Mc Graw Hill Education | CTB

Mark Limbach
Vice President, Finance
CTB/McGraw-Hill

September 4, 2013

Connie Oswald
2019 Washington Street, East
Charleston, WV 25305

Dear Ms. Oswald:

On behalf of CTB/McGraw-Hill LLC (CTB), I am pleased to submit our response to Request for Proposals (RFP) #EDD398716 for high school equivalency assessment aligned to West Virginia's Next Generation Content Standards and Objectives to the West Virginia Department of Education.

The plan we have created for the program is flexible and responsive to the requirements of the solicitation. Based on our successful record of providing high-stakes and large-scale paper and pencil and online assessments in the K–12 and Adult Education markets, CTB is highly qualified to deliver high school equivalency assessment services in West Virginia. We offer strong content and measurement capabilities, innovative technology, proven online assessment, technical and program management expertise, test and processing security, and a history of successful program implementation. As the selected provider for the West Virginia High School Equivalency Assessment program, CTB will be responsible for a number of activities, including:

- Provision of full-battery and practice high school equivalency assessments in Reading, Language Arts/Writing, Mathematics, Science, and Social Studies aligned to the Common Core Standards and Next Generation Science Standards
- Paper-based tests (PBT), printing and secure shipping of tests to approved testing centers
- Computer-based tests (CBT), provision of a system-agnostic test administration platform that can be used by computers at West Virginia's existing testing locations to administer the test
- Multiple forms both paper pencil and computer based in Spanish and English
- Provision of testing materials and training for test administrative staff
- Accommodations for students with disabilities
- Scoring and reporting services
- Supplemental supports including marketing materials

The test matches the needs of today's test takers and the current educational environment; it assesses the content that is required of today's students. Our development plan, which we describe in detail in this response, will ensure that TASC meets both the current and evolving needs of adult learners who are seeking a high school equivalency test in order to further their education and careers.

We share your enthusiasm and vision and look forward to opportunity for further discussion. Should you require clarification or additional information regarding CTB's submission, please contact Ms. Jan Barth, State Solutions Manager, at 304-941-9061, or by e-mail at janice_barth@ctb.com.

Sincerely,

Mark Limbach

Title Page

RFP Subject:	Provide a High School Equivalency Assessment Aligned to West Virginia's Next Generation Content Standards and Objectives
RFP Number:	EDD398716
Vendor's Name:	CTB/McGraw-Hill LLC
Vendor's Address:	20 Ryan Ranch Rd., Monterey, CA 93940
Telephone Number:	831-393-6336
Fax Number:	831-393-6635
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Signature: _____ Date: September 4, 2013

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As required by the RFP the Cost Proposal is Separately Sealed

Executive Summary

For the past 87 years, CTB McGraw-Hill (CTB) has been a leading provider of high-quality assessment products and services that have assisted learners of all ages meet their potential. Working collaboratively with our customers, we have a successful and proven and history of design/development innovation; excellent program management/ leadership with access to all CTB department expertise; and providing and maintaining successful supports/solutions that play a vital role in development of assessments and other services that promote student learning and performance.

CTB offers West Virginia a state-of-the-art high school equivalency assessment (HSE), Test Assessing Secondary Completion™ (TASC™). TASC can be administered online, on paper, or a combination of the two administration modes. CTB offers Common Core emergent, newly developed content; highly efficient processing and educator-centric reporting systems; and psychometric support from our Research team, which is nationally recognized for introducing innovations that support and improve the technical aspects of large-scale assessments and uniquely qualified program and project managers. TASC is delivered online using CTB's OAS (Online Administration System), the platform we use for TABE Online and other high-stakes tests. Computer adaptive versions of the TASC online assessments will be available in January 2015, with computer-based fixed forms available as a special condition for customers who request fixed forms.

West Virginia can select TASC to be the HSE assessment provider with the utmost confidence. We are eager to be the State's selected contractor West Virginia's efforts with the same enthusiasm and expertise that we have devoted to the WESTEST 2. CTB's proposal demonstrates our understanding of 1) high-stakes assessment as it applies to out-of school youth and adult learners and 2) how to build and transition assessments to full alignment with the CCSS and subsequently, the West Virginia Next Generation Content Standards and Objectives.

Nationally Recognized Leader in Adult Assessment Programs

CTB has long been a recognized provider of assessments for adult learners. The Test of Adult Basic Education (TABE), which provides a highly reliable, flexible system of testing for job screening and placement, is one of our most recognized assessments. Today, more adult education professionals choose TABE than any other assessment in the country. The most widely used adult assessment in the United States.

TABE delivers fast, accurate information about the test taker's skill level in each assessed content area, and educators and employers use it to inform decisions about hiring, training, and assignments in employment. TABE meets the highest standards for validity and reliability, and it is based on statistically sound measurement models and extensive research and development. No adult skills test offers greater technical strength than TABE, and as a result it has been a highly respected assessment tool for more than 45 years. It is a quality assessment system that relies on material relevant to adult education.

TABE is used by Adult Basic Education programs, Workforce Readiness programs, business and industry, and high school programs across the country. The results of TABE help educators and employers determine the skills of students, applicants, and employees. Numerous programs in West

Virginia are long-time TABE users and have used the paper/pencil tests as well asTABE Online. CTB certainly brings years of experience building assessments for adult learners, gained through TABE, to the West Virginia opportunity.

Flexible Forms and Accommodations Support

Research shows that the individuals who will take TASC are a diverse group and have a variety of needs that must be met in order to ensure that all examinees can fully and easily access and participate in the assessment. CTB is addressing those needs directly by providing TASC in a number of formats and in multiple delivery modes (online, paper/pencil, or a combination of these two modes) to include 1) three forms for both English and Spanish and 2) Braille and Large Print editions of the test 3) an audio CD for students who required an oral administration and/or in Braille, and 4) guidance for test administrators so that appropriate accommodations can be made available to those examinees and maintain the validity of the results. CTB uses certified Braille vendors to perform the transcription and production of Braille tests. Two English paper/pencil forms each year are produced as Braille editions. In addition, each of the three paper/pencil TASC English and Spanish forms produced each year are available on audio CD for students who require an oral administration as an allowable accommodation.

CTB is a nationally recognized leader in the use of technology to enhance the instructional and assessment process. Many of our assessments can be administered on computers, and we know the benefits and efficiencies computer-based testing offers. The computer-based administrations will be delivered through our Online Assessment System (OAS), a robust and flexible web-based test delivery system hosted by CTB that is easy for test takers and test administrators to use.

CTB has formed an **Office of Accommodations for TASC** states that want CTB to handle the accommodation approval process and provide technical support to local sites on issues relative to testing accommodations. Our OAS platform supports the same types of accommodations available with paper-based testing accompanied by additional accommodation options that are enabled by online technologies and programs. No matter the delivery mode, examinees' responses will be accurately and efficiently scored and reported and the results will be technically sound and comparable.

As a national test vendor, CTB is very aware that many states, testing centers, and/or examinees are not yet prepared for or able to use assessments that are available only on computer so our plan offers paper/pencil assessments opportunities. The paper-based administrations will be supported with high quality print materials to include CTB's proven scoring and reporting processes. Equivalent forms are not strictly possible when technology-enhanced items are incorporated in the computer-based assessment; in this case, items that measure skills comparable to the computer-based technology-enhanced items will be included in the paper-based forms.

CTB fully comprehends that some examinees that may need to take one or more of the TASC content area tests more than once before receiving a passing score. Therefore, they can take the entire test and up to two retests per content area for a single cost-effective fee. Of equal importance, test takers can work with the test center to schedule testing to meet their individual needs so that they reach their goal of a high school equivalency diploma.

College and Career Readiness and Transcripts

TASC is designed to be a high-stakes test that provides data about each examinee's performance. It will report whether the examinee has a passing score in each content area; we will determine the passing score through an analysis of the performance of a nationally representative sample of graduating high school seniors. That passing score will indicate that the examinee has performed as well as or better than 60 percent of the national sample and has the knowledge and skills expected of students at the end of high school.

TASC results will be presented in terms of a national percentile rank associated with each TASC content area and the total score. The national percentile ranks will be derived using the nationally

representative sample described above. To give examinees and educational instructors the optimal benefit from TASC, CTB will also provide criterion-referenced (CR) information in the form of diagnostic sub scores within each content area. This CR information can be used to identify areas of weakness by those examinees that must retake a test. It will also help examinees who are moving on to new educational studies to better understand their areas of strength and weakness.

TASC will also provide information about each test taker's college and career readiness by predicting his or her success in entry-level college courses. In addition, we are linking TASC scores to those on the GED so that policymakers can easily see how student performance compares on the two tests as they transition to TASC.

A score concordance between TASC and the current (pre-2014) GED® is being established with data from the spring/summer 2013 field test via the existing TABE-GED concordance. A universal concordance between TASC and other high school equivalency passing scores is not yet possible for other HSE tests measuring the CCSS that will not be available until 2014. However, CTB will be pleased to work cooperatively with other vendors to establish a scoring concordance to provide a universal crosswalk of passing scores between established high school equivalency tests.

CTB will work with a credentialing vendor, Lilac LLC, to ensure accurate and timely delivery of transcripts, and we will provide a process, forms, and guidelines to support the timely approval of accommodation requests and a method to appeal accommodation requests that are denied upon initial review, as described in our proposal

Technically Superior Empirical Research and Security Protocols

CTB's Research staff is nationally recognized for their innovations and their strict adherence to technically sound assessment practices. TASC is being built in accordance with those practices, and it is supported by a number of empirical research studies. The national field test started in spring 2013, and the resulting data will be carefully and thoroughly analyzed to inform the final test forms as well as the determination of passing scores. This fall we will conduct comparability studies between the paper-based and computer-based administration modes and the English and Spanish versions of the test so that all users will know that results, no matter how the examinee tested or which edition was used, are comparable.

Research activities and analyses will continue with embedded field testing in 2014 through 2016. This field testing will support the evolution of TASC and the planned controlled shift in the content standards frameworks through the introduction of new item types, including technology-enhanced items. It will also allow us to develop three new English and Spanish test forms each year and to introduce artificial intelligence (AI) scoring and adaptive testing in the computer-based version of TASC.

CTB has security protocols for TASC as it is a high-stakes test and results are used to make critical decisions for each examinee. Therefore, providing comprehensive test and data security is key to our support of TASC. Our online delivery platform protocols include many security safeguards that prevent unauthorized access to tests, examinee records, and results. Features ensure that test takers cannot access other programs or information during testing; data are encrypted during transmission to maintain the data's security and integrity.

Paper tests are shipped using traceable methods that promote security. CTB will train staff test centers and sites on tried and proven methods to best maintain the security of the materials while they are on site.

TASC Readiness Assessment

CTB is preparing a TASC Readiness Assessment (TRA). The TRA is designed to predict whether an examinee is prepared for and likely to pass the TASC. Based on the same test blueprint and content as the operational TASC, the TRA will be half the length and available in English and Spanish in preparation

for the 2014 administration year. Because the TRA and the operational TASC forms will be on the same scale in each subject area, examinees who take the TRA will get a score indicating the likelihood that they would have passed or not passed the subject area subtest had they taken the operational TASC form at that time. In addition, diagnostic feedback will be available in terms of percent correct scores at the subtest level. The diagnostic reports can thus be used to provide both examinees and instructional staff members with a better understanding of test takers' mastery of skills that are aligned to the Common Core State Standards.

Program Management and Comprehensive Support Services and Materials

As noted, CTB has extensive experience providing assessments for adult learners and working with state agencies to support their testing programs. We know that a testing program that focuses on individuals seeking a high school equivalency diploma must be supported with comprehensive services for the test centers and test takers. CTB offers a full complement of support services for TASC.

We will make available the same leadership staff currently assigned to the West Virginia Statewide Assessment Program because of their understanding of West Virginia technology infrastructure and issues that might arise with online test administrations. CTB has selected the following experienced program management staff.

- Our TASC Program Manager, Ms. Paula Boffa-Taylor, manages all implementations of TASC. Her specialized knowledge of the product and implementations across contracts, combined with the experience of Ms. Block and Ms. West, will result in a smooth implementation for the Agency.
- CTB's Senior Program Manager, Ms. Kimberly Block, has a long and highly credible history of providing intelligent, effective, and responsive program management for West Virginia's WESTEST 2 and online Writing Roadmap implementations. Kim will be available to Ms. Paula Boffa-Taylor, our day-to-day TASC Program Manager, who ensures that all program milestones are met and deliverables meet the state's specifications.
- CTB's Project Manager, Ms. Brenda West, is a resident a life-long resident of West Virginia and, as the former West Virginia K–12 Assessment Assistant Director, has devoted her professional career to enhancing educational services in the State. For the past six years, she has been the CTB project manager for West Virginia's state-wide online formative/interim assessment program managing the state's Acuity implementation. Brenda will assist Ms. Boffa-Taylor in providing onsite services working directly with West Virginia state staff and local staff upon request.

In addition to these staff, our Customer Service department will work with state educators and be available to test center administrators and educators to answer questions about TASC and take orders for additional materials. The Customer Service Center can be contacted via a toll-free number from 7:00 AM to 7:00 PM Eastern Time. CTB also provides training in the use of TASC materials and systems, the administration of the test, and the use of results.

Conclusion

CTB respects that adult learners generally take tests in locations that differ from those for traditional K–12 assessments. They can test in state-managed test centers, where high school equivalency tests are most often administered, as well as in adult basic education programs, workforce readiness centers, and correctional facilities.

It is important to know that when a state selects TASC as its high school equivalency test, CTB works with the state to assure that TASC can be administered under existing testing policies and in current test centers or other locations determined by the state. CTB will provide a full complement of services to support the use of TASC as West Virginia's new HSE assessment. The services will include examinee registration, delivery of paper-based test materials to testing centers, computer- and paper-based test administrations, scoring of the tests, and reporting of results. Additional tasks associated with the HSE assessment will include delivery of the test in other languages, and providing training for test

administrative and educational staff. CTB used a rigorous and legally defensible research design with the recognition that TASC results will be used by West Virginia officials to determine the awarding of high school equivalency certificates. The high-stakes nature of this new testing program mandates that test security will be a critical component, and our management plan was designed to ensure this security.

Finally, as a company, we are very aware that costs to states and/or students can be an issue. States and many test takers are facing fiscal challenges, so TASC has provided a cost-effective solution to states. Test centers do not have to pay a licensing fee; the only fee is that for the test itself. As noted, each examinee's fee includes up to two retakes of each content area test within a year. CTB can provide a customized system through which test takers can be registered and if the state wishes, fees can be collected within the proposed system.

CTB is ready and eager to introduce TASC in West Virginia through a mixed model provider network that includes delivery in local education agencies, correctional centers, and others test centers.

Attachment A: Vendor Response Sheet

Provide a response regarding the following: firm and staff qualifications and experience in completing similar projects; references; copies of any staff certifications or degrees applicable to this project; proposed staffing plan; descriptions of past projects completed entailing the location of the project, project manager name and contact information, type of project, and what the project goals and objectives where and how they were met.

List project goals and objectives contained in Section 4, Subsection 4:

Section 4, Subsection 4.4.3: *The Vendor should describe their solution to the RFP and explain how it could be used as a basis for high school equivalency diplomas in both paper and computer based formats.*

Test Assessing Secondary Completion (TASC)

In response to RFP #EDD398716, CTB-McGraw-Hill (CTB) proposes our new Test Assessing Secondary Completion (TASC) as West Virginia's High School Equivalency (HSE) Assessment to support the State's comprehensive plan to raise college and career readiness of out-of-school youth and adults. TASC will assess high school Reading/Language Arts, Writing/Language Arts, Mathematics, Science, and Social Studies in order to meet the needs of West Virginia and the other 38 states and territories that are working collaboratively to share ideas and plans for an alternative high school equivalency assessment. Each TASC subtest will take approximately the same amount of testing time as does the corresponding 2002 GED test. TASC will meet West Virginia's needs for valid, reliable, affordable, and accessible high school equivalency assessment that measures the Common Core State Standards (CCSS) and other emerging national standards. TASC will be available for administration in computer-based format by January 2, 2014. To accommodate the West Virginia's timeline, paper-based versions will arrive at the State's testing sites before December 15, 2013. CTB will provide three new forms of the English edition and three forms of the Spanish edition of TASC every year.

TASC is designed as a high-stakes and technically sound assessment specifically designed to be used for the purpose of determining high school equivalency for individual adult learners. CTB will produce three new forms (both English and Spanish versions) of the test as well as accommodated forms each year. The TASC Reading/Language Arts and Mathematics assessments will measure the CCSS and subsequently, West Virginia's customized Next Generation Content Standards and Objectives. The Science assessment will measure the new Next Generation Science Standards (NGSS) which CTB understands West Virginia will adopt. The Social Studies test will be aligned to a yet-to-be-developed new national content framework; however, the existing national curriculum standards guide the development of the content framework and the TASC content.

CTB realizes and appreciates that many of today's high school equivalency test takers have had limited exposure to the more rigorous content required by the CCSS and at the same time, these students must be able to demonstrate their knowledge in terms of those Standards. Therefore, CTB has designed TASC so that it evolves across the two years, increasing in rigor and incorporating new and more complex item types, but always measuring and reporting examinees' knowledge and understanding in terms of today's standards.

In 2014 TASC will measure the foundational concepts in the CCSS and will include:

- Multiple-choice items in all content areas
- An extended writing prompt for the writing assessment (evidence-based writing)
- Gridded-response items in mathematics
- Stimulus-based science and social studies multiple-choice item sets

In 2015 and beyond, TASC will increase the rigor of the coverage of the CCSS by field testing additional item types including constructed-response items and technology-enhanced items. Beginning with the 2016 operational tests, item formats on TASC will include the item formats that will be on the Smarter Balanced Assessment Consortium (SBAC) assessments and the Partnership for Assessment of Readiness for College and Careers (PARCC). Clearly, these new item types will allow us to more fully assess the complex and rigorous content in the CCSS and allow us to show equivalency to high school graduation standards. CTB will also introduce Artificial Intelligence (AI) scoring in 2016.

CTB is the only publisher developing Common Core content for both the SBAC and the PARCC assessment consortia. We leverage this experience in our development of TASC to provide examinees, educators, and policymakers the newest Common Core emergent content possible as well as the high quality assessment expertise that CTB has been known for over the past 87 years. All TASC items are field tested and the test is normed on nationally representative samples of graduating high school seniors and diverse samples of adult learners. Item response theory scaling and equating are used to support accuracy and form equivalence. As described in our proposal, CTB uses a rigorous research design to set appropriate and meaningful Passing and Career and College Readiness (CCR) score. TASC is intended to measure high school equivalency and is a national shelf-product, so it is important to establish a comparison to students who successfully complete the traditional high school sequence inclusive of content aligned to the CCSS in mathematics and ELA, the NGSS, and emerging national social studies standards.

CTB was awarded the contracts for the High School Equivalency RFPs issued by New York State and Indiana for an alternative high school equivalency exam, and we would be honored to add West Virginia to our growing customer list.

Section 4, Subsection 4.4.4: *The Vendor should show experience in developing and administering large scale assessments using both paper and computer based formats, training for test administration staff, printing and shipping capabilities of tests and test related materials in a timely and secure manner. The Vendor, as part of this documentation, should include a minimum of three (3) professional references to substantiate the Vendor's capacity and qualifications. References should be current (within the past three years) and should include name, title, organization name, address, phone number and e-mail address. One of the references should reflect large scale testing with a minimum of 5,000 students. Do not include current Agency staff as references. The vendor needs to grant permission to Agency to contact the references.*

Founded in 1926, CTB/McGraw-Hill is a leading provider of high-quality assessment products and services that help learners of all ages meet their potential. To achieve this, we provide online and paper-pencil solutions that play a vital role in education nation- and worldwide. CTB is a limited liability company organized under the laws of Delaware since November 13, 2001. We are a business unit of McGraw-Hill Education (MHE) and are located at 20 Ryan Ranch Road, Monterey, California 93940.

Stability

CTB has provided excellence in assessment since its founding, via penny postcards, in 1926. As a member of MHE, we continue our history of innovation and excellence in a rapidly changing environment. Fast on its feet and flexible, CTB can meet the needs of the WVDOE with reliability that has been tempered during our 87 years of success.

CTB works with users of our assessments and the departments overseeing the assessment programs at every step of the assessment and reporting cycle. CTB provides a range of solutions to support key education goals, and is a leader in the design and development of adult and near-adult educational assessments, including the Test of Adult Basic Education (TABE), TABE Online, TABE Adaptive, and the Test Assessing Secondary Completion (TASC):

- Assistance in the design and development of paper-based and online summative and formative assessment programs at every level—state, district, and school—that meet national and state requirements
- Involving educators in item development, item review, and scoring to provide valuable professional development that helps educators successfully use student data to effect instructional and learning change
- Diagnostic results that inform and guide instruction, including early diagnosis of reading and language difficulties
- Language assessments and assessments in other languages for learners whose language is other than English
- Student reports designed to meet the information needs of administrators, teachers, and parents so they can evaluate student growth from year-to-year and throughout the year

Leadership

McGraw-Hill Education is a leading innovator in the development of teaching and learning solutions for the 21st century. Through a comprehensive range of traditional and digital educational content and tools, MHE empowers and prepares professionals and learners of all ages to connect, learn, and succeed in the global economy. MHE has offices in 33 countries and covers every aspect of the education market from pre-K through professional development, including offering print and digital educational materials in more than 65 languages. Business units within McGraw-Hill Education include McGraw-Hill Higher Education, McGraw-Hill School Education, and McGraw-Hill Professional. Through these organizations, MHE publishes and distributes more than 1,000 titles a year, offering 95 percent of its textbooks in eBook form that features interactivity, search, and note-taking functionality.

As one of McGraw-Hill Education's business units, CTB is driven by MHE's commitment to create a smarter, better world where everyone can succeed in the knowledge economy. The strength of our parent organization enables CTB to concentrate on the delivery of excellence through provision of high-quality assessments and products that our customers can use confidently to make decisions about their students.

A Tradition of Excellence

With the Progressive Achievement Test in 1934, CTB established itself as an innovator known for the quality and reliability of our assessments and use of technology.

In the 1960s, Civil Rights legislation required that tests be demonstrably fair and unbiased. In response, we became the first publisher of K–12 achievement tests to use empirical bias-detection methods, which are now a standard analysis in testing.

With the advent of the high-stakes testing movement, we sought to bring the soundest technical foundations to assessments. The outcome was a groundbreaking contribution to the operational development of Item Response Theory that led to CTB being the first testing company to use Item Response Theory (IRT) to report student results, which in turn led to better diagnosis of student needs.

As the standards-based testing movement gained momentum in the 1990s, performance levels were needed to report test results. Finding existing methods lacking, CTB researchers (Green, Lewis, Mitzel, & Patz) developed a new method called the Bookmark Standard Setting Procedure, which was first presented at Council of Chief States School Officers in 1996. The Bookmark Procedure was so

successful that all major test publishers now provide it among the standard-setting methods offered to their customers.

In the 1990s, the Individuals with Disabilities Education Act required that all students, including learners with disabilities who sometimes need accommodations, participate in state testing programs. As this requirement was implemented, it became clear that traditional norms, which did not include learners who used accommodations, no longer represented the nation's tested population. We remain the only test publisher to offer inclusive norms.

Always alert to evolving assessment needs, CTB's *TerraNova* was the first nationally standardized assessment to mirror the look of textbooks and to combine multiple-choice and constructed-response items. Due to the flexibility and quality of the *TerraNova* family of assessments, CTB virtually invented the idea of building assessments based on existing items combined with new state specific items to create a close match to state or Common Core State Standards (CCSS), and we have extended this approach with *TerraNova* Common Core and our CoreLink™ Services. We now also produce the most industry-honored online formative assessment, Acuity.

Quality and commitment are not just goals at CTB; they are expectations for all of our employees. To meet our commitments, CTB is structured to provide excellence in operational performance and support of customer needs. Our management team upholds the CTB tradition of helping educators and learners succeed by providing the most innovative and reliable assessment solutions in the industry.

Ellen Haley, President

Ms. Haley has been President of CTB since 2007. Her strong understanding of the market, strategic skills, leadership, and sharp focus on results enhance CTB's contributions to U.S. and global assessments. After joining CTB in 1987, Ms. Haley successfully led all of CTB's major functional areas—Publishing, Research, Technology, Scoring, and Programs—before being appointed president.

Sandor Nagy, Chief Operating Officer

Mr. Nagy's expertise and skills align with CTB's focus on operational efficiency, including a systems-oriented approach, technology, an engineering mindset, and a global approach to business management. Before joining CTB, Mr. Nagy served in progressive leadership roles at General Electric (GE) from 1992 to 2005. While there, he held key global leadership roles in supply chain management, logistics, manufacturing, engineering, and customer order management.

David Seitter, Vice President of Sales and Marketing

Mr. Seitter, Vice President of Sales and Marketing, is responsible for developing and implementing the overall strategy, budget, and plan for CTB Sales and Marketing as well as CTB's strategies for increasing the existing core business and expanding into new markets. He works directly with our Sales and Marketing managers to develop regional, state, and district level plans. Prior to his current role, he was Vice President for Online Sales and was responsible for spearheading the online sales of CTB's award winning Acuity and Yearly ProgressPro™ products.

Business Acumen

Significant to the success of our programs is CTB's commitment to continuous improvement through Quality Management System (QSM) and Business Process Management (BPM). This commitment, when combined with our assessment expertise, directly enhances our ability to meet our users' needs. As a company, we commit our resources—and our highest level of invention, collaboration, consultation, and quality—to our work with governments, states, and districts.

CTB utilizes two complementary world-class systems to ensure that customer needs and expectations are satisfied: the CTB Quality Management System (QMS) and the Business Process Management (BPM)

methodology. These systems support our commitment to provide assessments and reporting that are of consistently high quality and reliability and adhere to industry standards and best practices.

QMS is used end-to-end at CTB—from the collection of requirements at the proposal stage, to the validation of research methodologies and test design, to controls on the development process, to the delivery of test materials, and through to scoring and reporting. QMS is managed through a formalized Quality Office function that reports directly to the Chief Operating Officer, independent from the functional operating organizations.

Business Process Management is a management approach focused on aligning all aspects of CTB with the wants and needs of customers. It is a holistic management approach that promotes business effectiveness and efficiency. It strengthens business processes, ensures alignment with customer needs, and improves operational efficiencies and effectiveness, resulting in higher quality products and overall improvements in business performance.

CTB deploys BPM by identifying those processes that may be impacting customer satisfaction and creating well defined and structured projects that improve and standardize those processes. We rely heavily on employee involvement to ensure that the best ideas and solutions are brought forward. This approach is well known in the quality and process improvement field, and has been adopted by high performing companies world-wide.

Program Management: PMI Certification

CTB provides full-service program management using an established and mature Program Management Office (PMO). We have aligned our processes with the Project Management Institute (PMI), the International Standards Organization (ISO), the Lean Enterprise Institute, Six Sigma, and Business Process Management.

Additionally, we ensure adherence to the best practices from the Operational Best Practices for Statewide Large-Scale Assessment Programs, developed by the Council of Chief State School Officers and the Association of Test Publishers. Using these principles provides the basis for successfully delivering the products and services for each task to each customer.

At CTB, the program manager's core mission is to anticipate and meet program goals. To ensure smooth operation of each program, program managers lead a team of experienced project managers representing each of our functional areas; they establish a schedule for weekly internal team meetings with the CTB functional departments. Communications between team members is constant, open, and results-oriented. We know that when a customer trusts us with their student data, it is essential that we treat each byte as if it were our own child's. It is a huge responsibility that is not lost on us.

Each program manager has ongoing contact with upper management so that we have an appropriate flow of communication up and down our organization. Should a program require additional support of a highly specialized nature, each program manager has access to the most experienced subject and process experts in the company, reaching beyond those individuals those assigned to the program.

Program managers:

- Serve as the day-to-day liaison and advocate.
- Plan, schedule, direct and monitor implementation of the tasks necessary for a successful project.
- Are proactive, identify potential problems, obtain input from the appropriate parties, and propose solutions to mitigate any program risks.
- Manage program changes effectively via a rigorous process that provides prompt feedback and optimal solutions that complement the existing program design.
- Oversee internal and any subcontractor processes to ensure the success of the program on all levels.

Each team, under the leadership of a program manager, maintains a full program schedule and complete program documentation. A Master Program Schedule is created to ensure identification, organization and sequencing of all project tasks, deliverables and milestones. The project schedule takes the key elements of the project and translates them into a time-based plan. The complete schedule includes a work breakdown structure, all tasks and activities associated with the project, and the interdependencies of the tasks to be performed. The program schedule is created using CTB's program management scheduling software; it is continuously monitored, updated and analyzed by a Program Schedule Analyst (PSA). Working closely with the project managers, the schedule analyst helps to ensure that the detailed departmental schedules remain in alignment with the program schedule. If any impacts to the schedule are identified, the PSA immediately notifies the program manager and works with the team to bring the schedule back into alignment with the customer deliverable requirements.

In short, CTB program managers ensure that program milestones are met, that program budgets are cost-effectively managed, and that the highest quality standards are maintained.

Excellence in Assessment

CTB begins each assessment believing that each customer has unique testing needs. Our goal is to follow through with the implementation and validation of an innovative testing program designed to address each of these unique needs.

Our Content and Research group typically develops tests in three phases, including the necessary test delivery and support considerations involved in determining the testing mode, scoring methods, and the use of advanced technologies such as computer adaptive testing, speech recognition, and artificial intelligence. These three phases are the building blocks of an effective testing program:

- Needs analysis
- Test program design and specification
- Test development and validation

CTB's teams have broad experience across testing programs, testing modes, and geographic regions. Not only do we employ proven methods in testing, but we are leaders in developing those methods through our own research and development work, as well as through our collaborative research relationships with testing experts around the world. Due to our leadership position in both testing thought and practice, we offer our customers the opportunity to employ the latest thinking and most advanced technologies in the development of each testing program. CTB's leadership also provides an expansive view of industry capabilities that allows us to identify the most cost-effective solutions for our customers' testing needs. Stated simply, we share a passion for educational and testing excellence with our customers and we collaborate with, consult, and support our customers through all stages of testing program development.

Content Development

Our Content Development group is known for creating superior paper-based and online assessments, as demonstrated by our work on many state and large district assessments. This group works with educators to analyze curriculum trends, design test plans, write items, develop item tryouts, and design and produce final test forms. Our specialists span all content areas: mathematics, reading/language arts, science, social studies, English language learners and end-of-course.

Our Content Development group orchestrates item review meetings as professional development opportunities for educators, including item writing, item review and bias/sensitivity meetings for all content areas. To ensure these meetings provide a quality professional development opportunity, we involve all participants in the discussions and decisions. As a result of these review meetings, 85–95 percent of our items are accepted for field-testing or for placement in tests. When these items are field tested, 85 percent pass our stiff statistical requirements for placement in one of the test forms we select and create each year for our custom clients.

CTB has conducted multiple trainings in the art and practice of item writing for many of its former and current customers, including educators in Missouri, Maryland, North Dakota, Qatar, and Bermuda. Each of these customers has used and/or continues to use educator-developed items and tasks in their state- and district-wide assessments. Teachers' feedback on surveys at the conclusion of item writing training workshops is always overwhelmingly positive in terms of the professional development experience and the new skills the educators acquired. CTB has developed and offers on-line tools that make online creation of all item types easy and efficient.

We utilize the alignment, depth-of-knowledge and breadth of content coverage procedures developed by Dr. Norman Webb, University Wisconsin (or customer prescribed methods) during item development and selection to ensure that the items we select for assessments cover the depth and breadth of each state's standards.

Adhering to the highest standards of publishing, copy editors, proofreaders, artists, typographers, and graphic designers apply their expertise to the deliverables as they move through the production process from manuscript to camera-copy or online distribution. Our designers optimize manufacturing considerations (paper weight, number of pages, screen use) to balance program goals.

Universal Design

CTB is committed to accessibility for all learners. Universal Design has been an element of our assessments since 2002. The principles of Universal Design guide our development process for all administration methods so that we accommodate the widest possible range of learners in each assessment. CTB was the first test publisher to do extensive usability studies on the design of our assessments to ensure that:

- Vocabulary and sentence are appropriate to the grade level,
- Definitions are clear,
- Graphics support understanding without distracting the student.

We take special care to design graphics to aid those who require reading accommodations such as student with severe learning disabilities.

Item and Test Security

CTB supports a sophisticated electronic security system to ensure the security of test materials and other customer data. Our security provisions encompass all aspects of our daily work, whether on-site or off, and include required security agreements, photo-identification badges, uniformed guards and closed- circuit TV 24/7. Computer and computer-file access are password protected. Secure material is routinely destroyed by shredding or chemical dissolution.

Workshop and review committee security is essential for item and test validity. Meeting participants are required to sign confidentiality agreements forbidding disclosure of the contents of materials they review. We abide by and enforce state or district regulations governing test security and penalties for violating test security.

Process Innovations:

Public Advisory Board

In 2010, CTB created a Publishing Advisory Board. This board guides CTB's development of assessment content that reflects the goals of the Common Core State Standards (CCSS). The CTB Publishing Advisory Board's experience developing high-quality assessment content and its insight into the CCSS and other emerging educational requirements help CTB stay at the forefront of the ever-changing world of K–12 assessment. The Board comprises diverse professionals with deep experience and leadership across the education arena. The perspectives of state assessment directors, classroom teachers, university professors, education researchers, and business leaders. Many Board members have specific knowledge of or have been deeply engaged with the development and implementation of the CCSS, and

each is committed to helping CTB play an effective role in serving the needs of today's educators. The Board provides general guidance, reviews specific product development plans and content development work, and helps CTB serve the needs of customers, including states, consortia of states, and other education stakeholders.

Monarch™ CTB's Next-Generation Content Repository

Monarch™ is our assessment publishing, scoring, and reporting system. It is an integrated, online project tool that facilitates seamless online editing, tracking, and selection of items. It includes Web-based authoring that integrates the publishing process with efficient, high quality, repository-based content. This powerful platform aids collaboration and speeds editing and review during item development and test construction providing greater reliability and faster response times.

Through the combination of excellent item development and use of Monarch, we have the capacity to work well, quickly and directly to meet the item needs for custom programs and products.

Distributed Authoring System

The CTB Distributed Authoring System (DAS) offers both a feature-rich, secure Web-based item development platform for teachers and an item management solution for administrators. The DAS includes all the tools and technology needed to make item creation easy and effective.

Because content is created through an online Web interface, users can access the DAS anytime from anywhere. Access control features such as unique password and username ensures that only authorized individuals with direct responsibility for item development, review, and editing are allowed access to the system. Authorized users can create content based on new or existing item specifications, classify items to specific expectations, select from multiple item formats that are all tailored to developing assessment content, and align items to one or more CCSS.

The CTB Distributed Authoring System lets us use workflows to manage content creation and is capable of tracking the content by development status. The DAS is capable of displaying the status of an item in any stage of the item lifecycle. Furthermore, the system tracks all changes to an item, and users can revert to a previous version through the audit log. All of the workflows and item lifecycle review processes are fully customizable to meet item acceptability criteria.

The DAS has the capability to export content in various formats and through various mechanisms. In addition to PDF and HTML, the system generates complete item metadata in XML for export to other systems using an Application Program Interface (API) and Web Services interfaces. As APIP becomes more clearly defined and accepted, CTB will migrate our item content to include these new tags and to modify the DAS' export capabilities to provide the appropriate XML file formats for universal distribution.

Automated Test Design

Whether selecting field test or operational test forms and whether the selection is manual or automated, that the resulting forms adhere to the test design, test blueprint, and psychometric requirements for valid and reliable tests. Options exist for our test development experts to use CTB software to manually develop test forms, or they can use our fully automated test assembly (ATA) engine to develop individual or multiple parallel forms at a time. Both methods produce test forms that meet all content and statistical design requirements.

CTB's automated test assembly system uses linear programming software and methodologies. Test forms generated with ATA are optimal with respect to statistical criteria specified by the customer, while simultaneously satisfying the multiple content constraints specified by the test framework blueprint. Forms and/or pre-test blocks can be selected either simultaneously or in sequence, depending on item availability at the time of selection. The ATA may also be used to manage the item pool to optimize the development of new items, if desired.

CTB content editors and research scientists enter the test specifications (i.e., the constraints and targets), including blueprint and statistical information in the ATA. Those specifications may include requirements for item attributes such as depth of knowledge, item type (i.e., multiple-choice or constructed-response), and other item metadata available. The system translates the specifications into a mathematical optimization model, uses a state-of-the-art commercially available solver to identify the optimal set of items from an item pool, and evaluates the test forms.

The advanced shadow test approach, conceived of and developed by CTB's Chief Scientist, Dr. Wim van der Linden, and documented in his book Linear Models for Optimal Test Design (2005) is used. The capabilities associated with this approach overcome many of the challenges encountered in more manual forms development processes, not the least of which are the time and expense of creating forms manually.

Product Innovations:

Common Core

With 2011 norms, *TerraNova* Common Core is the only field-tested, valid, and authentic measure of the CCSS currently available. *TerraNova* Common Core consists of selected-response, constructed-response, extended constructed-response, and performance task items in the same test, on the same scale. As the only publisher to offer both the Three Parameter Logistic (3PL) and the Two Parameter Partial Credit (2PPC) Item Response Theory (IRT) scoring models, CTB is able to offer partial credit, which can be a critical window into learners' progress toward a Standard in instances of partial mastery.

TerraNova Common Core is offered in an online adaptive mode that provides robust and challenging pools of items reflective of the skills needed for college and career readiness. Results are available in seven days or less, and reports show administrators, students, and teachers where they stand on both national and the Common Core State Standards today and over time.

A selected-response only option that targets the CCSS and key foundational skills necessary to demonstrate mastery of the CCSS is available. It provides reports that showcase student mastery against national standards.

The benefit of this unique "one test" approach is that educators can compare student results on national and CCSS across grades and ability levels. Responses to all items are integrated, so educators can see how well students are doing without the complex and time-consuming task of comparing performance on different measures while obtaining the most reliable and valid measure of learners' performance within the context of the CCSS.

CoreLink Services

CoreLink Services provide a bridge from existing state standards and tests to the new Common Core State Standards and to the future national common core assessments. CoreLink includes a new item bank that can be implemented as a stand-alone solution or paired with an existing state test to provide a reliable, valid, and comprehensive overview of student performance on the CCSS. In addition, CoreLink offers a wide array of professional development and psychometric services to complement the item bank and help ensure successful implementation of the CCSS.

With quick and informative data showcasing student mastery of the CCSS, CoreLink Services complements any state testing program. In particular, CoreLink Services allows:

- A complete measurement of student performance related to Common Core domains during the transition to the CCSS framework
  - A large number of CoreLink items (e.g., twice as many items as are included in operational tests) can be administered in each grade level to measure a broad range of CCSS. The matrix administration (similar to NAEP test administration) allows content to be spiraled across

multiple forms so that one student takes only a small subset of the test items resulting in limited administration time.

- Facilitation of operational test form equating
  - The CoreLink items can serve as external anchor items in a state test equating allowing operational tests to be linked to a larger set of items so that performance on these tests can be interpreted in a broader context.
- More reliable and interpretable year-to-year test trend results
  - Using a robust CoreLink anchor set that covers a full set CCSS for test equating purposes improves reliability of year-to-year performance trend data on operational test by reducing error associated with anchor item selection.
- Development and/or support of vertical scales
  - Vertical scales in English language arts and mathematics for a state test can be established by administering CoreLink items at adjacent grade levels. Alternatively, the state tests can be linked to the existing CoreLink scale taking advantage of the vertical properties of the scale. The underlying CoreLink vertical scales enable comparisons to be made across grades directly on state test scales.
- A capability to build new or augment custom test forms
  - The CoreLink item bank supports new form development or the items can be used to augment test forms developed by a state.

Expertise in Measurement and Assessment

CTB Research staff have primary responsibility for supporting the development of each assessment—including advising about test design and development of new item types and innovation of technical procedures—and for supervising, conducting, and documenting all statistical analyses. The validity and reliability of our assessment products and solutions is built on our tradition of excellence and the expertise of CTB Research professionals: psychometricians, statisticians, and, educational measurement specialists.

Our highly qualified staff members hold Ph.D. level degrees in the areas of education, psychology, statistics, mathematics, linguistics, applied linguistics, as well as many other subjects. They are industry leaders who expertly guide the test development process from definition through launch. We provide needs analyses and test design, or provide a response to a fully developed set of test requirements, to meet our customers' need for creation and validation of an assessment.

CTB's researchers lead the field in developing innovative and widely adopted procedures for analyzing selected- and constructed-response items and performance tasks. They are experienced with implementing and interpreting one- (i.e., Rasch), two-, and three-parameter logistic models, as well as various partial-credit item response models. They have extensive experience with classical test theory and generalizability theory. CTB Research professionals collaborate:

- To validate performance. The Research staff conducts pilot tests and usability studies with students and teachers for new catalog products and custom testing programs.
- To ensure a balanced representation of ethnic, gender, age, and role images in the test content. Standard test development protocols are followed and extensive sensitivity and bias reviews are conducted.
- To respond to your inquiries for relevant assessment information. We provide professional counsel, and technical assistance including supporting the work of state technical advisory committees.
- To ensure we remain a driving force in assessment research. Our researchers conduct collaborative research with faculty of leading research institutes and universities and are actively involved in the American Psychological Association, National Council on Measurement in Education, and the American Educational Research Association among others.

To conduct these technical studies, computer programs are developed to analyze student performance on tests. To develop and implement these programs, the Statistical Analysis group has a staff of scientific computer programmers. These professionals use not only standard statistical packages (e.g., SPSS, SAS), but also proprietary CTB software (e.g., ItemSys, PARDUX, FLUX) developed specifically for the analysis of test results.

Educational measurement is a scientific endeavor. We collect student test question (item) response data and conduct data analysis to examine the item quality. We estimate student ability in more accurate ways and ensure the fairness of the test items toward different groups of learners. Using systematic methods, we set performance standards against criteria determined by expert committees, rather than an arbitrary percent correct. We also conduct research in the field of testing to make sure that the test results are fair, consistent, and provide useful information to teachers and students. This type of research gives our customers direct access to the latest thinking within the discipline of educational measurement. Our consulting teams ensures that each customer's testing program implements the most appropriate research studies for their testing and policy needs, such as:

- Field Testing

To validate performance, the research staff conducts pilot tests and usability studies with students and teachers for new testing programs.

- Standard Test Data Analyses

Implementation of IRT and other advanced statistical methods increases the precision of the test scores compared to traditional raw scoring methods.

- Standard Setting

Standard setting employs proven methods to determine and describe proficiency and competency levels that accurately classify examinees based on their test scores.

Additional Studies

The following list of studies provides a sample of the types of research that we have conducted to evaluate various aspects of implemented testing programs: linking studies, classification consistency, validation, prediction, growth modeling, cheating, alignment, cross-language comparability, and efficacy studies.

Each has the effect of allowing a more precise view of student performance compared to traditional methods, and each can play a key role in test validation.

Policy Development Support

As experts in educational measurement and testing, our researchers can facilitate sound policy making by providing complete, accurate, unbiased information regarding the scientific and measurement implications associated with valid alternatives and to conduct the ongoing research to support sound decision making. We do not make policy decisions, but we can provide information to indicate the best direction for a single test or a full testing program. As an initial means of response to a request for information to support policy decisions, our customers may draw on our many years of experience in K–12 educational measurement and the extensive knowledge of our research staff concerning educational policies that relate to the design and consequences of many testing programs.

Empirically based research often provides a sound platform from which to make policy decisions. Though the existing research base can inform testing policy, custom-designed research studies may better inform unique policy considerations. We have provided many custom studies in support of client needs to evaluate policy intended to foster compliance with the Standards for Educational and Psychological Testing and with specific governmental regulations.

CTB provides technical reports that quantify each program's processes, methodologies, and quality control procedures, and which clearly document our adherence to the highest psychometric standards.

We work with our customers to prepare the necessary documentation for committee reviews by ensuring that technical reports provide the type of information required by relevant laws and regulations.

Whether selecting field test or operational test forms and whether the selection is manual or automated, CTB follows established procedures to ensure that forms adhere to the test design, test blueprint, and psychometric requirements for valid and reliable tests. Our assessments deliver information our customers can trust—data that creates a solid foundation for informed decision making and instruction.

Superior Delivery:

Fulfillment and Scoring of Assessments

We have worked with many nations, states and districts to produce materials/processes that reduce the stress of administration at the district and school level. We understand implicitly that the acceptance of any assessment begins with the delivery of high quality assessment materials that result in meaningful, immediately useable test information. This delivery process begins with manufacturing of paper/pencil books and answer documents, or in the delivery of the items on a robust online platform.

We have a history of continuous improvement that allows us to provide quality materials on time using the newest methods of manufacturing and delivery.

Navigator™

Our Navigator system provides users a complete range of data management services to make the experience of integrating and reporting student data as efficient and simple as possible. This suite of Internet applications was developed with input from school districts nationwide to help solve the data management challenges that have confronted school assessment administrators for years. Navigator's online applications are secure and intuitive, providing integrated management of logistics across all stages of the assessment process. Core applications cover traditional areas such as enrollment and student identification upload, test materials tracking, and assessment data management.

Navigator incorporates features, such as real-time file sharing, that provide schools, districts and states secure and immediate access to information, multimedia Web-conferencing, custom program Web-sites for public or private sharing of information, and a program-specific, searchable, knowledge base.

Navigator performs a key role in helping schools establish accountability systems in compliance with the national reporting requirements. Student demographic data can be compiled and modified up until one week before AYP reports are due, allowing schools to significantly increase the accuracy of statistical data needed for national submissions. Use of Navigator supports more accurate pre-coding of data. With Navigator, school administrators can easily edit or transfer student demographic and identifying information. Labor requirements are reduced, errors are minimized or eliminated, and recordkeeping is simplified and more accurate.

Manufacturing

CTB's Manufacturing staff support both catalog and custom products by coordinating the production process, with a variety of trusted vendors. Our capacity is scalable through use of most-favored print and distribution vendors. Each most-favored vendor is vetted to ensure consistent delivery of high quality product. Most-favored vendor status undergoes scheduled reviews. We require that variances be tracked and corrected. In addition, CTB manufacturing staff completes site visits to ensure consistent quality in scannable and non-scannable hardcopy materials.

We work with schools, districts and states to design answer documents that meet program needs. We use composition and production practices based on our experience creating the industry's first usability studies, and we adhere to the elements of Universal Design for our print materials.

Accurate printing for assessments begins when a customer's approved proofs and digital files are sent to the printer who:

- Checks digital files for compatibility and begins the printing process. A job ticket is created to track the progress and location of the job at all times. Tickets are also signed by operators and inspectors at key stages.
- Prepares production files and generates proofs. Proofs are sent to CTB where once they are approved they are sent to the customer for final approval prior to printing.
- Prints on high quality paper that meets strict opacity and brightness requirements. Plates are inspected for quality and installed on the printing press. At the start and periodically through the print run press sheets are pulled for quality control and to be compared to the final, approved proof.
- Binds—press sheets are collated, folded, Trimmed and bound. Individual press sheets are stored in a secure location on corresponding separate palettes before binding. Specified quantities of books are counted, shrink-wrapped, labeled and stored in a secure warehouse prior to shipping.

Based on the data captured during the online enrollment window, printed materials are picked and packed for shipment according to each customer's contractual requirements.

Print Vendor and Fulfillment Security

All of our print and distribution vendors are required to sign CTB security agreements and to provide secure facilities. Building entrances must be restricted, and access to the physical plant must be controlled. All scrap material is shredded, baled, and then destroyed. All film and files are secure and accessible only by authorized vendor personnel. CTB staff are periodically on site during both print and distribution phases to monitor security and to verify compliance.

Receipt and Processing of Assessment Materials

CTB has developed extensive procedures for the systematic and secure collection of assessment materials. Our record for on-time and accurate document retrieval is consistently high. We use our Tracking All Customers System to schedule the pick-up of test materials, to consolidate boxes from large districts, to ensure that all the boxes from a given location arrive in one shipment, to assist our Receiving department in logging materials and managing the material workflow. All of our carriers align electronically with our tracking systems. Within our building, we use our Scoring Inventory Receipt System (SIRS) to track all test books and secure answer documents. SIRS is a Web-based application and an Oracle centralized database. The Oracle database serves as the central repository for storing, tracking, and reporting on the status of materials that are sent out for assessment administration and returned to CTB for scoring and inventory purposes.

Customer Service

CTB's Customer Service Department supports fulfillment, shipping, and testing and is available to school, district and state staff via a toll-free number and via e-mail based on program or contract requirements. Prior to materials shipment, Customer Service staff receives intensive training in the details and requirements of the program they support so that operators can answer questions quickly. Before a program begins, the program manager works with the Customer Service Department to develop program-specific support scripts that include answers to frequently asked questions so that call operators can answer and resolve questions as quickly as possible. Those scripts are updated, as necessary, over the life of the program. Customer Service Representatives maintain a call resolution log to assist them in reviewing call history and resolution of each call.

We are aware that schools, districts and states need information quickly no matter when the need arises and especially during testing. CTB Customer Services response time is:

- Less than 12 hours for frequently asked questions
- Less than 24 hours for questions that require research

- Less than 48 hours for questions that require policy decisions or inter-departmental approval

We also provide access to online self-service support that catalogs communications such as troubleshooting tips, frequently asked questions, articles, and documentation (such as User Guides). Our search engine makes it easy for schools and districts to find the information they need about their assessments.

In addition, CTB has dedicated teams to provide technical assistance for any product we sell, not just our custom assessments. Access to these teams is available to all customers. Whether the question relates to software, online applications, technical questions on research (i.e. rigor of a product, Depth of Knowledge, research validity and reliability, how scores are derived, item parameters, content objective mapping, etc.), or how to set up user names and passwords— all inquiries are treated with equal attention with timely responses coming from our dedicated team of experts.

Innovative Technology

The technology infrastructure for a testing program is defined by the delivery mode of testing required. Online systems for test administration, scoring, and reporting require scalable systems that can securely and reliably deliver tests to examinees and provide timely and insightful reports of scored test results. CTB works with our customers to recommend the best solution to fit each customer's testing needs, and help to balance these needs with important cost and security considerations. We have been nationally recognized for our technology innovation across the industry with various awards to include the following: 2012 eSchool News Readers' Choice Award; 2011 District Administration Top 100 Products Readers' Choice Award for the third consecutive year; 2011 "Best Student Assessment Solution" in the Software & Information Industry Association CODiE Award; 2011 Tech & Learning Magazine Award of Excellence for the second consecutive year; 2010 "Best Student Assessment Solution" in the SIIA CODiE Award program for the second consecutive year; 2010 District Administration Top 100 Products Readers' Choice Award for the second consecutive year; and 2010 Tech & Learning Magazine Award of Excellence.

Technology Services

CTB's technology solutions and services include consultative assessment of each customer's technology infrastructure, software, policies, processes, support, and ongoing management of test delivery and reporting needs. Our team strategizes and collaborates on the end-to-end technology solutions and capabilities needed to successfully meet program goals.

Technical Capability—Online Assessments

Online test development and delivery require more than simply transferring traditional paper content to on-screen displays. It requires that the testing platform be developed in alignment with the needs of the planned item types, scoring methods, reports, and scale of the implementation.

CTB provides custom state online summative assessments. For states without the infrastructure to support full census online testing, CTB supports "mixed-mode" testing in both online and paper-based formats. Test results are merged, equated, and scaled to produce the traditional full census reports. CTB's mainframe reporting capabilities deliver accurate, comprehensive assessment results/reports to customers in either traditional printed format or online.

Our technological innovations include:

- A secure online testing platform
- An encrypted username and password; secure date and time window controls; desktop lockdown while in the system
- High volume scanning, scoring, and reporting capabilities
- Drill-up and drill-down online reporting
- Data and reports from individual student to class, building, district/diocese, and states

- Customizable reporting—both in print and online
- Implementation services, including network assessment, data loading, appliance configuration, troubleshooting, and rollout
- Integration with student information systems
- Formative, predictive and diagnostic assessments on a robust platform.

High Stakes Online Assessment

CTB provides a stable Web-based platform for delivery of high-stakes summative assessments. These high volume test administrations demand robust analysis of responses to produce the required score types, high security to ensure the validity of the assessment, and high-quality items where the presentation of the items is critical.

To ensure successful delivery of summative tests, the system is user friendly for both teachers and students, receiving enthusiastic remarks from engaged students. Test security is ensured by a "locked-down browser" that fills the entire student desktop and prevents test takers from accessing other applications during testing. Cheating is discouraged by random test form assignment. Test administrators overseeing the examinees during testing can monitor student test status in real time using the system's administrative software, and (depending on each organization's rules and procedures) can invalidate test results for students suspected of cheating without losing the students' results or disrupting the testing process. Security is maintained in the administrative software by means of hierarchy controls at various access levels, using a structure of limited permissions and login passwords.

The server-based architecture for the administrative software and student online assessment system provides a robust, scalable, fault-tolerant system that results in reliable student response capture and real-time test session monitoring. The application offers customization of certain features during implementation for ease of use and close alignment to customer testing program requirements.

The student test client offers a range of manipulatives closely replicating the traditional paper-based assessment experience. These include:

- highlighter for key words and phrases
- option eliminator to strike through answer choices
- calculator
- rulers (inches and centimeters)
- straightedge
- reference card for standard formulas and information the student is not expected to have mastered

CTB's online summative system supports accommodations for special-needs students as required. Accommodations can be provided on a per-test basis, as documented in each student's Individualized Education Program.

Advanced Reporting Options

CTB's online reporting platform transforms the way our users evaluate and utilize their test results data. Utilizing the robust set of data analysis and report generation tools, users may query and select data by any predefined category or group, summarize that data, and display it in various tables and graphic forms thus creating customized ad hoc reports. The newly generated reports can be immediately downloaded in PDF format or the data from that report may be downloaded in a file compatible with Excel® or other Microsoft® tools.

Implementation Services

CTB has a highly experienced team dedicated to assisting our customers with successful implementations of online testing. This implementation team works closely with individual sites to ensure the highest possible success rate in executing online testing. A training plan with high quality training materials is an integral part of every online implementation.

Our teams of technology experts work with customers to transition knowledge and grow their internal expertise. CTB's technology services are modular and can be tailored to meet customer needs.

Capacity Building

In addition to our ability to create a collaborative, CTB offers a full range of services that assist our customers in building internal capacity to develop, implement, and manage local testing programs. We do this in two primary ways. First, we develop formal methods and schedules that our consulting team uses to transfer our knowledge via training and workshops, job shadowing, and documentation. Second, we facilitate the knowledge transfer by ensuring that staff members with the appropriate skill sets are identified to take on various testing program responsibilities.

Commitment

As assessment/learning systems change and grow, there is a consistent need for quality assessment solutions that present reliable and accurate data about student achievement. Since its founding in 1926 with the mission "to help the teacher help the child," CTB has remained a financially stable and dependable resource for such solutions. We have the initiative coupled with the desire to listen to our clients to improve our products and services. We recognize that assessment is a part of a dynamic process of instruction, learning, and growth. We succeed only if our products and services help teachers and learners succeed in every stage of learning.

In this section, we present an overview of CTB, our history, and our mission to help the teacher help the child. In addition, we provide our company qualifications that specifically address our experience serving state governments.

CTB/McGraw-Hill's Mission

For more than 87 years, CTB/McGraw-Hill has distinguished itself as a leader in educational assessments and reporting. Founded in 1926, CTB/McGraw-Hill is a leading provider of high-quality assessment products and services that help learners of all ages meet their potential. To achieve this, we provide paper-and-pencil and online solutions that play a vital role in education nation- and worldwide.

As experts in educational measurement, assessment, and reporting, CTB goal is to facilitate sound policy making by providing complete, accurate, and unbiased information about the scientific and measurement implications associated with valid alternatives and to conduct ongoing research so that it supports sound decision-making. We do not make policy decisions, but we can provide information to indicate the best direction for the assessment or program. As an initial means of response to a customer's request for information to support policy decisions, we may draw on our many years of experience in K–12 educational measurement and on our content development and research staff's extensive knowledge of educational policies that relate to the design and consequences of many of the nation's testing programs.

Empirically based research often provides a sound platform from which to make policy decisions. Though the existing research base can inform assessment policy, custom-designed research studies may better inform unique policy considerations. We have provided many custom studies in support of clients' needs to evaluate policy intended to foster compliance with the Standards for Educational and Psychological Testing.

CTB provides technical reports that quantify each program's processes, methodologies, and quality control procedures and that clearly document our adherence to the highest psychometric standards. We work with states to prepare the necessary documentation for U.S. Department of Education

reviews by ensuring that technical reports provide the required information. We are proud of the fact that more than half of the first states to pass Peer Review worked with CTB.

CTB works with educators at every step of the assessment and reporting cycle. We provide these services with large and small programs tailored to meet the goals and budgets of schools, districts, states, private businesses, and countries. In addition to our custom work, we also publish innovative norm-referenced and criterion-referenced assessments that provide inexpensive, reliable, and valid information for school districts, adult education facilities, and other users. Our clients' students are part of a family of 18 million in 8,700 school districts and dioceses in 50 states, the District of Columbia, Guam, Puerto Rico, and the U.S. Virgin Islands, and in 46 countries including Bermuda, Canada, China, France, Germany, India, Japan, Peru, Qatar, Singapore, South Korea, and the United Kingdom who benefit from CTB-developed assessments, scoring and reports.

CTB collaborates with and provides services to a number of state assessment programs at any given time. Our best references may well be the long-term relationships we have built with many states, districts, and schools and our continued ability to meet their changing program needs while continuously providing quality assessments, scoring, and reporting. Table 1 summarizes our wide-ranging experience with large-scale assessments.

Table 1: CTB's Experience with Large Scale Assessments

			Content Areas										
Client	Program Name	Custom / Existing	ELA	W	M	S	SS	H	ELL	Online	Grades	Students	Contract Period
Alaska	State Assessment	E	✓		✓						5-7	15,000	1997-2013
Alabama	Alternate Assessment Program	C	✓		✓	✓					K-8, 10, 11	5,500	2006-2013
Bermuda	Norm & Criterion Referenced	C/E	✓		✓	✓					3-8, 11	3,700	2006-2012
Bermuda	Middle School Assessment	E	✓	✓	✓	✓	✓				6-8	3,700	2005-2012
California	STAR	E	✓		✓						2-12	4,500,000	2002-2009
Colorado	Colorado Student Assessment Program (CSAP)	C/E	✓	✓	✓	✓					3-10	490,000	1996-2011
Colorado	CSAP Alternate	C	✓	✓	✓	✓					3-10	4,900	2006-2013
Colorado	English Language Assessment (CELA)	C							✓		K-12	90,000	2007-2011
Department of Defense	U. History End-of-Course Testing	C				✓	✓	✓			11	25,000	2004-2013

Client	Program Name	Custom / Existing	Content Areas							Online	Grades	Students	Contract Period
			ELA	W	M	S	SS	H	ELL				
DoDEA NRT/LAS Links	Department of Defense Education Activity – NRT Assessment and English Language Proficiency	E	✓		✓	✓	✓		✓		NRT 3-11 LAS K-11	55,000	2011-2017
Florida	Administration FCAT	C	✓	✓	✓	✓				✓	3-11	1,900,000	2006-2010
Georgia	Criterion Referenced Competency Tests (CRCT)	C	✓		✓	✓	✓			✓	3-8	780,000	2006-2013
Hawaii	Hawaii State Assessment	E	✓	✓							3-8, 10	97,400	2006-2013
Indiana	Statewide Summative for grades 3-8	C	✓	✓	✓	✓	✓			✓	3-8	510,000	1984-2014
Indiana	Statewide Summative for 2% modified grades 3-8	C	✓		✓	✓	✓				3-8	18,000	2010-2013
Indiana	Statewide Summative Reading Proficiency for Grade 3	C	✓							✓	3-8	80,000	2011-2013
Indiana	English Language Proficiency Assessment	C							✓		K-12	68,000	2006-2014
Indiana	Statewide Diagnostic Assessments	C/E	✓		✓	✓	✓			✓	3-8	510,000	2008-2014
Maryland	English Language Proficiency	C/E							✓		K-12	49,000	2006-2011
Missouri	Custom and TerraNova Survey	C	✓	✓	✓	✓					3-8	240,000	1995-2013
Missouri	Benchmark Tracker ScoreSmart	E	✓		✓	✓				✓	Teacher	5000	2008-2010

Client	Program Name	Custom / Existing	Content Areas							Online	Grades	Students	Contract Period
			ELA	W	M	S	SS	H	ELL				
Missouri	Pre K-12 Benchmarking System	E	✓		✓	✓				✓	6-8; K-12 option	1,250	2011-2013 w/1yr option
B to B Privately labeled	Benchmark Tracker	C	✓		✓	✓				✓	3-8, and high school	230,000	2007-2013
New York	NCLB	C	✓		✓						3-8	1,500,000	1997-2012
New York City	Periodic Assessment Program	C	✓		✓	✓	✓		✓	✓	3-11	970,000	2007-2013
New York City	Electronic Distributed Scoring	C	✓	✓	✓	✓	✓	✓	✓	✓	3-12	970,000	2012-2014
Nevada	English Language Development Program	C/E							✓		K-12	90,000	2005-2011
North Dakota	Statewide Assessment	C/E	✓		✓	✓					3-8, 11	36,000	1997-2015
Ohio	Custom Development	C				✓					5	100,000	2004-2014
Oklahoma	End –of-Instruction Core Curriculum Test and Modified Alternative Assessment Program	C	✓	✓	✓	✓		✓		✓	High School		2012-2015
PARCC Consortium	Item Development	C	✓		✓						3-6 9-11		2012-2013
PISA	Pilot Round of PISA-Based Test for Schools in 2012	C	✓		✓	✓					15 yr olds	10,000	2012
Qatar	Comprehensive Educational	C	✓	✓	✓	✓	✓				4-11	45,000	2012-2014
Qatar	QCEA	C	✓		✓						4-11	45,000	2003-2011
Qatar	QSSC	C	✓		✓	✓	✓				12	4,700	2008-2011

			Content Areas										
Client	Program Name	Custom / Existing	ELA	W	M	S	SS	H	ELL	Online	Grades	Students	Contract Period
Smarter Balanced Assessment Consortium (SBAC-12)	Initial Achievement Level Descriptor Development	C	✓		✓						3-8, 11	N/A	2012
Smarter Balanced Assessment Consortium (SBAC-14)	Item/Task Writing/Review Pilot	C	✓		✓						3-8, high school	10,000	2012-2013
Granite School District Utah	Student Assessment and Progress Monitoring Benchmark Product	C	✓		✓	✓				✓	1-8	43,844	2012-2013
Utah	Online Writing	C		✓						✓	K-12	22,600	2005-2009
Washington DC	NRT/CRT	C/E	✓		✓	✓	✓				3-12	42,000	2004-2014
Washington ELL	Washington English Language Proficiency Assessment	C/E							✓		K-12	90,000	2011-2016
West Virginia	WESTEST 2	C	✓	✓	✓	✓	✓			✓	3-12	300,000	2002-2013
West Virginia	Alternate Performance Task Assessment	C	✓		✓	✓					3-8, 11	2,000	2009-2014
Wisconsin	WKCE/WSAS	C/E	✓	✓	✓	✓	✓				3-8	450,000	1996-2013
Wisconsin	Alternate Assessment for Students with Disabilities	C	✓		✓	✓					3-8, 10	8,500	2003-2013

Key: ELA-English/Language Arts (Reading), W-Writing, M-Mathematics (EOI), S-Science (All), SS-Social Studies, H-History, ELL-English Language Learner

Recognized Strength in Adult Assessment

The Test of Adult Basic Education (TABE), which provides a highly reliable, flexible system of testing for job screening and placement, is one of our many recognized assessments. It delivers fast, accurate information about the examinee's skill level in each content area—information that can be used to inform decisions about hiring, training, and assignments in employment. No adult skills test offers greater technical strength than TABE, which meets the highest standards of validity and reliability and is based

on statistically sound measurement models and extensive research and development. For more than 45 years, TABE has been a highly respected assessment tool, and today, more adult education professionals choose TABE than any other assessment in the country. As the most widely used adult assessment in the United States, TABE is used by Adult Basic Education programs, Workforce Readiness programs, business and industry, and high school programs across the country. TABE helps educators and employers determine the skills of learners, applicants, and employees; it is a quality assessment system that relies on material relevant to adult education.

CTB developed the Test Assessing Secondary Completion (TASC), the newest high school equivalency exam on the market, to measure reading/language arts, writing, mathematics, social studies, and science. TASC's newly created content is aligned to the Common Core State Standards, the Next Generation Science Standards, and social studies national frameworks. TASC provides not only high school equivalency scores, but it also assesses college and career readiness. Leveraging CTB's high-stakes, secure online platform, TASC can be taken both online or in paper-and-pencil formats.

CTB has recently worked on a number of programs for the Partnership for Assessment of Readiness for College and Careers (PARCC), the Smarter Balanced Assessment Consortium (SBAC), and the National Center State Collaborative (NCSC); we are also the lead vendor for several key initiatives of the Consortia. CTB is part of the ETS-led program for PARCC item development, and we are the lead vendor for the SBAC Initial Achievement Level Descriptor Development (SBAC-12) and Item/Task Writing/Review Pilot (SBAC-14) contracts. CTB is also the lead vendor for the NCSC General Supervision Enhancement Grant (GSEG) Project's RFP # 2012-11-01: Development and Administration of the Summative Assessment.

In the following pages we detail relevant contract experience and provide references for Agency consideration.

Georgia Criterion-Referenced Competency Tests (CRCT) and Online Retakes

Contract Period: 2006-2014

Description of Program and Services: Georgia CRCT includes end-of-year summative assessments that measure skills in Reading, English/Language Arts, Mathematics, Science and Social Studies in Grades 3–8 for the spring administration in addition to Grades 3, 5 and 8 Reading and Grades 5 and 8 Mathematics during the summer retest administration. These assessments are designed to provide accountability for the state in the form of aggregate data at different levels (e.g., school, system, state); information regarding program strengths and areas of improvement in relation to instruction of the state mandated curriculum; and a summative measure of individual student acquisition of knowledge and skills as prescribed in the state curriculum. All third grade students are required to achieve grade level scores on the CRCT in Reading. All fifth and eighth grade students are required to achieve grade level scores on the CRCT in Reading and Mathematics. Students who performed below grade level in promotion and retention grades and content areas must be offered a retest opportunity.

Georgia districts have the option to administer the CRCT retakes using traditional paper and pencil or CTB's secure Online Assessment System (the same platform that delivers CTB's high school equivalency assessment - Test Assessing Secondary Completion abbreviated as TASC). The online retest option has proven very successful in districts that have used it, and throughout the course of the contract, school district usage of CTB's Online Assessment System has increased substantially. In 2012, over 9,000 students completed their CRCT retakes online, and in 2013, over 10,000 students completed their CRCT retakes online.

Development for the CRCT includes high quality and cognitively-rich new items that are aligned with the state curriculum; Reading, Mathematics and ELA are aligned to the Common Core Standards. CRCT items assess the skills inherent in the curriculum as well as depth of knowledge. The items reflect the range of cognitive demand inherent in Georgia's curriculum. \

The CRCT assessments are pre-equated and validated using post-administration equating analyses. CRCT utilizes the Rasch measurement model and statistical procedures to equate the scores that are consistent with best-practice. Test forms in subsequent years are equated using common items from previous years' forms. Post-operational technical reports provide ongoing results of operational testing of items for the main administrations of the CRCT and all other research activities such as comparability studies, equating, etc. CRCT reports are delivered within a five-day window. Reports are delivered both electronically and in paper format.

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Title: Associate Superintendent, Assessment and Accountability
Organization: Georgia Department of Education

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205 Jesse Hill Jr. Drive SE
Atlanta, GA 30334

Telephone: (404) 656-2668
Email: mfincher@doe.k12.ga.us

Kentucky Adult Education TABE Online Statewide Program

Contract Period: December 2012-July 2016

Description of Program and Services: Kentucky Adult Education purchased TABE Online to distribute 250,000 registrations across adult education local sites across the state. The implementation is well underway. TABE Online, a secure Web-based system (the same platform that delivers CTB's Test Assessing Secondary Completion or TASC) allows adult educators to assess and report adult basic education skills at any time using the Internet. It provides users with reliable, skill-level data to screen and place students in training and employment programs or determine readiness for success as tested by high school equivalency tests. TABE Online includes the Locator, Complete Battery, and Survey tests for TABE 9&10.

TABE Online is being supplemented with Common Core State Standards testlets in 2014. These testlets will be available at no cost to TABE Online users and will provide users with experience with the new Common Core item types (e.g. constructed response and technology enhanced items) and Common Core reports. Kentucky exports TABE Online data and imports it into their student information system for NRS and other state level reporting requirements. Trained by CTB, state personnel deliver all the TABE Online training to their local sites and CTB provides the account management and technical support services.

Subsequent to NRS approval, Kentucky will transition to the TABE Adaptive platform without interruption to their current contract or longitudinal reporting. TABE Adaptive brings an innovative computer adaptive testing platform to TABE 9&10. TABE is the most comprehensive and reliable adult basic skills assessment in the education industry, providing a solid foundation for effectively assessing the skills and knowledge of adult learners.

TABE Adaptive is a computer adaptive test that is individually adjusted to the ability level of the student. Administered online TABE Adaptive provides a quick and easy way to measure the skills adults need to succeed on the job and in life.

Contact: Mr. David Walters
Title: Director of Program Administration
Organization: Kentucky Adult Education Council on Postsecondary Education

Address:
1024 Capital Center Drive, Suite 250
Frankfort, KY 40601

Telephone: 502-573-5114, Ext 122
Email: david.walters@ky.gov

Indiana Statewide Testing for Educational Progress plus (ISTEP)

Contract Period: 1984–2014

Description of Program and Services: The Indiana State Department and CTB have a long history of a successful partnership. Currently, Indiana annually tests all public school students and non-public school students in Grades 3–8 in English/Language Arts (including Writing) and Mathematics, Grades 4 and 6 in Science, and Grades 5 and 7 in Social Studies. Indiana's online statewide assessment program includes multiple-choice, open-ended, and constructed-response items.

These tests are administered online through CTB's Online Assessment System (OAS). The OAS is CTB's secure platform in which all secure online assessments are administered. Approximately 500,000 students are tested each year, 70 percent (350,000) of whom test online. The online administration includes the capability for students to take online portions on laptop computers and tablets.

Of utmost importance is the alignment of the tests to Indiana standards, the tests are comprised of custom and existing items that align to the Indiana Academic Standards. Indiana's statewide assessment system met the Alignment Requirements of the United States Department of Education Peer Review Process. The Indiana statewide system also met all of the other rigorous requirements of the Federal Review with CTB as their contractor and partner.

Indiana conducts pilot testing of technology-enabled and constructed-response items which are administered within the online assessment system. After the pilot, items are stored in CTB's item banking system for selection on future forms. Scoring rubrics are created during the development phases and revised as needed after test administration. Scoring of the assessments is conducted primarily at CTB's Indianapolis facility using electronic hand-scoring.

Additionally, CTB creates and prints customized test books, answer sheets, answer books, report forms, examiners' manuals, test coordinators' manuals, test interpretation guides, teacher scoring guides, and posters. Web versions of the guides for teachers and parents are posted on the website of the Indiana Department of Education along with actual applied-skills (constructed-response) test books. Test materials are distributed to approximately 600 locations throughout the state via several carriers determined by the size of the shipment.

Additionally, CTB was our Grade 10 Test Contractor through 2008 before the State Board moved to End-of-Course tests. Grade 10 students were administered the high stakes Gradation Qualifying Examination and retest opportunities were provided twice each year to students who fell below the standard.

Contact: Michele Walker
Title: Director of Student Assessment
Organization: Indiana Department of Education

Address:
Indiana Department of Education
115 W. Washington Street
South Tower, Suite 600
Indianapolis, IN 46204

Telephone: (317) 232-9050
Email: mwalker@doe.in.gov

Additional References

Customer 1	
Legal Name of Company	Missouri Department of Elementary and Secondary Education (DESE), Office of Career and College Readiness
Company Mailing Address	205 Jefferson Street
Company City, State, Zip	Jefferson City, MO 65101
Company Website Address	http://dese.mo.gov/index.html
Contact Person	Michael Muenks, Assessment Coordinator
Company Telephone Number	573-751-8465
Company Fax Number	573-751-8613
Contact Email	Michael.Muenks@dese.mo.gov
Industry or Company	Provision of all services and materials for the Missouri Assessment Program, Grade-Level Assessments, including all tasks from item development to technical reporting.
Customer 2	
Legal Name of Company	Indiana Department of Workforce Development
Company Mailing Address	Indiana Government Center South 10 N. Senate Ave.
Company City, State, Zip	Indianapolis, IN 46204
Company Website Address	http://www.in.gov/dwd/
Contact Person	Cory Mahon
Company Telephone Number	317-233-6480
Company Fax Number	317-232-1821
Contact Email	cmahon@dwd.in.gov
Industry or Company	All activities associated will successful administrations of the Test of Adult Basic Education (TABE)

Section 4, Subsection 4.4.5: *The successful Vendor should identify the key Vendor staff, including the management team that would train the Agency, and describe how they would provide orientation to the Agency staff including information for testing/ registration by test-taker, test preparation by Examiner, test administration, scoring process, and the proposed methods for implementation.*

The Vendor should describe any professional development assistance to the Agency that they will be offering to instructional staff and testing staff including timeline, format, frequency and content of the professional development.

The Vendor should describe:

A) the frequency and format of continuous communications between the Vendor and the Agency staff. Communications should provide an opportunity to review and discuss task implementation and status; and,

Staffing for the West Virginia High School Equivalency Test

CTB Program Management

At CTB we take great pride in the professionalism, experience, and dedication of our Program Management staff. Our program managers oversee and guide the work of the members of the team

assigned to the program throughout the contract via regularly scheduled meetings, as well as ad hoc meetings and calls. As the leader of the team and the person ultimately responsible for client satisfaction, the program manager works closely with the functional areas to monitor the project plan and deliverables to ensure that work is proceeding on schedule and that the needs or concerns of the client are being addressed.

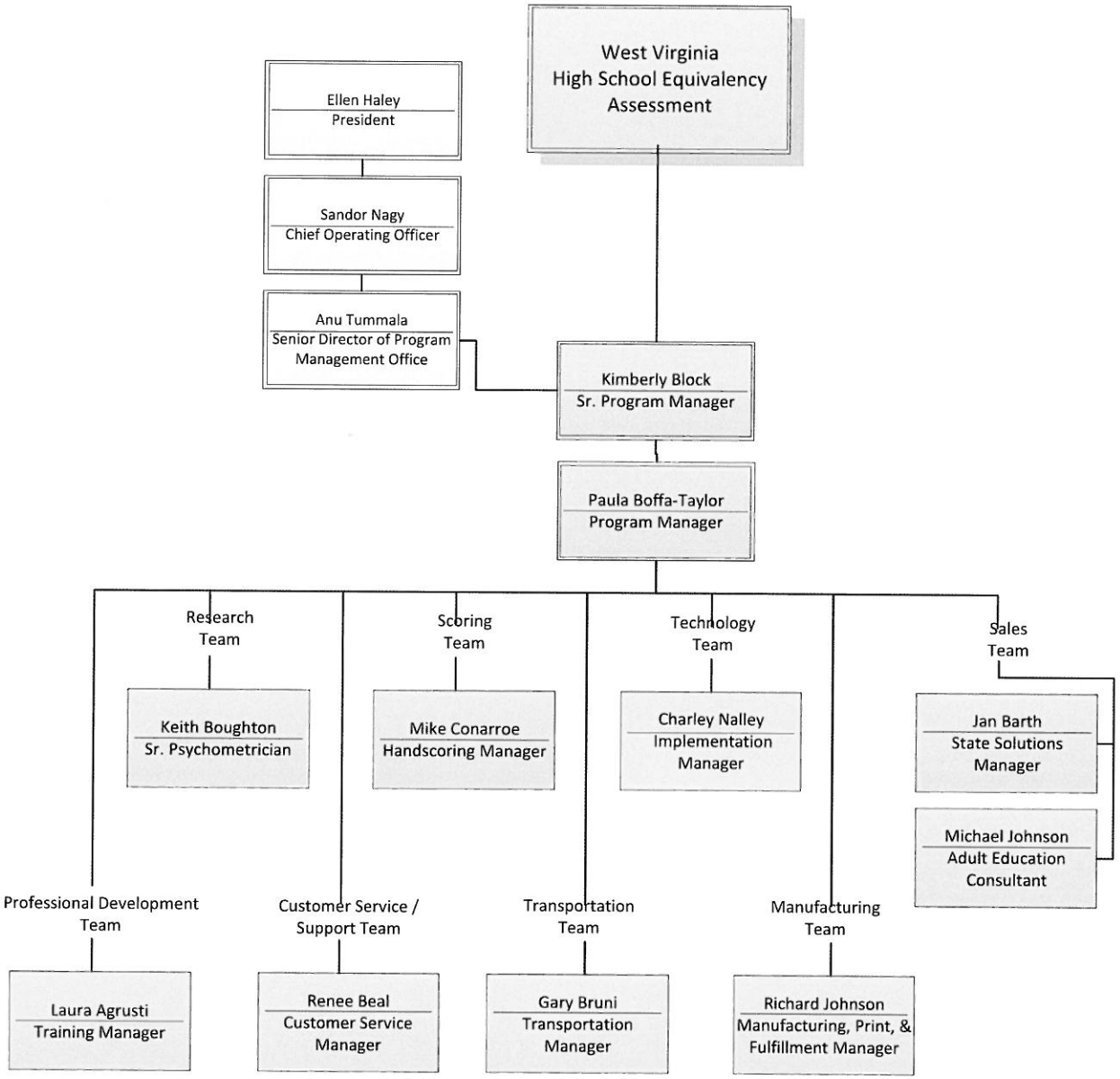
In addition to regularly scheduled meetings with the full project team, the program manager also meets regularly with the CTB Help Desk specialist assigned to the program. During these meetings, the program manager and Help Desk specialist review a log of the week's activity to see the level of calls being received, the nature of the calls, and if there is a need for further steps, e.g. follow up with a particular caller, additional training for Help Desk staff, improved FAQ document, etc. This log can also be reviewed with WVDOE, if desired, so that WVDOE is aware of the inquiries being raised in the field.

Since a strong, trusting relationship is a key factor in a successful program, our program managers begin the relationship building process as soon as the contract is awarded. Beginning with the first phone call and the Kickoff Meeting, the program manager begins investigating the needs and concerns of WVDOE (and WVDOE' customers, where appropriate), which will allow him/her to be sensitive to those issues and needs that may not have been evident during the proposal development process.

Paula Boffa-Taylor, with senior support from Ms. Kim Block, will serve as the primary program manager for the West Virginia HSE program. Just as the program manager is the key internal contact for the functional areas engaged in the project, he/she is also the Agency's key point of contact throughout the contract. As the person within CTB who is empowered to direct the functional areas in the fulfillment of the contract and to escalate issues, if necessary, the program manager keeps in close contact with WVDOE, through the regularly scheduled meetings and ad hoc meetings/calls, especially during periods of heightened activity, such as project implementation. We have found that regularly scheduled meetings with the client are critical to a successful project and help strengthen the sense of teamwork and connection that are vital to a strong, successful engagement. Upon contract award, we will work with the staff of WVDOE to establish the meeting times.

Our organizational chart for the West Virginia High School Equivalency test program is shown in Figure 1 on the following page.

Figure 1: WV HSE Team



Ms. Boffa-Taylor and Ms. Block will be supported by both their project team and executive management, as described in Table 2.

Table 2. Staffing for the WV HSEA Program

ROLE/TITLE	NAME	RESPONSIBILITY
Program Management		
Sr. Program Manager	Kimberly Block	Oversees all West Virginia contracts.
Program Manager	Paula Boffa-Taylor	Oversee the successful day-to-day management of the program beginning with implementation
Research		
Sr. Psychometrician	Keith Boughton	Provide psychometric and research consultation
Technology		
Technology Implementation Manager	Charley Nalley	Works with CTB's customers to ensure the successful implementation of online assessment products and services. Oversees assessment of site readiness for online testing, system setup, student data/hierarchy loading, and monitoring during operational testing.
Handscoring		
Handscoring Manager	Mike Conarroe	Manage, coordinate and monitor the activities, project schedule and deliverables of CTB supervisory staff assigned to the project to ensure that all Handscoring project events are completed on schedule and within quality standard guidelines
Professional Development		
Training Manager	Laura Agrusti	Work with school district personnel to arrange and facilitate training for CTB assessment products and programs. Manage all aspects of training implementation including developing training modules and hiring consultants.
Customer Service/Support		
Customer Service Manager	Renee Beal	Oversees the workflow associated with customer ordering, billing, and first/ second level technical support. Responsibilities include managing multiple teams, budget input, and accountability for achieving financial goals. Works with the sales team to support CTB's customers.

ROLE/TITLE	NAME	RESPONSIBILITY
Transportation		
Transportation Manager	Gary Bruni	Manages all aspects of transportation for CTB including inbound scheduling of shipments, all outbound materials, vendor cost analysis, and budgeting for all areas of transportation for CTB.
Manufacturing		
Manufacturing Print and Fulfillment Manager	Richard Johnson	Overall department management for vendor print/media and fulfillment activities. Planning, budgeting, resources, quality control and security compliance
Sales		
State Solutions Manager	Jan Barth	Develops and executes strategies for CTB's support in the Development and Administration of the High School Equivalency Assessment. Provides value-added consultation services, and serves as the sales contact for the State of Maine.
Adult Education Consultant	Mike Johnson	Responsible for managing day-to-day operation of assessments target for Adult Basic Education. Provides support to Product Management and Sales related to industry direction and needs of the customers.

Biographies for our proposed West Virginia High School Equivalency Assessment program staff are included immediately below, with detailed résumés found in Appendix 1 of this proposal.

Kimberly Block

Senior Program Manager
CTB/McGraw-Hill employee since 1999

Job Description: Ms. Block's responsibilities include interacting with customers, CTB project managers, and vendors to ensure that customer specifications are clearly communicated and requirements are met. She sets priorities for project managers and obtains commitments from team members and vendors to keep project tasks on schedule. Ms. Block is responsible for monitoring contract milestones and timelines. She oversees project budgets and resolves any problems and discrepancies that may occur throughout the life of a project. To keep projects on target, Ms. Block keeps track of contract specifications and ensures that quality control standards are in place for all contract phases. She routinely monitors and reevaluates significant risks as the project continues and interacts with the customer to ensure that needs for new design or implementation of new program elements, strategies, or methods are appropriately incorporated.

Qualifications and Education: Ms. Block's skills include the capability to implement, critically evaluate, and improve upon project processes and timelines. She is an accomplished program manager who sets realistic goals and effectively liaises between external (education departments, subcontractors) and internal (team members) customers, providing test-related support services to policy makers, and documenting program progress. She is proactive in her interactions with the customer, ensuring that any requirements related to the Program are met.

Contracts assigned: West Virginia statewide programs including WESTEST 2, Online Writing, APTA, WV Writes and Acuity.

Past contracts assigned: West Virginia statewide programs including WESTEST, Online Writing and APTA, and several DoDEA programs.

Paula Boffa-Taylor

Program Manager
CTB/McGraw-Hill employee since 2011

Job Description: Ms. Boffa-Taylor is the Program Manager for the Benchmark Program at The School District of Philadelphia. She works closely with the client to ensure the successful administration of the Benchmark tests which are administered 3 times a year at approximately 250 schools to students in Grades 3–12. Ms. Boffa-Taylor oversees a team consisting of each functional area providing services in support of the program. She also creates ancillary testing documents and field communications to support teachers, administrators, and field offices in the administration and handling of the tests, which are delivered mostly via paper and pencil. She reviews and revises procedures, as necessary, to improve understanding and administration of the program.

Qualification and Education: Ms. Boffa-Taylor has over twenty five years of experience in providing program and client relationship management, both as an individual and as a team leader. She has extensive experience in managing and providing assessment services and addressing the concerns of clients and their constituents, especially in terms of assessment delivery. She has served on countless implementation teams in which new and/or updated software is being integrated into a client's processes. Ms. Boffa-Taylor earned her Master's degree in Music from the University of Michigan in Ann Arbor, Michigan and her Bachelor's degree in Liberal Arts from Rhode Island College in Providence, Rhode Island.

Successes and Innovations: Ms. Boffa-Taylor has developed strong relationships with the Philadelphia School District representatives located both in the field and in Academic Division offices. She has provided them instruction and support in the handling and processing of test materials. This resulted in a substantial increase in adherence to testing protocols (materials returned correctly and on time; nonscorable materials returned on time after testing window closed), and a decrease in calls to Help Desk and delayed shipments. She was also a key factor in the District's decision to award the Benchmark Program to CTB in 2012, after having served as the District's onsite liaison during the previous contract for Predictive examinations.

Contracts assigned: Philadelphia, PA Acuity

Laura Agrusti

Manager of Professional Development
CTB/McGraw-Hill employee since 2011

Job Description: Ms. Agrusti manages Acuity training for various schools throughout the country; Facilitate onsite and virtual trainings on a variety of topics such as Data Analysis, and Linking Assessment to Instruction; Design multimedia, live and paperbound workshop materials on topics such as Performance Based Tasks and Rubrics; Maintain budgets for Professional Development services.

Qualifications for this position including Education: Ms. Agrusti has a Master's degree in Curriculum, Instruction, and Supervision from Rider University in Lawrenceville, New Jersey. She has a Bachelor's degree in Spanish from Pennsylvania State University, State College, Pennsylvania. Ms. Agrusti has experience as a former teacher and school administrator.

Successes and Innovations: Ms. Agrusti is the Professional Development Manager for the NYC DOE Periodic Assessments contract. This year she successfully worked in collaboration with the NYC DOE

to create and/or update 14 PowerPoint presentations and 5 Technical Documents with current content and post to the additional help section of Acuity. She also delivered 4 live trainings.

Relevance of these to present work: Ms. Agrusti will continue to manage the Professional Development requirements for this contract.

Contracts assigned: NYC DOE, TABE, LAS Links, *TerraNova* and Writing Roadmap trainings in addition to Acuity.

Past contracts assigned: NYC DOE, DoDEA, WELPA

Renee Beal

Customer Care Manager
CTB/McGraw-Hill employee since 2007

Job Description: Ms. Beal oversees the workflow associated with customer ordering, billing, and first/ second level technical support for online products. Her responsibilities include managing multiple teams, implementing and maintaining quality measures, budget input, and accountability for achieving financial goals. She works in conjunction with the sales team to support CTB's customers and products.

Qualifications and Education: Ms. Beal has a Bachelor's degree in Computer Technology from Purdue University in Indianapolis, Indiana. She has held several technology positions which have broadened her skill set. Some of these skills include troubleshooting complex technical issues, providing technical training, developing support metrics, project management, process improvement, data analysis, and vendor relationship management.

Successes and Innovations: Ms. Beal has facilitated successful migration of support across functional divisions/departments within McGraw-Hill Education. Some of these have included New York City Acuity, Acuity, Yearly Progress Pro, and Legacy software products. She is the liaison between the vendor and the Customer Care Department for the requirements gathering, design, and successful implementation of Salesforce CRM solution during Phase 1 and Phase 2.

Relevance of these to present work: Ms. Beal had previous experience with support transitions, which is applicable to the help desk support needs of CTB's customers. She has hands-on experience in developing a successful plan that involves disseminating product knowledge, developing support standards, and defining successful support and quality metrics.

Contracts assigned: Ms. Beal oversees the help desk portion of all CTB contracts that require technical support from Customer Care.

Past work: Online formative custom contracts, including Indiana, New York City, Philadelphia, Denver, and West Virginia. Online summative custom contracts, including Indiana, Georgia, Florida, and West Virginia.

Keith A. Boughton

Research Scientist III
CTB/McGraw-Hill employee since 2004

Job Description: Dr. Boughton works as the lead Research Scientist for the English/language arts and mathematics components of Acuity, CTB's innovative interim assessment. In this role, he provides technical leadership to the content experts and software engineers who work to provide the Acuity system across the United States. In addition, he serves as secondary Research Scientist on the science component for Acuity, as well as on custom Acuity assessments in Indiana and New York City. Dr. Boughton is responsible for all psychometric studies, DIF, calibrations, and equating/scaling. He is the principal investigator on several CTB Research and Development Projects, including A Hierarchical Modeling Approach for Overall and Subscore Estimation paired with a Hierarchical CAT Item Selection

Algorithm: A New Approach for Next Generation Assessment Systems (2012), A New Model for Cognitive Diagnostic Computer-Adaptive Testing: An IRT-Based Continuous Conjunctive Latent Trait Diagnostic Modeling Approach (2011), Using Automatic Item Generation to Produce Large Pools of Items Based on the Common Core Standards (2012), Implementing Cognitive Diagnosis in Large Scale Assessment (2010), CTB Assessment Designer: Item authoring for Coherent Assessment (2010), Combing Constrained CAT with Cognitive Diagnosis (2009), and Advancing the CTB Core Curriculum Content Standards Framework, Learning Maps, and LMFACT to Support Diagnostic Assessment (2008).

Education: Dr. Boughton has a Ph.D. degree in Educational Measurement from the University of Alberta, Edmonton, Canada; an M.A. degree in Educational Measurement from the University of Victoria, Victoria, Canada; and a B.Sc. degree in Psychology from the University of Victoria, Victoria, Canada.

Successes and Innovations: Dr. Boughton's current research interests include computer-adaptive testing, Markov Chain Monte Carlo algorithms (MCMC), differential item functioning (DIF), Hierarchical IRT models, and multidimensional IRT models.

Relevance of these to present work: Dr. Boughton has an extensive knowledge of IRT and its limitations are important for maintaining common scales.

Contracts assigned: Acuity.

Past work: ETS PRAXIS.

Mike Conarroe

Associate Manager, Handscoring
CTB/McGraw-Hill employee since 2007

Job Description: Mr. Conarroe is responsible, along with the Regional Handscoring Manager, for the day-to-day management for Handscoring at the 700 seat Indianapolis Scoring Center. His job duties also include management of temporary satellite scoring facilities outside the state of Indiana, working with staffing vendors to staff all projects, as well as management of individual custom and shelf Handscoring projects.

Education and Qualifications: Mr. Conarroe received his bachelor's degree in Mathematics.

Success and Innovations: Mr. Conarroe has implemented several lean process improvements, including a process for scorer self-training. He has worked with the CTB Development team on creating a web-based scoring system, as well as managing the Handscoring of custom assessments at temporary satellite sites in several states.

Relevance of these to present work: Mr. Conarroe is experienced in delivering quality Handscoring solutions.

Contracts assigned: West Virginia Online Writing, Transitional Colorado Student Assessment Program, and New York City Distributed Scoring

Past work: Mr. Conarroe has three years' experience as a Supervisor in Handscoring, responsible for management of the Handscoring for several custom assessment programs. In addition, he has six years' experience as a Kelly Services Evaluator, Team Leader and Supervisor for CTB McGraw-Hill.

Charley Nalley

Implementation Manager
CTB/McGraw-Hill employee since 2003

Job Description: Mr. Nalley manages the Tier 3 production support and implementation team for all CTB online systems. His team manages any escalated issues and seeks to resolve them as quickly as possible to ensure seamless use of CTB products and platforms.

Qualifications and Education: Mr. Nalley received his bachelor's degree from James Madison University in 1992. He has been working with CTB in various roles in the technology department for 8 years. Prior to joining CTB, he worked in the retail book industry for 10 years supporting and installing inventory management systems in independent bookstores across the U.S.

Successes and Innovations: Mr. Nalley has been working with CTB since the inception of our current Acuity platform and has served in various roles in the software development process, from Business Analysis, management of QA resources, and currently in support of Implementations and Production Support.

Relevance of these to present work: With my years of experience working with CTB's online products and platforms, Mr. Nalley serve as a subject matter expert regarding use and implementation of our technology solutions. This directly impacts my ability to manage the team that provides the Tier 3 support for our products and our ability to resolve the most complex issues.

Contracts assigned: Mr. Nalley's team supports all online product support and a variety of contracted projects.

Past contracts assigned: Mr. Nalley's team continues to support all online product lines developed by CTB/McGraw-Hill which include Acuity and ISTEP.

Gary Bruni

Transportation Manager
CTB/McGraw-Hill employee since 1996

Job Description: Mr. Bruni ensures that all outside and in-house customer requirements are met. He develops and implements workflow processes, and project capacity and contingency planning on various computer platforms.

Education: MGI Management Barcoding and Capacity Planning, Frontline Leadership, ISO 9000 Auditor, FrontPage 2000, and HTML.

Successes and Innovations: Mr. Bruni collaborates with colleagues and vendors to develop and implement software solutions to automate processes and increase accuracy, cost-effectiveness, and productivity.

Relevance of these to present work: He establishes and maintains successful business relationships with vendors and customers (internally and externally) by effectively communicating requirements, and coordinating and monitoring interdepartmental efforts.

Past Work: As receiving and shipping supervisor, he coordinated and supervised interdepartmental efforts, interpreting contractual obligations, outlining departmental responsibilities, and maintaining budgets and schedules.

Richard Johnson

Senior Manager, Print Management and Fulfillment
CTB/McGraw-Hill employee since 2005

Job Description: Mr. Johnson manages the production or procurement of all test materials and reports, and the fulfillment of customer orders for these products.

Qualifications and Education: Mr. Johnson earned his Master's degree in Business Administration from California Lutheran University. His Bachelor's degree is in Leadership Theory from the University of California in Berkeley, California. Mr. Johnson has proven leadership and managerial skills.

Successes and Innovations: At CTB, Mr. Johnson has standardized the variable data print processes, automated fulfillment operations, and improved vendor quality and processes. He has received multiple

Team Achievement Awards for quality improvement, process improvement, and innovative solution development.

Relevance of these to present work: Mr. Johnson provides process controls, standardization, and supplier management, which are critical to the delivery of high-quality products.

Contracts assigned: All products that are not purely electronic.

Janice "Jan" Barth, PhD

State Solution Manager
CTB/McGraw-Hill employee since 2010.

Job Description: Dr. Barth works with assigned states to address any related proposals they might wish to write/release. She attends board meetings to understand the state and its needs, and works to position the company for work. Additionally, Jan is assigned to both SB and PSRCC consortia.

Education: Dr. Barth received her Doctorate degree in Educational Leadership from the West Virginia University in Morgantown, West Virginia. Both her Master's degree in Special Education and Bachelor's degree in Social Studies were from Marshall University in Huntington, West Virginia. Dr. Barth has formally been the State Director of Assessment, Research and Accountability and on Special Assignment to the State Superintendent in West Virginia.

Successes and Innovations: Dr. Barth worked with CTB to develop unique and rigorous items for WESTEST2 in Reading/language arts, mathematics, science and social studies. She led West Virginia through four successful federal peer reviews: one for accountability program, one for Title One Monitoring and the other two were WESTEST 1 and WESTEST 2 federal assessment peer reviews. Dr. Barth developed a comprehensive, balanced assessment system of summative and benchmark assessments to include classroom assessment into state policies.

Relevance of these to present work: Dr. Barth has gained invaluable knowledge of procedures, attitudes, regarding development of assessment/accountability programs. She has strong working relationships with the federal government and other national organizations, such as CCSSO or NASBE.

Contracts assigned: West Virginia, Ohio, Tennessee, North Carolina, Maryland, Rhode Island and New Jersey.

Michael Johnson

CTB/McGraw-Hill employee since 2007
National Adult Education Manager

Job Description: Mr. Johnson is responsible for managing day-to-day operation of assessments target for Adult Basic Education. Provides support to Product Management and Sales related to industry direction and needs of the customers.

Education and Qualifications: Mr. Johnson received his bachelor's degree in Public Administration from the University of Wisconsin-La Crosse, La Crosse, WI.

Mr. Johnson has been involved with Adult education for over 18 years, and has over 10 years' experience in high stakes certification exams. As the National Sales Manager for TABE® products, he assists in the development of TABE assessment to meet the needs of Adult Learns in ESL and Basic Skills programs. In addition, Mr. Johnson brings his knowledge and expertise in adult learning to CTB's new TASC Alternative High School Equivalency Assessment.

Professional Development

CTB proposes one round of five live webinars that are each approximately three hours in length. We will use a train-the-trainer model. Trainings will include a maximum of 100 participants per session; participants will be WVDOE, instructional, and testing staff members from the test centers. A total of approximately 500 representatives who will deliver the training at each test site will attend the webinars.

In these web-based training sessions, we will discuss all major purposes, functions, and features of the administrative and student portions of test administration and implementation. For computer-based tests, these topics include, but are not limited to: test content; logins and permissions; test accommodations; adding, finding, editing, and registering a student; creating a test session; test administration; and creating and accessing reports. We will also train WVDOE, instructional, and testing staffs on the process of proctoring the computer and paper-based tests and other related administrative duties to ensure that test security and the implementation of standardized protocols are followed.

Technology requirements needed for participants to access the webinar training include telephones and computers with Internet connectivity. We will use our secure WebEx system to deliver the webinars. Training session details and registration will be available on WVDOE' website. Following the session, all training recordings and materials, which include but are not limited to procedures guides and technical manuals, will be available to WVDOE, instructional, and testing staffs 24/7 for on-demand, just-in-time learning.

a plan for technical assistance for CBT and PBT during the contract period including the hours for telephone support.

CTB Help Desk

Telephone and email support will be available to West Virginia TASC users Monday through Friday from 7:00 AM EST to 5:00 PM EST. All issues reported via phone to the Help Desk during normal business hours, regardless of severity, will be issued a ticket number and acknowledgement of the reported issue will occur immediately.

CTB delivers world-class service using a three-tiered support system to provide consistency in the management of support issues and incidents. The Help Desk acknowledges receipt and begins the resolution process of reported support issues and incidents within 24 hours. Our focus is on building customer trust with agile support to create an excellent customer experience in case resolution.

Help Desk resources will be experienced support staff members who are trained and certified specifically to support the West Virginia high school equivalency test. Training for representatives is classroom-based and comprehensively covers key contacts, contract specific requirements, descriptions and walkthroughs of associated systems and processes, FAQ's, and knowledge base items. Once training is completed, representatives must complete and pass a certification before being added to the West Virginia support team. Our three tiers of support are:

Tier 1: Customer Service/Technical Support Help Desk that is staffed by knowledgeable and experienced support professionals that will address the issue and correct it as soon as possible

Tier 2: Second level of support. Issues that cannot be resolved by Tier 1 staff are escalated to this tier. This tier is staffed by those who have a higher level of experience with the platform and contract requirements and who will perform additional troubleshooting to address the issue or incident. This level is staffed by Senior Support personnel.

Tier 3: The final level of support is used when the most complicated or urgent issues are escalated. Issues that cannot be resolved by the Tier 2 support staff are escalated to this tier. This level consists of various team members (systems administrators, database administrators, implementation staff,

content/publishing staff, software developers, and program management) who work together to resolve the escalated issues.

Inquiries and issues unresolved by the initial support tier (Tier 1) will be escalated to a second-level team (Tier 2), which is composed of senior technical support personnel. If the issue cannot be resolved by the second level team, they will forward the issue to a third level team (Tier 3), composed of system administrators, database administrators, software developers, and contract and product specialists. On resolution, escalated cases will be de-escalated to the initial support tier for communication to the customer and case closure.

The CTB Help Desk will assign a contract subject matter expert for this West Virginia high school equivalency test contract. This individual will work directly with the CTB program manager and WVDOE in support of customer deliverables. In addition, this individual will attend status meetings as a subject matter expert for Tier 1 calls and/or emails and escalations.

The Help Desk will work in conjunction with the CTB Program Management team to develop scripts for the West Virginia contract to cover the most common question topics stakeholders may have for the Tier 1 Help Desk. These scripts will be divided into a number of sub-headings, kept by both CTB Program Management team and West Virginia Help Desk team. The use of this script process ensures consistent messaging for general topics as well as specific topics vetted with WVDOE, as required.

The CTB Help Desk uses an online customer management system, Salesforce.com (SFDC), to log customer interactions. The system tracks account, contact, and case information for historical and trending purposes that can also be used to pinpoint training opportunities and potential system enhancements. The data contained in SFDC is secured and accessible only by authorized CTB employees. The software uses historical customer information for each account and a case reference number for each technical issue and inquiry. SFDC has the flexibility to generate reports detailing case history and statistics in a variety of formats, which can be provided to WVDOE as requested.

Section 4, Subsection 4.4.6: *The Vendor's proposal should describe scoring in detail but not limited to the following processes:*

A) scoring both CBT and PBT;

B) short essays and/or writings;

C) scanning PBT answer sheets;

D) timeline of scoring, posting and the transferring of scores to the Agency; and,

E) how test-takers/Agency/Examiner will be notified of scores for CET and PBT.

The Vendor should describe whether the assessment scores would be prescriptive and/or adaptable to indicate strengths and weaknesses.

The Vendor should indicate whether scores from previous high school equivalency assessments can be combined with the vendor's test scores and if so, how they would be combined.

Document Scanning

CTB will use electronic scoring for both the PBT and CBT versions of TASC. For PBT, CTB will use state-of-the-art scanning facilities with scanners that are capable of processing student demographic and response data from the pages of answer documents to electronic images and data, ensuring accuracy and reliability in the final data that we report. We use scanning systems that are completely scalable and modular in design and that can be operated 24 hours/7 days per week. CTB's scanning systems are designed to accurately capture student response data and demographic information and are continually monitored. If standards are not met, the scanning systems will stop, display an error message, and

prevent further scanning until the condition is corrected. Those conditions include document page and integrity checks, user designed online edits, and numerous internal quality assurance/quality control checks. Before every scanning shift starts, the operators thoroughly clean the machines and perform a diagnostic routine. This is yet another step to protect data integrity, and it is one that has been done faithfully for the many years that we have been involved in production scanning. As a final safeguard, we routinely make spot checks of scanned files, bubble by bubble, throughout scanning runs. The result of these precautions, from the layout of the form to the daily vigilance of our operators, is the highest levels of accuracy in the data that we report.

CTB uses Scantron 5000i scanners for their speed, accuracy, and volume capacity. During scanning, we collect bubble (Optical Mark Recognition or OMR) data and also capture document images to facilitate the handscoring of responses to constructed-response items. All score data and demographic data are captured from documents and fed to CTB's Winscore System for the document editing process that is reliant on key-entry clean-up of the bubble and barcode data. Our document scanning and editing process incorporates the following validations:

- Data clean-up and key entry (correction of bubbling errors) are done from images associated in our system with each error and automatically displayed at the key-entry workstation so there is no chance of a key entry operator key-entering from the wrong book.
- We use proprietary and patented OMR software that can correct skew, stretch, or shift of a sheet due to paper motion while passing through the scanner or due to inaccurate printing. This software uses multiple anchor marks (usually four) printed on the sheet to establish with complete certainty the location of bubble positions, even if the sheet has been distorted by humidity.
- The Scantron 5000i scanners come equipped with software that performs industry-standard checks for various problems that would indicate possible scanner problems. In addition, CTB's proprietary software adds a series of image reliability checks.
- Every 5,000 sheets, we scan a diagnostic sheet to check the correct operation of the scanner. If the bubbles on the diagnostic sheet are at the wrong levels, the scanner will refuse to scan until one sheet passes the test.
- A Scantron field engineer is on site for every shift at our scanning center to ensure immediate resolution to any issue that may arise.
- We use industry-standard mark resolution logic to determine the intended bubble or mark by a student from among dark and light marks.
- Group and stack information is captured through header sheets.
- The scanner software distinguishes between hand-bubbled and machine-printed bubbles and holds the machine-printed ones to a higher standard of darkness.
- Possible erasures are captured at the scanner along with the darker valid and intended bubbles. This information can be passed to our Winscore system to support the Erasure Analysis process, should that be an option of interest to West Virginia.

Document Editing

Raw scoring and editing of scanned data, such as answer documents and headers, are performed in CTB's client/server system WinScore, where a sophisticated system of edits can be invoked to review the integrity of each batch scanned and produce a list of suspected errors. While editors can view data from any document online, the "error suspect list" lets editors concentrate on the most likely problems based on predefined guidelines as approved by the WVDOE. This system reduces editing time and provides a high degree of quality assurance.

CTB has continued to enhance the capability of our editing software to simplify the detection and correction of errors. Online editing screens focus editors on potential problems and then provide related information. The actual scanned documents are always available to the editor in case a visual verification or hand-check of the document is needed. The software supports the review and correction

of any field in the scanned record; student errors affecting the reliability of the data (including double-grids, blank responses, incorrect student identifiers, and damaged documents) are flagged, pulled, and reviewed, and the records are corrected. The operator is guided through each error in a particular job in a sequential manner. Entry and verification of the necessary corrections are also enhanced so that we are sure that each error is actually corrected. As batches are extracted for scoring, final edits are performed so that all requirements for scoring have been met. This automated final edit will flag a batch for further editing; if any error is detected, the batch containing the errors cannot be extracted for reporting. CTB concentrates its intensive editing capabilities into a process that uses a powerful client/server system, plus comprehensive software support. The result is a system design that ensures the accuracy of the optical scanning operation.

CTB's extensive operational scoring experience has allowed us to institute standardized document handling and scoring procedures to ensure that examinee responses (scanned and imaged) are linked to the correct test taker as coded on the accompanying header documents. Once in WinScore, scanned information can be decoded and scored. The scoring process assigns scores to all the responses to the questions. A completed job is then exported to our mainframe scoring and reporting system for further processing. The export process extracts the raw score data for each case and puts them in a binary file in a proprietary format acceptable by the software that performs further processing on these data. Our Derived Score Processor (DSP) program will read the examinee's items, determine which items are correct, and calculate the raw score for each test section. This program uses scoring parameter tables and internal algorithms to assign scores to test sections.

Handscoring Plan

CTB will use its Electronic Handscoring System (EHS) to route constructed-response and writing essay responses to readers for scoring. The automation of many of the supervisory and quality assurance tasks is a key benefit of this system. The technology supports and facilitates the following reader quality-assurance features:

- No biographical or identifiable information is available to the Reader, so all items are scored as blind reads.
- Supervisors are able to monitor Reader performance in real time by submitting and reviewing images of "benchmark" or pre-scored validity papers to readers at any time. This monitoring is conducted without the Reader knowing when a check-set is being administered. Supervisors are also able to access reader performance and item analysis reports in real time, which allows them to monitor scoring quality throughout the day.
- Automated distribution of papers for first or second reads is based on randomization or other distribution patterns, as required by a project's scoring algorithm.

Handscoring Accuracy

The scoring of the writing prompts must be highly reliable to ensure that each response receives a fair, consistent, and accurate score. To this end, CTB will employ a variety of scoring activities to ensure a fair and accurate scoring of all responses to the writing prompts. These activities include systematic administration of intra-rater reliability reads (including validity papers/check-sets and read-behinds) as well as monitoring inter-rater reliability. To ensure the accuracy and reliability of the handscoring completed for the writing prompts, CTB will institute a series of quality processing steps:

- One hundred percent of all writing responses will receive a second, independent human reading to establish inter-rater reliability statistics. The results of the analysis of these statistics will be available to the WVDOE.
- Ten percent of any additional constructed responses will receive a second, independent human reading to establish inter-rater reliability statistics. The results of the analysis of these statistics will be available to the WVDOE.

- Inter-Rater Reliability—Readers score concurrently and do not know when they are participating in inter-rater reliability monitoring. This allows us to establish inter-rater reliability statistics for all readers and for the project as a whole. Inter-rater reliability statistics can be scrutinized to determine severity or leniency trends, agreement rates, discrepancy rates, the distributions of scores, and the number of condition codes. Furthermore, inter-rater reliability statistics are an excellent source to determine team drift and Team Leader influence.
- All scoring will be conducted in such a way that the Reader does not know the name of or any demographic information about the individuals whose responses they are scoring. Unbiased scoring is ensured because the only identifying information on the response is an identification number.
- CTB will conduct intra-rater reliability reads through targeted read behinds as part of our standard procedure. The targeted read-behind system allows handscoring staff members to provide timely feedback to the Reader because the Team Leaders can discuss incorrectly scored responses with the Reader as soon as a problem is detected.
- Validity Papers—The purpose of validity sets is to provide consistent accurate scoring reflective of the scoring guides throughout the entire scoring session. By administering these pre-scored papers throughout scoring, we can ascertain whether the scoring teams/individuals are drifting from the original scoring criteria. Validity papers will be administered at pre-established intervals that are based on the rate of scoring. They appear to readers and team leaders in the same format as do actual responses. The scores assigned to the validity papers are compared to the conventional or approved score. Through this comparison, information is obtained about the accuracy and reliability of the Reader.
- Resetting of scored documents—If a Reader is found to be unreliable based on his or her agreement percentage on the validity papers, the scores can be removed for the period during which the unreliable scoring is determined to have occurred. The student responses scored by the Reader during that time period will be resubmitted to the scoring pool for scoring.

At CTB, quality monitoring does not stop with the quality of our staff and reports. We also strive to excel in our management oversight and verification of the quality assurance processes, as well as any corrective actions that may result through an internal audit program. To this end, CTB has developed an additional handscoring branch, the Data Monitor team.

Our staff of Data Monitors supports quality assurance for all CTB programs across all sites. The data monitoring teams support the quality assurance process for all CTB programs by accessing the same reports reviewed daily by the scoring teams and by creating summary level reports. Data Monitors act in an audit capacity to assure that no issues "slip through the cracks." Having this second quality assurance team supporting the program is of paramount importance.

Handscoring Staffing Qualification

CTB will ensure that all individuals recruited and hired as readers must have at least a bachelor's degree. Staffing will include a large number of returning readers who have previous experience with handscoring projects and the scoring of analytic and holistic prompts. Supervisors and team Leaders will be selected from a pool of experienced handscoring candidates based on past performance and their knowledge and skills in the writing content area.

CTB will work closely with our professional staffing vendor, who will also recruit new readers for employment. CTB requires that all supervisors, team leaders, and readers possess a bachelor's degree or higher. The staffing vendor carefully screens all new applicants and verifies that 100 percent of all potential readers meet the degree and credits/certification requirements. The staffing vendor also conducts a one- to two-hour interview/screening process. Prior to the interview, all potential readers complete a sample scoring activity during which they are shown examples of test responses and are supplied with a scoring rubric. In a brief introduction, they become acquainted with the application of a rubric and are then asked to apply the rubric to score the sample responses. Each applicant's scores are used for discussion during the interview process to determine the applicant's trainability, as well as his or her ability to understand and implement the standards set forth in the sample scoring rubric. When

the staffing vendor feels applicants are qualified, the applicants are recommended for training and assignment. Before being hired, all employees are required to read, agree to, and sign a nondisclosure agreement outlining the CTB/McGraw-Hill Education business ethics and security procedures.

Handscoring Training Process

CTB has instituted a comprehensive standardized training model to direct the training of the handscoring staff at each handscoring site. Whether training CTB's own staff or providing training and training models for teachers, our commitment to the training and qualification process stems from our belief that the consistency and reliability of the scores the readers assign are directly related to the quality of the training that they receive.

We will begin with the communication of the writing assessment scoring philosophies to team leaders and readers. Since the team leaders work closely with the supervisors in pulling student responses, assigning scores, and writing annotations in preparation for the rangefinding meetings, they are considered scoring experts. They ensure consistency within the team and alignment with the scoring guides and protocols. During scoring, team leaders focus on being a single reference to answer Reader questions in order to maintain consistency, on understanding scoring reports and using those reports to coach readers, and on alerting Supervisors to any issues that may arise. The readers will be trained by the Handscoring Supervisors and will be supported by team leaders. Training for readers follows the process used for team leaders, which includes:

- Introduction and review of the writing prompt and constructed-response scoring process.
- Introduction of the scoring guide for a specific writing prompt, with a focus on the rubric and any corresponding anchor papers. It is our general practice to provide the scoring guides electronically to readers. These will be a key resource for readers throughout all of scoring.
- Introduction to the training set for an item through annotated responses.
- Handscoring Supervisors present annotated training examples of student responses for review and further discussion of the scoring criteria requirements.

After the training sets for all items have been discussed, the qualification process can begin. Qualification is conducted through proprietary CTB online training software. The Supervisors and Team Leaders will proctor the qualification process. Due to the streamlined function of the online training reports, the Supervisor can determine whether a Reader qualifies upon the Reader's completion of the set; no time is lost tabulating whether a Reader has qualified.

Only qualified readers are assigned to score examinee responses and receive project-specific training on such issues as the handling of alert or sensitive papers.

Supervisors will have experience with handscoring projects and the scoring of analytic and holistic prompts. Supervisors will be selected from a pool of experienced candidates, based on past performance and their knowledge and skills in the writing content area. They will have previous experience scoring large-scale assessments and will be able to communicate effectively with large groups. These individuals will be responsible for accurate and consistent training, scoring, monitoring, reporting, and management of the scoring team in their respective area.

Supervisors will meet daily with the Team Leaders to review inter-rater reliability, validity results, production rates, and individual reports for each reader and will discuss techniques for working with readers who are having difficulty applying the scoring criteria. Throughout the project, they will explain, document, and clarify the scoring criteria to readers.

Timeline for Scoring Results

At CTB, there is a companywide consciousness that each document that we process and every student or test taker response that we score represents the work of a student or examinee and that with this knowledge comes the responsibility to ensure the accuracy and the reliability of all data.

Ten days is the average length of time for scoring once tests are received at our scoring facilities.

Test administrators will have access to unofficial results for computer-based testing, as will education centers for those examinees who are enrolled in one. These results can printed and shared with examinees who wish to see them.

Unofficial scores, based on the machine scorable items, will be available at the test center shortly after completion in all subject areas based on the machine scorable items. Thus, unofficial scores will be available in 2014 and 2015 in mathematics, reading, science, and social studies. However, unofficial scores on the writing test will not be available until 2016 when we expect artificial intelligence scoring will be available.

Quality Control

In addition to the document processing and handscoring process and procedures outlined above, CTB conducts quality control checks at all phases of test processing, scoring, analysis, and data reporting. Established procedures require all personnel and subject matter experts to complete their tasks according to strict quality assurance regulations to ensure accuracy and reliability in the scoring of all assessments.

CTB will conduct comprehensive test processing validation procedures to ensure that all contract-specific requirements are clearly understood and have been translated into comprehensive repeatable work instructions. Through our test deck processing, CTB ensures that all scoring software and systems, as well as the processing tasks completed by trained scoring personnel, meet program requirements.

Our operational scoring site will prepare for the receipt of test documents in several steps. CTB's scoring department has standardized these steps to ensure that operational departments, including scoring operations and the scoring process teams, are prepared and trained to process examinees' documents in strict accordance with program requirements and following CTB's standard operating procedures.

Two primary forms of documentation communicate the details of the processing procedures and contract-specific requirements to all Scoring Departments. These specifications are created months in advance of the receipt of test documents and guide the scoring process to ensure the quality and consistency of scoring across administrations. They include:

- Data Verification Specifications—It is through the stringent adherence to data verification specifications, guiding the verification of data at each process step and the creation of mock data, to demonstrate the accuracy of scoring software that we take the first steps in ensuring the quality of the data we report.
- Scoring Specifications—The Scoring Project Manager is responsible for the delivery of operational specifications to all departments that are responsible for the completion of a specific operational work module (log-in activities, inventory activities, scanning activities, edit/update activities, document retention activities, and so forth). Specifications or detailed processing procedures ensure accuracy at each stage of processing.

The scoring operations specifications provide and enforce specialized processing procedures and requirements for those departments completing the scoring process and security inventory tasks. Operations specifications will be created to maintain consistency in document processing and scoring for each test cycle. The scoring operations specification is created using a standardized template to ensure that all departments are familiar with the layout of the document. This document is organized by workstation. In this way, those team members completing tasks in the breakdown/log-in stations accurately account for all documents. Similarly, the specifications provided to the scanning station impart procedures and instructions for monitoring and validating scanning.

In addition, prior to document arrival at CTB, the Scoring Project Manager will use registration data to prepare pre-work materials to expedite document handling. To ready the CTB scoring system for the accurate and consistent processing of test documents, the Scoring Project Manager will prepare:

- Customer Pre-work Packets—These packets accompany a test center's documents through all stages of the scoring and reporting process. These packets essentially become the documented history of test center documents and monitor the job progress as well as any processing anomalies that may be encountered.
- Test Center Tracking Records—A record is created for each test center's documents on CTB's electronic processing job tracking system. This tracking system allows CTB personnel to monitor and report on the status of any job as it moves through the scoring system.

We will score the multiple-choice responses from all online assessments for correct responses, and a total raw score will be computed immediately upon the completion of the test. Each examinee's raw score can then be viewed in the Test Status display in OAS. Once the testing window is complete, all examinee responses will be exported to CTB's main scoring processing system, where they will be automatically merged with any scored data from the paper administrations. They will then undergo the final data validation and clean up procedures.

For every new customer, our online testing platform undergoes the same rigorous quality assurance process as we perform on our paper-based scanning and scoring systems. Every new release of the OAS platform undergoes, at a minimum:

- Unit testing
- Functional testing
- User interface testing
- Integration testing
- Regression testing
- Security testing
- Database testing and performance testing

OAS maintains a testing status as each examinee progresses through each test. The application interface will prevent examinees from making mistakes that are normal for paper-based testing, such as marking two responses for a single item, incomplete erasures, marking through timing tracks that prevent scanning, etc. In this way, many of the examinee document clean-up requirements for paper-based testing are not needed with online testing. Some conditions that might interfere with obtaining complete test results for an examinee, such as incomplete test sessions, non-attempted tests, etc., are flagged in the application.

All examinee responses will be exported to CTB's main scoring processing system, where they will automatically be merged with any paper-based scored data, if required. All merged data will be included in the Record Editing System for editing of demographic information. Additionally, we will perform case count validations to ensure all data are complete and inventoried before final reporting.

Scores Provide Valuable Information

TASC is designed to be a high-stakes test that provides data about each examinee's performance toward high school equivalency and college and career readiness. On each subtest, in addition to the scaled score that will indicates whether the examinee has a passing score for high school equivalency and is college ready, TASC score reports also provide criterion-referenced information in the form of diagnostic subscores. The diagnostic information can provide guidance to examinees, especially on those TASC subject areas that the examinee does not pass, on specific topics in which the student should seek additional instruction in order to increase the likelihood of passing the test on subsequent attempts.

CTB will provide diagnostic information for each TASC subject area test in the form of a subscore for appropriate reporting categories and the relationship between the examinee's obtained subscore and that of a typical student at the passing score for the subject area. For example, TASC mathematics results will be reported at an overall level in terms of scaled score, pass classification, and national percentile rank. In addition, examinees' obtained math subscores will be reported for each reporting category in mathematics (Number and Quantity, Algebra, Functions, Geometry, and Statistics and Probability). Useful diagnostic information will be provided in the form of the subscore that would be expected for a student at the mathematics passing score.

A student may observe that they received a score of 30% correct on the Algebra portion but that a typical student at the passing cut score would be expected to get 60% correct. Also, they may observe that they received a score of 70% correct on the Geometry portion and that a typical student at the passing cut score would be expected to get 55% correct in Geometry. The student may infer that they were well-prepared for the Geometry portion but underprepared for the Algebra portion. In this way, a student who has failed the TASC mathematics test can examine the subscore reports to better understand where he or she needs to focus subsequent studies to prepare for the next attempt on the mathematics test. In this case, the student should at least maintain his or her level of achievement in Geometry and increase their level of achievement in Algebra.

Subscores will be reported on reporting categories for all subject areas, referenced (as illustrated above) to a typical student at the passing score for the associated content area. This information will provide students with valuable diagnostic information. CTB will provide the Department and testing centers with information to support the appropriate interpretation of test scores, including scaled scores, passing status, national percentile rank, subscores, and expected subscores for typical students at the passing score in each subject area. TASC test passing cut scores are set on each subject area. Students may take individual or multiple subtests in any single administration.

CTB understands that the West Virginia Department of Education (DOE) determines whether or not a student, based on his or her assessment scores, obtains a West Virginia High School Equivalency credential. As a state policy, the DOE may choose to exempt students from subtests they have already passed via alternate means, such as the GED®. CTB will provide the results of any TASC subtests taken in terms of pass/fail to the DOE. If desired, the DOE can combine students' passing results from TASC and GED to award HSE credentials. This is consistent with the TASC passing standard that specifies that students pass TASC at the overall level when they have passed each individual subtest.

Section 4, Subsection 4.4.7: *The Agency is seeking a test that provides a variety of methods for answers, such as, but not limited to multiple choice answers, fill-in-the-blank, doze items, and short essay answers. The Vendor should describe in detail all item layouts for their proposed assessment solution.*

The Vendor should describe in detail how test questions will be developed and selected for the test, and show the evidence based research used to develop and select items for the test. Also describe how the proposed solution correlates to other assessments such as: Accuplacer, Compass, ACT and SAT.

The Vendor should describe in detail the demographic information that will be collected during the testing process.

The Vendor should provide and describe the number of forms of the tests that will be available in each language for PBT and CBT, and the number of usage for each form.

The Vendor should describe how pre-test or practice tests and instructional materials are aligned to the test and how they would be made available.

The Vendor should describe the method of providing:

A) high school equivalency assessments in Braille, audio and large print versions;

B) high school equivalency assessments in languages other than English; and

C) multiple forms of the assessment for re-testers.

The Vendor should describe the process for determining cut scores for the test, which would equate to standards for the issuance of a West Virginia High School Equivalency Diploma and also indicate scores that predict college and career readiness. The Vendor should provide and describe the plan which identifies two (2) indicators:

1) Passing scores which are equal to or higher than those earned by the top 60% of graduating high school seniors; and,

2) Scores should also verify the level of performance that necessary for the student to successfully enroll in credit-bearing college courses.

Test Assessing Secondary Completion (TASC) Test Content

Test Assessing Secondary Completion ™

The Test Assessing Secondary Completion (TASC) was developed by CTB/McGraw-Hill to measure reading / language arts, writing, mathematics, social studies, and science. TASC's newly created content is aligned to the Common Core State Standards, the Next Generation Science Standards, and social studies national frameworks. TASC provides not only high school equivalency scores, but it also assesses college and career readiness. Leveraging CTB's high-stakes, secure online platform, TASC can be taken both online or in paper-and-pencil formats.

TASC includes:

- Three forms available in English and Spanish each year
- Support of accommodations (large print, Braille, audio, and online)
- Paper-and-pencil or online formats
- Paper-and-pencil or online Readiness Assessment
- Opportunities for states to use existing testing sites
- Online score reporting and data transfer
- Online registration and scheduling website (optional)

Test Design

The January 2014 TASC in all content areas is comprised of multiple-choice items (and gridded-response items in mathematics) and a single writing prompt. Beginning with the January 2015 TASC, the embedded field test items will include technology-enhanced and constructed-response items.

Beginning with the January 2016 assessment, the online assessment will include technology-enhanced and constructed-response items on each content area assessment. We anticipate that the TASC online administration will be fully computer-adaptive by 2016. Therefore, we estimate that the number of operational items that any examinee may be presented then will be fewer than the number of scored items in 2014 or 2015. The following table presents the TASC Online test design by year.

Table 3. TASC Online Test Design, 2014, 2015, 2016 and Beyond

		2014		2015		2016 and Beyond	
Content Area	**Item Type**	**Total Scored Items Per Form**	**Field Test Items per Form**	**Total Scored Items Per Form**	**Field Test Items per Form**	**Total Scored Items Per Form (CAT estimate)**	**Field Test Items per Form**
Reading	MC	40	10	40	10	30	4 - 5
	TE	0		0	0 - 1	3	0 - 1
	CR	0		0	0 - 1	2	0 - 1
	Passages	6	1	6	1	6	1
Writing	MC	40	10	40	10	25	0 - 10
	Prompt	1	0 - 1	1	0 - 1	1	0 - 1
Math	MC	35	6	35	6	21	6
	GR	10	2	10	1	3	1
	TE	0		0	1	3	1
	CR	0		0		2	0 - 1
Science	MC	40	7	40	5	24	5 - 8
	TE	0		0	0 - 1	3	0 - 1
	CR	0		0	0 - 1	2	0 - 1
	Stimuli	7	1	7	1	5	1
Social Studies	MC	40	7	40	5	24	5 - 8
	TE	0		0	0 - 1	3	0 - 1
	CR	0		0	0 - 1	2	0 - 1
	Stimuli	7	1	7	1	5	0 - 1

MC - Multiple-choice; TE - Technology-enhanced; CR - Constructed-response

Test Administration Time

Table 4 below presents the estimated testing time for each content area based on the number of items on the fixed-length computer-based and paper-and-pencil forms in 2014 and 2015. Based on the 2013 field test and the first operational administration in 2014, the actual testing time for the fixed-length form will be validated, including determining if administration time for paper/pencil and computer-based mode of administration is similar or different. When TASC becomes fully computer adaptive in 2016 (if not sooner), and fewer items will likely be administered to estimate a student's score, testing time should decrease; however, the precise impact on reduced test administration time will be determined when TASC is fully computer adaptive.

Table 4. TASC Testing Time, 2014, 2015

Content Area		Testing Time (minutes)
English/Language Arts	Reading	70
	Language	60
	Writing	50
Math		90
Science		70
Social Studies		80
Total Time		420 (7 hours)

Examinees may take individual or multiple subtests in any single administration; however, they must complete the entire battery before they can retest those subtests that were not passed. There is no time requirement on completing the battery or repeating the subtests.

Examinees may take different subtests in different formats. However, subtests taken in different formats in a single administration session will have the results reported in separate records for that administration. Subtests taken in different administrations are reported as separate records regardless of format. Composite scores such as English Language Arts (ELA), which are the composite of Reading/ELA and Writing/ELA, and the overall composite (the average score for all subtests) can only be calculated when the appropriate subtests are taken within the same administration and in the same format or mode.

Reviewers should note that if the state policy is to maintain the status of GED® subtests passed prior to 2014, then it will be acceptable for examinees to be exempted from those TASC subtests. If the state has adopted such a policy, an examinee who needs to pass only Mathematics may take a second form of only the Mathematics subtest if they did not pass Mathematics on the first TASC form; he or she will not need to take the other subtests of the first form.

Test Administration Manuals

CTB provides a combined Test Coordinator/Test Administrator Manual (TCM/TAM) for the online and print versions of the Test of Adult Secondary Completion (TASC). In addition to the administration manual, an Educator's Guide that provides detailed information about the TASC will be available. We design and produce these ancillary materials following processes similar to those we implement in test form development and construction. These materials are important components for the TASC, as they provide important information about the program to a number of constituencies.

Understanding that educators are involved in many other activities and possibly many other testing programs, the TASC TCM/TAM provides clear and concise instructions for the TASC assessments, for both the online and paper/pencil administration modes. The manual provides instructions on conducting the online test administration, including registration, authenticating examinees, providing approved test accommodations, instructions for each content area assessment, and reporting conditions that may lead to invalidation of a test. The manual also includes information about how to handle the paper-based test administrations, including receipt of materials at the testing centers, ordering additional materials, and returning all print test materials and completed answer documents for scoring. The test manual includes a list of all assessment materials, such as test booklets, including the Braille, Large Print, and translated editions, answer documents, proctor directions, and other related information necessary for precise, standardized test administration.

The contents of the Test Coordinator/Test Administrator Manual include the following:

Table of Contents

Field Test Data Collection and Test Form Construction

The Spring/Summer 2013 Field Test

There are two stand-alone field tests for the TASC test development to ensure a high quality product. The first field testing in the spring/summer of 2013 includes a sufficient number of items to create at least three operational forms for 2014 in both English and Spanish. These items were organized into field-test blocks for each content area, which will be assigned randomly to examinees, based on a matrix sampling design. CTB uses a matrix design to collect field test item data, as it offers a feasible and efficient solution. Note that the blocks of items will be assembled using CTB's automated test assembly approach (ATA), as described in detail below.

Data from this field test provide empirical information about the quality of the items and preliminary scale for final test form construction. On the basis of these data, the best items are selected to appear in the operational tests that go through the second field test in fall 2013 on a nationally representative sample population of high school seniors and adult examinees across the country.

ATA Test Form Assembly

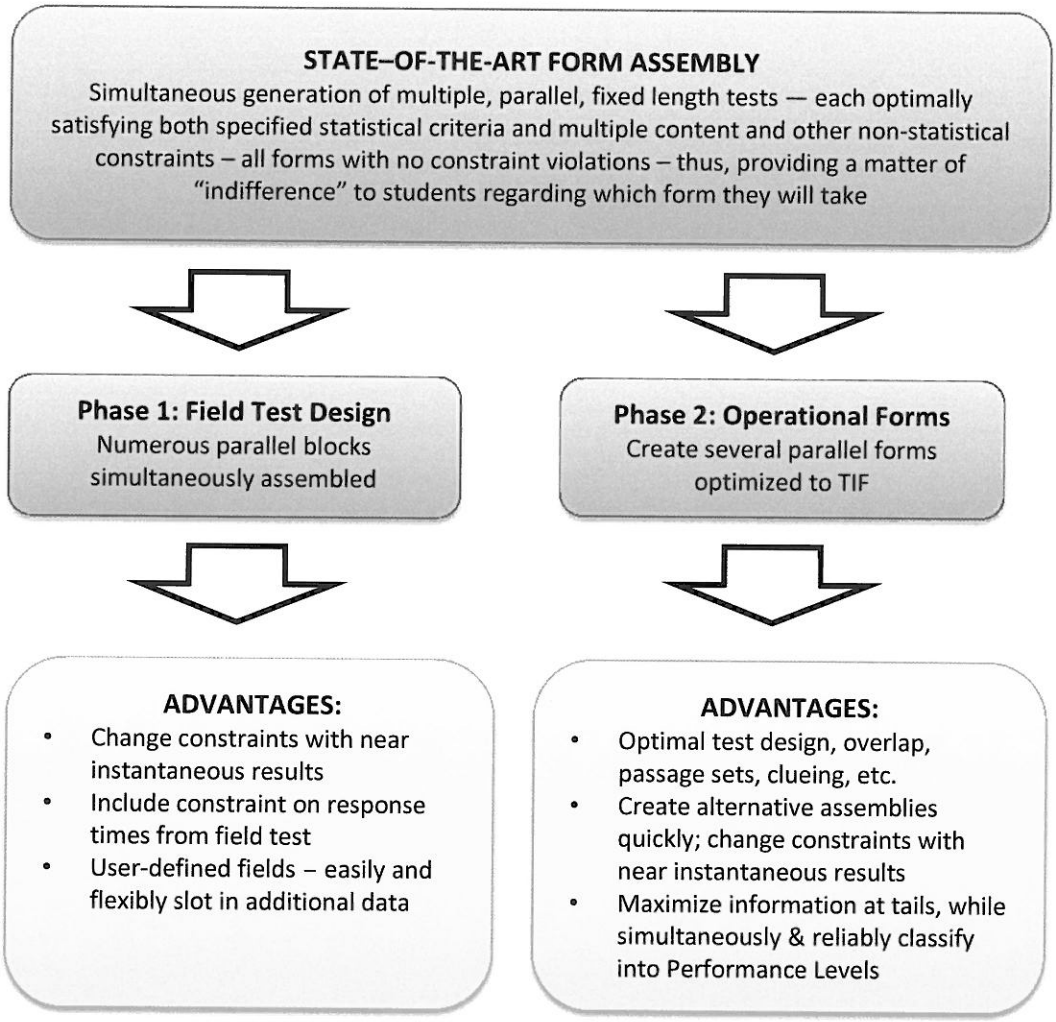
Optimal paper-based forms will be selected using CTB's ATA system, which is fully compatible with all Item Response Theory (IRT) models and test characteristic curve (TCC) or test information function (TIF) targets. It considers classical item statistics, content targets and constraints, and test administration

accommodation requirements (e.g., avoiding items that cannot be enlarged for visually impaired students). The system supports the development of paper-based forms that are congruent with the online assessments with respect to the test blueprints, including content coverage and cognitive complexity to the degree possible.

CTB's ATA engine is particularly well suited to the need to develop as many equivalent test forms as possible from the TASC item bank for operational form assembly. The forms will be optimized to information targets such that students are classified reliably into performance levels and students at the extremes are provided adequate measurement, while balancing complex item set and item type requirements, content blueprint requirements and psychometric requirements. There is no limit to the number of parallel forms ATA can build, and because ATA selects all forms simultaneously, there is no degradation in forms which is seen when sequential methods are used.

Costs are reduced through the use of this ATA engine, as these complex assembly problems are difficult, if not impossible, for a human to solve. With the ATA engine, detailed information regarding each test form created is produced immediately. Human resources are expended where they most matter: in the design of the constraints to ensure specifications will be met and in the review of the output. CTB has been using the ATA system operationally to serve many of CTB's state customers' and internal product needs. The following figure delineates the advantages of using the ATA system.

Figure 2. The ATA Advantage



The ATA results are returned via the user interface and are also available as pdf, Excel, and text documents that can be reviewed. These will be stored in the Oracle database and on a file server for the life of the contract. The pdf summary report includes the following information:

- Descriptive statistics for the selected forms
- Frequency distributions for item and stimulus attributes for the selected forms
- Constraints and indication of number of items selected meeting each constraint
- Blueprint coverage
- Test information function (target and reference)
- Test characteristic curve (target and reference)
- Standard error of measurement curve (target and reference)
- Parallel forms plotted on the same axes
- Auditing information, included to ensure quality control of results and efficient tracking ofselected assembly output

The Fall 2013 Field Test

The operational test forms selected based on the spring/summer 2013 field test data will be finalized in the fall 2013 field test in October, 2013. The fall 2013 field test analysis will produce the final TASC score scale, a comparability analysis between the TASC PBT and CBT forms, and normative data for setting the passing cut scores for high school equivalency and indicator scores for college and career readiness. Along with the TASC test forms, the corresponding TABE 9 Advanced Level A Survey tests and the *TerraNova*, Third Edition, Grade 12 Survey tests will also be administered to provide concurrent validity data result. Using these external tests will establish external validation of the TASC test results. For example, TABE 9 Level A Survey tests can provide a linkage to the Advanced level TABE and GED 2002. A score concordance between TASC and the current (pre-2014) GED® will be established with data from the fall 2013 field test via the existing TABE-GED concordance. The grade 12 *TerraNova* tests provide high quality national norms that can be used to validate the normative data collected for the TASC tests.

Each TASC test form will be administered to approximately 8,500 adult examinees across the nation from adult basic education institutions, vocational/technical colleges, and adult and juvenile correctional facilities. Each examinee will also be administered a corresponding content area of TABE 9 or the *TerraNova* tests. A representative sample of national high school senior students from public and private high schools will also be administered TASC test forms in the fall 2013 study. The high school seniors' performance on TASC will be used to create passing indicators and the college-readiness indicators. A detailed description of that study's design is presented later in the "TASC Cut Scores" section.

Analysis of Field Test Data

CTB will analyze the data from the field tests to provide information about the items' psychometric characteristics, such as difficulty, bias, and contribution to score accuracy for both the English and Spanish forms. A thorough analysis of the field-test data by CTB psychometric staff is an integral part of the operational form assembly process. Statistical information about examinee performance on each item will be produced by each test content area. For each multiple-choice item, several answer-choice statistics are examined:

- the proportion of examinees choosing each answer
- the point-biserial correlation between the answer choice and the number-correct score on the rest of the test
- item difficulty (the percentage of examinees choosing the correct answer choice)
- omit rates

For essay prompts, we conduct a raw score frequency distribution analysis, item difficulty, item-total correlation, inter-rater agreement, and reliability analyses. Our content developers and research staff use this information during the operational form assembly process to ensure that the quality of the items in the operational test forms is the highest possible. Following traditional measurement principles, content developers will select items based on the analysis of the field-test data to ensure that the selection of items for each TASC operational test represents the required item difficulties appropriate for a high school equivalency diploma.

The detailed description of the field test data and analysis results will be documented in the TASC technical manual which will be available in February, 2014. The published TASC technical manual will detail the TASC test development process and psychometric quality of the test. The TASC technical manual will include detailed descriptions of the test blueprint, item development, field test administration and data analysis, test scaling, cut score setting and validation, PBT and CBT score comparability study, summary of the examinee sample and test results. Specifically, the technical report will include, but not be limited to, the following topics:

- Evaluation of test content validity. Summaries of the content alignment to the Common Core State Standards in all content areas will be provided in the report.
- Examinee demographics. This will include summaries of the sample in the field test administrations disaggregated by student gender, ethnicity, school/institution type, social economic status, disability status, and any other relevant demographic characteristics.
- Classical item analysis statistics. These statistics will include a description of item response/omit rates, item discrimination (item-total correlations for multiple-choice keyed responses and constructed-response scores, and point-biserial correlations of incorrect multiple-choice distractors with the total raw score), item difficulty (p-values), and proportion of examinees choosing each answer option (for multiple-choice items) or achieving each score value (for multiple point constructed-response items). Statistical criteria for item evaluation will be included.
- Item calibration and equating methodology. A detailed methodology and rationale for use of IRT models will be provided. The procedures employed to calibrate items, evaluate item-model fit, equate test forms, and derive student scores will be described in detail.
- Item calibration and equating results. This information will include IRT-based item parameters, fit statistics, the number of estimation cycles, and non-converging items, and statistics. The equating results, including anchor set test statistics and test characteristic curves, will be provided as well.
- Test form statistics. These statistics will include raw-to-scale-score conversion tables, conditional standard errors, and test reliability indices (Cronbach's alpha and Feldt-Raju coefficients).
- Reliability of the writing prompt. In order to support and assess the accuracy and reliability of the extended writing response we will score 100% of the responses with double-reads. That is, all writing responses will be scored independently by two raters with appropriate resolution for disagreements. The results of scoring of for the field test samples will be documented including intra-class correlation and weighted kappa. In addition, means and standard deviations for the first and second ratings will be reported and compared with the means and standard deviations for the entire field-test sample, along with the percentage of agreement among raters (i.e., percent of raters in perfect agreement, percent giving adjacent scores, and percent differing by two or more points).
- Inter-rater reliability. Consistency of scoring of the writing response items will be measured and summarized by the inter-rater analysis on the double-read responses. Reliability indices will include intra-class correlation and weighted kappa. In addition, means and standard deviations for the first and second ratings will be reported and compared with the means and standard deviations for the entire field-test sample, along with the percentage of agreement among raters (i.e., percent of raters in perfect agreement, percent giving adjacent scores, and percent differing by two or more points).
- Evaluation of construct validity. Convergent and discriminant correlation analyses will be employed. Construct validity will be demonstrated by consistent patterns of test score correlations: higher

inter-correlations of scores from tests measuring similar abilities and lower inter-correlations of scores from tests measuring distinct abilities and skills.

- Disaggregated test results. Disaggregated results, including test raw score and scale score frequency distributions, means, standard deviations, and score ranges, will be reported for the total population as well as for subgroups of students (e.g., gender, ethnicity).
- Classification consistency. The decision consistency estimates describe the agreement between classifications based on alternate forms. The decision accuracy describes the agreement between classification based on one form and classification based on the test takers' true scores. CTB software for classification accuracy and consistency, which is based on the Livingston-Lewis procedure and/or other methods, can be used to produce the statistics of the classification consistency index. The results of the Livingston-Lewis procedure using CTB software have been evaluated against other procedures (Chen, Finkelman, & Rogosa, 2005).
- Data for examinees with disabilities. It is CTB's standard procedure to include the data for examinees with disabilities in data calibration, scaling, and reporting. We recommend including students with disabilities and students using testing accommodations in the test data analyses. The test scores for this population will be reported as part of the overall student population as well as a separate demographic category. If the test data arecollected for a sufficiently large number of students with disabilities and/or students using testing accommodations, we will conduct additional data analyses (e.g. differential item functioning) for this group of students.

References

Lord, F. M. (1980). Applications of Item Response Theory to Practical Testing Problems. New Jersey: Lawrence Erlbaum.

Stocking, M.L., & Swanson, L. (1993). A method for severely constrained item selection in adaptive testing. Applied Psychological Measurement, 17, 277-292

van der Linden, W. (2005). Linear models for optimal test design. New York, Springer.

TASC Content—Aligned to Common Core State Standards

Over the course of 2014 through 2016, CTB will modify each TASC subtest so that it will be increasingly more tightly aligned with the Common Core State Standards (CCSS) in terms of rigor and complexity in addition to content. This approach will support a natural, gradual, and fair transition to the CCSS. We will make this transition starting in 2014 by using only multiple-choice items in Reading, Science, and Social Studies, complemented by gridded-response items in Mathematics and a writing prompt in Writing. Starting in 2016, more robust item types such as constructed-response and technology-enhanced items will be introduced into the test. This transition in the item types included and a systematic approach for the selection of Common Core content will allow us to transition from an assessment that is fully content-aligned to the CCSS in 2014, albeit with less complex text and less cognitively rigorous items, to a somewhat more rigorous and deeply aligned CCSS assessment in 2015 and 2016. This approach supports a scaffolded transition plan for assessments that, while still fully aligned to the CCSS, are expected to be accessible to students who are currently preparing for tests aligned to the 2002 GED framework.

The CCSS were developed to raise educational achievement for all students, and the Standards are complex. The CCSS move beyond recall of ideas, literal comprehension, and simple applications of skills. Each Standard is written to represent a rather complex performance or deep understanding of concepts, skills, and processes in mathematics and English language arts (ELA). While the Standards can be deconstructed and assessed using multiple-choice and gridded-response items for mathematics and multiple-choice items and a writing prompt for ELA, the full range of *complexity* will not be measured with these item types alone. The use of these item types will result in the test's alignment to the portions of the CCSS that can be measured with those item types—multiple-choice, gridded-response, a

text-based writing prompt—and thus, this approach offers an opportunity to produce transitional assessments aligned to the CCSS while focusing on core standards that students are expected to demonstrate. For Standards written as complex performances, familiarity with these item types combined with assessing only portions of a single standard, provides students with the opportunity to demonstrate proficiency while not being overly challenged by more robust item types that assess an entire complex Standard.

We will also accomplish a transition to full CCSS alignment of the tests in terms of cognitive complexity by increasing the rigor of the items gradually each year. Rigor, as defined by Norm Webb's Depth of Knowledge (DOK) taxonomy, has to do with the types of thinking and responding expected of students when they are faced with the item or task:

- Items at level 1 require recall of knowledge and literal comprehension.
- Items at level 2 require students to demonstrate conceptual understanding and simple applications, as well as some thinking or reasoning (e.g., infer, classify, determine cause and effect, predict, or interpret).
- Items and tasks at level 3 of Webb's taxonomy (strategic thinking) require students to use higher order thinking and responding skills to draw conclusions, make interpretations, solve non-routine problems, explain phenomena, etc.
- Level 4, the highest level of Webb's taxonomy (extended thinking), requires students to design, synthesize, critique, evaluate, and prove (e.g., support claims with evidence).

For the most part, the 2014 TASC will include depth of knowledge level 1 and 2 items, with a smaller proportion of level 3 items. In 2016, we will add more item types, including technology-enhanced and open-ended items, covering all cognitive levels, thus moving toward a greater emphasis on levels 2 through 4. While the TASC will be fully aligned to the content of the CCSS beginning in 2014, this shift in the test's emphasis on rigor will more completely represent the full intent, expectations, and complexity of the CCSS.

The alignment of TASC to the CCSS starting in 2014 and continuing through 2015 and 2016 provides a consistent construct on which to base the test design and blueprint and also allows the test to be psychometrically consistent across all three years. The research design of TASC during this transition period has been carefully planned to support the highest technical quality. Specifically, the measurement of the same set of standards is a key assumption that is necessary to support the equating of forms from year to year.

Concerns over high failure rates in 2014 or 2015 due to use of a new test aligned to new standards may be better addressed through standard setting and policy associated with the setting of the passing score than by holding on to outgoing standards. CTB/McGraw-Hill will set a cut score associated with the performance of current graduating students. However, we will be pleased to work with states to consider a phase-in period for the target pass score to support fairness for students as the full nature of the CCSS are implemented in adult education, alternative education, or institutions' educational programs.

TASC Alignment to The College and Career Readiness (CCR) Standards for Adult Education

The College and Career Readiness (CCR) Standards for Adult Education were prepared for the U.S. Department of Education Office of Vocational and Adult Education under contract awarded by the U.S. Department of Education and published in April 2013. Three questions guided the review of the Common Core State Standards (CCSS) in the development of the CCR:

- What content in the area of English language arts and literacy (ELA/literacy) is most relevant to preparing adult students for success in higher education and training programs?

- What content in the area of mathematics is most relevant to preparing adult students for success in higher education and training programs?
- Which standards in each content area are most important for adult students?

The result of the CCR project is the identification of a subset of CCSS standards representing knowledge and skills that are essential to enabling adult learners to meet the real-world demands of postsecondary training and employment.

In English Language Arts, the selected key standards focus on:

- exposing students to appropriately complex texts in both instruction and assessment and also emphasizing the acquisition of vocabulary, especially on academic vocabulary.
- students' ability to cite evidence from texts to present careful analyses, well-defended claims, and clear information, as described in Reading Standard 1.
- building the knowledge that will prepare students for college and careers through broad exposure to literacy in the domains of science, history, and technical subject areas, with special emphasis on standards for the comprehension of informational text.

In mathematics, the CCR focus on key CCSS standards that reflect an emphasis on:

- numeracy in the early grades to lead to deeper understanding of the properties of operations at successive grade levels, encouraging fluency in the application of those properties, eventually for all operations with all number systems in a variety of situations.
- coherent progression of content within and across levels to build conceptual understanding of core content.
- building rigor through equal measures of conceptual understanding of key concepts, procedural skill and fluency, and rigorous application of mathematics in real-world contexts.

The content assessed by the TASC ELA and Mathematics assessments reflects the foci of The College and Career Readiness Standards for Adult Education and is fully aligned to the CCSS standards in Level E (grades 9–12) of the CCR. In Section 4, Subsection 4.4.8 of this proposal, we describe in detail the content of each TASC assessment. The TASC content is fully aligned to the CCSS, and therefore, also to the CCR which is a subset of the grade 9–12 CCSS.

The reading component of the ELA assessment includes a range of texts of varying length and complexity, with approximately 75 percent of the texts being informational texts, including historical, scientific, and technical informational texts. A portion of the Reading score points is derived from items that assess language acquisition and use. Vocabulary items assess the examinees' use of word analysis skills, reading closely, and using a variety of resources and analytic skills to determine meanings in context and interpret the author's use of figurative language and literary devices. Reading items require examinees to read text critically and to draw inferences or conclusions based on the text and then go back to the text to cite specific textual evidence. Items require that examinees focus on the craft and structure elements of each text, examining how sentences and larger portions of the text contribute to the overall development of ideas within the text as well as how the placement of these elements affects the meaning of the text in relation to its overall purpose. The Language Arts/Writing component of the English Language Arts assessment requires that examinees apply language skills in the context of editing and revising sentences and paragraphs to clearly convey meaning or style and demonstrating command of standard English grammar, usage, and conventions. The writing prompt is in response to a textual stimulus and requires that examinees produce writing that effectively uses evidence from the text to support their claims.

The mathematics component of TASC consists of item models aligned to the CCSS Traditional Pathway and the Standards for Mathematical Practice that represent the necessary knowledge equivalent to the high school requirements and college/career readiness. TASC is consistent with the goals of the CCR

and the identified key CCSS standards identified in the CCR. That is, TASC emphasizes the application of computational and procedural skills in contextual situations to solve problems. The mix of computational and embedded approaches to the same set of skills helps ensure that examinees at various levels of proficiency will have the ability to demonstrate their competency, and suggests that examinees who score higher on the test will also be demonstrating more advanced problem-solving skills. Greater weight is given to algebra, functions, and geometry in order to support the ultimate goal that scores can be used to infer college and career readiness. Although TASC does not provide scores for the Standards for Mathematical Practice that are described in the CCSS, item/task models have been designed to ensure that items and tasks require the application of mathematical practices.

TASC Accommodated Versions

CTB has a history of adhering to and documenting our work relative to the Standards for Educational and Psychological Testing (AERA, APA, NCME, 1999), as well as the Code of Fair Testing Practices in Education (Joint Committee on Testing Practices, 2004) and Standards and Assessments Peer Review Guidance (2004). In each of these, guidance is provided for the development, administration, and use of educational tests that are fair and unbiased for all examinees, regardless of background, demographic characteristics, native language, or disability and that the assessments should be reviewed in light of potential bias.

CTB is a leader in the area of accommodations, both for differently-abled students and students with limited English proficiency. All TASC test items and regular print test books are constructed with accessibility in mind. For example, all test items are formatted for full-width of the page, rather than some items being placed in a two-column layout. Additionally, all text in the regular print test book is a minimum of 12-point font to ensure enlargement to 18 point. Greater comparability between regular print and large print editions will contribute to ensuring accessibility and validity of the assessments for all students.

CTB has deep understanding and experience in building assessments that are accessible to diverse examinees, from various subgroups, leading to tests that are fair and valid across participants. The key is the identification of the targeted construct. Once the construct is clearly defined, barriers to assessing the construct can be minimized across subgroups that may differ such as due to language, culture, experience, ability, communication mode, or response needs.

Spanish Language Editions

The three TASC forms developed and administered each year in both online and paper/pencil modes are available in Spanish. The Spanish TASC editions are available to those English Language Learners eligible to take the assessment in their native Spanish language. The Mathematics, Science, and Social Studies tests are direct translations from English into Spanish. The English/Language Arts Spanish editions are a combination of direct translation, transadaptation, and parallel development. Not all components of a language arts/literacy test is directly translatable. Therefore, for some test items, it is often more appropriate to adapt items in the source language to be more suitable in the target language. In adapted tests, some test items are rewritten, others are replaced by more suitable items that measure the same construct, or some completely new items or item types are written.

Large Print and Braille Editions

Our Development and Research staffs possess a thorough understanding of the complexities of Braille translation. Although items for Braille must be selected to build comparable test forms, not all items can be translated into Braille and some concepts are not accessible or appropriate for blind students. It is essential in these cases to include experts in providing services to students with visual disabilities and other disabilities participate in the item reviews. We follow American Printing House for the Blind (APH) guidelines for Braille and Large-Print publications when we create accommodated versions of CTB's Test of Adult Secondary Education (TASC).

Our TASC product includes large print editions of the three unique English and Spanish paper/pencil test forms produced each year. Large print testbooks, manipulatives, and answer documents are produced in 18 point APHont type on 12 x 15.75" approved paper and spiral bound. Students with visual disabilities who take the TASC online have accessibility tools available to them, including changing the screen background color and magnification.

CTB uses certified Braille vendors to perform the transcription and production of Braille tests. Two English paper/pencil forms each year are produced as Braille editions. The Braille editions are proofread by an independent transcriber of the Braille vendor's staff, ensuring accuracy of the transcription. Assessment materials for the Braille editions include test administrator notes and scripts.

Audio CD Editions

Each of the three paper/pencil TASC English and Spanish forms produced each year are available on audio CD for students who require an oral administration as an allowable accommodation. When students register for the TASC, they will indicate whether this accommodation is requested.

TASC Cut Scores for West Virginia

Passing and college career readiness cut scores for each TASC subject area (ELA: reading, language arts, writing; mathematics; science; and social studies) and for the TASC total score will be set and validated using a variety of methodologies, including norm-referenced information based on a nationally representative sample of graduating high school seniors and the correspondence of TASC scores to subsequent scores in college coursework.

As developers of the widely used Bookmark Standard Setting Procedure (Lewis, Mitzel, Mercado, and Schultz, 2012) and innovators of state-of-the-art methodology for developing Performance Level Descriptors (Egan, Schneider, & Ferrara, 2012), CTB's Research Scientists are considered national experts with respect to setting performance standards on assessments that result in examinee classification in relevant levels of achievement such as TASC passing and CCR classifications.

Our proposed research design uses multiple benchmarks of student proficiency including

- norm-referenced benchmarks that are comparable to those used to set the pass cut scores on current measures of secondary completion
- criterion-referenced benchmarks established through the association of TASC and subsequent performance on college coursework based on matched longitudinal data

In addition, CTB will monitor developments with respect to high school graduation requirements for states and the PARCC and SBAC consortia to maintain relevance with the changing national educational landscape.

Passing Scores for High School Equivalency

The TASC pass scores are primarily norm-referenced benchmarks set using methods similar to those used to set the pass cut scores on current measures of secondary completion. The fall 2013 TASC field test will provide the level of TASC achievement for 1000 nationally representative grade 12 high school students (norm group). The TASC pass cut score will initially be estimated as the overall TASC score (average score from each subject) associated with the 40th percentile of the national high school norm group. This will result in an overall cut score such that that approximately 60 percent of the nation's high school seniors would be expected to pass all five tests. Once the overall cut score is set, individual subject area cut scores will be set so that the national percentile ranks associated with each subject area cut score are approximately equal.

After the initial cut scores are set based on the performance of the norm group, the impact data for samples of adult examinees will be examined. CTB recognizes that adult education centers are still preparing to implement the Common Core State Standards and that the level of readiness may be lower in adult education centers than in the nations' high schools. If the impact data associated with the adult

population appears to be highly discrepant with current pass rates on existing measures of high school equivalency, CTB will consider a transitional set of cut scores. That is, the cut score established for 2014 may be lower than the target cut score (associated with the 40th percentile of the national norm group) with an increase in cut score in 2015 to achieve the target cut score when the full set of common core standards are measured on TASC in 2016 and when, presumably, adult education centers are fully prepared to support students on the Common Core State Standards. Note that ESE may choose to require students to meet the standard set by the target cut score in the 2014 administration regardless of transitional cut scores considered by CTB.

The association of the TASC passing score and the current GED passing score will also be considered. A TASC-GED concordance is being established using data from the spring 2013 field test via the existing TABE-GED concordance (TABE is CTB's Test of Adult Basic Education). In addition, CTB will monitor developments with respect to high school graduation requirements for states and the PARCC and Smarter Balanced consortia to maintain relevance with the changing national educational landscape. When assessment results from the PARCC and Smarter Balanced consortia are available, data associated with their designated levels of achievement may be used to develop a concordance between TASC and their assessments to support the validity of the established TASC cut scores or a rationale to modify them to provide greater consistency with commonly used external measures of secondary completion.

Indicators for College and Career Readiness

TASC provides not only high school equivalency scores, but it also assesses college and career readiness.

A variety of methods may be used to support the establishment of a college and career readiness (CCR) cut score. Associations between TASC and existing measures of CCR readiness may be utilized. That is, data collected during the TASC field test may provide an association between TASC scores and CCR benchmarks on external assessments. The college and career readiness (CCR) cut score may also be set on a criterion-referenced basis using longitudinal data matching TASC scores for students participating in the 2013 field test with their subsequent grades in relevant college coursework. We will identify the level of performance on TASC subject area tests associated with subsequent performance of a C or better (or other appropriate grade) in credit-bearing college courses in the relevant subject. This information will be obtained by matching the participating high school graduating seniors' 2013 TASC field-test with their grades in subsequent fall 2013 credit-bearing college courses in the relevant subject. We will use a logistic regression analysis to identify the point on the TASC subject area scale where a student has a .75 likelihood of a obtaining a C or better on his or her associated college class.

References

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Readiness Testing and Instructional Materials

CTB is preparing an official practice test for the TASC. This is a Readiness Assessment, not just a practice test, because it is designed to assess whether an examinee is prepared for and likely to pass the

TASC. The Readiness Assessment is based on the same test blueprint and content as the operational TASC. The Readiness Assessments half the length; each content area has 20-23 items per content area. The Readiness Assessment will be available in English and Spanish in preparation for the 2014 administration year. The Readiness Assessment was developed alongside the operational TASC, and items are on the same scale as the TASC in order to predict likely performance on the TASC.

TASC preparation materials are now available from McGraw-Hill School Education/Contemporary. McGraw-Hill Education presents its Common Core High School Equivalency Series—a suite of three brand new programs: Common Core Basics: Building Essential Test Readiness Skills (for adult learners with a 6-8 grade level equivalent), Common Core Achieve: Mastering Essential Test Readiness Skills (for adult learners with a 9-12 grade level equivalent), and PowerUP! Getting Started with Computers and Keyboarding. McGraw-Hill's Adult Education Online Professional Development Series offers robust instructor support, and complements the Series.

Common Core Basics: Building Essential Test Readiness Skills

Common Core Basics is a high school equivalency test preparation program for adult learners with a 6-8 grade level equivalent, and is currently available for purchase and implementation. Common Core Basics helps students build the fundamental skills needed to begin preparing for high school equivalency exams, like the TASC. The program is built upon the College and Career Readiness Standards for Adult Education and includes materials for both students and instructors:

For Students:

Print Core Subject Modules

- Each Core Subject Module starts with a diagnostic pre-test to assess student strengths and weaknesses, and help determine what areas need special focus.
- Builds key skills, strategies, and content knowledge for College and Career Readiness Standards-based high school equivalency exams, like the TASC
- Available in Reading, Writing, Mathematics, Social Studies, and Science
- Foundational skills are woven continuously throughout each part of the lesson using:
  - Evidence-Based Reading Instruction
  - Depth of Knowledge
- 21st Century Skills – including workplace skills, information/ media literacy, and global awareness – are emphasized
- Contextualized lessons to workplace and real-life tasks keep students engaged and instruction relevant
- Short and extended response writing practice is included at the end of every lesson in the Reading, Writing, and Social Studies Core Subject Modules
- Inquiry-based learning opportunities are included in the Science and Mathematics Core Subject Modules

For Instructors:

Print Instructor Resource Binder

Every student lesson includes a complete instructor lesson plan with:

- Explicit before, during, and after lesson support
- Lesson plans specifically support teachers on how to instruct:
  - Evidence-Based Reading Instruction

- Depth of Knowledge
- Detailed strategies for pre-teaching the core lesson skills and vocabulary
- Strategies for student background building
- End-of-lesson and post-lesson notes provide lesson extensions, strategies for supporting English learners, and assessment guidance for lesson review and writing exercises

Common Core Achieve: Mastering Essential Test Readiness Skills

Common Core Achieve is a high school equivalency test preparation program for adult learners with a 9-12 grade level equivalent, is currently in production and will be available for implementation starting October 2013. Common Core Achieve is built upon the College and Career Readiness Standards for Adult Education, and includes the core content instruction and test-specific practice needed for TASC success. Common Core Achieve offers flexible learning solutions in both print and digital:

For Students:

Print:

Core Subject Modules

- Available in Reading & Writing, Mathematics, Social Studies, and Science
- Provides the core content instruction needed for TASC success
- Focuses on Evidence-Based Reading Instruction and Webb's Depth of Knowledge
- Diagnostic pre- and post-tests in each title

TASC-specific Exercise Books

- Available in Reading & Writing, Mathematics, Social Studies, and Science
- TASC-specific practice and exercise that supports increased Depth of Knowledge and matches exact test format

Digital:

Common Core Achieve Online

- Provides the test-specific core content instruction needed for TASC success
- All-in-one platform includes instruction and assessment for Reading & Writing, Mathematics, Social Studies, and Science for one low price
- Focuses on Evidence-Based Reading Instruction and Webb's Depth of Knowledge
- Diagnostic pre- and post-tests for each subject area
- Self-paced or instructor-assigned modes for maximum flexibility
- Time on task reporting at the student and class level

LearnSmart Achieve

- Online TASC-specific adaptive test preparation
- Available in Reading & Writing, Mathematics, Social Studies, and Science
- Ongoing diagnostic questions provide real-time data on areas of student strength and weakness
- Remedial mini-lessons and practice are automatically assigned, as needed

- Personalized learning plans are created and continually modified throughout the test preparation process
- Content and item types match TASC exam format

For Instructors:

Available in both print and digital formats, every student lesson includes a complete instructor lesson plan with:

- Explicit before, during, and after lesson support
- Lesson plans specifically support teachers on how to instruct:
  - Evidence-Based Reading Instruction
  - Depth of knowledge
- Detailed strategies for pre-teaching the core lesson skills and vocabulary
- Strategies for student background building
- End-of-lesson and post-lesson notes provide lesson extensions, strategies for supporting English learners, and assessment guidance for lesson review and writing exercises

PowerUP! Getting Started with Computers and Keyboarding

PowerUP! prepares students with the applied computer basics and keyboarding skills needed for computer-based test-taking, college classes, and the 21st Century workplace. PowerUP! can be used on its own, or paired with Common Core Basics or Common Core Achieve to create a complete solution for TASC exam preparation. Includes instruction on:

- Basic computer navigation skills, e.g., powering a computer, locating Start menu, using a mouse
- How to create documents in word processors, spreadsheets, and presentation programs
- Using email and the Internet
- Keyboarding essentials
- Computer-based test-taking

Adult Education Online Professional Development Series

In addition to program-specific instructor resources, we offer our Adult Education Online Professional Development Series. Developed in partnership with the American Institutes for Research and the National College Transitions Network, this series includes seven engaging, research-based courses. These online modules are self-paced for flexible delivery, and incorporate the best practices and strategies used within Common Core Basics and Common Core Achieve. The Series also includes a full course on integrating the College & Career Readiness Standards into the Adult Education classroom.

Section 4, Subsection 4.4.8: *The Vendor should describe the alignment of the assessment with the West Virginia Next Generation Content Standards and Objectives (West Virginia's Customized Common Core State Standards) and provide detailed information on how the test is incrementally aligned to the West Virginia's Next Generation Content Standards and Objectives over the life of the contract. This information should include an explanation of the content areas that will be covered in the test to include but not limited to:*

A) Language Arts/Writing

B) Mathematics

C) Science

D) Social Studies

E) Other components for consideration

TASC Content—Based in Evidence Centered Design

"Validity is an integrative, evaluative judgment of the degree to which empirical evidence and theoretical rationales support the adequacy and appropriateness of inferences and actions based on test scores and other measures." (Messick, 1989, p. 13)[1]

When developing assessments, the primary responsibility of test developers is to ensure that evidence can be used to validate any claims made about the inferences and actions to be made using test scores. Evidence centered design (ECD) is a framework for test development and validation that has grown out of Messick's definition. Using ECD, CTB begins test development with a clear understanding of the inferences to be made from test scores as well as the intended uses of those scores. Test designs—including content frameworks, test maps, and item/task models to guide item/task demands—are created so that scores are useful for making the desired inferences. Research studies are designed to determine whether scores can be trusted (are reliable) and that they can be used to make the intended inferences (are valid).

The development of the Test Assessing Secondary Completion began with a clear idea of the primary inference (claim) to be made from the test scores. For TASC, scores should provide evidence about whether or not examinees have learned the content in each subject area that is to be achieved by the end of high school. Since a single test cannot provide evidence of examinees' achievement for all of the knowledge and skills they are expected to learn in high school, test scores must be used to infer students' degree of mastery in the larger domain based on a sample of performances. The test maps lay out, for each subject area, how content and skills are sampled from the larger domain, and the item/task models define how knowledge and skills are elicited from examinees. Implicit in the test map and the item/task models are statements about what knowledge and skills are most important in a subject area.

Item and task models are used to frame items so that they tightly align with the knowledge, skills, and cognitive demands described in the standards. Where standards statements represent a complex set of skills, item/task models are designed to get at the heart of each standard.

Whether or not intended inferences can be made does not solely rely on perceived alignment with the standards as represented by the structure and content of the tests and the demands of the items. Empirical evidence is also needed to provide support for the validity of the intended inferences and score uses. Therefore, beyond test design, item analyses provide empirical support for the quality of items, reliability studies provide support for the trustworthiness of scores, scaling studies provide support for the quality of the measurement scale, and future validation studies will investigate whether scores from TASC correlate with other measures of high school achievement, such as GED scores and grades in courses.

CTB has been developing original content specifically aligned to the Common Core State Standards in mathematics and English language arts since spring 2011. We are using the same item specifications that

[1] Messick, S.(1989). Validity. In R. L. Linn (Ed.), Educational Measurement (3rd ed., pp.13-103). Washington, DC: The American Council on Education & the National Council on Measurement in Education.

we have used with our other proprietary products that are aligned to the CCSS, such as our CoreLink product. The writers engaged in creating the content have extensive experience working with CTB on these products as well as on our work with the PARCC and Smarter Balanced consortia. Because we have been involved in developing test content for both Smarter Balanced and PARCC, our writers' and editors' understanding of the CCSS has matured and deepened through that work. As a result, the TASC content developers are among the most experienced at writing to these next generation standards.

English Language Arts

The Reading component of the TASC English Language Arts assessment are fully aligned to the Common Core State Standards for English Language Arts and Literacy and present examinees with six texts representing a variety of genres, with an emphasis on the text types recommended in the Common Core. Texts include literary fiction and nonfiction as well as historical, scientific, and technical informational texts. The distribution of texts (literary to informational) follows the break down that NAEP uses and corresponds to the distribution recommended in the Common Core State Standards. Approximately 30 percent of the Reading score points are based on literary texts (e.g., stories, drama, poetry), and 70 percent is based on informational texts (e.g., literary nonfiction, personal essays, speeches, arguments, historical accounts). A portion (10%–15%) of the Reading score points is derived from items that assess language acquisition and use. Vocabulary items assess the examinees' use of word analysis skills, reading closely, and using a variety of resources and analytic skills to determine meanings in context and interpret the author's use of figurative language and literary devices.

The texts are of varying length, and include paired passages and passages of extended length (up to 1200 words). All texts are of a range of complexity, per CCSS Reading Standard 10, and are appropriate for students who have completed high school and are ready for college or careers. Texts require close, analytic reading, and the associated test items focus on examinees' use of evidence to support their analyses (claims, conclusions, inferences) about texts. For example, items may require examinees to draw an inference or conclusion based on the text and then go back to the text to cite specific textual evidence. Items require that examinees focus on the craft and structure elements of each text, examining how sentences and larger portions of the text contribute to the overall development of ideas within the text as well as how the placement of these elements affects the meaning of the text in relation to its overall purpose.

The Language Arts/Writing component of the English Language Arts assessment has two parts. The first part includes multiple-choice items that assess examinees' ability to edit and revise writing by applying knowledge of how language functions in different contexts, making effective choices to convey meaning or style, and demonstrating command of standard English grammar, usage, and conventions. Items are of different formats; some require examinees to edit sentences and paragraphs while others require them to revise paragraphs or the larger document by adding, removing, or repositioning sentences or paragraphs. Skills assessed include revising text structure and creating divisions and transitions to achieve more effective text organization, unity/coherence, and clarity. The second part of the Language Arts/Writing component of the ELA assessment assesses the examinee's ability to compose an informative/explanatory essay in response to a prompt. This essay portion of the assessment requires an expository response to one or two brief reading selections (totaling 600–800 words) and focus on assessing Writing Standards 1 and 2:

- Standard 1: Write arguments to support claims in an analysis of substantive topics or texts, using valid reasoning and relevant and sufficient evidence.
- Standard 2: Write informative/explanatory texts to examine and convey complex ideas, concepts, and information clearly and accurately through the effective selection, organization, and analysis of content.

The writing prompt assesses the examinee's ability to compose an informative/explanatory essay in response to a textual stimulus. The prompts require that examinees produce writing that effectively uses evidence in the source text to support their claims. Examinees have 45 minutes to write an essay, which is scored using a 1 to 4 point holistic rubric that includes descriptors that focus on the expectations of the CCSS Writing standards.

The primary claims for the English-Language Arts test are that:

- Scores can be used to make inferences about whether examinees have learned to read and interpret complex text
- Can anchor their interpretations in text, can use reading to interpret unfamiliar vocabulary
- Can use information from what they have read to support the ideas in their writing
- Know the skills and rules necessary for editing and revision of their writing.

The test maps are designed to support these inferences. Items and tasks are developed to elicit examinees' abilities to use their knowledge and skills in authentic ways. The selection of expository/informational writing purposes and the major focus on informational reading passages also reflect the ultimate goal that scores from TASC may be used to predict whether students are college and career ready.

The English/Language Arts test blueprint is presented in Table 5 below. Sample items can be found at www.ctb.com/tasc in PDF format.

Table 5. English/Language Arts Blueprint

Domain / Reporting Category	Sub-Domain	Sub-Domain %	Domain % (Predicted)
Reading—Informational	Key Ideas and Details	21%	70%
	Craft and Structure	21%	
	Integration of Knowledge and Ideas	21%	
	Vocabulary Acquisition and Use	7%	
Reading—Literary	Key Ideas and Details	8%	30%
	Craft and Structure	8%	
	Integration of Knowledge and Ideas	8%	
	Vocabulary Acquisition and Use	6%	
Language Arts	Conventions of Standard English; Demonstrate command of the conventions of standard English grammar and usage when writing or speaking.	30%	100%
	Conventions of Standard English; Demonstrate command of the conventions of standard English capitalization, punctuation, and spelling when writing.	25%	
	Knowledge of Language	30%	
	Text Types and Purposes	15%	
Writing	Text Types and Purposes	100%	100%

Mathematics

Scores from the Mathematics test serve as indicators of whether examinees have learned the standards defined in the CCSS. The items and tasks ask examinees to apply their conceptual and procedural understanding, as well as their ability to use the mathematical practices defined in the CCSS, to solve problems.

The TASC consists of item models aligned to the CCSS Traditional Pathway and the Standards for Mathematical Practice that represent the necessary knowledge equivalent to the high school requirements and college/career readiness. Using the CCSS Traditional Pathway and the Standards for Mathematical Practice, the TASC Mathematics blueprint design consists of integral standards needed to obtain knowledge of high school equivalency in math along with career readiness.

Rather than an emphasis on pure computation, the procedural skills are often embedded within contextual situations that require examinees to appropriately model situations before they can apply the procedural and computational skills needed to solve the problem. For example, questions related to the examinee's ability to solve problems might be posed in various ways, such as:

- An equation is given and a solution is asked for.
- An equation is given along with a related contextual question, in which the examinee must relate the equation to the context to find the appropriate solution.
- A contextual question is asked which can be solved by creating a related equation and then solving it.

The mix of computational and embedded approaches to the same set of skills helps ensure that examinees at various levels of proficiency have the ability to demonstrate their competency, and suggests that examinees who score higher on the test also likely demonstrate more advanced problem-solving skills.

The Mathematics test blueprint is presented in Table 6 below. Sample items Sample items can be found at www.ctb.com/tasc in PDF format.

Table 6. Mathematics Test Blueprint

Domain / Reporting Category	Sub-Domain	Sub-Domain %	Domain % (Predicted)
Number and Quantity	The Complex Number System	4%	13%
	The Real Number System	9%	
Algebra	Arithmetic with Polynomials and Rational Expressions	6%	26%
	Creating Equations	6%	
	Reasoning with Equations and Inequalities	8%	
	Seeing Structure in Expressions	6%	
Functions	Building Functions	6%	26%
	Interpreting Functions	8%	
	Linear, Quadratic, and Exponential Models	7%	
	Trigonometric Functions	5%	
Geometry	Circles	3%	23%
	Congruence	5%	
	Expressing Geometric Properties with Equations	4%	

Domain / Reporting Category	Sub-Domain	Sub-Domain %	Domain % (Predicted)
Statistics and Probability	Geometric Measurement and Dimension	4%	12%
	Modeling with Geometry	4%	
	Similarity, Right Triangles, and Trigonometry	3%	
	Conditional Probability and the Rules of Probability	3%	
	Interpreting Categorical and Quantitative Data	3%	
	Making Inferences and Justifying Conclusions	4%	
	Using Probability to Make Decisions	2%	

This assessment primarily focuses on the Skills and Concept level from Webb's DOK taxonomy, with a secondary balance between Recall and Strategic Thinking.

The primary claim for the Mathematics test is that scores can be used to make inferences about whether examinees have learned how to solve routine and non-routine mathematics problems using their conceptual and procedural knowledge in mathematics. Because mathematics is knowledge intensive, we have given careful attention to the weights assigned to the different mathematics topics in the test maps. Greater weight is given to algebra, functions, and geometry in order to support the ultimate goal that scores can be used to infer college and career readiness. Although TASC does not provide scores for the Standards for Mathematical Practice that are described in the CCSS, item/task models have been designed to ensure that items and tasks require the application of mathematical practices. Educators and other users of the test results should be able to use scores from TASC to infer that examinees can apply the full range of mathematical practices as they engage with routine and non-routine problems.

Science

TASC Science items are developed to align with the Next Generation Science Standards (NGSS), which are based on the National Research Council's "A Framework for K–12 Science Education: Practices, Crosscutting Concepts, and Core Ideas."[2] The final version of NGSS was released in April 2013, and all items are developed to align with the final version. The January 2014 TASC Science operational test includes only multiple-choice items. However, constructed-response and technology-enhanced items will be field tested in 2015 and will appear on the test as operational items beginning in 2016.

The National Research Council is preparing a Science Assessment Framework to provide recommendations for assessing science proficiency as defined by the Science Education Framework and as implemented in the NGSS. When this Science Assessment Framework is released later this year, CTB will use these recommendations to determine what changes may be required in the TASC Science assessment's approach and design.

[2] National Research Council (2012). A Framework for K-12 Science Education: Practices, Crosscutting Concepts, and Core Ideas. Washington, DC: The National Academies Press.

The primary claim for the TASC Science test is that scores can be used to make inferences about the depth of examinees' ability to use scientific and engineering practices to demonstrate knowledge of core ideas in the physical, life, and earth/space sciences. A secondary claim is that scores can also be used to assess whether examinees can make connections between the core ideas and the cross-cutting concepts integrated in the standards such as patterns; cause and effect (mechanism and explanation); scale, proportion, and quantity; systems and system models; energy and matter (flows, cycles, and conservation); structure and functions; and stability and change.

The blueprint for the TASC Science assessment is derived from the relative emphasis of each major science discipline—Physical Sciences, Life Sciences, and Earth and Space Sciences—in the final version of the Next Generation Science Standards. The number of NGSS performance expectations in each major discipline is approximately equal. However, within each discipline there are differences in the number of performance expectations in each Core Idea. The TASC Science test blueprint has been designed to reflect both the relative emphasis of each discipline and the relative emphasis of each Core Idea within each discipline. Although there are slight differences in the number of standards within each of the major science disciplines, the test blueprint gives equal weighting to each discipline, thus reflecting the relative importance of each discipline in an integrated approach to science education.

While Engineering Design is not a TASC reporting category, aspects of the Engineering Design standards that can be assessed in large-scale assessments are represented in the context of stimuli and items. Items in the three major disciplines may involve applying scientific knowledge within the context of engineering design solutions and practices. For example, examinees may need to consider or evaluate design criteria and constraints when applying scientific concepts to solving real-world problems.

The TASC science items are being developed to align with the NGSS performance expectations, including the Clarification Statements and Assessment Boundaries that accompany the performance expectations. The final version of the Definition of College and Career Readiness (CCR) in Science, when it is published, could be used as the basis for developing domain models and claims for a high school-level assessment aligned to the NGSS and based on an Evidence-Centered Design approach.

Because the recently-published NGSS are not yet implemented in classroom instruction, final and further important recommendations regarding next generation science assessments may be adjusted as states implement instruction based on the NGSS. CTB recognizes the need to allow for shifts and changes in the approach and design for the TASC Science test to align with best practices and recommendations in science education.

The TASC Science test blueprint is presented in Table 7 below. Sample items Sample items can be found at www.ctb.com/tasc in PDF format.

Table 7. Science Test Blueprint

Domain / Reporting Category	Sub-Domain	Sub-Domain %	Domain % (Predicted)
Physical Sciences	HS-PS1 Matter and Its Interactions	11%	33%
	HS-PS2 Motion and Stability: Forces and Interactions	8%	
	HS-PS3 Energy	7%	
	HS-PS4 Waves and Their Applications in Technologies for Information Transfer	7%	

Domain / Reporting Category	Sub-Domain	Sub-Domain %	Domain % (Predicted)
Life Sciences	HS-LS1 From Molecules to Organisms: Structures and Processes	12%	34%
	HS-LS2 Ecosystems: Interactions, Energy, and Dynamics	12%	
	HS-LS3 Heredity: Inheritance and Variation of Traits	5%	
	HS-LS4 Biological Evolution: Unity and Diversity	5%	
Earth and Space Sciences	HS-ESS1 Earth's Place in the Universe	10%	33%
	HS-ESS2 Earth's Systems	13%	
	HS-ESS3 Earth and Human Activity	10%	

Social Studies

Without a set of common core standards for social studies, TASC uses national standards created by groups that specialize in four of the five social studies domains that TASC assesses: U.S. History, World History, Civics and Government, and Economics. CTB created a content framework that draws domain standards from the following national resources:

- US History and World History – National Center for History in the School, National Standards for History Basic Edition, 1996
- Civics and Government – Center for Civic Education, National Standards for Civics and Government, 2010
- Economics- Council for Economic Education, Voluntary National Content Standards in Economics, 2nd Edition

For the Geography domain, CTB wrote the TASC targets based on the standards created by the National Council for the Social Studies and the National Council for Geographic Education.

After identifying these targets for the TASC framework, the Social Studies team at CTB conducted an analysis of the targets by comparing them to key states' high school standards for these domains, as well as to the 2002 and 2014 versions of the GED. Through this process, we identified the concepts that are taught by many states. This allowed our Social Studies team to determine the weight of each subdomain within the blueprint and to identify the specific standards to be assessed in the first field-test administration of TASC.

CTB conducts periodic analyses of the TASC framework by comparing the framework to more state standards and to the national standards, as they become available. The Social Studies team at CTB is treating the TASC framework as a living document. As such, during the initial phases of development, we are adapting to the needs of the examinees and to stakeholders using the results of the assessment.

The primary claims for the Social Studies test are that scores can be used to assess the degree to which examinees have learned and can apply the knowledge, skills, and ways of thinking defined in national standards for the domains of U.S. and world history, geography, civics, and economics and can read, analyze, and interpret primary and secondary texts and visual information related to the social studies. The standards assessed by TASC identify what students are expected to know and be able to do by the end of high school. The number of performance expectations for each domain varies widely. Of particular importance is whether examinees demonstrate understanding of larger themes in the social studies, such as human environmental interaction, time and chronology, cause and effect, characteristics of culture, and the foundational ideas and functions of our government.

The TASC Social Studies assessment is carefully designed to reflect a greater focus on application, analysis, and interpretation than on recall of knowledge. For example, most of the item scores reflect examinees' ability to show conceptual understanding, application, and strategic thinking. Some of the item/task models reflect the idea that complex understandings can be more effectively assessed and demonstrated by examinees when several items are based on the same stimulus materials (e.g., written and visual information). The assessment thus includes several sets of two to four items associated with a particular text or graphic stimulus, such as a political cartoon, an excerpt of a document or speech, or a map. Often the items in these sets measure concepts and application skills across the social studies domains (geography, history, civics and government, and economics). Items unrelated to a common stimulus vary in complexity and purpose, whether assessing examinees' basic content knowledge or their ability to evaluate information critically.

The items in the assessment require examinees to analyze stimulus materials to make comparisons and inferences, draw conclusions, and recognize cause and effect relationships. For example, examinees may be asked to recognize the similarities between two foundational United States documents, draw a reasoned conclusion about an ancient culture based on an illustration of artifacts, or explain a possible cause of an economic trend shown on a graph. Examinees may be asked to recognize an example of a major social studies concept; summarize information provided on a chart; recognize an effect of events shown on a time line; or integrate and synthesize information from multiple sources, such as a map and a graph. Examinees may also be asked to apply a social studies concept across time and place. In addition, examinees may be asked to demonstrate prior knowledge of social studies concepts and skills by recognizing basic economic or governmental principles or utilizing geographic tools.

The assessment focuses on examinees' abilities to understand larger themes in the social studies, such as human-environmental interaction, time and chronology, characteristics of culture, the foundational ideas and functions of United States government, the role of the citizen in a participatory democracy, and economic institutions and systems.

The Council of Chief State School Officers released a Vision for the College, Career, and Civic Life (C3) Framework for Inquiry in Social Studies State Standards in November 2012. That document explains the plan for a framework that states can use to craft their own social studies standards. The framework that will be released in 2013 will be based on evidence and college and career readiness, like the CCSS for ELA and Math. CTB plans to use the C3 framework in conjunction with the standards used in the initial field test as a basis for developing domain models and claims for a high school-level assessment of all social studies domains.

Because the C3 framework has not been released and further recommendations regarding social studies assessment are forthcoming, CTB recognizes the potential need to make changes and shifts in the design of the TASC Social Studies test to align with the best practices in social studies education.

The Social Studies test blueprint is presented in Table 8 below. Sample items Sample items can be found at www.ctb.com/tasc in PDF format.

Table 8. Social Studies Test Blueprint

Domain / Reporting Category	Sub-domain	Sub-Domain %	Domain % (Predicted)
U.S. History	Revolution and the New Nation (1754-1820s)	6%	25%
	Expansion and Reform (1801-1861)	9%	
	Civil War and Reconstruction (1850-1877)	16%	
	The Development of the Industrial United States (1870-1900)	10%	
	The Emergence of Modern America (1890-1930)	8%	
	The Great Depression and World War II (1929-1945)	18%	
	Post-War United States (1945-1970s)	26%	
	Contemporary United States (1968 to the present)	4%	
World History	The Beginnings of Human Society	2%	15%
	Early Civilizations and the Emergence of Pastoral People, 4000-1000 BCE	3%	
	Classical Traditions, Major Religions, and Giant Empires, 1000 BCE-300 CE	12%	
	Expanding Zones of Exchange and Encounter, 300-1000 CE	7%	
	Intensified Hemispheric Interactions, 1000-1500 CE	6%	
	The Emergence of the First Global Age, 1450-1770	14%	
	An Age of Revolutions, 1750-1914	21%	
	A Half-Century of Crisis and Achievement, 1900-1945	20%	
	The 20th Century Since 1945: Promises and Paradoxes	15%	
	World History Across the Eras	0	
Civics and Government	Civic Life, Politics, and Government	24%	25%
	Foundations of the American Political System	24%	
	U.S. Constitution: Embodies the Purpose, Values, and Principles of American Democracy	30%	
	Relationship of the United States to other Nations and to World Affairs	2%	
	Role of the Citizen in American Democracy	20%	
Geography	World in Spatial Terms	13%	15%
	Places and Regions	19%	
	Physical Systems	16%	
	Human Systems	29%	
	Environment and Society	24%	
Economics	Basic Economics	16%	20%
	Trade and International Politics	10%	
	Microeconomics	30%	
	Macroeconomics	20%	
	Government and Economics	24%	

Section 4, Subsection 4.4.9: *The test should be validated and the Vendor should provide all documentation of the study, list of locations where the study was performed, the testing conditions, number of participants, percentage of participants making each score and other information describing the validation process.*

The Vendor is to describe the process of reviewing and evaluating test material with the Agency six (6) months after award and thereafter annually to ensure test materials and outcomes are within the required parameters to indicate equivalency to a high school diploma.

As detailed in Section 4, Subsection 4.4.7 above, development of the TASC assessment follows the same rigorous process as for all CTB's high quality products. TASC is being built in accordance with technically sound assessment practices and supported by two well-designed and implemented empirical research studies. The national field test started in spring 2013, and the resulting data will be carefully and thoroughly analyzed to inform the final test forms, as well as the determination of passing scores. In the fall 2013 field test study we will finalize the TASC score scale, conduct comparability studies between the paper-based and computer-based administration modes and the English and Spanish versions of the test so that all users will know that results, no matter how the examinee tested or which edition was used, are comparable. The two studies ensure sufficient empirical data to build and validate the final TASC test forms with the most desirable psychometric property and quality.

Concurrent validity will be established by the relationships between TASC and current measures of adult achievement, including the Test of Adult Basic Education (TABE); *TerraNova*, CTB's nationally normed achievement test; and the GED®. Data linking TASC to these assessments will be gathered during the fall 2013 field test.

The reliability of the assessments will be established using empirical data from the spring/summer and fall 2013 field tests. The spring/summer 2013 field test establishes the measurement attributes of the TASC items and field test forms. We will assemble final forms with optimal measurement characteristics based on test blueprints and the results of the spring/summer 2013 field test using CTB's state-of-the-art automated test assembly methodology. The reliability and validity of the final forms will be supported by data from a second field test in fall 2013, based on the administration of the final forms to approximately 8,500 examinees who will take the English forms and 1,000 examinees who will take the Spanish forms. The comparability of the computer-based and paper-based tests and the English and Spanish forms will also be established using data from the fall 2013 field test.

Research activities and analyses will continue with embedded field testing in 2014 through 2016. This field testing will support the evolution of TASC and the planned controlled shift in the content standards frameworks through the introduction of new item types, including technology-enhanced items. It will also allow us to develop three new English and Spanish test forms each year and to introduce artificial intelligence (AI) scoring and adaptive testing in the computer-based version of TASC.

TASC Norms

TASC will be normed against a nationally representative sample of graduating high school seniors. Because TASC is intended to measure high school equivalency, it is important to establish a comparison to students who successfully complete the traditional high school sequence—graduating high school seniors—on content equivalent to relevant high school content—the CCSS in mathematics and ELA, the NGSS, and emerging national social studies standards. Because TASC is a national shelf-product, it is important to have a nationally representative sample of such students.

The design of the norm group selection is based on a stratified random sampling methodology. The nationally representative sample is selected first at the school level using the MDR database of educational marketing information (www.schooldata.com). The representativeness is achieved using a stratified sampling design with four stratification variables: school type (private, public), region (eastern, mid-continent, southern, western), community type (central city, suburban, rural), and socioeconomic status (high, low). From each randomly selected school in each sampling stratum, no more than 50

students (graduating seniors) are then randomly selected to participate in the spring 2013 TASC field test to achieve the proportional representation associated with the nation.

CTB's dedicated sample acquisition group contacts each randomly selected school to recruit for the sample and continues to draw schools at random from each cell until sufficient numbers of students fill each cell's requirements.

Review and Evaluation with Agency

Soon after contract award, and certainly within the first six months of the contract, CTB will provide the Agency with the 2014 TASC forms and accompanying test blueprint, test maps, and supporting data for inspection of the test content and psychometric properties. The Agency may inspect the test materials for the purpose of verifying the validity of the TASC in relation to equivalency to a West Virginia high school diploma. Annually thereafter, CTB will provide the Agency with the three forms for each administration year for inspection and ongoing confirmation of the validity of the TASC as a measure of equivalency to a high school diploma. Elsewhere in this proposal we describe how the TASC will be modified from 2014 to 2016 to be more fully aligned to the full range of content, complexity, and challenge of the Common Core State Standards. We also describe the validity research studies that CTB is undertaking to establish the appropriate use of the TASC as a measure of equivalency to a high school diploma. The results of these studies will also be available to the Agency for review.

Section 4, Subsection 4.4.10. *The Vendor should describe how test accommodations for individuals with disabilities would be provided for both the CBT and PBT versions of the test and the process for student qualification. The Agency needs flexibility with the qualification process.*

Proposals should include a plan for complying with the Americans with Disabilities Act (ADA) of 1990.

Proposals should describe in detail some or all of the following testing accommodations for a PBT or CBT in each language:

- *Extended time*
- *Special location/private room/small group*
- *Audiocassette*
- *Large print with extended time*
- *Calculator/talking calculator*
- *Scribe*
- *Supervised breaks*
- *Signed interpreted instructions for the deaf/hearing impaired.*

Vendors should identify accommodations that are appropriate for CBT and PBT administrations and provide evidence of current and/or proposed application materials and model for accommodations application and approval, supporting documentation and decision process.

TASC Accommodations Process

CTB will support appropriate accommodations for both paper-based test (PBT) and computer-based test (CBT) administrations of TASC. We will provide a process, forms, and guidelines to support the timely approval of accommodation requests and a method to appeal accommodation requests that are denied upon initial review, as described below. CTB is preparing the following documents to support this process for accommodations that will include, but not be limited to, extended time, special location, private room, small group, audio, adaptive font size, calculator, talking calculator, scribe, supervised breaks, signed/interpreted instructions for the deaf/hearing impaired.

Documents

TASC Accommodation Guidelines. Accommodation guidelines will be provided for each role—examinee, test administrator, and accommodations evaluator. The accommodation guidelines for each role will clearly describe the application process with respect to each role and the information that must be provided on the associated forms.

Request for Accommodations Forms (RFA). The Request for Accommodations form documents the requesting examinee's basic information; documents that the test center administrator has reviewed the request and that the documentation appears complete; and documents the evaluator's credentials, diagnosis, and recommendations for specific accommodations. The following forms will be available:

RFA: Long-Term Physical Disabilities and Chronic Health Disability

RFA: Emotional/Psychological /Psychiatric Disability

RFA: Attention-Deficit/Hyperactivity Disorder

RFA: Learning and other Cognitive Disabilities

RFA: Intellectual disabilities

Evaluator Guidelines (EG): The Evaluator Guidelines detail the evidence that the evaluator must provide to support the diagnosis and accommodations recommendation. The following forms will be available:

EG: Long–Term Physical Disabilities and Chronic Health Disability

EG: Emotional/Psychological /Psychiatric Disability

EG: Attention-Deficit/Hyperactivity Disorder

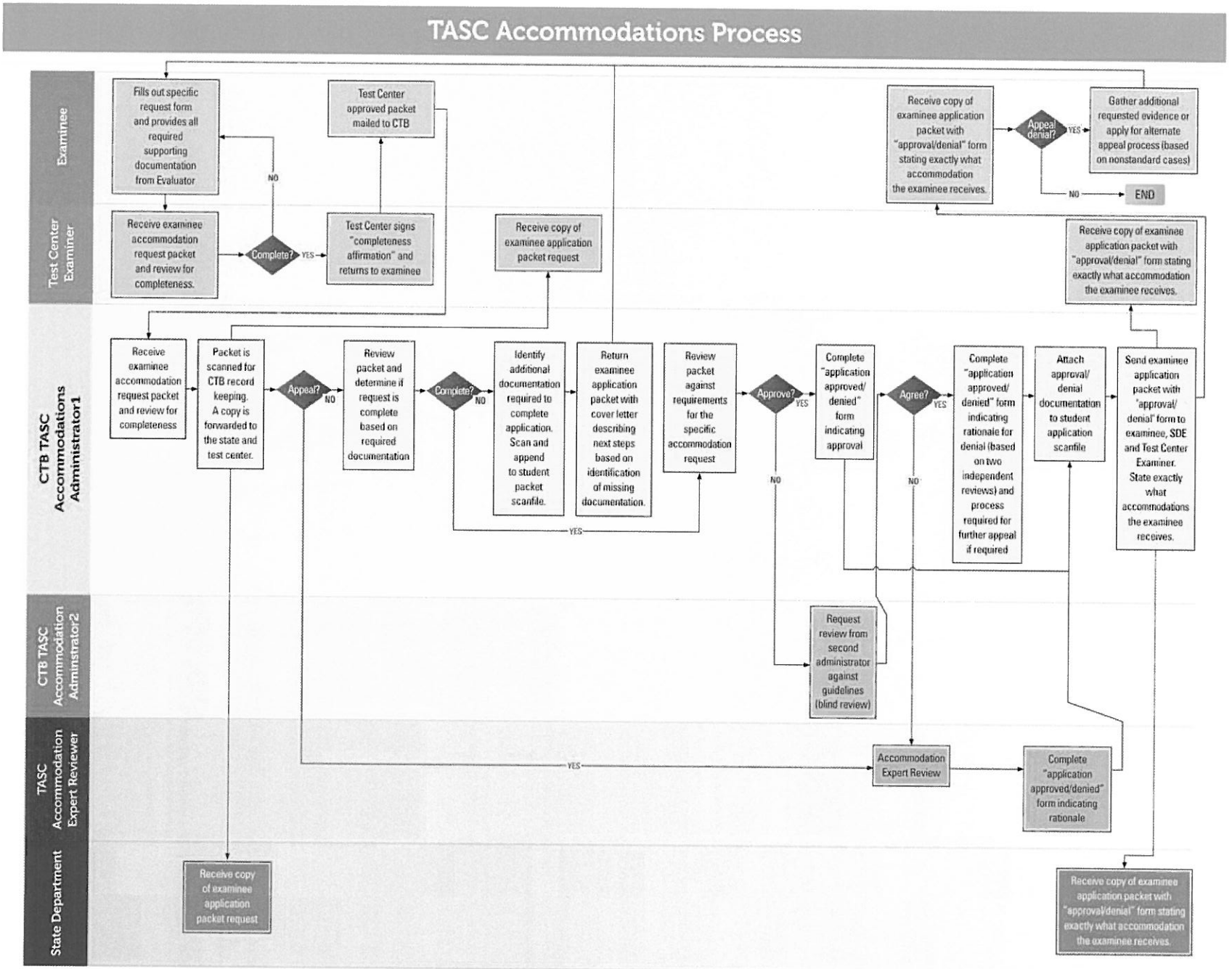
EG: Learning and other Cognitive Disabilities

EG: Intellectual disabilities

Appeal Request: The appeals request form is completed by examinees initially denied accommodations in order to provide additional evidence that may support the request for accommodations.

The following Accommodations Process will be supported by CTB/McGraw-Hill. The following process is graphically illustrated in Figure 3 on the following page.

1. Candidates seeking accommodations will apply to CTB through the CTB interactive website or by downloading the appropriate forms, described above, and mailing them to CTB. We will send a copy of all applications to both the state agency and the applicants designated test center.
2. Applications will be considered on a case-by-case basis and will be acknowledged within 30 business days. Applicants will be notified of the decision by CTB in writing, with a copy provided to the state agency and the test center. Documentation will be maintained by CTB for at least 18 months.
3. Approved accommodations will be valid for twelve months after the approval date. An application for an extension may be submitted with updated supporting documentation, if necessary. Applicants who are denied accommodations may appeal the decision to CTB and request further review by submitting a request for an appeal.



Note: 30 day turn around for application processing. All hardcopies of all application and decision correspondence are kept on file by SED, CTB, and the test center for a period of 18 months or longer. (Scanned and electronic records storage should also be available, if appropriate).

CTB has a deep understanding of and extensive experience in building assessments that provide the necessary accessibility supports and accommodations for students with various disabilities, in compliance with Section 504 of the Americans with Disabilities Act (ADA) and universal design principles. Our publishing staff is trained in the elements of designing assessments following universal design principles and attending to bias and fairness issues that can be introduced by accommodations. We continue to maintain a review process that addresses accessibility and validity through alternate formats, including those mentioned above. For CBT, our technology platforms are developed with accessibility supports and accommodation tools that have been in use across the country. Further, we are actively involved in development of the interoperability standards for accessible item and test formats (QTI/APIP standards).

Alternate Paper-and-pencil forms

Alternate forms of delivery that include Braille and Large Print versions of TASC for both the English and Spanish versions of TASC and an audio CD version, which is available as a paper-and-pencil version accommodation for examinees needing an oral administration. Other accommodations may be provided on the PBT versions as specified for qualified students meeting the Department's requirements.

Accommodations Available for Computer-based Assessments

The computer-based version of TASC will be administered using CTB's secure online delivery, which currently supports the following accommodations:

- Text-to-speech
- Foreground/background color choices
- Text enlargement
- Image enlargement
- Zoom/magnifying glass
- Highlighting
- Answer choice eliminator
- Reference/formula cards
- Visual masking
- Calculator
- Timing options (extended, untimed, pausing)
- Auditory calming
- Embedded glosses/translations/footnotes/etc.

The AERA, APA, and NCME (1999) *Standards for Educational and Psychological Testing*[3] note that evidence about content can be used to address questions about differences in the meaning or interpretation of test scores across relevant subgroups of examinees. Given that multiple accommodations are often provided to students, and students with the same disability may use different combinations of accommodations, studies collecting validity evidence are important if scores from accommodated test

[3] American Educational Research Association, American Psychological Association, and National Council on Measurement in Education Joint Committee on Standards for Educational and Psychological Testing. (1999). Standards for Educational and Psychological Testing. Washington, DC: American Educational Research Association.

administrations are going to be considered comparable to those scores from non-accommodated administrations. Within the literature, the documentation supporting the high quality procedures used in the development of assessments is referred to as procedural validity.

Additional Support for Customers

In our efforts to support customers in understanding the range of accommodations and potential implications to valid interpretations, we have developed the Guidelines to Inclusive Test Administration, which are available at CTB.com: http://www.ctb.com/ctb.com/control/ctbBestPracticesShowAction?p=ctbResearch&articleId=475. These guidelines specify categories of accommodations that can be captured directly during administration for data analyses. The analyses can provide an indication of accommodation needs and can use data specific to state examinees, which will provide the Department of Education with direct evidence that can be used for any potential revisions to accommodation and participation policies and guidelines.

We will be happy to work with the Department to review the current GED accommodation policies; to develop state-specific policies, guidelines, and administrative support; and to ensure the testing environment provides clear instructions for establishing accommodation needs and profiles and subsequent test administrations with accommodations.

CTB/McGraw-Hill Accommodations Research: References

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Barton, K. and Schultz, G. (2012). Using technology to assess hard-to-measure constructs in the CCSS and to expand accessibility: English Language Arts. In Invitational Research Symposium on Technology Enhanced Assessments, K-12 Center at ETS. (http://www.k12center.org/rsc/pdf/session1-barton-paper-tea2012.pdf)

Barton, Karen. (2012). Discussant in Assessment of Special Populations at the annual meeting of the American Educational Research Association, Vancouver, British Columbia.

Egan, K. L., Schneider, M.C., & Ferrara, S. (2011). The 6D Framework: A validity framework for defining proficient performance and setting cut scores for accessible tests. In S. Elliott, R. Kettler, P. Beddow, & A. Kurz (Eds.), Accessible Tests of Student Achievement: Issues, Innovations, and Applications. New York: Springer. 275–292.

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Kim, D.H., Schneider, C., & Siskind, T. (2009). Examining equivalence of accommodations on a statewide elementary-level science test. Applied Measurement in Education. 22(2), 144-163.

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Lewis, D. M., Green, D. R., & Miller, L. (June, 1999). Using differential item functioning analyses to assess the validity of testing accommodated students with disabilities. Paper presented at the 1999 Council of Chief State School Officers Large Scale Assessment Conference, Snowbird, Utah.

Section 4, Subsection 4.4.11: *The Vendor should address the issue of national acceptance of the proposed tests by colleges, technical centers, employers, and other entities and institutions.*

With TASC as the selected vehicle to meet West Virginia's requirements for high school equivalency, students who pass it will be granted a West Virginia diploma. They will have demonstrated proficiency as set by the State. The diploma that is granted as a result of passing TASC will be portable across states and accepted by employers and colleges.

CTB has been actively promoting awareness and acceptance of TASC. We have met with several groups, including the U.S. Department of Labor, U.S. Chamber of Commerce, National Coalition of Workforce Boards, and the Job Corps. We plan to meet with the National Guard, DANTES, the U.S. military, and the Council for Higher Education Accreditation in the near future. During the fourth quarter of 2013, we will also target major employers in states that are implementing the TASC to receive information.

CTB has implemented a formalized marketing strategy to create awareness of high school equivalency tests and TASC, in particular. In doing so, we have launched a multi-channel marketing campaign and public relations effort targeting all 50 states. The objective is to establish TASC as a well-recognized brand within the high school equivalency test category.

CTB's goal is to create awareness of and continue momentum around TASC by implementing the tactics listed below. We strive to have strong brand recognition for all our products. When employers ask applicants to fill out applications, they should not have boxes to check such as "high school diploma" or "GED." Rather, they should have a choice such as "high school equivalency," to which TASC would be a recognized response. Name recognition is paramount, and we intend to make TASC part of the general lexicon. To make it so, CTB is talking the following steps.

Public Relations

CTB is pursuing a broad public relations effort for TASC and high school equivalency testing. This effort consists of press releases, presentations at statewide and national conferences, and working with the press to gain media exposure.

Web

CTB has developed a web presence for TASC at CTB.com/TASC. This website provides important information about TASC, including details about test design and a brochure. In addition to the current web presence, CTB is developing a dedicated website at TASCTest.com. TASCTest.com will provide very detailed information to policymakers, educators, test takers, the media, publishers, and the general public. This website will serve as the key information hub to build awareness about high school equivalency testing and TASC for these multiple audiences.

Digital Marketing

CTB is deploying a series of national digital marketing campaigns targeting both those states that have adopted TASC and others who may be looking at options for their high school equivalency test. These campaigns encompass multiple channels, including search engine advertising, web banner advertising, and email marketing.

In states that have adopted TASC, the messaging will be geared to making the TASC name as recognizable as GED and will convey CTB's full support of the state's high school equivalency testing program. For other states, the messaging will clarify that TASC is a high school equivalency exam and will also offer information about TASC for those considering testing options and alternatives.

The initial focus of these campaigns is to direct interested parties to the newly created TASC website. The focus of future follow-up campaigns will be to drive readers to a recorded TASC webinar that will be hosted by TASC assessment specialists.

Webinar

TASC webinar(s) that outline the TASC solution will be offered in the digital marketing campaigns. Webinars will be targeted to education and business entities. CTB will record and post the webinars to the website to expand the information available on this test.

White Paper

CTB plans to develop a white paper discussing the research, uses, and implications around high school equivalency tests and TASC.

Sell Sheet and Brochure

TASC marketing collateral includes an overview of TASC, TASC features and benefits, screen shots of TASC components, sample reports, and other items. These marketing pieces were published in May.

Social Media

As states begin using TASC, we will use social media to spread the news through a broad-based strategy that encompasses Twitter, LinkedIn, Facebook, and YouTube. Examples of some CTB announcements released through Twitter are:

- For info about TASC, the new test for High School Equivalency, visit CTB.com/TASC
- Full press release about our new high school equivalency assessment to provide accessibility & affordability
- McGraw-Hill to Provide GED Replacement for New York State
- New York and Revamped GED Faces First Big Challenge

Conferences

We are attending national and regional conferences to promote TASC. For example, CTB exhibited at the Commission on Adult Basic Education (COABE) national conference in New Orleans from March 24–28, 2013, and hosted a reception. At our exhibit booth, we featured an easel sign promoting TASC, and CTB professional staff members were available to provide information about TASC. A reprint of the TASC press release about our contract award in New York was also at the booth. Additionally, we gave away TASC promotional items, including a mini-pad of paper with attached pen with the TASC logo and messaging.

Section 4, Subsection 4.4.12: *The Vendor's proposal should describe in detail the following:*

A) annual data warehousing and annual downloading of new CBT items during each contracted year and how they will meet delivery deadlines of January 2 each contracted year;

B) a plan for annually printing and securely shipping test batteries and appropriate supplies such as scannable test answer booklets and calculators for the PBT;

C) how they will change the PBT forms each calendar year and provide West Virginia testing centers the required number of PBT batteries that are to be used the next calendar year, January through December, by the end of November of each contracted year;

0) a guideline for secure storage of PBT, a detailed security plan of PBT, the security of CBT tests, and the process of keeping materials and data secure at all times during the project;

E) any supplemental supports to include but not limited to marketing materials for the general public and potential test-takers within the adult education system, and pre-test or practice tests;

F) Describe how pre-test or practice tests and instructional materials are aligned to the test, how they would be made available; and,

G) the process for the Agency to provide transcripts and diplomas.

Data Warehousing and Annual Item Download

Through registration, administration, and scoring activities CTB will warehouse data for the West Virginia High School Equivalency Assessment program. All data related to the WVHSE is the property of the Agency. CTB will work with the Agency to ensure access to relevant information through our registration system and reporting tool called Prism. Prism provides pre-configured sorting of relevant data as well as the capability for customized reporting.

Each year CTB provide new test forms in both paper/pencil and online versions. Online test forms will be securely loaded to the OAS delivery system and made available to authorized users before January 2 of each contract year. Protocols for security of content in the OAS delivery system are detailed further down in this section.

Printing of Test Materials

CTB will provide three new forms of the TASC test battery in both English and Spanish in paper format by November 1 each year of the contract. These are non-consumable test books that can be used multiple times as long as they are free from damage or examinee markings. Should test books become torn, mutilated, or otherwise unusable, they can be returned to CTB and we will replace them.

CTB's Manufacturing Operations will print and warehouse TASC test books, answer documents, manuals, and ancillary materials and provide print and fulfillment services with IPAK Inc., headquartered in Pennsauken, NJ. CTB has been procuring printing and fulfillment services from IPAK since 1988. Throughout our long-term professional association, IPAK has assisted in implementing numerous quality assurance and security measures that are required of high stakes state assessments within their plant and throughout their production processes.

In support of the WV-HSE, CTB will work with the highest quality ISO vendors for all manufacturing, fulfillment, and distribution processes.

Quality Manufacturing

Test books will be printed on our McGraw-Hill 45-pound offset paper. The booklets will be saddle-stitched with two-wire staples at the binding edge. The answer sheet inks will be a non-read black and a highlight color with carbon-black scan marks to facilitate capture of the examinees' pencil responses as they pass through our Document Processing Center scanners.

Manuals and Guides

Ancillary materials will be printed on McGraw-Hill-approved 40 pound Abibow Equal paper using one standard Pantone color plus black on the covers and black ink for the interior text.

Return Materials

Our Manufacturing and Fulfillment team will supply return envelopes that testing sites will use to return materials. The envelopes made with a 67-pound tag paper, have variable depth, and include permanent adhesive strips on one end to allow closure to protect the bundles of books. Materials are shipped to test centers in our custom-colored cartons that can also be used to return used and unused materials.

Material Packaging

The WV-HSE requires strict security and absolute precision in the execution of the production and packaging of materials and in their distribution to sites. This will be accomplished in several ways. Boxes will be sorted and pallets securely wrapped by internal distribution codes. We use distinct custom-colored cartons for shipment and return of materials and packing of secure materials. These are just a few of the customized delivery services that CTB will provide to help West Virginia Test Coordinators in their vital role of preparing for test administration and maintaining control of all materials.

To help test coordinators further, CTB will shrink-wrap TASC materials, including test books and answer documents, in the most efficient ratios. Our preliminary planning includes packages of 10 test booklets to most efficiently support both large volume distribution and the need for additional shipments to select test centers. Shrink-wrapping is a service intended to help test administrators as they distribute materials while maintaining security. Final packaging specifications will detail the shrink-wrap and/or other packaging requirements for all TASC materials.

Boxing/Palletization

CTB has established standard packaging specifications to ensure the secure transport of testing materials. All TASC materials will be packed in our custom-colored, double-strength (double-walled) corrugated boxes and sealed with CTB's secure tape. To provide for the safety of test center staffs, we will establish a 30-pound maximum carton weight for all testing material. Because the security of the contents is always a concern, we ask that test centers reuse these specifically designed boxes when they return testing materials to the scoring/inventory centers after testing.

All boxes containing testing materials will be labeled legibly and durably. Once packaged, all boxes will be placed on standard 40-inch by 48-inch skids and stretch-wrapped in plastic on both top and bottom to ensure security during transport. Cartons on the four corners of the skid will have corner-boards placed on them for added protection. The skids will then be four-way banded. Our standard "build" configuration is eight cartons per layer, six layers high.

Packaging

The packaging specifications for the program will include clear, concise requirements that our Fulfillment vendor will use for the final packaging and distribution of materials. Specifications will identify all testing components to be picked (test book, answer documents, administrator/ coordinator materials, labels, etc.), algorithms, quantities to be packaged, and destination addresses. These specifications ensure that

each testing site will receive the materials at the correct destinations when they are needed. Sites will then have sufficient time to check the materials, so the assessment can occur as scheduled.

Prior to the start of the pick-and-pack, assessment materials will be staged on pallets, which aides in the efficiency of packaging and helps to control for error. The fulfillment of materials will be handled by experienced pick-and-pack teams. The material pick line is set up in reverse order so that the last items picked and placed in the carton are the first items for the Test Coordinator to review when he or she opens the carton. As shrink-wrapped materials are picked, they will be scanned and counted by the vendor's inventory verification system, ensuring that we pick only appropriate items in appropriate quantities based on the order information from the testing center. Materials will then be placed in cartons with appropriate paperwork, palletized, and transferred to the Shipping department.

We determine the pick order to support timely distribution and delivery to testing centers.

CTB Manufacturing Operations will produce Braille and Large Print editions of the testing materials according to current industry standards.

Manufacturing print operations will print large print versions for the vision impaired test booklets based on order amounts from the school districts.

Braille Production:

CTB will produce Braille versions of each content area on each TASC test form. Throughout the item development and review process, CTB will be attentive to the needs of Braille readers and examinees with low vision. CTB ensures that all items and graphics are created in accordance with the principles of Universal Design and the American Printing House for the Blind Guidelines for Accessible Tests.

We use Interpoint on 80-pound paper for the Braille products. We will provide a copy of the Braille test in regular print for test administrators, proctors, and aides who will work with Braille readers.

Large Print Production:

CTB will print Large Print versions of TASC. These will be printed on 70-pound non-reflective paper stock with black ink. To aid in the ease of opening, the booklets will be bound with a white spiral plastic coil. Large Print test books and answer documents will be produced in 18-point type on 12" x 15.75" approved paper.

Our enlargement method yields 18- to 20-point type on 70-pound non-reflective paper that is used for its clarity, durability, and superior handling in the testing environment. We strongly suggest that examinees who use a Large Print edition may need further environmental adjustments during testing, such as:

- Ample space to accommodate the use of the large-size booklets
- Magnifying instruments so they can read information that may not be sufficiently enlarged
- Ample lighting to provide maximum visual contrast
- Permission to mark answers in the test booklet or on a Large Print answer sheet that must then be transcribed to a regular answer document by the testing proctor.

Packaging of Braille and Large Print Materials

Braille and Large Print materials will be individually packaged and will include a standard test book, answer document, Test Administrator notes, and scripts.

Calculators

Calculators for use with TASC administrations must be provided by the Agency, test centers, or examinees. Calculators must have log and trig functions and must not have programming or graphing capabilities.

Test Security for Printed Materials

CTB maintains annual Special Terms and Conditions for Secure Materials agreements (STACs) with all suppliers. The STAC agreements ensure that vendors will maintain appropriate administrative, technical, and physical safeguards in accordance with the highest industry standards, including business contingency plans to protect the integrity and confidentiality of CTB's confidential information and materials.

All of our print and distribution vendors are required to sign CTB security agreements and to provide secure facilities. Building entrances must be restricted, and access to the physical plant must be controlled. All scrap material is shredded, baled, and then destroyed. All film and files are secure and accessible only by authorized vendor personnel. CTB staff members are periodically on site during both print and distribution phases to monitor security and to verify compliance. CTB conducts audits at all vendors during the print, bind, and assembly phases for compliance with all security measures.

All materials are shipped in specially designed boxes that are resistant to breakage. All secure test materials received by a testing site or facility should be counted to ensure none were lost or stolen in transit. Before administering a test, materials should be counted, and the count verified after the test is complete. Secure materials shipped to CTB for processing will include a manifest with the total count of materials that CTB can verify, reporting discrepancies to the test site and the State. CTB will work with WVDOE to design all necessary security checklists and forms.

Testing site security is critical, with locked storage for secure materials, and staff trained in the handling, administering, and shipping of secure materials to ensure compliance with test administration security standards.

Shipping of Test Materials

CTB has developed extensive procedures for the systematic and secure collection of assessment materials. Our record for on-time and accurate document retrieval has been consistently high. We will use UPS to deliver and pick up materials. They have the capacity to support electronic tracking so that all materials for every shipment of WV-HSE materials are tracked and delivered in a timely and accurate manner.

CTB will retrieve both the used and unused test books by January 31st following the end of the contract year. We have included the cost for the retrieval of these materials in the cost of the program.

Computer-Based Test Security

CTB's online systems meet or exceed industry-standard security measures, encryption, and user management tools. We have deployed security at the application, technical infrastructure, and user levels to manage security within the system.

All levels are accessed through secured user authentication using secure HTTP (128-bit SSL), and credentials are transmitted only when encrypted. All administrative data, including all examinee data, are heavily protected. They are securely transmitted between administrator workstations and the OAS server over HTTPS using 256-bit encryption. Data can be transferred between the client workstation and the OAS server only after authentication of the administrative user.

Test content is cached to the test taker workstation over secure HTTPS protocols, and this content is encrypted for further security. Only at the time of delivery of an item to the examinee is the content decrypted. Additionally, once the examinee has completed the testing session, all content is automatically removed from the workstation.

The OAS test delivery client is a locally-installed client application that interacts with CTB servers continually during test delivery using standard, secure HTTPS calls. The examinee user interface is implemented in Java and executes locally on the user's workstation. The client requires a current Java runtime (JRE) installation. A platform-specific (Windows/Linux/Mac) component provides desktop lockdown and test security features.

Security is maintained in our online software through hierarchy controls at various access levels using a structure of limited permissions and login passwords. Access to the data is strictly controlled through systems of user roles and assignments in the organizational hierarchy. A user may have access only to the data and functionality appropriate to his or her role and only for the members of the organization to which he or she is assigned. User authentication and roles determine the population groups available to each user.

The examinee test client is provided in a browser window that is locked down on the test taker's desktop running in a full-screen "kiosk" mode. The browser window uses the full screen, overlaying any task bars or other control elements on the computer desktop, and it cannot be minimized. This makes it impossible for examinees to navigate to other files, programs, or Internet sites. All hot keys and shortcuts (e.g. Ctrl+C to copy, Ctrl+P to print) are disabled, as are other applications such as instant messaging software and other Internet/communication applications. The examinee cannot tab or switch out of the testing application or leave the application without explicitly stopping his or her session. Re-entry to that portion of the test can be prevented or allowed, based on administrator configuration settings.

The examinee log-on and test assignments are pre-defined so that the test taker cannot view or gain access to any test/item content other than that allocated for the testing session. That access is possible only after successful authentication of the logon credentials. Examinees have access to the testing environment only with a proper login ID and password. The password is unique for every test session and is assigned through the registration and test assignment process. A third piece of identification, called an access code, must be provided by the Test Administrator at the time testing begins.

OAS will disconnect a session within a set timeframe if no activity is detected. All responses are saved in real-time so no loss of data will occur.

Access to OAS and data is controlled by a role-based system. This system is maintained by the highest level administrator in the state's organization. Only the top-level administrator decides what roles will be assigned and what access will be provided to those in the layers beneath him/her in the organization.

The ability to restart a session can be controlled by user roles and permissions. Should the WVDOE require that testing center personnel not be allowed to re-start testing sessions, this can be controlled via the user's role/permission set.

The secure test delivery client makes it impossible for examinees to navigate to other files, programs, or Internet sites. The full "kiosk" mode prevents navigation to other applications on the desktop. Since all hot keys and shortcuts are disabled, examinees cannot tab or switch out of the testing application or leave the application without explicitly stopping their session.

OAS has a strict role-based authentication and access system for test administration. Access to data and various system functions is strictly controlled through user roles and assignments in the respective test centers and facilities. A user may have access only to the data and functionality appropriate to his role. For example, a user with an administrator role assigned to Boone County Career Center would have permission to edit examinee demographic data for any examinees belonging to Boone County Career Center. Another user in this test center might also have an administrator role but be assigned only to a particular group of examinees. That user would also be permitted to edit data but only for examinees belonging to the group to which he or she was assigned.

Supplemental Support

As described previously in Section 4, Subsection 4.4.11, CTB is committed to creating national acceptance of TASC as well as supporting customers to market TASC in-state.

Support Materials

CTB offers a readiness test and test preparation materials from McGraw-Hill education that are aligned to TASC. Please refer to Section 4, 4.4.7 above for details.

Quality Information for WVDOE Determination of WVHSE Diplomas

The WVDOE is the sole authority for issuing West Virginia High School Equivalency Diplomas. CTB is ready to interface TASC data with the WVDOE's preferred system and/or vendor for providing the diplomas.

Section 4, Subsection 4.4.13: *The Vendor should describe in detail the paper and computer process for registration including how real time support is provided to examiners regarding issues connected to the ordering, delivery, administration, or scoring.*

The Vendor should describe in detail the assignment of identification numbers to test takers.

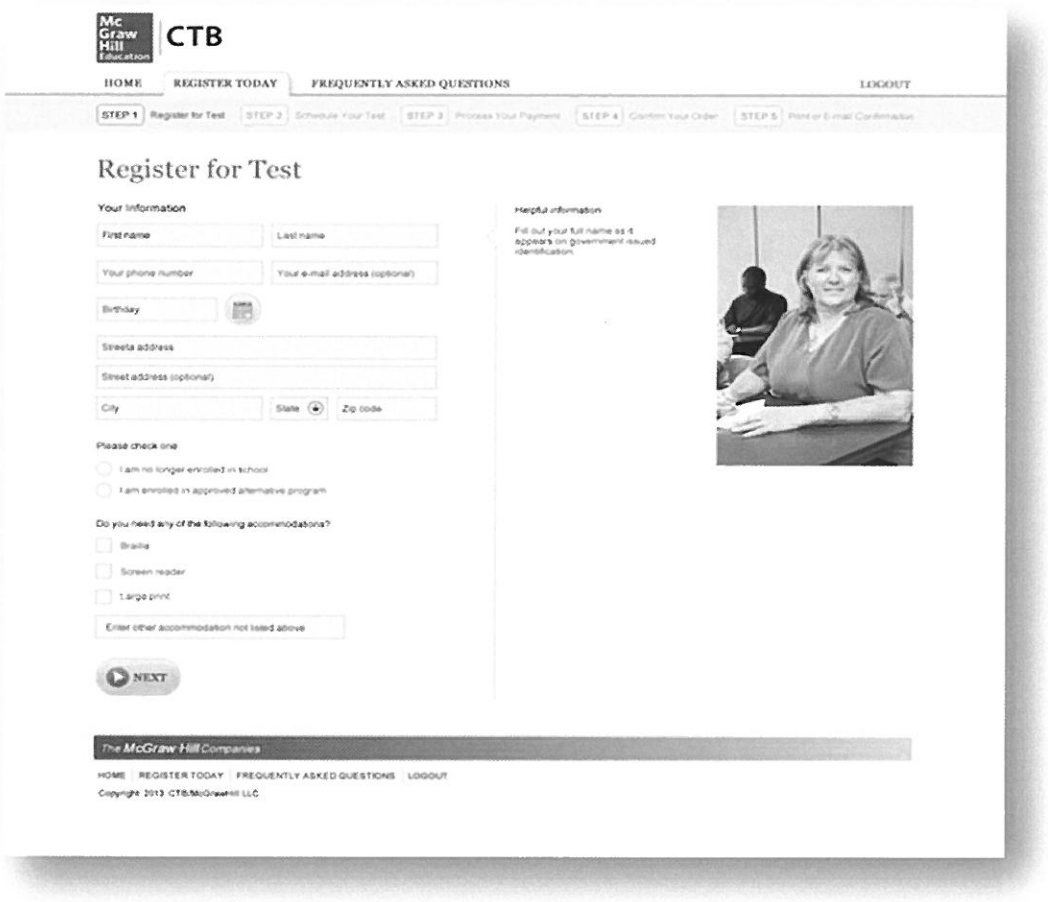
The Vendor should provide a process for data matching with the Agency's management information system.

CTB proposes an online registration system that will allow examinees or testing site or CTB proxies to complete their registration, make payment, schedule a test session and site (including the selection of an online or paper-based mode of administration), and withdraw from or reschedule their test session and site.

The examinee interface will also include helpful features such as a frequently asked questions (FAQ) page, data entry field descriptions, and clear, straight forward instructions for each step of the registration process.

CTB Customer Service can assist those examinees without Internet access to ensure fair access to the registration system for all test takers. Examinees will register through an online portal in five easy steps, which are illustrated in the figures below.

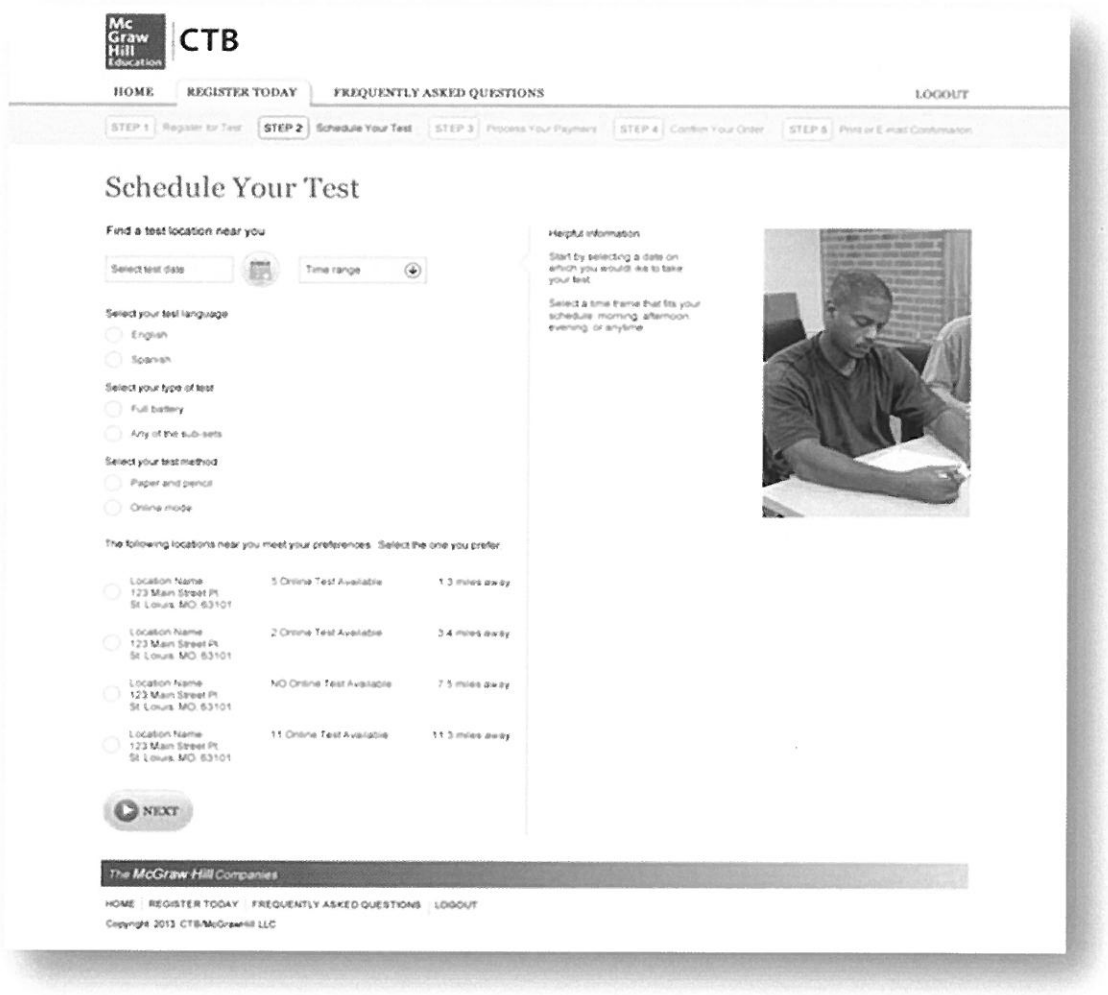
Figure 4. Step One – Register for Test



The registration process provides users with an easy-to-use, clear interface through which they can quickly create an account and self-select their profile type. The registration screen also provides step-by-step help advice to the right of the fields each time a user enters or clicks on a field. The registration page features include:

- Field validation and error checking for common mistypes and missing content
- Field-based Help content
- Birthday calendar visual interface
- Self-selection for user type and category

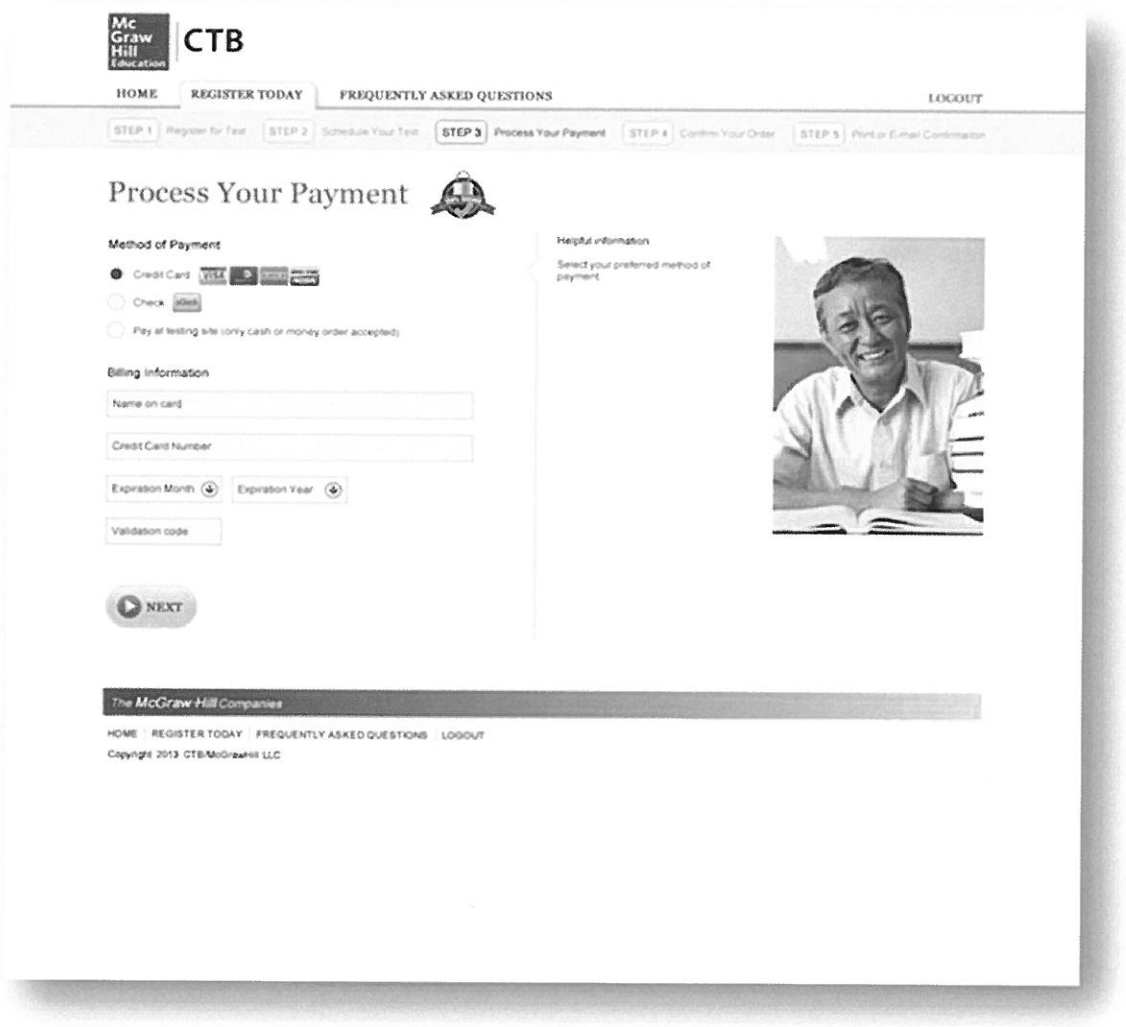
Figure 5. Step Two- Schedule Your Test



This page is designed to provide users an easy selection process. The schedule test interface allows users to select dates and times when they are available to test. The system then finds the time slots closest to their selected dates and times along with a location closest to their registered address. Furthermore, users can select the address of the test site to see the location on the map in relation to their home address. The options for test sites are altered on the fly as users alter different criteria such as language, test type, and delivery method. As with all screens in the registration system, accompanying Help text is found directly to the right of the field selected. Features of this screen include:

- Test date and time matching based on user preferences
- Location based test site selection and mapping integration
- Auto-site location changes based on user option selections
- Field validation and error checking for common mistypes and missing content
- Field-based Help content

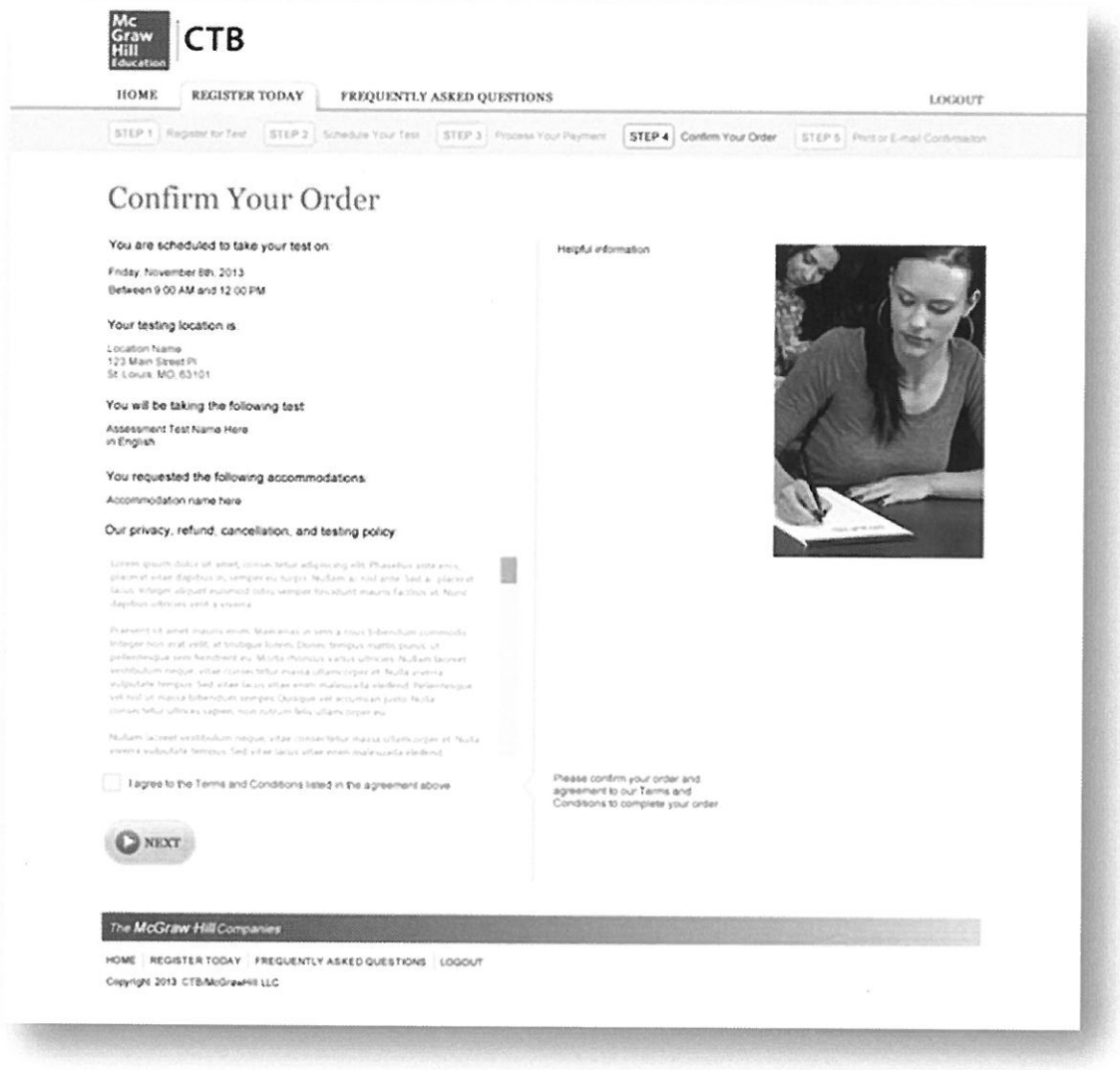
Figure 6. Step 3 – Process Your Payment



The payment screen uses best practices in online payment methodology. Each field is validated against merchant and gateway payment solutions to make sure the credit card data format is correct and the content is valid. This ensures more accurate online transactions. Features on this screen include:

- Credit card number and verification code validation with gateway merchants prior to submission
- Error checking for field names and dates
- Field validation and error checking for common mistypes and missing content
- Field-based Help content

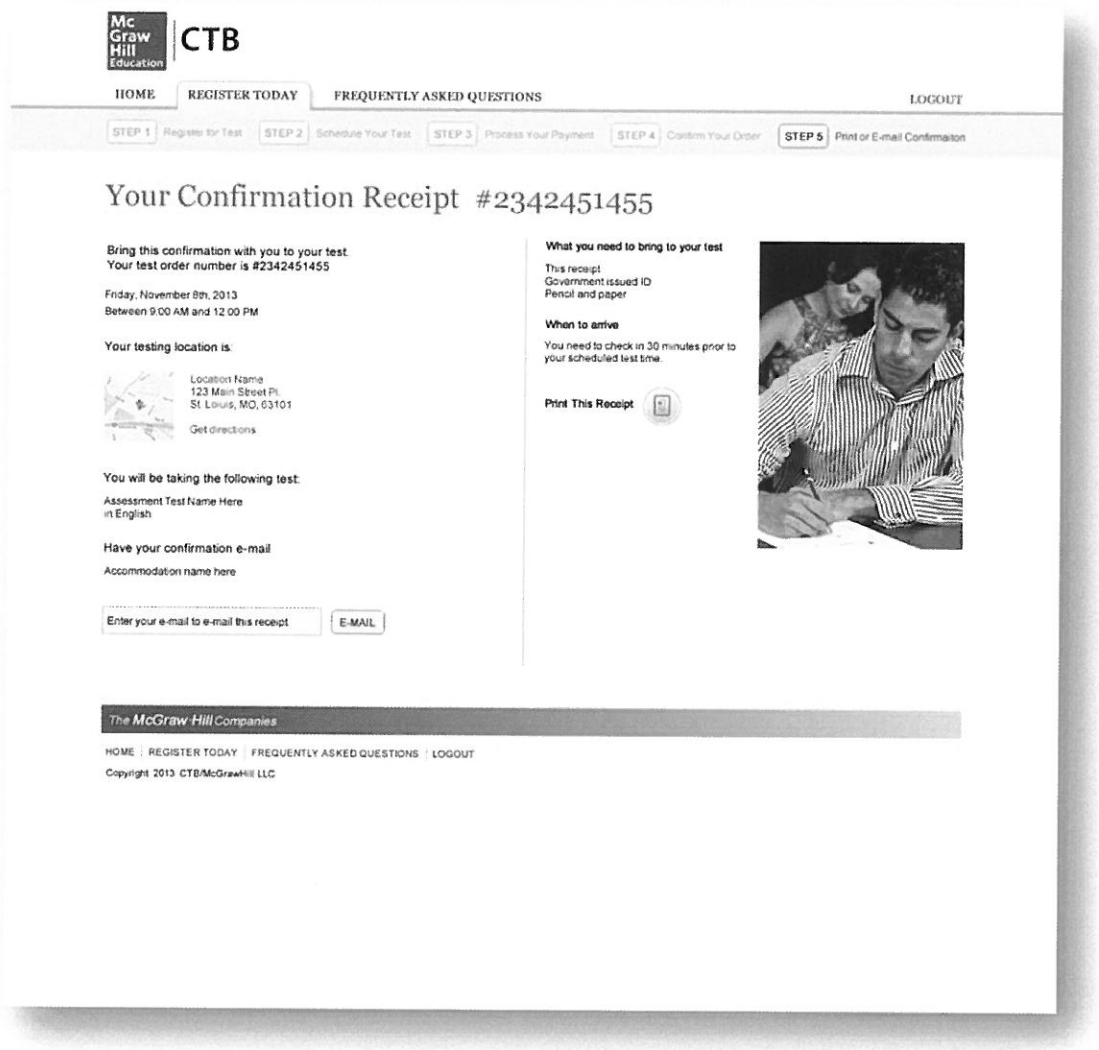
Figure 7. Step 4 – Confirm Your Order



Order confirmation provides users with a quick review of all their submitted options and content along with an agreement to which they agree before completing the order. Users must scroll through the length of the agreement before they can check the "I agree" field. Features of this screen include:

- Outputs all user options and content selections
- Agreement contract with a slide to end of the field and check box authorization
- Field validation and error checking for common mistypes and missing content
- Field-based Help content

Figure 8. Step 5 – Confirmation Receipt



The confirmation screen provides users with a receipt and instructions the next steps for the test. They include a clickable map, an option to print the receipt, and ability to send the confirmation and instructions to the user's e-mail address of choice. Features of this screen include:

- Full receipt with instructions and clickable map
- Printable receipt with instructions and map
- Ability to e-mail receipt and instructions

The CTB registration and scheduling system includes a variety of administration functions to manage registration and scheduling, as described above. Key features and functions are summarized below.

Registrant Functions

Registrants will be able to:

- Create a profile: Where the examinee creates a record by entering biographical information.
- Schedule a test and site: Allows registrants to select their testing location and time based on a pre-

populated schedule. The system will track the number of seats available and discontinue registrations for full testing sessions. A wait list can be established through which a registrant on the wait list will be notified should a seat in his or her desired test session open up.

- Make payment: An e-commerce feature that allows registrants to pay online either by credit card, debit card, or e-check. The system will process electronic payments through a designated merchant account. Although we strongly recommend an emphasis on payment forms that allow for immediate funds sufficiency determinations, e.g. credit cards and eChecks, it is possible to construct the system so that it allows for cash, check, or money order payments. CTB strongly recommends that the registration process not allow cash payments, as that payment type would place a greater burden on testing sites to manage the payments and enter the payment status in registrant records.
- Withdraw from/reschedule a test: The registration system allows examinees to cancel or reschedule test sessions for which they have registered. A credit that the registrant can access and use for payment during a later registration will be carried for a specified period of time. In rare cases, e.g. death or acts of God, registrants may receive refunds.
- Test administrator interface: This interface allows test sites to accept and enter cash payment information and to validate examinee age, residency, accommodations, and test completion status.

Additional Important Features of the Registration System

The TASC test registration system will also feature an FAQ page that registrants can easily reference to assist with the application process. For example, if a registrant is looking for an explanation of accommodations, payment requirements, specific requirements, or any number of topics, he or she could access the FAQ center. The FAQ center can help reduce call and email volume from registrants with questions that are easily answered through the FAQs.

System security is also a very important feature of the registration system. The proposed system will include multiple user security management functions, allowing only designated staff to access information. They can access only that information that is relevant to their role. The system will also have a secure hosting environment, with 24-hour physical monitoring, backup, and disaster recovery.

Reporting

Our online reporting system will provide the reports with various pre-configured sort options so users can view reports containing just the data elements they need. TASC will provide a number of standard reports that are focused on summarizing the results of individual test sessions.

Section 4, Subsection 4.4.14: *The Vendor should provide the technical specifications for their proposed approach to delivering CBT and any different requirements in correctional settings requiring off-line CBT.*

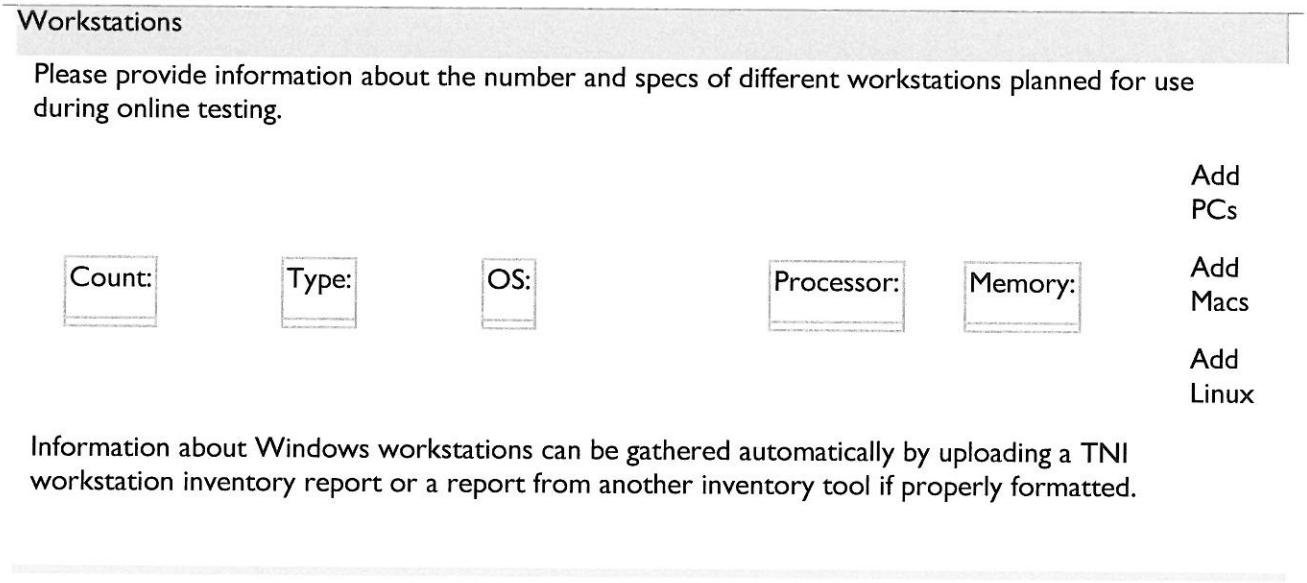
The Vendor should describe how they plan to provide technical readiness tools, utilities or processes for local testing centers to use in verifying the capacity of their technical infrastructure for conducting CBT that are compatible with the Vendor's test administration platform. The verification tools should allow the Agency to identify centers that do not have the appropriate technology to administer the test. Technical readiness tools should include but are not limited to: technical assistance manuals and annual updates of the manuals.

Site Readiness Assessment

CTB provides our Readiness for Technology Survey (RTS) application for all sites that administer TASC through computer-based testing. RTS is a web-based application that allows each local testing center to input its system specifics (hardware configurations, operating systems, number of workstations) and network information directly through a web interface. These data are used to assess the compatibility of the systems in each local testing center with the OAS Test Delivery Client as well as to evaluate the adequacy of the network capacity at each site. The results of this analysis provide key data to inform decisions about computer-based testing at local testing centers.

To minimize the effort required, much of the data entry is accomplished by use of drop-down selections, as shown in Figure 10.

Figure 10: Readiness for Technology Survey Uses Easy Drop-Down Selection



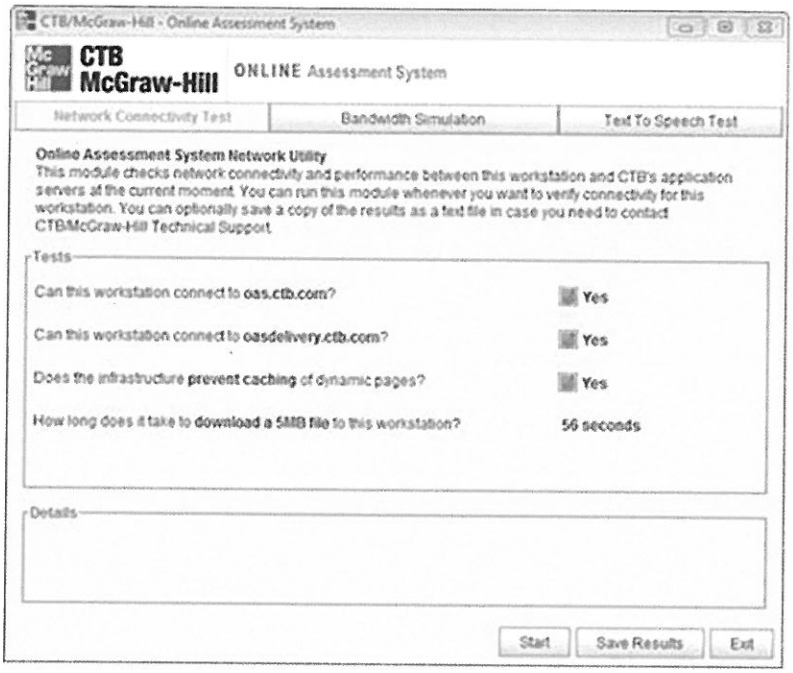
Additionally, testing sites can import a file containing an inventory of systems into RTS to further minimize the effort required to capture these data.

RTS will evaluate the information input on the systems against the benchmark configuration and provide a score card report that indicates the level of readiness of the current systems and a gap analysis between those parameters entered and the benchmark parameters. The score card will indicate an overall level of readiness color-coded in red, green, and yellow as well as a detailed level of readiness by systems, such as hardware, LAN, WAN, load capacity, and so forth.

CTB will work with West Virginia's testing sites to interpret the score cards and plan the next steps to meet full site readiness for assessment administrations.

CTB also provides an enhanced network utility tool that can be used to verify the connectivity between school networks and CTB servers. This tool, which is shown in Figure 11, also offers the ability to actively simulate a specified population of students concurrently taking a test under actual network load conditions. The simulator can be used by network personnel at the various times of the day when testing will actually take place to ensure that test scheduling and peak loads can be adjusted to ensure optimal testing conditions.

Figure 11. Network Connectivity Tool and Load Simulator



We believe our unique experience performing such readiness evaluations for our current customers who are using our OAS and the capabilities of our RTS tool place us in a position to provide quality service to meet West Virginia's needs and to provide each test site with valuable assessment and direction in preparation for their final implementation of online delivery of TASC.

Both minimum and recommended workstation requirements for Microsoft, Apple, and Linux platforms for TASC are listed in the three following tables:

Table 9. TASC and Microsoft Windows

MICROSOFT WINDOWS - Workstation System Requirements		
	Recommended	**Minimum**
Hardware & Memory	1.3 Ghz processor	1 Ghz processor
	512 MB of memory	512 MB of memory
	1 GB disk space available	200 MB disk space available
Display Monitor	Set to 1024x768 pixels	Set to a minimum of 800 x 600 pixels
	Minimum color display: 256 colors (32-bit)	Minimum color display: 256 colors (8-bit)
Operating System	Windows 2000 SP 4, XP SP 3, Vista SP1, Windows 7	Windows 2000 SP 4, XP SP 3, Vista SP1, Windows 7
Additional Software	Adobe® AIR®	Adobe® AIR®
	Java Runtime Environment™	Java Runtime Environment™
Internet Access	High-speed port or connection (i.e., T1, DSL)	High-speed port or connection (i.e., T1, DSL)
Peripherals	Mouse and Keyboard	Mouse and Keyboard

Table 10. TASC and Apple Macintosh

APPLE MAC - Workstation System Requirements		
	Recommended	**Minimum**
Hardware & Memory	Macintosh 1.8 GHz Intel processor 512 MB of memory 1 GB disk space available	Macintosh 1.8 GHz Intel processor 512 MB of memory 200 MB disk space available
Display Monitor	Set to 1024x768 pixels Minimum color display: 256 colors (32-bit)	Set to a minimum of 800 x 600 pixels Minimum color display: 256 colors (8-bit)
Operating System	Mac® OS 10.4.8, 10.5.4, or 10.6	Mac® OS 10.4.8, 10.5.4, or 10.6
Additional Software	Adobe® Flash® Player 9 Java Runtime Environment™	Adobe® Flash® Player 9 Java Runtime Environment™
Web Browser	Safari 2.0 or Firefox 2.0	Safari 2.0 or Firefox 2.0
Internet Access	High-speed port or connection (i.e. T1, DSL)	High-speed port or connection (i.e. T1, DSL)
Peripherals	Mouse and Keyboard	Mouse and Keyboard

Table 11. TASC and Linux

LINUX - Workstation System Requirements		
	Recommended	**Minimum**
Hardware & Memory	1.3 GHz processor 512 MB of memory 1 GB disk space available	1.0 GHz processor 512 MB of memory 200 MB disk space available
Display Monitor	Set to 1024x768 pixels Minimum color display: 256 colors (32-bit)	Set to a minimum of 800 x 600 pixels Minimum color display: 256 colors (8-bit)
Operating System	Linux Fedora Release 11 (Red Hat), Open SUSE 11.1, or Ubuntu 9.04	Linux Fedora Release 11 (Red Hat), Open SUSE 11.1, or Ubuntu 9.04
Additional Software	Adobe® AIR® Java Runtime Environment™	Adobe® AIR® Java Runtime Environment™
Internet Access	High-speed port or connection (i.e. T1, DSL)	High-speed port or connection (i.e. T1, DSL)
Peripherals	Mouse and Keyboard	Mouse and Keyboard

The network bandwidth requirements for the test delivery client is extremely modest; a one Megabit (symmetric) connection to the Internet not excessively used by other applications should support 200 or more concurrently active OAS test delivery client workstations.

OAS (Online Administration System), the platform through which TASC is delivered online, has already supported multiple successful operational administrations, with sustained instantaneous concurrency in

excess of 45,000 students, for student populations of more than 250,000. Further, CTB has conducted capacity and performance testing of the platform and demonstrated both sustained instantaneous concurrency of 125,000 students and delivery of up to 2,000,000 tests in a day by the platform.

We take multiple measures to ensure security and guarantee student test results are never lost:

1. First, all test content is transferred to the client once prior to starting the test and initiating timing. The content is encrypted and compressed so that students and or administrators cannot view it outside of the test client.
2. Second, all traffic to/from the client occurs over SSL utilizing 128-byte encryption. CTB utilizes certificates that are signed by a reputable and independent signing authority.
3. Third, examinees must enter three pieces of information: username, password, and test access code. These three fields uniquely identify an examinee and the test section to which the examinee is assigned. Passwords and test access codes are generated with each test section, so examinees do not have access to parts of the assessment prior to their designated administration period.
4. Fourth, if at any time the client determines that an abnormal delay in navigation is occurring within the test due to network interactions, test and item timing are suspended and a notification is presented to the student. If the condition clears and does not re-occur frequently, the test proceeds as normal. If a delay is sustained or repeated, however, the test is suspended, and the examinee can exit the secure testing client. The examinee can log in again and resume the test immediately, from the item where he or she left off, on any other workstation or on the same workstation if and when the local network performance or connectivity problem is resolved.

Correctional Facilities:

TASC is delivered online using CTB's OAS, which is the same platform we use for TABE Online and other high-stakes tests. Currently, CTB's online delivery system requires an active connection to the Internet. We do this to ensure that all results from the user's workstation are captured on our servers. After 2014 we plan to support an offline/locally cached mode of our assessments. In the interim, we will provide paper/pencil assessments for correctional facilities and other sites without online access.

The proposal should additionally address the following:

(a) The proposal should describe in detail the test system specifications for the Proposer's recommended test administration platform, which may include:

- *Test access control*
- *Administrative access control*
- *Security or test content and test-taker data*
- *Desktop security during testing*
- *Wireless networking*
- *Network availability*
- *Data interoperability*

Computer-Based Test Site Workstation Preparation

The computer-based TASC uses a locked-down application running in a full-screen "kiosk" mode. This application is installed as a thick client or runs in a locked-down web browser on the examinee's workstation, making it impossible for the examinee to minimize the test to navigate to other files,

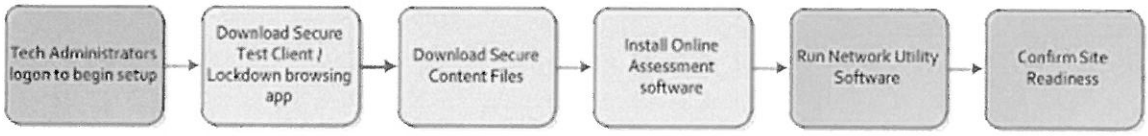
programs, or Internet sites. The examinee log-on and test assignments are pre-defined so that examinees cannot view or gain access to any test/item content other than that allocated for the testing session. They can access the test only after successful authentication of the logon credentials.

Administrative staff members receive installation documentation that guides them through the system install step-by-step and provides links to the appropriate websites to check the versions of the Java, Flash, or Adobe software that are needed to deliver test content on Windows, Mac, or Linux platforms. A "self-install" process that can be configured to automatically download and install the test client upon first access is available. This installation application can also be controlled by test center administrators; it can be configured to install based on certain network required activities.

The secure TASC client will be installed locally at the test site. Depending on the network configuration, system administrators can mass deploy the installation executable to workstations with standard systems management tools. A non-interactive extraction process will place the client files into a common application data directory, and the unpacked client can then be immediately run from this location. All final installation processes are activated when the online assessment is accessed for the first instance. Full installation at that point is extremely quick and has no real discernible time delay in the application startup.

Test content is downloaded and cached to the student workstation over secure HTTPS protocols. This content is encrypted for further security. The content is decrypted only at the time of delivery of an item to the student. Additionally, once the student has completed the testing session, all content is automatically removed from the workstation. The following Figure 12 shows the process to set up a secure workstation.

Figure 12. Steps to Creating a Secure Workstation



Taking TASC Online

CTB's Online Assessment System is a mature online test administration system that employs industry-standard best practices to ensure the security of the test content, the testing experience, and the student reporting data. Originally developed in 2005, OAS has been continuously improved to provide the best possible testing experience for students, educators, and administrators.

The OAS test delivery client software has a rich presentation layer, designed to replicate the paper-and-pencil test taking experience of viewing both the text/graphic and item responses at a glance. Items are presented as a single item per screen, along with the associated graphics or passages, as shown in the following Figures 13 and 14. All answer choices are supplied on the screen along with the item text and graphics, making examinee interaction simple and efficient. When an item has a particularly long element (such as a reading passage), the screen is split so all responses remain on the screen and a scroll bar is added to the prompt section for easy viewing.

Figure 13. Example Mathematics Item - Multiple-Choice

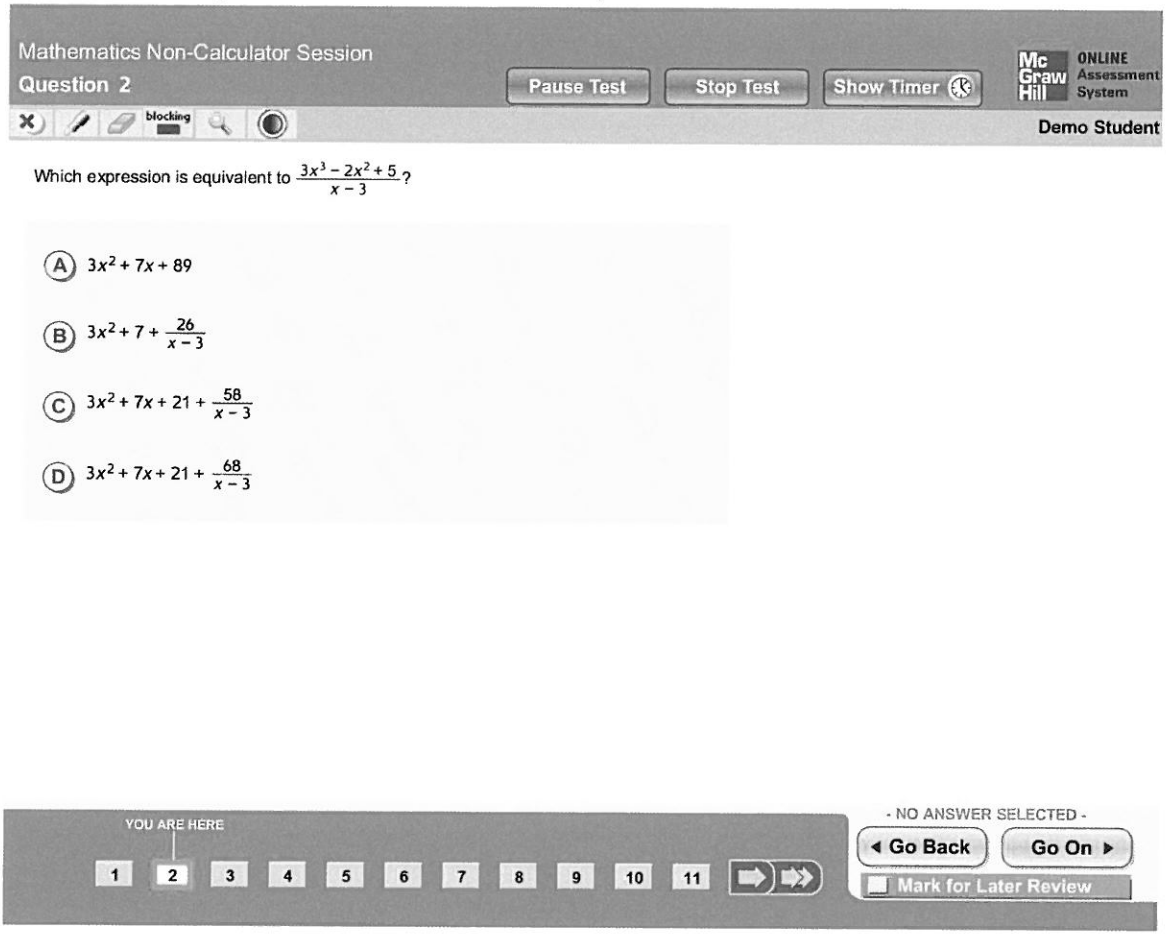
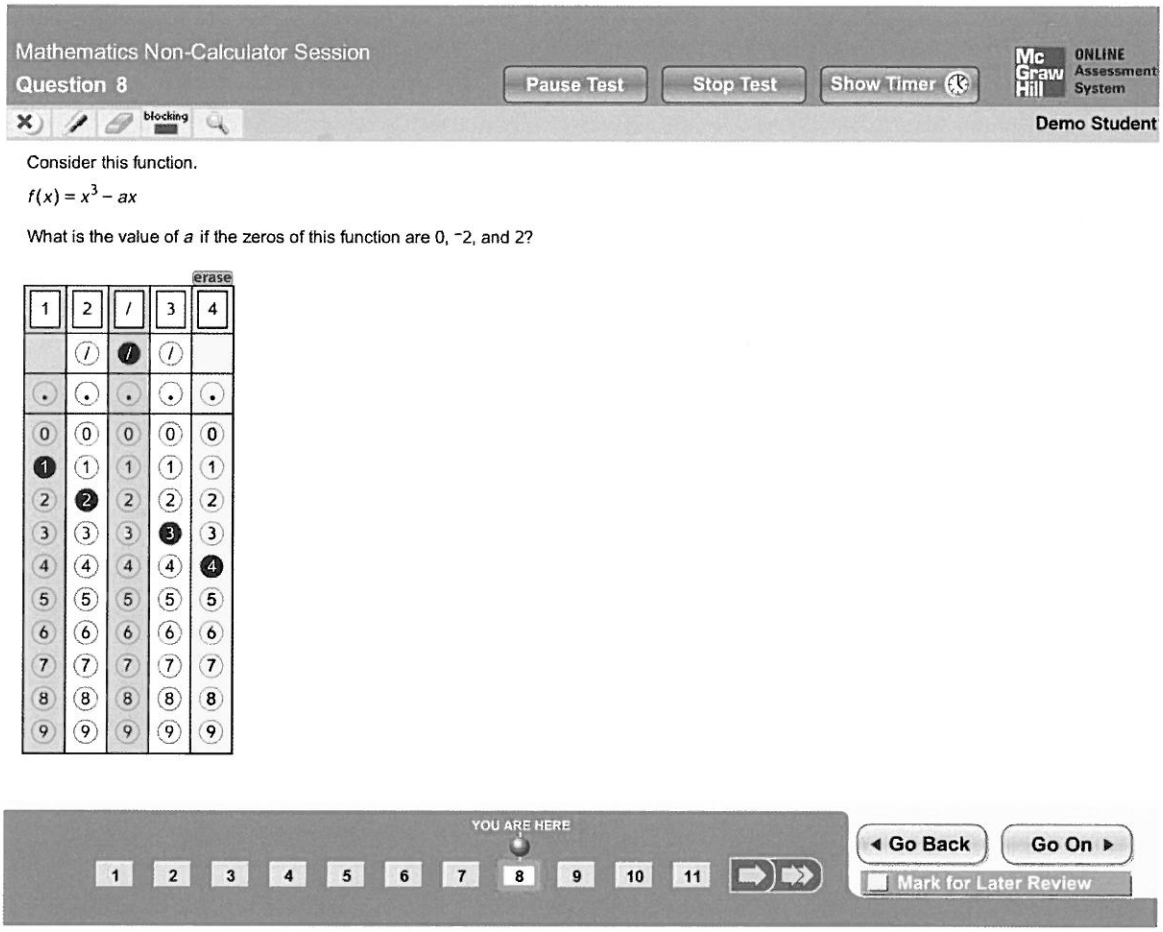
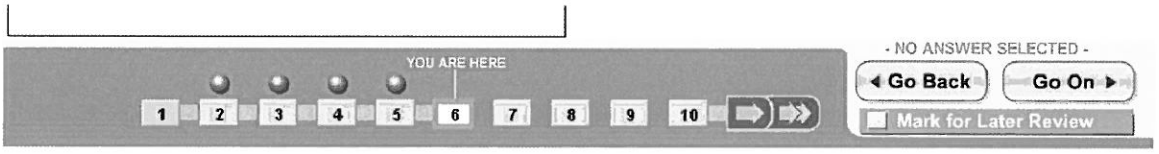


Figure 14. Example Mathematics Item - Gridded-Response



The student's progress through the test is tracked and presented in a progress bar at the bottom of the screen, which is shown in the figure below. Examinees can navigate back to review items previously completed or mark items for later review with the click of a button. A blue dot displays above each answered item, the item number is highlighted for those item marked for review, and a "You are here" message indicates which item is currently being viewed as seen in Figure 15.

Figure 15. Progress Bar



Prior to exiting the test, examinees are provided with a summary of items that are unanswered or that they flagged for review, and they are encouraged to return to those items to complete them before exiting, if time remains.

Manipulatives

Features such as text highlighters, rulers, formula reference cards, and other manipulatives are available, if appropriate, for the test being given. The online test is identical to the paper test, so any manipulatives needed for the items will also be available on paper. The manipulatives are presented in a tool bar at the top left of the item screen, as shown in the following Figure 16 and Figure 17, and can be selected by simply clicking on the required tool.

Figure 16. On Screen Calculator

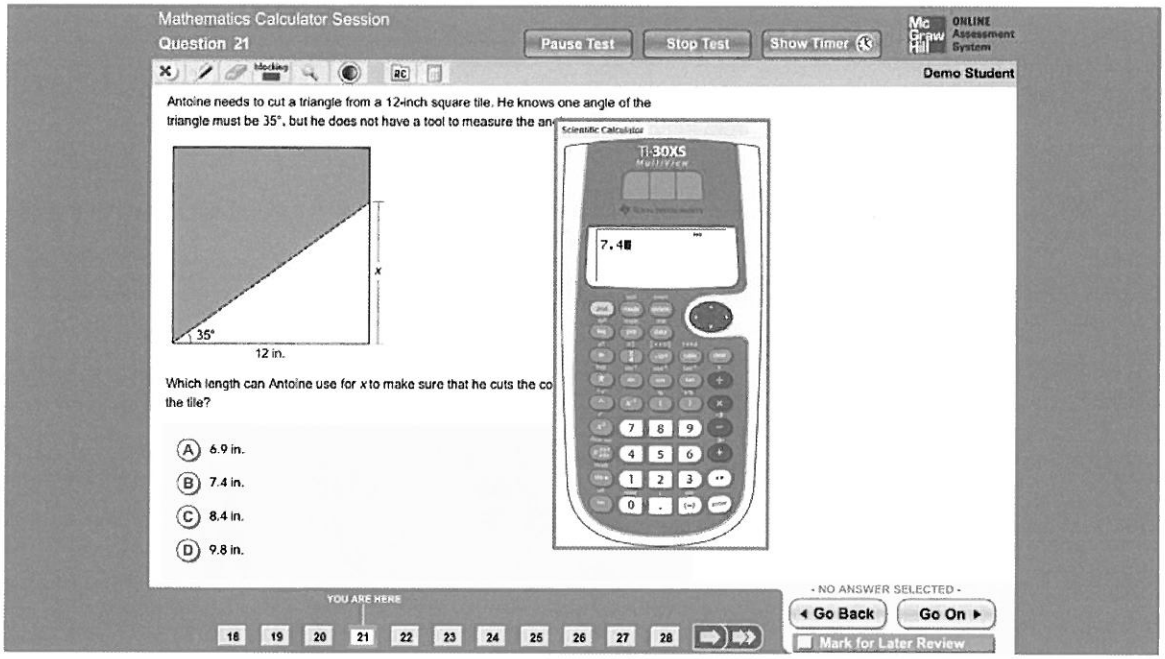
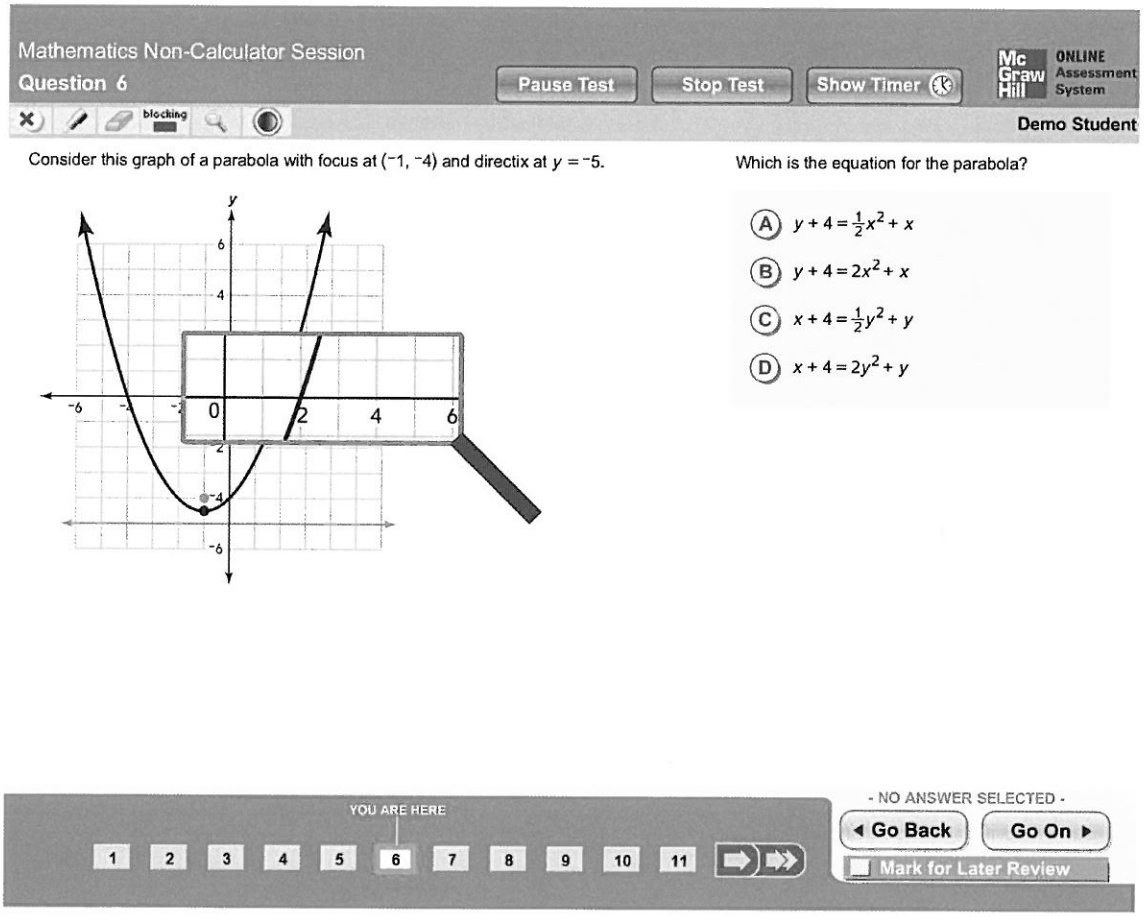


Figure 17. On Screen Magnifier



OAS provides additional features that assist the examinee during testing. An Option Eliminator allows examinees to visibly mark out item responses they have determined are not correct. The Option Eliminator is configurable, allowing for several positions for the eliminator in relation to the answer designator—either on top of the answer choice or on the left side of the answer choice. The following Figure 18 shows the option eliminator.

Figure 18. Option Eliminator

A highlighter permits examinees to highlight text, images, and the white space between words or lines of text., as shown in the following Figure 19.

Figure 19. Highlighter

An eraser, shown in Figure 20 below, is also provided to remove Option Eliminator or Highlighter markups.

Figure 20. Eraser

structures in an

Access for Examinees with Disabilities

OAS has been built to meet both the spirit and intent of Section 508 of the Americans with Disabilities Act and also the specific application of these guidelines by each state. The technical innovations present in our system provide an opportunity to create greater access to information for people with disabilities that ever before. Through the use of a text reader, for example, a literacy-impaired or dyslexic examinee can take the same test with the same content as do other test takers. The ability to increase font size and to change font and background colors enables visually-impaired individuals to understand and navigate through an assessment alongside the other test takers.

The OAS system has accommodations for Large Print versions, including 18 point font, scaling of graphics, and magnification. Our platform is seamlessly integrated for screen reading. This approach was carefully chosen to support high-stakes tests and to ensure that examinees have an equivalent experience regardless of where they are testing. The delivery client works with the screen enlargement and other visual features of MAGic and ZoomText. Text enlargement, image/art zooming, and accessible color settings are also available within the online delivery software itself. OAS incorporates its own text reader functionality, which is hosted in the cloud. Available to any test taker as a test accommodation, the software provides screen reading (with a speed-adjustable, synthetic voice) of all test content for individuals with accommodations on any workstation without a need for separate software installation or licensing.

All accommodations are configurable to a specific examinee's accommodations needs.

Additional Features

CTB provides a practice environment where test takers can familiarize themselves with the online test delivery platform.

Assessments can be defined as single or multiple sessions. Each session can be configured to contain any number and types of items and can be timed or untimed. Each session is treated independently for determining final session completeness. Examinees may not begin the second session until the first session scheduled is complete. All items responses for each session are exported intact to the main reporting database.

A selection of planned significant general enhancements to the OAS platform over the next year includes these:

- New read-aloud speech synthesis technology with improved voice quality
- iPad tablet support for test delivery
- IMS standards-based test content import/export capabilities
- Elimination of Adobe AIR pre-requisite for test delivery client software
- "Clicker" integration (Turning Technologies and others) for paperless "offline" response capture
- State-of-the-art adaptive testing engine
- Immediate hand-scoring service for online-captured text responses
- Android tablet support for test delivery
- Support for additional technology-enhanced interaction types

(c) Administrative System

The administrative system used to manage the delivery of tests must be capable of supporting the various aspects of the assessment program. These might include data, test, and security management. In the proposal, the proposer should describe the administrative system for the planned test administration platform.

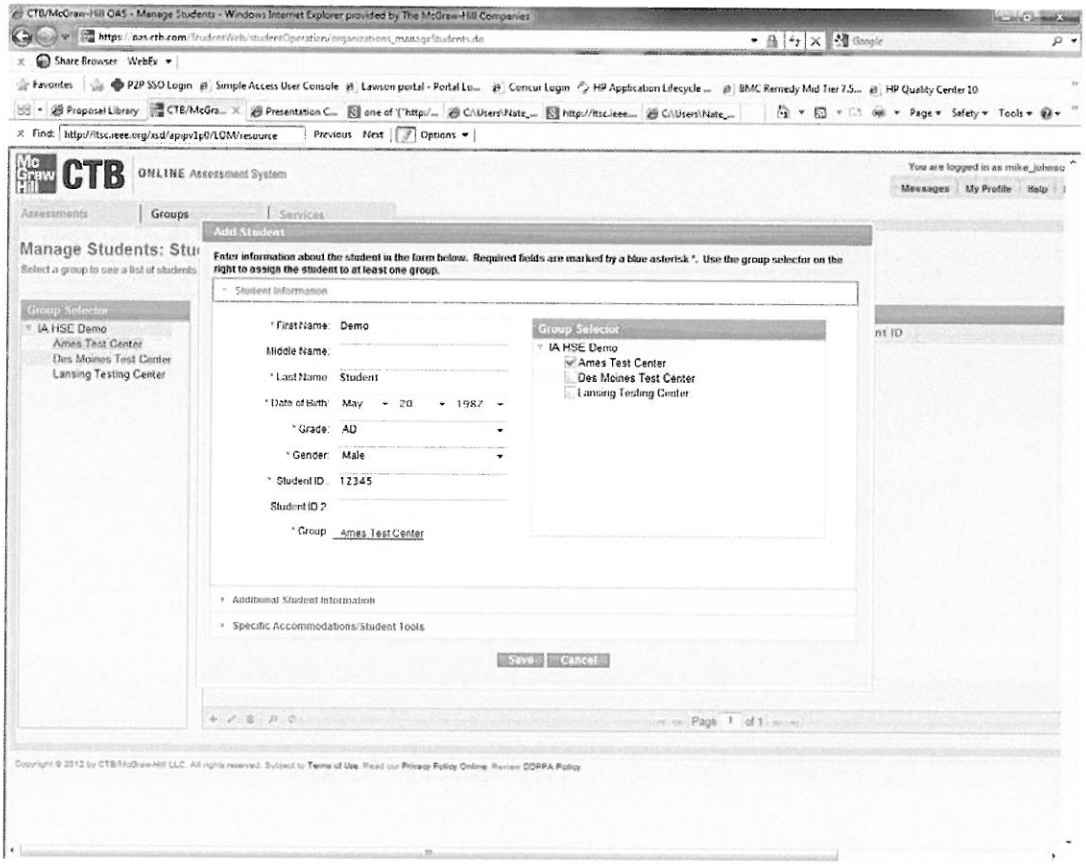
TASC Administration Features

OAS has a full administrative component (web application) that will allow local establishment of user roles and authentication for access to the system, functionality for student and staff registration, test scheduling and assignment, testing status and review, and final reporting of student raw scores and overall testing statistics.

OAS also offers robust administrative functions for adding, updating, or deleting examinees. Test takers will be added to the test delivery system and assigned to appropriate test sessions automatically when they register.

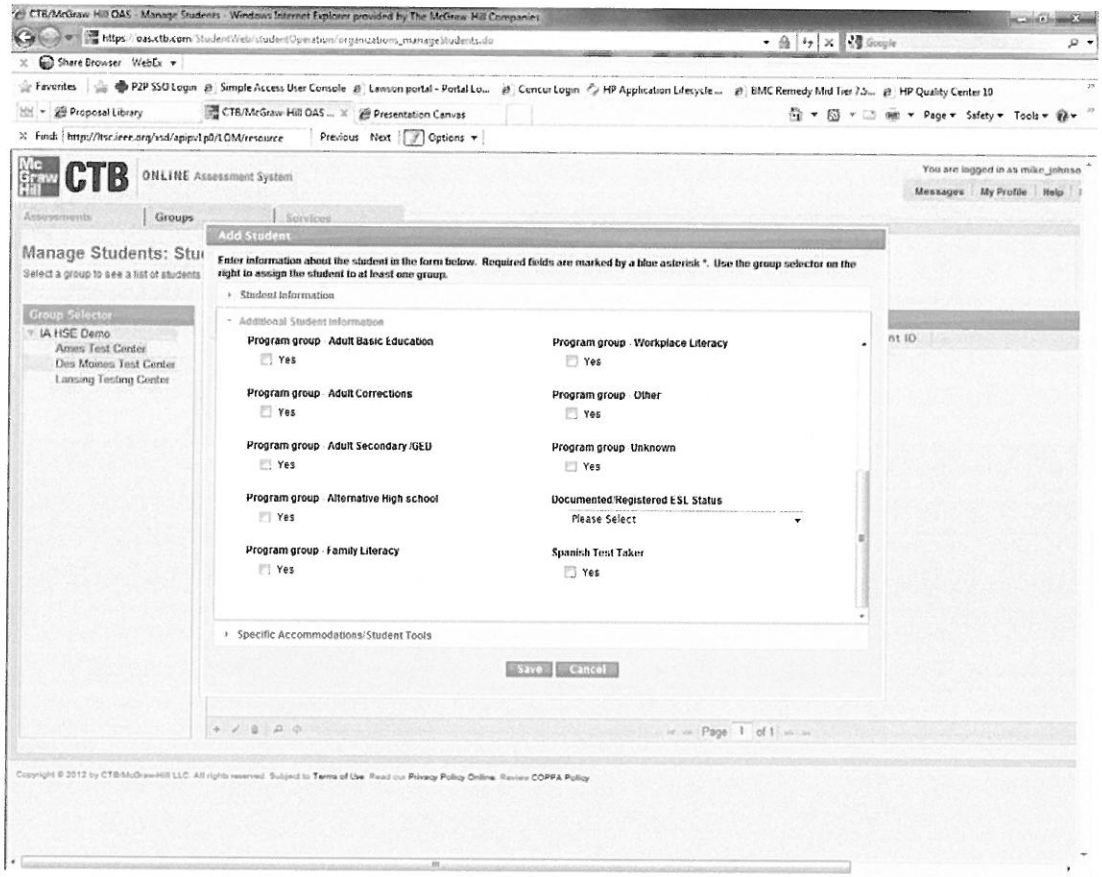
Once registered students are added to the system and administrative users have access to view, edit, and update examinee profiles through a direct and very intuitive interface. The examinee profile is divided into three sections. The top section, Student Information, contains basic profile information such as name, date of birth, gender, etc. and is shown in Figure 21 below.

Figure 21. Student Information Section of the Student Profile



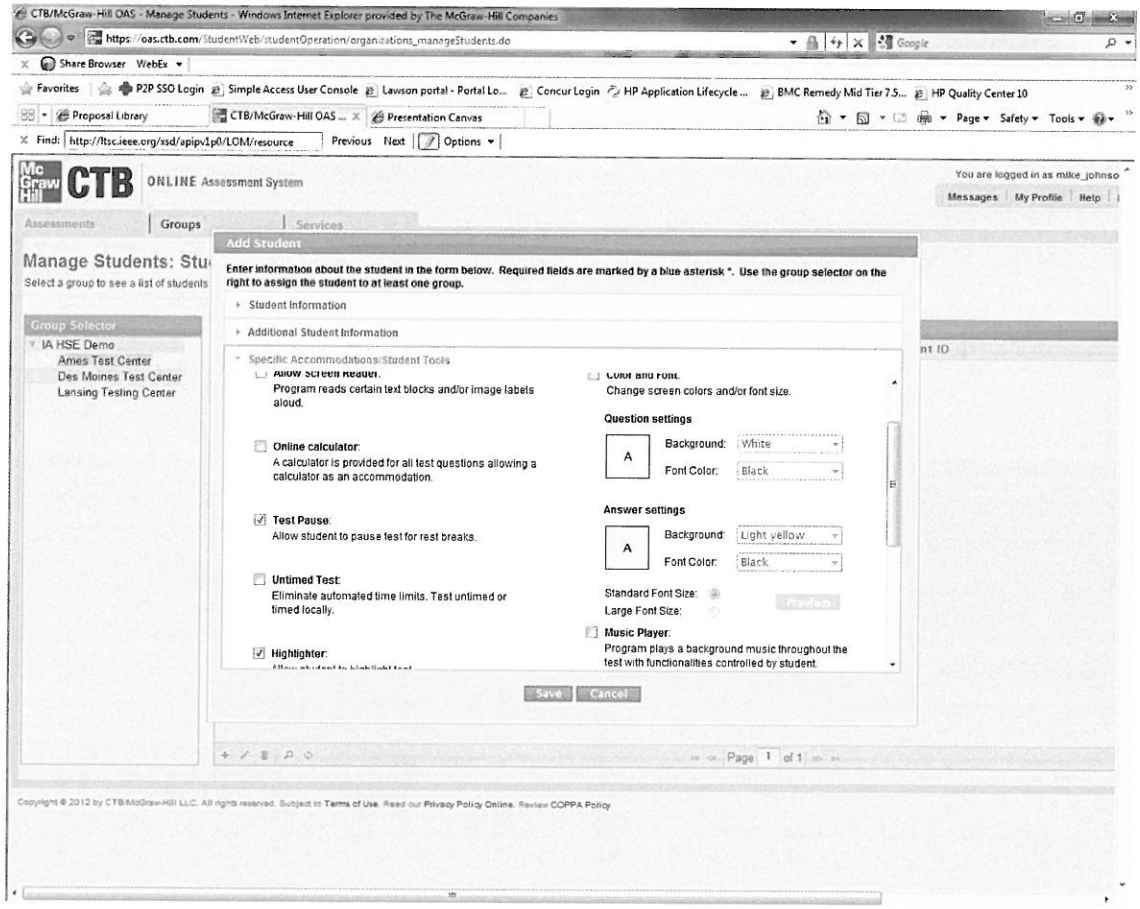
The middle section, Additional Student Information, contains demographic and accommodations information such as ethnicity, Section 504, etc. that can be defined and configured by each customer. This section is shown in the following Figure 22.

Figure 22. Additional Student Information Section of the Student Profile



The bottom section as shown in Figure 23. Specific Accommodations, contains information on any specific testing accommodations required for the examinee and is shown below.

Figure 23. Specific Accommodations Section of the Student Profile



Administrative users, based on their access rights, can create and maintain test session data in OAS and generate examinee login credentials. OAS guides the user through the necessary steps of selecting the test, specifying options needed, selecting the examinees, saving the setup, and printing the login credentials for the test takers. These steps are illustrated in the following Figures 24-26.

Figure 24. Test Scheduling

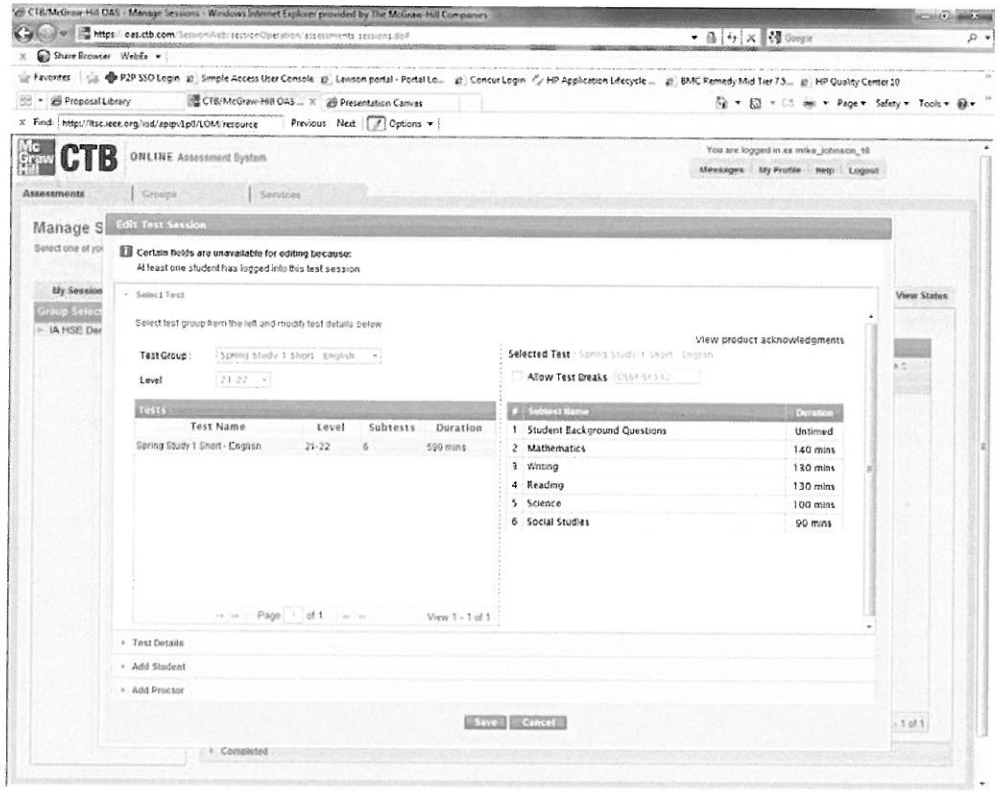


Figure 25. Test Scheduling

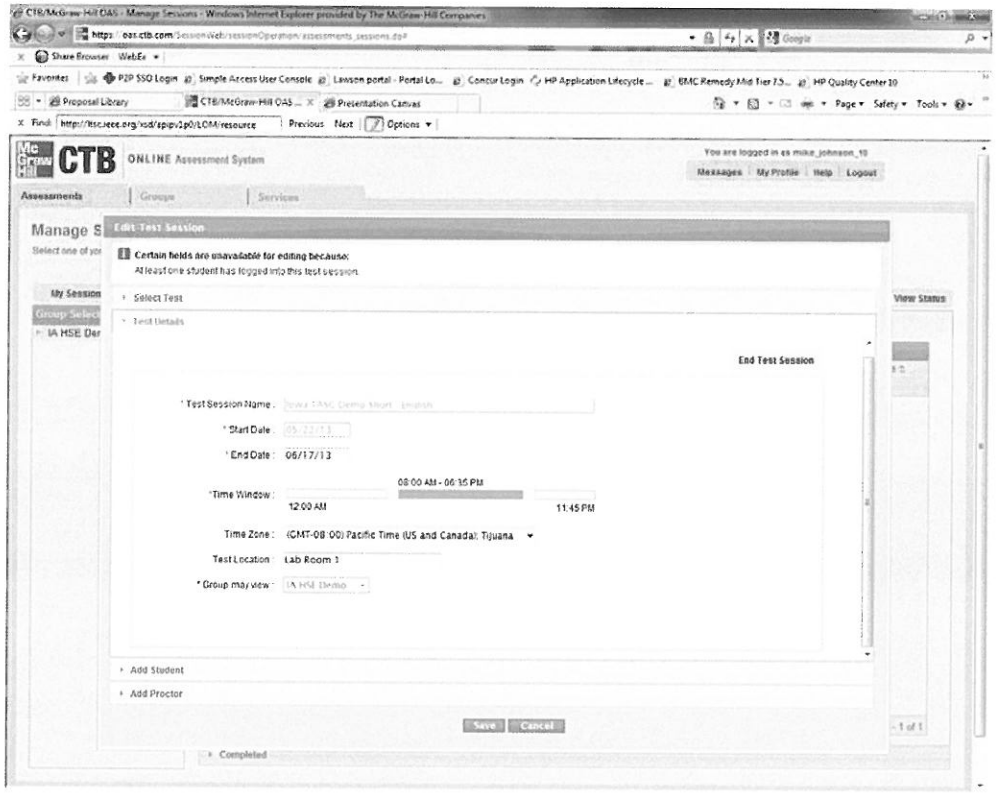
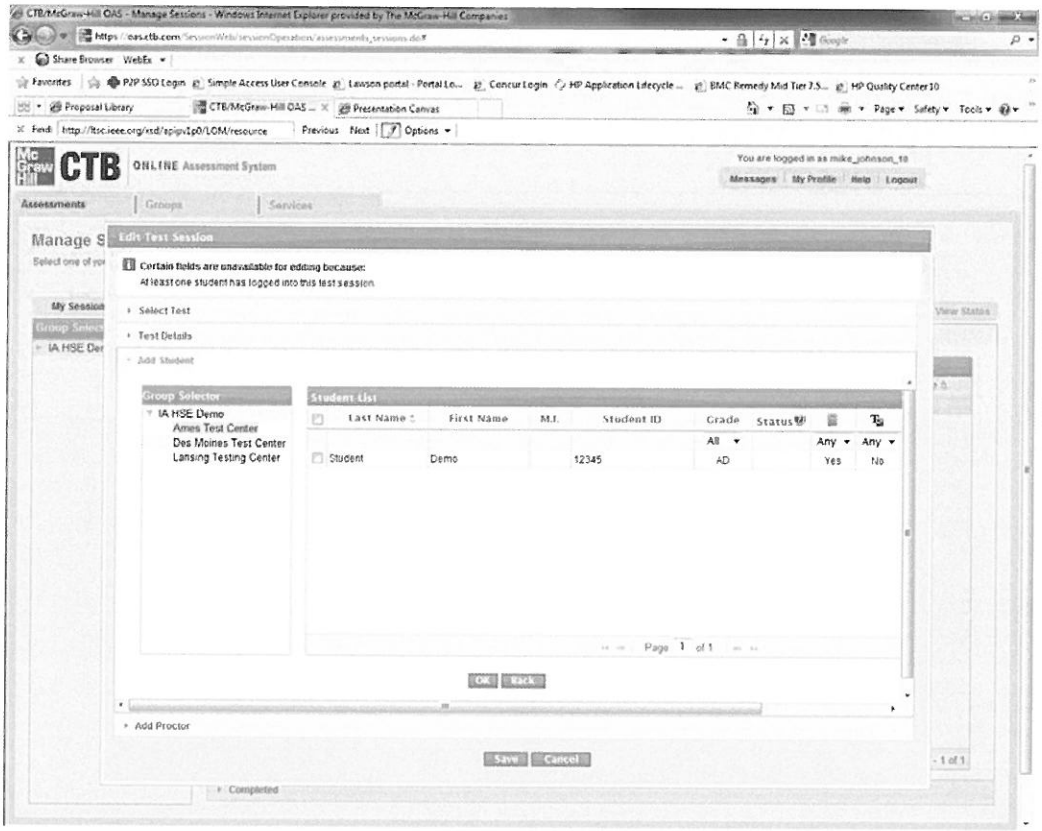


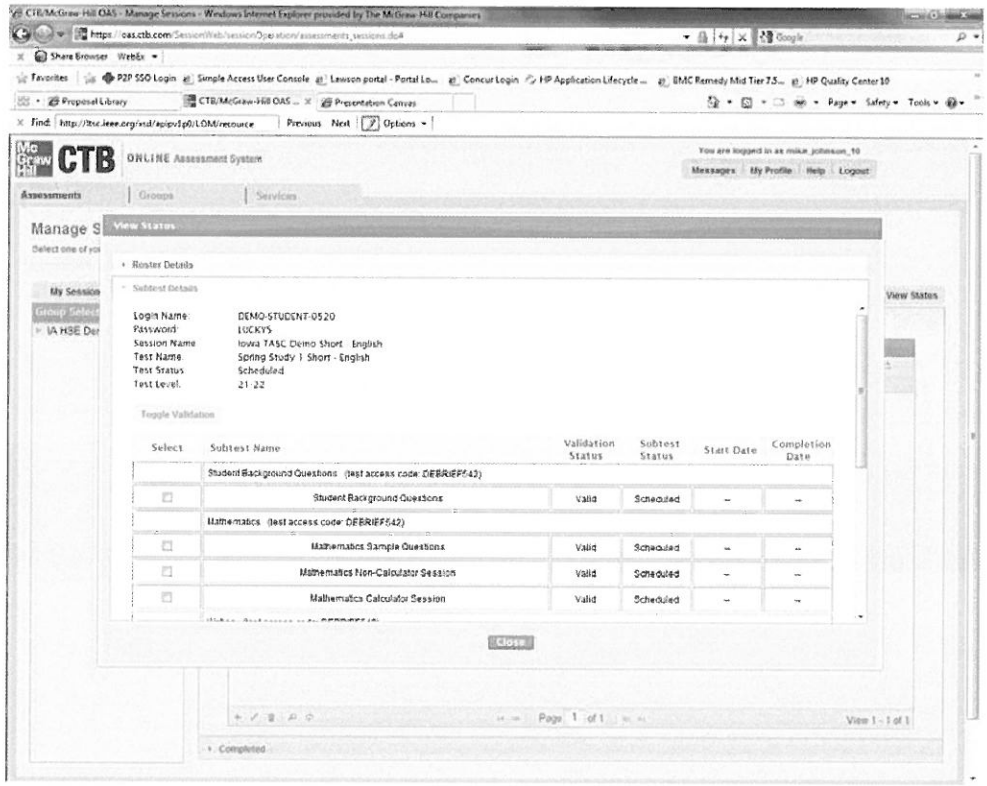
Figure 26. Test Scheduling



The administrative user's home page contains a display of every test session to which the user has access, including past, current, and future administrations. The user can select any test session and View Status to see the current testing status of every examinee assigned to the test. This information is available in real time; clicking the refresh button will provide an immediate update of the list. As shown in the following figures, the status provides details about which examinees are still testing, which have a test that is being scored, and which have completed the test.

Figure 27. Program and Session Status

Figure 28. Program and Session Status



Additionally, the administrative user can, if appropriate permissions are available, invalidate an examinee's testing session from the Test Status screen, should it be required.

The system will also have, via administrator access to the registration system, the following administrative features for test site and registration management:

- Executive Dashboard: Allows CTB to manage and provide real-time registration reporting on either a scheduled or ad hoc basis.
- Session Manager: Provides the interactive functionality required to monitor space at test sites for scheduled test sessions, as well as information about examinees on wait-lists.
- Registration Management Center: Designed for administrative support. For example, it will allow CTB or registration sites to proxy-register examinees who do not have computer access, process accommodation information to ensure proper materials are sent to the sites, and so forth.
- Auto Email Notification Manager and Message Center: These two features work in tandem to manage both automated and on-the-fly email communications. For example, emails for registration confirmations, outstanding payment information, instructions for testing day, and ad hoc communication between administrators and registrants are all processed here.

Section 4, Subsection 4.4.15: *The Vendor should describe the process to provide a plan and deliver an annual (January — December) progress report including student data and an annual fiscal (July 1-June 30) progress report. The Vendor should provide this report in an electronic format such as Excel.*

The Vendor should describe in detail what reports can be provided to the Agency and also include and describe in detail the formats to export data files to the Agency.

Report Generation

Our online reporting system is called PRISM and will provide the reports with various pre-configured sort options in addition to ad-hoc reporting tools that allow the user to create reports containing just the data elements they need, in the order and format they desire. Authorized users can also produce downloadable data files containing ad-hoc reporting results for analysis. The standard reporting is focused on summarizing results of individual test sessions. It provides various reports such as HSE dashboard, Student rosters, Candidate reports, Student search features and so on.

Data Transfer of Results to WVDOE Using FTP Site

The OAS application uses no special software for exporting, importing, or otherwise manipulating data owned by WVDOE. OAS complies with various data security and privacy regulations such as FERPA. All data transmitted to OAS occurs over HTTPS using 128-bit SSL communications. In cases where files are imported or exported, CTB maintains a secure site and can transport data over SFTP. CTB does not transmit any data over non-secure, open Internet connections.

CTB will work with WVDOE to determine the format and method of data transfers for West Virginia's high school equivalency testing program.

Section 4, Subsection 4.4.16: *As part of this project, the state seeks to be in contract with a Vendor that will directly and fully participate in the transfer of the all student data and testing information to the state at the conclusion of the contract (either through the successful completion of the contract period or through termination). Successful transition should include, but not be limited to, demographic information, all student data and testing information. All student data and test information, testing center details, personnel forms and approval process, accommodating tracking and ordering in all forms developed for and used in conjunction with this project shall remain the property of WVDE in all phases of the transition. All deliverables become property of the WVDE in an electronic, editable form (e.g., Stamped CD with all student data and testing information).*

The Vendor should provide a detailed schedule for the transition of tasks and events and a timeline for the transition of materials and procedures. The process should allow an effective and seamless transition between Vendors annually and at the end of this contract. The Vendor should include a list of all computer programs and software tools necessary to allow an end user to read and export any data provided by the Vendor under this contract.

The Vendor's proposal should describe in detail the process of transferring test results, student data, candidate demographic data, and reports.

CTB will work with the Agency to determine the most appropriate method for delivering data files on a regular basis. We have several solutions to this requirement that we use with our client states. Our most basic approach is to use a secure FTP server (hosted at WVDOE or CTB). A member of the program team will own the task of transferring the results data files to this site on a scheduled, regular basis.

If the WVDOE requires a web-based solution, we can deploy our Online File Exchange (OLFX) web--based application, or we can set up a secure Microsoft SharePoint site for file exchange.

For this proposal we are assuming that the FTP solution will suffice. If the Agency desires a web-based solution, we will need to create a change request and the State may incur additional charges for those solutions.

Whichever solution is ultimately selected, we will configure and deploy the appropriate technology during the program startup phase, and document all agreed upon systems and processes to facilitate any transition among vendors.

Section 4, Subsection 4.4.17: *The Vendor should describe in detail how their solution will allow for the local agencies (LEA) to purchase the tests directly from the Vendor (at the cost agreed upon in the RFP). This should include a timeline from the submission of a purchase order to receiving of the test (PBT and CBT),*

The Vendor is to describe how LEA's should place initial purchase order that will guarantee that PBT should arrive at the test centers before December 15, 2013.

CTB will provide to the LEAs an order form for TASC materials and services where rates will match those agreed upon via the RFP process. The LEA will submit a purchase order with the CTB order form via mail, email, fax, or by calling our Order Processing group:

CTB/McGraw-Hill Order Processing
PO Box 881002
Indianapolis, IN 46208-1002

CTBorders@ctb.com

Phone 800-538-9547
Fax 800-282-0266

CTB will ship materials orders typically within 3-5 business days of CTB's acceptance of the order; shipping duration to West Virginia is typically 2-3 days. CTB will provide access to CBT testing upon CTB's acceptance of the order.

CTB recommends LEAs submit an order by December 1, 2013 to ensure receipt of materials prior to December 15.

Section 4, Subsection 4.4.18: *The Vendor should describe invoicing on a quarterly basis that should include but not limited to: itemization by date, test center and only actual test administrations, with no charge for no-shows. The Vendor should have the ability to accept electronic deposits.*

CTB will invoice each LEA within thirty days of the end of each quarter for examinee attempts. An attempt is considered a partial or full test response. CTB will not invoice for no-shows. A report will accompany the invoice and include itemization by date and test center. CTB has the ability to accept electronic deposits.

Attachment B: Mandatory Specification Checklist

List mandatory specifications contained in Section 4, Subsection .5:

> ***Section 4, Subsection 4.5.1:*** *The vendor shall provide to the Agency a high school equivalency assessment in both paper and computer based formats that is validated and reflects the skills necessary to master a high school diploma. This assessment will provide for the individual adult learner, the dropout at least seventeen (17) years of age or the Option Pathway student at least sixteen (16) years of age, the basis for the Agency to issue the West Virginia High School Equivalency Diploma.*

CTB's proposed high school equivalency assessment, TASC, will be provided in both paper-based and computer-based formats. TASC will provide quality, reliable information to the WVDOE for use in awarding West Virginia High School Equivalency Diplomas.

> ***Section 4, Subsection 4.5.2:*** *The Agency shall be the sole issuer of the West Virginia High School Equivalency Diploma.*

CTB acknowledges that only the WVDOE will issue West Virginia High School Equivalency Diplomas.

> ***Section 4, Subsection 4. 5.3:*** *The assessment data shall be owned by the Agency and all data will be provided to the Agency by the Vendor.*

CTB acknowledges that the WVDOE will maintain ownership of all assessment data, and confirms that these data will be provided to the Agency.

> ***Section 4, Subsection 4.5.4:*** *The assessment must be aligned with the West Virginia's Next Generation Content Standards (West Virginia's Customized Common Core State Standards), http://wvde.state.wv.us/next-generation.*

TASC is aligned to West Virginia's Next Generation Content Standards. Please see details of the alignment described in Section 4, Subsection 4.4.8 of Attachment A.

> ***Section 4, Subsection 4. 5.5:*** *The vendor will provide a databank to house testing center data, such as, but not limited to, testing center details, personnel forms and approval process, inventory, accommodation tracking, ordering, etc., to be accessible daily from 7:00 A.M. to 7:00 P.M.*

CTB will house and make accessible testing center data as specified by the Agency.

Section 4, Subsection 4.5.6: *All materials shall be held strictly confidential and should not be copied, duplicated, or disseminated in any manner or discussed with anyone other than the persons authorized by the Agency.*

CTB will maintain confidentiality of all information generated from the West Virginia High School Equivalency program.

Section 4, Subsection4. 5.7: *The Agency's test centers shall reserve the right to return, any of the said paper based tests which are torn, mutilated or otherwise unusable, to the bidder. The Vendor shall replace all such returned tests and materials free of charge immediately upon the return thereof during the contract year, The Vendor will have no obligation to replace tests and materials free of charge when the damage has been caused by improper administration or when the loss has not been reported in accordance with the Vendor's published procedures*

CTB will accept return of damaged materials in accordance with procedures initially communicated to test centers and the Agency.

By signing below, I certify that I have reviewed this Request for Proposal in its entirety; understand the requirements, terms and conditions, and other information contained herein; that I am submitting this proposal for review and consideration; that I am authorized by the bidder to execute this bid or any documents related thereto on bidder's behalf; that I am authorized to bind the bidder in a contractual relationship; and that, to the best of my knowledge, the bidder has properly registered with any State Agency that may require registration.

CTB/McGraw-Hill LLC
(Company)

Mark Limbach, Vice-President - Finance
(Representative Name, Title)

Phone: 831/393-6336 Fax: 831/393-6635
(Contact Phone/Fax Number)

September 5, 2013
(Date)

Appendix 1: Résumés

We include résumés for the West Virginia High School Equivalency Assessment key staff members from the CTB team in alphabetical order. The reference table of contents is provided for your convenience.

Laura Agrusti

Academic Background

M.A. Curriculum, Instruction, and Supervision, Rider University, Lawrenceville, NJ

B.S. Spanish, The Pennsylvania State University, State College, PA

Professional Experience

CTB/McGraw-Hill, New York, NY: 2011 to present

Manager of Professional Development Services: Recruit, hire and manage a team of 10–15 freelance staff, consultants and subject-matter experts to provide onsite and web-based trainings for customers on 5 digital formative and summative assessment products ranging from early childhood to adult education; we discuss the unique needs of the client with the account contact, plan an agenda, develop the training materials, lead the sessions, collect evaluations, and provide follow-up support and maintenance. Work closely with internal functional areas including Finance, Research, Product Management, Publishing, Marketing and Sales to ensure teams are working together to create a high-quality product for customers; participate in regularly scheduled Scrum Sprint planning meetings to discuss product enhancements. Prepare and manage professional development budgets and instructional plans for 5 digital formative and summative assessment products across the country as well as several large-scale contracts including New York City and the State of Washington; engage in weekly internal and customer-facing meetings. Develop and oversee the design and implementation of print, digital, and live professional development resources and workshops based on current research and industry trends; topics include Data Analysis, Performance-Based Learning, Linking Assessment to Instruction, and Common Core. Support sales team in meeting or exceeding revenue goals; respond to RFPs. Maintain the CTB/McGraw-Hill mission and brand in all areas related to professional development and training.

BrainPOP, New York, NY: 2009 to 2011

Manager of District Relations: Provided onsite professional development training for teachers and administrators throughout the world. Provided weekly webinars and web chats in order to provide support to teachers and administrators. Wrote entries on the BrainPOP Educators blog which provided strategies for utilizing BrainPOP in the classroom. Managed the accounts for all New York and New Jersey clients. Provided sales presentations to potential clients. Offered subscription options based on the needs of each individual district. Designed sales estimates, maintained purchasing contracts with BOCES and FAMIS. Attended sales conferences throughout the country and managed company display and promoted BrainPOP's brand and products as well as provided training sessions for conference participants.

Innovative Designs for Education, Ramsey, NJ: 2007 to 2009

Instructional Strategies Specialist: Transformed the structures of a large urban school district by designing organizational development activities and building professional learning communities in order to enhance the effectiveness of the staff and community. Provided onsite

(continued next page)

Laura Agrusti (page 2 of 2)

Professional Experience (continued)

coaching and staff training workshops to schools throughout NY and NJ. Discussed the school's needs with all stakeholders, researched current literature, developed curricular materials, created agendas, and facilitated workshops for teachers and administrators on topics such as technology infusion, data-driven decision-making and SMART goals. Created online and reproducible classroom materials for teachers and administrators based on current educational research for the IDEportal. Managed company display and exhibited services and materials at education tradeshows. Wrote articles for monthly newsletter called The Update, also wrote proposals and managed the individual needs of diverse schools in both urban and suburban settings. Maintained database to monitor progress and to facilitate communication and sharing of documents.

Lawrence Township Public Schools, Lawrenceville, NJ: 1997 to 2007

Teacher and Assistant Principal: Supervised 15+ teachers as Principal. Maintained budget for materials; served as liaison to the parents, community members, and the school; managed lesson planning; evaluated staff. Designed and implemented the World Languages schedule and curriculum for grades K-6 which included elementary schools and upper elementary schools. The district became a model program in the state of NJ. Engaged in the organizational design and development of the school and district by implementing Smaller Learning Communities (SLC's) and Professional Learning Communities (PLC's) to promote knowledge sharing between experienced and novice employees and create a more personalized experience for students.

Janice Barth

Academic Background

Ed. D. Educational Leadership / Curriculum & Instruction Minor, West Virginia University, Morgantown WV

MS Special Education, Gifted Education, Marshall University, Huntington, WV

BA Social Studies, Marshall University, Huntington, WV

Professional Experience

CTB/McGraw-Hill, Monterey, CA: 2010 to present

State Solutions Manager (SSM): Direct interaction with assigned state staff to provide assessment solutions that match the needs of the state assessment programs. Seek and find released proposals and bring them to the CTB Bid Board for review/bid decisions.

West Virginia Department of Education, Charleston WV: 1989 to 2010

Special Assignment to State Superintendent (2007–2010)**:** Direct and manage state assessments, Title I, Special Education Monitoring and Research office staff and budgets. For these four areas, the job responsibilities include the following: develop policies, writing proposals, working effectively with staff from the West Virginia Department of Education, county school district staff, parents, higher education, Center for Professional Development and the West Virginia Legislature. Additionally, working effectively with the United Stated Departments of Education, Council of Chief State School Officers (CCSSO), National Assessment Governing Board (NAGB) are part of the current job responsibilities. Special Assignment serves as 1) the Federal Liaison to CCSSO, the legislative advocacy group who communicates and corresponds with members of Congress, and 2) a member of the State Superintendent's Cabinet.

Executive Director (2000–2007)**:** Design, develop, implement the new state assessment for accountability to include all other state assessment programs, direct and manage office staff and budgets, develop policies, writing assessment proposals, working effectively with staff from the West Virginia and United States Department of Education, county school district staff, higher education, Center for Professional Development and the legislature. Additionally, working effectively with the West Virginia Board of Education, Appalachian Educational Lab (AEL), Council of Chief State School Officers (CCSSO), National Assessment Governing Board (NAGB) and parents.

NAEP Coordinator (1995–2000)**:** Coordinate the NAEP statewide testing, prepare statewide administrator trainings to include instructional materials for teacher training on NAEP frameworks and item bank to improve student achievement. Work directly with federal NAEP representatives. Work with state level NAEP coordinators.

West Virginia Challenge Coordinator (1989–1995)**:** Develop, design, and implement the new instructional program in the following areas: mathematics, social studies, and English to include cooperative learning, thinking skills, and work directly with State, RESA, and county personnel. Grant writing for Challenge Program included successful $500,000.00 to Benedum Foundation for Innovative Program Design and Development and secured other successful smaller grants for Benedum.

(continued next page)

Janice Barth (page 2 of 2)

West Virginia University, Charleston, WV: 1991–2007

Adjunct Associate Professor: Develop course syllabus and instruction for West Virginia Challenge Program of Studies, including the development and preparation of instructional materials for satellite transmission; adjunct professor for WVDE workshops that secures college credit.

Kanawha County Board of Education, Charleston, WV: 1981 – 1989

Professional Organizations/Presentations

Member of WV Partnership to Assure Student Success (PASS)

Federal Liaison Member for WVDE Legislative Advocacy Team

Member of Legislative NCLB Subcommittee B

Member of RESA IV Regional Council

Member of West Virginia Association School Administrators

Member of West Virginia Reading Council

President of West Virginia Council for Exceptional Children

Conference Chairperson and President Elect for West Virginia Council for Exceptional Children

Curriculum Committee Member for National Association for Gifted Children

President for West Virginia Association for Gifted and Talented

Conference Chairperson and President Elect for West Virginia Association for Gifted and Talented

Member of Association for Supervision and Curriculum Development

Publications

The Reauthorization of the Elementary and Secondary Education Act

(ESEA) White Paper (2010)

Annual West Virginia Accountability Workbook (2003–2010)

West Virginia Request for Proposal (RFP) (2007)

Closing the Achievement Gap Report (2006 -2010)

Investigation of the Relationship Between School Organizational Health and School Achievement as Mediated by Socioeconomic Status in West Virginia Middle Schools in the Areas of Reading, Mathematics and Writing from 1996 to 1999 (Dissertation, 2001)

West Virginia Department of Education Request for Proposal (RFP) for the New Assessment System, (WVDE, 2001)

Renee Beal

Academic Background

B.S. Computer Technology, Purdue University, Indianapolis, IN

Professional Experience

CTB/McGraw-Hill, Monterey, CA: 2007 to present

Customer Care Manager (2011 to present)**:** Oversees the workflow associated with customer ordering, billing, and first/second level technical support for online products. Responsibilities include managing multiple teams, budget input, and accountability for achieving financial goals. Works with the sales team to support CTB's customers.

Field Technician (2009–2011)**:** Provided Tier 2 level support, training and troubleshooting for CTB's digital and software based products as well oversight and guidance for members of the Tier 2 team. Facilitated communication between "clicker" response device vendors and CTB Help Desk for all support and order related requirements. Analyzed trends to identify and submit recommendations for improvements to software, system, and technical related enhancements.

Technical Team Leader (2007–2009)**:** Monitored and coached to acceptable performance levels as measured against rigorous metrics including customer hold time, call length and volume, and overall customer satisfaction. Provided product training and policy instruction to Tier 1 representatives and ensured adherence to standards.

Technical Support Coordinator (2007)**:** Provided technical support, training, and troubleshooting for online and software based CTB products.

Indiana University HELPnet, Indianapolis, IN: 2003 to 2006

Systems Analyst: Monitored and maintained the operating systems and associated subsystems associated with the network infrastructure. Provided system-level support of multi-user operating systems, hardware, and software tools, including installation, configuration, maintenance, and support of these systems. Continually evaluated the existing infrastructure to identify alternatives for optimizing server and computer resources.

Client Support Team Manager (2003)**:** Provided oversight for all activities related to the help desk, including staffing, ticket resolution, project resolution, customer satisfaction, and overall agent productivity.

Support Representative (2001–2003)**:** Provided technical support, training and troubleshooting for software, hardware, and network based issues in a Windows environment.

Kimberly Block

Professional Experience

CTB/McGraw-Hill, Monterey, CA: 1999 to present

Senior Program Manager: Manages and coordinates activities across all aspects of West Virginia's statewide contract programs including West Virginia's WESTEST 2, Online Writing, APTA, WV Writes and Acuity— awarded to CTB in 2007. Prior to 2007, was responsible for managing West Virginia's WESTEST, Writing and Alternate Performance Task Assessments. Responsibilities include interacting with customers, CTB project managers, and vendors to ensure that customer specifications are clearly communicated and requirements are met; establishing priorities for project managers and obtaining commitments from team members and vendors to keep project tasks on schedule. Responsible for monitoring contract milestones and timelines; overseeing project budget and resolving discrepancies and overruns; forecasting and resolving problems; tracking contract specifications and ensuring that quality control standards are carried out in all phases of the contract. Skills include the capability to implement, critically evaluate, and improve project processes and timelines, to establish priorities, provide liaison between external (education departments, subcontractors) and internal (team members) customers, provide test-related support services to policy makers, and to document program progress. Interacts with the West Virginia Department of Education to ensure that needs for new design or implementation of new program elements, strategies, or methods are appropriately incorporated into the program.

Program Coordinator: Managed and coordinated custom contracts including several DoDEA programs and the WESTEST program. Responsibilities included: planning, administering, and controlling all Program Management activities to produce and deliver custom contracts. Ensured that policies, quality, and security control measures and documentation requirements were met. Served as one of the primary contacts for internal and external customers. Ensured deliverables were accurate and met contracted dates.

Administrative Assistant: Provided administrative support to Senior Account Executives and National Account Managers. Participated in the development of proposals, including the collection of costs and assembling proposals for submittal. Processed custom orders, including cost collections, price quotes, and preparation of financial documents. Worked across departments to ensure that timelines were met.

Quality Water, Salinas, CA: 1998 to 1999

Installation Coordinator: Responsible for processing new contracts. Prepared and managed schedules for commercial and residential installations.

American TAKII, Inc., Salinas, CA: 1986 to 1996

Office Manager/ Executive Secretary: Responsible for the development and maintenance of a customized computer-based accounting system. Managed all aspects of the accounting department, including payroll. Organized and maintained personnel records. Administered employee benefits programs.

Professional Training

Managing Projects to Success Training Program, Monterey, California March 2005

Paula Boffa-Taylor

Academic Background

M.M. Music, Magna cum Laude, The University of Michigan, Ann Arbor, MI

B.A. Liberal Arts, Magna cum Laude, Rhode Island College, Providence, RI

Professional Experience

CTB/McGraw-Hill, Monterey, CA: 2011 to present

Program Manager (Acuity): Manage the day-to-day operation of a contract providing interim assessment services to The School District of Philadelphia. Coordinate the efforts of a team of seasoned professionals in providing Content, Publishing, Manufacturing, Fulfillment, Scoring, Reporting, Transportation, and Customer Service for the account. Maintain a presence within the District offices to more agilely respond to their needs and facilitate the flow of information between teams.

Client Relationship Manager (Acuity): Oversee the day-to-day operation of the Acuity Predictive Testing program for the School District of Philadelphia, serving as the CTB, on-site point of contact. Work closely with the client to ensure the successful administration of the Predictive Assessments, which are administered 3 times a year at over 270 schools. Develop and maintain close relationships with staff at the Central Office and the Academic Division offices within the field to ensure that processes and procedures are understood and protocol for receiving and distributing secure testing materials are followed. Facilitate meetings and workshops throughout the District to develop a stronger understanding of the Predictive Testing program and reinforce the support network in the field.

Kaplan Compliance Solutions (now Vertafore), Indianapolis, IN: 2005 to 2009

Sr. Director, Client Relationship Management: Successfully executed key outsourcing contracts with combined annual revenue of approximately $6 million. Served as the client's single point of contact for contractual and relationship issues. Facilitated clear and direct communication between the client and internal staff, acting as an intermediary, and setting reasonable client expectations. Developed and delivered training workshops to improve staff understanding of, and response to, common client situations.

Promissor (now Pearson VUE), Bala Cynwyd, PA: 1990 to 2005

Senior Account Director (2004 –2005)**:** Successfully turned around at-risk, strategic clients, as evidenced by contract renewals and client willingness to serve as references. Managed a portfolio of 8 major clients with combined annual revenue of approximately $5 million. Led team of client support and test development professionals in the planning and delivery of contract services that met the terms of the contract and industry standards for licensure and certification testing.

Director, National Certification Programs (1999–2004)**:** Directed the Test Development, Program Direction, and Psychometric teams in the Chicago and Philadelphia offices who were responsible for creating and maintaining national certification exams. Supported sales in the

Paula Boffa-Taylor (page 2 of 2)

Professional Experience (continued)

acquisition of new business; presented at client board meetings and industry conferences; and consulted with clients on issues of item bank sufficiency and item performance.

Senior Test Editor/Coordinator/Test Editor (1990–1998)**:** Facilitated national meetings of subject matter experts in the review, revision, and approval of test items. Reviewed examination performance and investigated item bias issues. Worked closely with clients to ensure the production of valid and fair test items.

Community College of Philadelphia, Philadelphia, PA: 1994 to 1997

Adult Basic Education Instructor: Provided instruction and support to college students, ranging from those who needed additional help with particular courses, to students with learning challenges and students for whom English was their second language. Also provided Adult Basic Education instruction to non-college students.

Keith A. Boughton

Academic Background

Ph.D. Educational Measurement, University of Alberta, Edmonton, Canada

M.A. Educational Measurement, University of Victoria, Victoria, Canada

B.S. Psychology, University of Victoria, Victoria, Canada

Professional Experience

CTB/McGraw-Hill, Monterey, CA: 2008 to present

Research Scientist III: Responsible for developing general strategies and plans for technical research related to CTB's products and contracts. This responsibility includes designing innovative procedures to meet new technical requirements arid recommending improvements in existing procedures. This position conducts and/or supervises others in conducting these studies, and in producing reports and professional papers. Responsible for developing research programs in needed areas to assure the technical quality of CTB's tests and to meet new technical needs. Designs and carries out research studies. Develops appropriate research methodologies, develops budgets and schedules, identifies appropriate data collection and analysis strategies, and provides proper interpretation and reporting of results. Supervises the activities of other Research Scientists and Research Associate staff. Provides technical advice to customers, test development staff, marketing, and upper-level management. Designs improvements in standard technical studies in scaling, equating, test reliability, and test validity. Writes research papers for internal use, for presentation at professional meetings, and for professional journals. Keeps apprised of new research methodologies and technical advances described in current literature. Carries out leadership roles in professional organizations.

Research Manager: Responsible for building and leading a team of the best and brightest Research Scientists in the applied fields of psychometrics and educational measurement. Supervises, coordinates, and manages research activities in support of CTB's products and services. Plans, budgets, recruits, and fosters the development of research staff. Directs research activities for products and/or contracts, and presents and publishing research results. Contributes to the conceptualization and development of new products and services and enhancements in Research productivity. Represents Research at professional meetings (local, state and national). Contributes to CTB's reputation for sound innovation and technical leadership through research presentations and publications.

Research Scientist II: Responsible for designing and conducting technical studies to support educational achievement tests involving both multiple choice and performance assessments. Studies include tryout analyses and item response theory scaling and equating using partial credit models. Responsibilities include designing and implementing specific research studies, carrying out subsequent data analyses, and producing reports or professional papers.

Principal Investigator for CTB Research & Development Initiatives:

Using Automatic Item Generation to Produce Large Pools of Items Based on the Common Core Standards (2012).

Keith A. Boughton (page 2 of 5)

Professional Experience (continued)

A Hierarchical Modeling Approach for Overall and Subscore Estimation paired with a Hierarchical CAT Item Selection Algorithm: A New Approach for Next Generation Assessment Systems (2012).

A New Model for Cognitive Diagnostic Computer-Adaptive Testing: An IRT-Based Continuous Conjunctive Latent Trait Diagnostic Modeling Approach (2011).

Implementing Cognitive Diagnosis in Large Scale Assessment (2010).

CTB Assessment Designer: Item authoring for Coherent Assessment (2010).

Combing Constrained CAT with Cognitive Diagnosis (2009).

Advancing the CTB Core Curriculum Content Standards Framework, Learning Maps, and LMFACT to Support Diagnostic Assessment (2008).

ETS, Princeton, NJ: 2001 to 2004

Measurement Statistician: Planned, coordinated, and performed statistical analyses required for score reporting and interpretation of basic and/or segments of complex programs. Developed score interpretation materials and testing program publications. Conducted and reported on complex research. Worked independently on most phases of statistical analysis. Provided guidance to less experienced measurement statisticians.

Professional Organizations

AERA, NCME

Publications

Wang, C., Chang, H-H., & Boughton, K. A. (Accepted). Variable-length multidimensional adaptive testing. Applied Psychological Measurement.

Wang, C., Chang, H-H., & Boughton, K. A. (2010). Kullback-Leibler information and its applications in multidimensional adaptive testing. Psychometrika, 76, 13-39.

Yao, L., & Boughton, K. A. (2009). Multidimensional Linking for Tests with Mixed Item Types. Journal of Educational Measurement, 46, 177-197.

Yao, L., & Boughton, K. A. (2007). A Multidimensional item response modeling approach for improving subscale proficiency estimation in cognitive diagnostic assessments. Applied Psychological Measurement 31, 83-105.

Puhan, G, Boughton, K. A., & Kim, S. (2007). Examining Differences in Examinee Performance in Paper and Pencil and Computerized Testing. Journal of Technology, Learning, and Assessment, 6(3). Retrieved November 20, 2007 from http://www.jtla.org.

Boughton, K. A., & Yamamoto, K. (2006). A HYBRID Model for Test Speededness. In, M. von Davier & C. Carstensen (Eds.), Multivariate and Mixture Distribution Rasch Models. New York: Springer.

Gierl, M. J., Bisanz, J., Bisanz, G., & Boughton, K. A. (2004) Identifying content and cognitive skills that produce gender differences in mathematics: A demonstration of the DIF analysis framework. Journal of Educational Measurement, 40, 281-306.

Gierl, M.J., Gotzmann, A., & Boughton, K.A. (2004). Performance of SIBTEST when the percentage of DIF items is large. Applied Measurement in Education, 17, 241-264.

Keith A. Boughton (page 3 of 5)

Conference Presentations and Research Submissions

Boughton, K. A., Zhang, L., Wang, C., Smith, J., and Chang, H-H. (2013). Improving Subscore Estimation using a Hierarchical IRT Model: The Construction of a more Reliable Diagnostic Score Profile. Paper submitted to NCME, San Francisco, California.

Matovinovic, D., and Boughton, K. A. (2013). How testing companies can address the growing demand for assessment tasks. In M. Gierl (Organizer), Using Automated Methods to Produce Large Pools of Items that Meet the Common Core Standards: Theoretical Developments and Operational Applications. Symposium submitted to NCME, San Francisco, CA.

Wang, C., Chang, H-H, Boughton, K. A., Zhang, L., and Smith, J. (2013). Improving Subscale Estimation using a Hierarchical IRT Model combined with a Hierarchical Computer

Adaptive Testing Algorithm. Paper submitted to the Annual Conference of AERA, San Francisco, California.

Wang, C., Chang, H-H, Douglas, J., and Boughton, K. A. (2012). A New IRT-Based Continuous Conjunctive Diagnostic Modeling Approach. Paper to be presented at the Annual Conference of AERA, Vancouver, Canada.

Wang, C., Chang, H., & Boughton, K. A. (2011, April). Variable-length multidimensional adaptive testing. Paper presented at the AERA, New Orleans.

Boughton, K. A., Gao, F., Lewis, D., & Kim, D. (2010, May). Technical issues in vertical scaling of benchmark assessments. In D. Lewis (Organizer), Technical issues in benchmark assessments. Symposium presented at the Annual meeting of the National Council on Measurement in Education, Denver, CO.

Kim, D., Gao, F., Lewis, D., & Boughton, K. A. (2010, May). A comparison of prediction methods for benchmark assessments. In D. Lewis (Organizer), Technical issues in benchmark assessments. Symposium presented at the Annual meeting of the National Council on Measurement in Education, Denver, CO.

Chang, H., Wang, C., & Boughton, K. A. (2009, July). A Simplified KL Information Index (SKI) for multidimensional computerized adaptive tests. Paper presented at the Psychometric Society, Cambridge, England.

Wang, C., Chang, H., & Boughton, K. A. (2009, July). Some theoretical results concerning KL information in MIRT. Paper presented at the Psychometric Society, Cambridge, England.

Yao, L., Hong, Y., Lewis, D., & Boughton, K. A. (2008, April). Value added modeling: A comparison of several approaches using real data. Paper presented at the Annual meeting of the National Council on Measurement in Education, New York, NY.

Boughton, K. A., & Yamamoto, K. (2007, April). A HYBRID Model for Test Speededness. In, M. von Davier & C. Carstensen (Organizers), Multivariate and Mixture Distribution Extensions of the Rasch Model. Symposium presented at the Annual meeting of the National Council on Measurement in Education, Chicago, IL.

Boughton, K. A., Lorie, W., & Yao, L. (submitted). A multidimensionality multi-group IRT model for vertical scales with complex test structure: An empirical evaluation using real data. Paper submitted for publication.

Boughton, K. A., Yao, L., & Lewis, D. (2006, April). Reporting Diagnostic Subscale Scores for Tests Composed of Complex Structure. In K. A. Boughton and L. Yao (Organizers), Improving Diagnostic Subscore Estimation and Classification. Symposium presented at the Annual meeting of the National Council on Measurement in Education, San Francisco, CA.

Yao, L., Boughton, K. A., & Lorie, W. (2006, April). A Multidimensional item response modeling approach for improving subscale proficiency estimation. In K. A. Boughton and L. Yao (Organizers), Improving Diagnostic Subscore Estimation and Classification. Symposium presented at the Annual meeting of the National Council on Measurement in Education, San Francisco, CA.

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Conference Presentations and Research Submissions (continued)

Dwyer, A., Boughton, K. A., & Yao, L., Steffen, M., & Lewis, D. (2006, April). A Comparison of Subscale Score Augmentation Methods using Empirical Data. In K. A. Boughton and L. Yao (Organizers), Improving Diagnostic Subscore Estimation and Classification. Symposium presented at the Annual meeting of the National Council on Measurement in Education, San Francisco, CA.

Yao, L., & Boughton, K. A. (2006, April). Multidimensional Equating of Diagnostic Subscale Scores. In K. A. Boughton and L. Yao (Organizers), Improving Diagnostic Subscore Estimation and Classification. Symposium presented at the Annual meeting of the National Council on Measurement in Education, San Francisco, CA.

Finkelman, M., Hooker, G., Boughton, K. A., & Yao, L., & (2006, April). A Multidimensional Adaptive Testing (MAT) Algorithm for Improving Subscale Proficiency Estimation and Classification. In K. A. Boughton and L. Yao (Organizers), Improving Diagnostic Subscore Estimation and Classification. Symposium presented at the Annual meeting of the National Council on Measurement in Education, San Francisco, CA.

Finkelman, M., Hooker, G., Boughton, K. A., & Yao, L., (2006, April). Estimation Irregularities in Compensatory Multidimensional Item Response Models. Paper presented at the Annual meeting of the National Council on Measurement in Education, San Francisco, CA.

Boughton, K. A., & Yao, L. (2005, April). The effects of multidimensionality on TCC equating with mixed format tests: A case for multidimensional IRT. Paper presented at the annual meeting of the American Educational Research Association, Montreal, Quebec, Canada.

Boughton, K. A., Lorie, W., & Yao, L. (2005, April). A multidimensionality multi-group IRT model for vertical scales with complex test structure: An empirical evaluation using real data. Paper presented at the annual meeting of the National Council on Measurement in Education, Montreal, Quebec, Canada.

Boughton, K. A., & Yamamoto, K. (2004, April). Recovery of item parameters and switching distributions in the HYBRID model for test speededness: A comparison of marginal maximum likelihood estimation and Markov chain Monte Carlo estimation. Paper to be presented at the annual meeting of the National Council on Measurement in Education, San Diego, CA, USA.

Boughton, K. A., Larkin, K. A., & Yamamoto, K. (2004, August). Modeling differential speededness using a HYBRID psychometric approach. Paper to be presented at the annual meeting of the American Educational Research Association, San Diego, CA, USA.

Boughton, K. A., Kim, S., & Klinger, D. (2004, August). Marginal maximum likelihood estimation versus Markov chain Monte Carlo estimation in performance-based assessments. Paper to be presented at the annual meeting of the National Council on Measurement in Education, San Diego, CA, USA.

Klinger, D. A. & Boughton, K. A (2004, April). The Impact of Multiple Raters and Sample Size on Parameter Estimation Accuracy in the GPCM. Paper to be presented at the annual meeting of the National Council on Measurement in Education, San Diego, CA.

Puhan, G., & Boughton, K. A. (2004, April). Evaluating the comparability of paper and pencil versus computerized versions of a large-scale certification test. Paper to be presented at the annual meeting of the American Educational Research Association, San Diego, CA, USA.

Gotzman, A., & Boughton, K. A. (2004, April). A comparison of type I error and power rates for the Mantel-Haenszel and SIBTEST procedure when the group differences are large and unbalanced. Paper to be presented at the annual meeting of the American Educational Research Association, San Diego, CA, USA.

Gierl, M. J., Bisanz, J., Bisanz, G., & Boughton, K. A. (2002, April). Using differential bundle functioning analyses to evaluate cognitive characteristics predicted to cause gender differences in mathematics. In M. J. Gierl (Chair), New Approaches for Identifying and Interpreting Differential Bundle Functioning. Symposium conducted at the annual meeting of the National Council on Measurement in Education, New Orleans, LA.

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Keith A. Boughton (page 5 of 5)

Conference Presentations and Research Submissions (continued)

Boughton, K. A., Klinger, D. A., & Gierl, M. J. (2001, April). Effect of rater error on parameter recovery of the generalized partial credit model and graded response model. Paper presented at the annual meeting of the National Council on Measurement in Education, Seattle, USA.

Boughton, K. A., & Cartwright, F., Gierl, M. J. (2001, April). Construction of automated parallel forms and multiple parallel panels in computer-adaptive sequential testing: New measures of parallelism and their applications. Paper presented at the annual meeting of the American Educational Research Association, Seattle, USA.

Boughton, K. A., Dawber, T. E., & Hellsten, L. M. (2001, April). Differential-bundle functioning: Statistically testing substantive hypotheses. Paper presented at the annual meeting of the American Educational Research Association, Seattle, USA.

Gierl, M. J., Bisanz, G. L., & Boughton, K. A. (2001, April). Using differential bundling functioning to identify and interpret gender differences on science achievement tests. Paper presented at the annual meeting of the American Educational Research Association, Seattle, USA.

Boughton, K. A., & Gierl, M. J. (2000, April). Automated test assembly procedures for criterion-referenced testing using optimization heuristics. Paper presented at the annual meeting of the American Educational Research Association, New Orleans, USA.

Boughton, K. A., & Klinger, D. A. (2000, April). Parameter recovery in the generalized partial credit model versus the graded response model. Poster presented at the annual conference of the National Council on Measurement in Education, New Orleans, USA.

Boughton, K. A., Gierl, M. J., & Khaliq, S. (2000, May). Differential bundle functioning in mathematics and science achievement tests. Paper presented at the annual meeting of the Canadian Society for Studies in Education, Edmonton, Alberta, Canada.

Boughton, K. A., & Klinger, D. A. (2000, May). The generalized partial credit model and the graded response model in performance-based assessments. Paper presented at the annual meeting of the Canadian Society for Studies in Education, Edmonton, Canada.

Gary Bruni

Professional Experience

CTB/McGraw-Hill, Monterey, CA: 1996 to present

Transportation Manager: Responsible for managing all aspects of transportation for CTB including inbound scheduling of shipments, all outbound materials, vendor cost analysis, and budgeting for all areas of transportation for CTB.

Operations Manager: (1996 to 2001) Participated in the planning, development, and implementation of successful processing for both custom and shelf contracts; collaborated interdepartmentally to evaluate customer requirements and define department responsibilities. Facilitated the development and implementation of workflow processes, project capacity, and contingency planning for both home office and remote sites. Identified resources; developed and monitored budgets, schedules, and timelines to ensure efficient utilization and allocation of business resources.

Collaborated with colleagues and vendors to develop and implement software solutions to automate processes, and increase accuracy, cost-effectiveness, and productivity. Supported software applications by performing functional testing and maintaining documentation. Also kept releases current, developed training materials, and trained staff to troubleshoot and resolve issues. Worked with vendors to identify potential software solutions as they related to workflow processes.

Established and maintained successful business relationships with vendors and customers (internally and externally) by effectively communicating requirements and coordinating and monitoring interdepartmental efforts.

Managed the overall day-to-day functions of five operational units (Shipping and Receiving, Transportation, Warehouse, Storage and Retrieval, and Forms Manufacturing).

Receiving and Shipping Supervisor: Coordinated and oversaw interdepartmental efforts by interpreting contractual obligations, outlining departmental responsibilities, and maintaining budgets and schedules.

Other Relevant Experience

MGI Management Barcoding and Capacity Planning, Frontline Leadership, ISO 9000 Auditor, FrontPage 2000, and HTML. Lean Six Sigma training, (1996 to present).

Michael Conarroe

Academic Background

B.S. Mathematics, Southeast Missouri State University, Cape Girardeau, MO

Professional Experience

CTB/McGraw-Hill, Indianapolis, IN: 2007 to present

Associate Manager, Handscoring: Responsible for the day-to-day management of the 700 seat Indianapolis Scoring Center that included management of temporary satellite scoring facilities outside the state of Indiana and working with staffing vendors to staff all projects as well as management of individual custom and shelf Handscoring projects.

Kelly Services, Indianapolis, IN: 2001 to 2007

Supervisor: As Handscoring Team Leader and Evaluator Supervisor was responsible for supervising the quality and production for groups of 50-150 scorers.

Michael Johnson

Academic Background

B.S. Public Administration, University of Wisconsin - La Crosse, La Crosse, WI

Professional Experience

CTB/McGraw-Hill, Monterey, CA: 2007 to present

National Adult Education Manager (2011 to present)**:** Responsibilities include managing day to day operation of assessments target for Adult Basic Education. Providing support to Product Management and Sales related to industry direction and needs of the customers.

Product Manager - TABE (2007-2011)**:** Ownership of both TABE and TABE CLAS-E product lines with full responsibility for P&L, product development and positioning, sales coordination and training, and continuous product improvements.

CompTIA, Oakbrook Terrace, IL: 2002 to 2006

Senior Product Manager: Managed vendor-neutral high-stakes certifications exams (Network+, Convergence+) with full responsibility for P&L, product development and positioning, committee coordination, ongoing and continuous improvements and global marketing.

Thompson-NETg, Naperville, IL: 2001 to 2002

Sales and Partner Product Manager: Managed Business and Professional Development for educational training products. Planned the implementation of pending software releases that increased customer usage of courseware and managed Channel Resellers to launch learning tracks to assist sales.

ASAP Software, Buffalo Grove, IL: 1999 to 2001

Product Manager: Managed software product lines including Microsoft, Citrix, Novell, Legato, Executive Software, Autodesk and Computer Associates. Created and implemented all marketing activities to maximize marketing development funds of assigned vendors that produced significant revenue increases.

Productivity Point International, Hinsdale, IL: 1994 to 1999

Vendor Programs Manager (1997 to 1999)**:** Facilitated the selling and implementation of national programs and projects between multiple software vendors including Microsoft, Citrix, Lotus and Novell and the one hundred thirty (130) Productivity Point International Training Centers.

Vendor Programs Administrator (1994 to 1997)**:** Managed training contracts and reported quarterly franchise activity. Presented and trained new franchise sites and sales teams on vendor programs.

Merisel, Wood Dale, IL: 1993-1994

Customer Service Representative: Daily phone contact with Merisel Resellers to research and resolve billing, shipping and product questions.

Richard Johnson

Academic Background

M.B.A. Business Administration, California Lutheran University, CA

B.A. Leadership Theory, University of California, Berkeley, CA

Professional Experience

CTB/McGraw-Hill, Monterey, CA: 2005 to present

Senior Manager, Print Management and Fulfillment: Manages all assessment material production, order fulfillment, and variable data (report) printing, including demand planning, analysis, project management, fulfillment, capacity planning, procurement, and the assignment and training of internal and external resources in support of programs. Defines and implements quality control and security compliance across projects and vendor management of resources. Coordinated manufacturing, fulfillment, and variable data printing activities for all programs that use physical products, including statewide assessments for Alaska, Arizona, Georgia, Indiana, Missouri, Tennessee, West Virginia, Wisconsin, Washington DC, Nevada, and California.

United States Marine Corps, Various: 1982 to 2005

Infantry Officer: Led combat, logistics, and headquarters organizations of increasing size and scope and served in staff positions at a variety of levels, retiring with the rank of Colonel. Served combat tours in Operation Desert Storm and Iraqi Freedom (two tours).

Awards

CTB Team Achievement Award for Quality Improvement (two awards)

CTB Team Achievement Award for Process Improvement (two awards)

CTB Team Achievement Award for Innovative Solution Development (one award)

Charley Nalley

Academic Background

B.S. Geography, James Madison University, Harrisonburg, VA

Professional Experience

CTB/McGraw-Hill Digital Learning, Nashville, TN: 2003 to Present

Implementation Manager (200-present)**:** Responsible for successful implementation and support of CTB's online assessment products and platforms. This includes management of customer facing implementation team members and the technology production support team.

Program Manager (2003–2005)**:** Responsible for successful management and completion of the software development process for MHDL. This includes management of all technology/software development requests, management of the product calendar, development and approval of functional requirements, management of Quality Assurance and User Acceptance Testing for all delivered software, and timely delivery of production quality software for MHDL to our customers.

Ingram Book Company, LaVergne, TN: 1997 to 2003

Process Improvement Manager (2002–2003)**:** Analyzed business processes for the purchasing group of Ingram Book Company and facilitated the implementation of improvement recommendations for processes and procedures. Responsible for managing all project requests for the purchasing group, ranging from ad hoc to companywide initiatives. Responsible for ensuring appropriate resource allocation for the implementation of company initiatives that affected the purchasing group. Responsibilities included providing documentation of processes and procedures, and managing a Process Improvement Analyst.

Business Analyst (2000–2002)**:** Provided system solutions to business requirements for companywide eBusiness initiative. Responsibilities included gathering and analyzing business requirements for business-to-business Web site. This included meeting with business units to determine functional requirements; writing of functional specifications; providing gap analysis for application/development; and assisting quality assurance in testing of final results. Also, provided training for our internal associates and technical support staff. Assisted in mentoring newly hired Business Analysts on the development process and implementation.

Installation Specialist (1997–1999)**:** Managed the installation and training of IBID, a bookstore point-of-sales and inventory management system. This included coordination of and preparation for the installation, as well as the setup of hardware and the configuration of software to meet the specific requirements of the customer. Additional support included providing on-site training for the bookstore staff and management. Served as technical support for the IBID software and other Ingram proprietary software from LaVergne, Tennessee, office when not actively working on installations. Assisted in the development of new features for the software.

Proposal Clarifications and Required Forms

Proposal Clarifications

It is CTB's understanding that a mutually agreed upon contract (the "Contract") which will include the terms and conditions of the Solicitation EDD398716 (the "RFP") for the High School Equivalency Test Services, and the Contractor's response to the RFP ("Proposal"), will be confirmed or negotiated between the State of West Virginia Department of Administration, Purchasing Division (the "State") and the winning bidder (the "Contractor").

Because the RFP terms do not include all terms that may be essential to form a clear basis for an understanding, and in accordance with Section Three, General Terms and Conditions, Paragraph 11 of the RFP, CTB is offering additional clarifications here. Nothing herein is intended to take exception to any mandatory requirement, however the following clauses may clarify the intent of the parties with respect to the indicated provisions of the RFP so that wording similar to that below (subject to changes mutually agreed upon by the parties) will be expressly included in any resulting Contract between and the Contractor.

Reference Section Three, Paragraph 12 (Liquidated Damages)
CTB understands that Paragraph 12 is a concept provision of the Standard West Virginia General Terms and Conditions, but that since no liquidated damages amounts or rates have been specified, none are agreed and none will apply.

Reference Ownership, Copyright, License, Confidentiality and Security; and Section Four, Subsection 4.5.3

Inasmuch as neither the Section Three General Terms and Conditions, nor the Section Four Project Specifications provide an adequate handling of the existing intellectual property rights of the Contractor, nor the license rights extended to the State, the following clarifications are provided.

1. **Contractor Test Materials** The parties understand and agree that Contractor will be using its independently developed and proprietary high school equivalency TASC testing materials including but not limited to test items and related test materials, items under continuing development for Contractor's TASC Item Pool, and test forms, (all, hereinafter, the "Contractor Test Materials").
2. **Contractor Software Materials** The parties understand and agree that Contractor will be using its independently developed and proprietary On-line Assessment Software ("OAS"), and other scoring, and reporting, research, or other proprietary software of the Contractor (the "Contractor Software Materials").
3. **Ownership** None of the Contractor Test Materials or Contractor Software Materials being used by or provided to the by the Contractor under the Contract shall be deemed to have been created for the project or under the Contract. All rights, including copyright and patent rights, in and to the Contractor Test Materials and Contractor Software Materials, including any revisions

thereof or derivative works therefrom, are, shall be, and shall remain the confidential, trade secret, and proprietary property of Contractor. Other than records, data, reports, and similar items associated with performing duties, no testing materials or software are to be developed under the contract to be owned by.

4. **License** The Contractor shall grant to a non-exclusive right to use the Contractor Test Materials and Contractor Software Materials as described within Contractor's Proposal for the High School Equivalency Test, during the term of this Contract and any extensions or renewals thereof. Except as may be explicitly stated in writing by the Contractor, no other rights are granted by the Contractor with respect to the Contractor Test Materials or Contractor Software Materials. Specifically, no right is granted to reproduce or modify the Contractor Test Materials or Contractor Software Materials, nor shall the release or otherwise disclose to the public or to any third party any Contractor Test Materials, either in hard copy, electronically, or on web-site.

5. **Confidentiality of Contractor Materials** It is further understood and agreed that the Contractor Test Materials, including test items, and Contractor Software Materials, as defined above, are the confidential, proprietary, trade secret material of the Contractor and are not to be divulged to a third party except as necessary or appropriate to administer, score or analyze the results of the High School Equivalency test for purposes of this Contract. The acknowledges and agrees that the Contractor Testing Materials and Contractor Testing Software are confidential trade secret materials exempted from disclosure requirements under WV Freedom of Information law (29B-1-4. Exemptions). Accordingly, the agrees to take all reasonable steps necessary to maintain the confidentiality of the Contractor Test Materials and Contractor Software Materials and will not disclose or disseminate any Contractor Testing Materials and Contractor Testing Software without the prior written consent of the Contractor. The further agrees that prior to providing access to or disclosure of any Contractor Test Materials or Contractor Testing Software to a third party, the agrees it shall provide the Contractor with written notice so that the Contractor will have the opportunity to prevent disclosure except under terms that will maintain the security and confidentiality of such Materials.

Required Forms

The required forms appear in the following order:

- Certificate of Insurance
- Solicitation Pages
- Purchasing Affidavit
- Agreement Addendum for Software
- RFP Page 0055 Attachment (This document will be signed upon contract negotiation.)
- Certification and Signature Page
- Addendum Acknowledgement Form

ACORD®

CERTIFICATE OF LIABILITY INSURANCE

DATE(MM/DD/YYYY) 03/25/2013

THIS CERTIFICATE IS ISSUED AS A MATTER OF INFORMATION ONLY AND CONFERS NO RIGHTS UPON THE CERTIFICATE HOLDER. THIS CERTIFICATE DOES NOT AFFIRMATIVELY OR NEGATIVELY AMEND, EXTEND OR ALTER THE COVERAGE AFFORDED BY THE POLICIES BELOW. THIS CERTIFICATE OF INSURANCE DOES NOT CONSTITUTE A CONTRACT BETWEEN THE ISSUING INSURER(S), AUTHORIZED REPRESENTATIVE OR PRODUCER, AND THE CERTIFICATE HOLDER.

IMPORTANT: If the certificate holder is an ADDITIONAL INSURED, the policy(ies) must be endorsed. If SUBROGATION IS WAIVED, subject to the terms and conditions of the policy, certain policies may require an endorsement. A statement on this certificate does not confer rights to the certificate holder in lieu of such endorsement(s).

PRODUCER	CONTACT NAME:	
Aon Risk Services Northeast, Inc. New York NY Office 199 Water Street New York NY 10038-3551 USA	PHONE (A/C. No. Ext): (866) 283-7122	FAX (A/C. No.): (847) 953-5390
	E-MAIL ADDRESS:	

INSURED	INSURER(S) AFFORDING COVERAGE		NAIC #
MHE US Holdings, LLC 2 Penn Plaza New York NY 10121 USA	INSURER A:	Zurich American Ins Co	16535
	INSURER B:	American Zurich Ins Co	40142
	INSURER C:	XL Specialty Insurance Co	37885
	INSURER D:	Illinois National Insurance Co	23817
	INSURER E:	ACE Property & Casualty Insurance Co.	20699
	INSURER F:		

COVERAGES **CERTIFICATE NUMBER:** 570049337641 **REVISION NUMBER:**

THIS IS TO CERTIFY THAT THE POLICIES OF INSURANCE LISTED BELOW HAVE BEEN ISSUED TO THE INSURED NAMED ABOVE FOR THE POLICY PERIOD INDICATED. NOTWITHSTANDING ANY REQUIREMENT, TERM OR CONDITION OF ANY CONTRACT OR OTHER DOCUMENT WITH RESPECT TO WHICH THIS CERTIFICATE MAY BE ISSUED OR MAY PERTAIN, THE INSURANCE AFFORDED BY THE POLICIES DESCRIBED HEREIN IS SUBJECT TO ALL THE TERMS, EXCLUSIONS AND CONDITIONS OF SUCH POLICIES. LIMITS SHOWN MAY HAVE BEEN REDUCED BY PAID CLAIMS. **Limits shown are as requested**

INSR LTR	TYPE OF INSURANCE	ADDL INSR	SUBR WVD	POLICY NUMBER	POLICY EFF (MM/DD/YYYY)	POLICY EXP (MM/DD/YYYY)	LIMITS	
A	**GENERAL LIABILITY** X COMMERCIAL GENERAL LIABILITY CLAIMS-MADE X OCCUR GEN'L AGGREGATE LIMIT APPLIES PER: X POLICY PRO-JECT LOC			GLO509592800	03/22/2013	03/22/2014	EACH OCCURRENCE DAMAGE TO RENTED PREMISES (Ea occurrence) MED EXP (Any one person) PERSONAL & ADV INJURY GENERAL AGGREGATE PRODUCTS - COMP/OP AGG SIR	$2,000,000 $2,000,000 $10,000 $2,000,000 $4,000,000 $4,000,000 $100,000
A	**AUTOMOBILE LIABILITY** X ANY AUTO ALL OWNED AUTOS SCHEDULED AUTOS X HIRED AUTOS X NON-OWNED AUTOS			BAP 5095930 00	03/22/2013	03/22/2014	COMBINED SINGLE LIMIT (Ea accident) BODILY INJURY (Per person) BODILY INJURY (Per accident) PROPERTY DAMAGE (Per accident)	$2,000,000
E	X **UMBRELLA LIAB** X OCCUR **EXCESS LIAB** CLAIMS-MADE DED X RETENTION $10,000			XOOG27050505 SIR applies per policy terms & conditions	03/22/2013	03/22/2014	EACH OCCURRENCE AGGREGATE	$8,000,000 $8,000,000
B A	**WORKERS COMPENSATION AND EMPLOYERS' LIABILITY** ANY PROPRIETOR / PARTNER / EXECUTIVE OFFICER/MEMBER EXCLUDED? (Mandatory in NH) Y/N: N If yes, describe under DESCRIPTION OF OPERATIONS below	N/A		WC509592600 Work Comp - AOS WC509592700 Work Comp - MA	03/22/2013 03/22/2013	03/22/2014 03/22/2014	X WC STATU-TORY LIMITS OTH-ER E.L. EACH ACCIDENT E.L. DISEASE-EA EMPLOYEE E.L. DISEASE-POLICY LIMIT	$1,000,000 $1,000,000 $1,000,000
D	Media Prof			018260329 SIR applies per policy terms & conditions	03/22/2013	03/22/2014	Per Occ SIR	$2,000,000 $1,000,000

DESCRIPTION OF OPERATIONS / LOCATIONS / VEHICLES (Attach ACORD 101, Additional Remarks Schedule, if more space is required)

Evidence Only

CERTIFICATE HOLDER

MHE US Holdings, LLC
2 Penn Plaza
New York NY 10121 USA

CANCELLATION

SHOULD ANY OF THE ABOVE DESCRIBED POLICIES BE CANCELLED BEFORE THE EXPIRATION DATE THEREOF, NOTICE WILL BE DELIVERED IN ACCORDANCE WITH THE POLICY PROVISIONS.

AUTHORIZED REPRESENTATIVE

Aon Risk Services Northeast, Inc.

Holder Identifier :

Certificate No : 570049337641

ACORD 25 (2010/05)

State of West Virginia
Department of Administration
Purchasing Division
2019 Washington Street East
Post Office Box 50130
Charleston, WV 25305-0130

Solicitation

NUMBER	PAGE
EDD398716	1

ADDRESS CORRESPONDENCE TO ATTENTION OF:
CONNIE OSWALD
304-558-2157

VENDOR
RFQ COPY
TYPE NAME/ADDRESS HERE
CTB/McGraw-Hill LLC
20 Ryan Ranch Rd.
Monterey, CA 93940

SHIP TO
DEPARTMENT OF EDUCATION
BUILDING 6
1900 KANAWHA BOULEVARD, EAST
CHARLESTON, WV
25305-0330

DATE PRINTED: 08/02/2013
BID OPENING DATE: 09/10/2013 BID OPENING TIME 1:30PM

LINE	QUANTITY	UOP	CAT. NO.	ITEM NUMBER	UNIT PRICE	AMOUNT
				REQUEST FOR PROPOSAL THE STATE OF WEST VIRGINIA AND ITS AGENCY THE WEST VIRGINIA DEPARTMENT OF EDUCATION REQUEST A PROPOSAL TO PROVIDE A HIGH SCHOOL EQUIVANLENCY ASSIGNMENT ALIGNED TO WEST VIRGINIA'S NEXT GENERATION CONTENT STANDARDS AND OBJECTIVES PER THE ATTACHED SPECIFICATIONS AND INSTRUCTIONS TO BIDDERS. BID OPENING: 9/10/2013 AT 1:30 PM (SEE INSTRUCTIONS TO BIDDERS)		
0001	2,350	EA		924-20 TEST (CBT) ANY OF THE CONTENT AREAS IN ANY LANGUAGE EITHER STANDARD, LARGE PRINT, AUDIO OR BRAILLE. INCLUDES: SCANNABLE ANSWER SHEETS (LANGUAGE ARTS, WRITING, SOCIAL STUDIES, SCIENCE, READING, AND MATHEMATICS); CALCULATORS; TRANSCRIPTS; CORRECTION OF ERRORS ON REGISTRATION FORM; PRACTICE TEST, TESTING FEE, START-UP FEE AND SCORING FEE.		
0002	150	EA		924-20 TEST (PBT) ANY OF THE CONTENT AREAS IN ANY LANGUAGE		

SIGNATURE [signature] TELEPHONE 831-393-6336 DATE September 4, 2013
TITLE Vice President Finance FEIN 52-2358325 ADDRESS CHANGES TO BE NOTED ABOVE

WHEN RESPONDING TO SOLICITATION, INSERT NAME AND ADDRESS IN SPACE ABOVE LABELED 'VENDOR'

State of West Virginia
Department of Administration
Purchasing Division
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Post Office Box 50130
Charleston, WV 25305-0130

Solicitation

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EDD398716	2

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DATE PRINTED: 08/02/2013
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LINE	QUANTITY	UOP	CAT NO.	ITEM NUMBER	UNIT PRICE	AMOUNT
				EITHER STANDARD, LARGE PRINT, AUDIO OR BRAILLE. INCLUDES: SCANNABLE ANSWER SHEETS (LANGUAGE ARTS, WRITING, SOCIAL STUDIES, SCIENCE, READING, AND MATHEMATICS); CALCULATORS; TRANSCRIPTS; CORRECTION OF ERRORS ON REGISTRATION FORM; PRACTICE TEST, TESTING FEE, START-UP FEE AND SCORING FEE.		
0003	2,300	EA	924-20	BATTERY TEST (CBT) PACKAGE (INCLUDES THE CONTENT TEST AREAS) IN ANY LANGUAGE, EITHER STANDARD, LARGE PRINT, AUDIO OR BRAILLE. INCLUDES: SCANNABLE ANSWER SHEETS (LANGUAGE ARTS, WRITING, SOCIAL STUDIES, SCIENCE, READING AND MATHEMATICS); CALCULATORS; TRANSCRIPTS; CORRECTION OF ERRORS ON REGISTRATION FORM; PRACTICE TEST, TESTING FEE, START-UP FEE AND SCORING FEE.	Please Refer to the Cost Proposal	
0004	50	EA	924-20	BATTERY TEST (PBT) PACKAGE (INCLUDED THE CONTENT TEST AREAS) IN ANY LANGUAGE, EITHER STANDARD, LARGE PRINT, AUDIO OR BRAILLE. INCLUDES: SCANNABLE ANSWER SHEETS (LANGUAGE ARTS, WRITING, SOCIAL STUDIES, SCIENCE, READING AND MATHEMATICS); CALCULATORS; TRANSCRIPTS; CORRECTION OF ERRORS ON REGISTRATION FORM; PRACTICE TEST, TESTING FEE, START-UP FEE AND SCORING FEE.	Please Refer to the Cost Proposal	

SIGNATURE [signature] TELEPHONE 831-393-6336 DATE September 4, 2013
TITLE Vice President Finance FEIN 52-2358325 ADDRESS CHANGES TO BE NOTED ABOVE

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LINE	QUANTITY	UOP	CAT NO.	ITEM NUMBER	UNIT PRICE	AMOUNT
0005	1,150	EA		924-20	Please Refer to the Cost Proposal	
	CBT FEE FOR RETESTING (ONLY APPLIES TO A TEST BEING RETAKEN DUE TO PREVIOUS FAILURE OF TEST) AND INCLUDES CALCULATORS, TRANSCRIPTS; CORRECTIONS OR ERRORS ON REGISTRATION FORM, PRACTICE TEST, TESTING FEE AND SCORING FEES.					
0006	10	EA		924-20	Please Refer to the Cost Proposal	
	PBT FEE FOR RETESTING (ONLY APPLIES TO A TEST BEING RETAKEN DUE TO PREVIOUS FAILURE OF TEST) AND INCLUDES CALCULATORS, TRANSCRIPTS; CORRECTIONS OR ERRORS ON REGISTRATION FORM, PRACTICE TEST, TESTING FEE AND SCORING FEES.					
0007	5	YR		924-20	Please Refer to the Cost Proposal	
	ANNUAL DATA WAREHOUSING FEE					

SIGNATURE [signature] TELEPHONE 831-393-6336 DATE September 4, 2013

TITLE Vice President Finance FEIN 52-2358325 ADDRESS CHANGES TO BE NOTED ABOVE

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Solicitation

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DATE PRINTED
08/02/2013

BID OPENING DATE: 09/10/2013 BID OPENING TIME 1:30PM

LINE	QUANTITY	UOP	CAT NO.	ITEM NUMBER	UNIT PRICE	AMOUNT
	****** THIS IS THE END OF RFQ EDD398716 ****** TOTAL:					
					Please Refer to the Cost Proposal	

SIGNATURE
TELEPHONE 831-393-6336
DATE September 4, 2013
TITLE Vice President Finance
FEIN 52-2358325
ADDRESS CHANGES TO BE NOTED ABOVE

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25305-0330

DATE PRINTED
08/27/2013

BID OPENING DATE: 09/10/2013 BID OPENING TIME 1:30PM

LINE	QUANTITY	UOP	CAT NO.	ITEM NUMBER	UNIT PRICE	AMOUNT

ADDENDUM NO. 01

1. TO PROVIDE CLARIFICATION TO THE LANGUAGE IN THE ORIGINAL SOLICITATION, PAGE 1. THIS SOLICITATION IS A HIGH SCHOOL EQUIVALENCY ASSESSMENT - NOT AN ASSIGNMENT AS LISTED IN ERROR.
2. TO PROVIDE ANSWERS TO QUESTIONS RECEIVED.
3. TO PROVIDE REVISED PRICING PAGES.
4. TO PROVIDE THE ADDENDUM ACKNOWLEDGMENT. THIS DOCUMENT SHOULD BE SIGNED AND RETURNED WITH YOUR BID. FAILURE TO SIGN AND RETURN MAY RESULT IN DISQUALIFICATION OF YOUR BID.

END OF ADDENDUM NO. 01

SIGNATURE	TELEPHONE	DATE
	831-393-6336	September 4, 2013
TITLE: Vice President Finance	FEIN: 52-2358325	ADDRESS CHANGES TO BE NOTED ABOVE

WHEN RESPONDING TO SOLICITATION, INSERT NAME AND ADDRESS IN SPACE ABOVE LABELED 'VENDOR'

RFQ No. EDD398716

STATE OF WEST VIRGINIA
Purchasing Division

PURCHASING AFFIDAVIT

MANDATE: Under W. Va. Code §5A-3-10a, no contract or renewal of any contract may be awarded by the state or any of its political subdivisions to any vendor or prospective vendor when the vendor or prospective vendor or a related party to the vendor or prospective vendor is a debtor and: (1) the debt owed is an amount greater than one thousand dollars in the aggregate; or (2) the debtor is in employer default.

EXCEPTION: The prohibition listed above does not apply where a vendor has contested any tax administered pursuant to chapter eleven of the W. Va. Code, workers' compensation premium, permit fee or environmental fee or assessment and the matter has not become final or where the vendor has entered into a payment plan or agreement and the vendor is not in default of any of the provisions of such plan or agreement.

DEFINITIONS:

"Debt" means any assessment, premium, penalty, fine, tax or other amount of money owed to the state or any of its political subdivisions because of a judgment, fine, permit violation, license assessment, defaulted workers' compensation premium, penalty or other assessment presently delinquent or due and required to be paid to the state or any of its political subdivisions, including any interest or additional penalties accrued thereon.

"Employer default" means having an outstanding balance or liability to the old fund or to the uninsured employers' fund or being in policy default, as defined in W. Va. Code § 23-2c-2, failure to maintain mandatory workers' compensation coverage, or failure to fully meet its obligations as a workers' compensation self-insured employer. An employer is not in employer default if it has entered into a repayment agreement with the Insurance Commissioner and remains in compliance with the obligations under the repayment agreement.

"Related party" means a party, whether an individual, corporation, partnership, association, limited liability company or any other form or business association or other entity whatsoever, related to any vendor by blood, marriage, ownership or contract through which the party has a relationship of ownership or other interest with the vendor so that the party will actually or by effect receive or control a portion of the benefit, profit or other consideration from performance of a vendor contract with the party receiving an amount that meets or exceed five percent of the total contract amount.

AFFIRMATION: By signing this form, the vendor's authorized signer affirms and acknowledges under penalty of law for false swearing (*W. Va. Code* §61-5-3) that neither vendor nor any related party owe a debt as defined above and that neither vendor nor any related party are in employer default as defined above, unless the debt or employer default is permitted under the exception above.

WITNESS THE FOLLOWING SIGNATURE:

Vendor's Name: CTB/McGraw-Hill LLC

Authorized Signature: _____ Date: 8/30/13

State of CA

County of Monterey, to-wit:

See Attached
California Jurat

Taken, subscribed, and sworn to before me this 30 day of AUGUST, 2013.

My Commission expires _____, 20___.

AFFIX SEAL HERE

NOTARY PUBLIC _____

JOLLENE ALLEN
Commission # 1968710
Notary Public - California
Monterey County
My Comm. Expires Mar 3, 2016

CALIFORNIA JURAT WITH AFFIANT STATEMENT

☑ See Attached Document (Notary to cross out lines 1–6 below)
☐ See Statement Below (Lines 1–5 to be completed only by document signer[s], *not* Notary)

1
2
3
4
5
6

Signature of Document Signer No. 1

Signature of Document Signer No. 2 (if any)

State of California

County of Monterey

Subscribed and sworn to (or affirmed) before me on this

30 (Date) day of AUGUST (Month), 20 13 (Year), by

(1) MARK LOMBARDI,
Name of Signer

proved to me on the basis of satisfactory evidence to be the person who appeared before me (.) (,)

(and

(2) _____,
Name of Signer

proved to me on the basis of satisfactory evidence to be the person who appeared before me.)

Signature _____
Signature of Notary Public

JOLLENE ALLEN
Commission # 1968710
Notary Public - California
Monterey County
My Comm. Expires Mar 3, 2016

Place Notary Seal Above

OPTIONAL

Though the information below is not required by law, it may prove valuable to persons relying on the document and could prevent fraudulent removal and reattachment of this form to another document.

Further Description of Any Attached Document

Title or Type of Document: PURCHASE AFFIDAVIT

Document Date: _____ Number of Pages: _____

Signer(s) Other Than Named Above: _____

RIGHT THUMBPRINT OF SIGNER #1	RIGHT THUMBPRINT OF SIGNER #2
Top of thumb here	Top of thumb here

WV-96A
Rev. 12/12

AGREEMENT ADDENDUM FOR SOFTWARE

In the event of conflict between this addendum and the agreement, this addendum shall control:

1. **DISPUTES** - Any references in the agreement to arbitration or to the jurisdiction of any court are hereby deleted. Disputes arising out of the agreement shall be presented to the West Virginia Court of Claims.

2. **HOLD HARMLESS** - Any provision requiring the Agency to indemnify or hold harmless any party is hereby deleted in its entirety.

3. **GOVERNING LAW** - The agreement shall be governed by the laws of the State of West Virginia. This provision replaces any references to any other State's governing law.

4. **TAXES** - Provisions in the agreement requiring the Agency to pay taxes are deleted. As a State entity, the Agency is exempt from Federal, State, and local taxes and will not pay taxes for any Vendor including individuals, nor will the Agency file any tax returns or reports on behalf of Vendor or any other party.

5. **PAYMENT** - Any references to prepayment are deleted. Fees for software licenses, subscriptions, or maintenance are payable annually in advance. Payment for services will be in arrears.

6. **INTEREST** - Any provision for interest or charges on late payments is deleted. The Agency has no statutory authority to pay interest or late fees.

7. **NO WAIVER** - Any language in the agreement requiring the Agency to waive any rights, claims or defenses is hereby deleted.

8. **FISCAL YEAR FUNDING** - Service performed under the agreement may be continued in succeeding fiscal years for the term of the agreement, contingent upon funds being appropriated by the Legislature or otherwise being available for this service. In the event funds are not appropriated or otherwise available for this service, the agreement shall terminate without penalty on June 30. After that date, the agreement becomes of no effect and is null and void. However, the Agency agrees to use its best efforts to have the amounts contemplated under the agreement included in its budget. Non-appropriation or non-funding shall not be considered an event of default.

9. **STATUTE OF LIMITATION** - Any clauses limiting the time in which the Agency may bring suit against the Vendor, lessor, individual, or any other party are deleted.

10. **SIMILAR SERVICES** - Any provisions limiting the Agency's right to obtain similar services or equipment in the event of default or non-funding during the term of the agreement are hereby deleted.

11. **FEES OR COSTS** - The Agency recognizes an obligation to pay attorney's fees or costs only when assessed by a court of competent jurisdiction. Any other provision is invalid and considered null and void.

12. **ASSIGNMENT** - Notwithstanding any clause to the contrary, the Agency reserves the right to assign the agreement to another State of West Virginia agency, board or commission upon thirty (30) days written notice to the Vendor and Vendor shall obtain the written consent of Agency prior to assigning the agreement.

13. **LIMITATION OF LIABILITY** - The Agency, as a State entity, cannot agree to assume the potential liability of a Vendor. Accordingly, any provision in the agreement limiting the Vendor's liability for direct damages is hereby deleted. Vendor's liability under the agreement shall not exceed three times the total value of the agreement. Limitations on special, incidental or consequential damages are acceptable. In addition, any limitation is null and void to the extent that it precludes any action for injury to persons or for damages to personal property.

14. **RIGHT TO TERMINATE** - Agency shall have the right to terminate the agreement upon thirty (30) days written notice to Vendor. Agency agrees to pay Vendor for services rendered or goods received prior to the effective date of termination. In such event, Agency will not be entitled to a refund of any software license, subscription or maintenance fees paid.

15. **TERMINATION CHARGES** - Any provision requiring the Agency to pay a fixed amount or liquidated damages upon termination of the agreement is hereby deleted. The Agency may only agree to reimburse a Vendor for actual costs incurred or losses sustained during the current fiscal year due to wrongful termination by the Agency prior to the end of any current agreement term.

16. **RENEWAL** - Any reference to automatic renewal is deleted. The agreement may be renewed only upon mutual written agreement of the parties.

17. **INSURANCE** - Any provision requiring the Agency to purchase insurance for Vendor's property is deleted. The State of West Virginia is insured through the Board of Risk and Insurance Management, and will provide a certificate of property insurance upon request.

18. **RIGHT TO NOTICE** - Any provision for repossession of equipment without notice is hereby deleted. However, the Agency does recognize a right of repossession with notice.

19. **ACCELERATION** - Any reference to acceleration of payments in the event of default or non-funding is hereby deleted.

20. **CONFIDENTIALITY** -Any provision regarding confidentiality of the terms and conditions of the agreement is hereby deleted. State contracts are public records under the West Virginia Freedom of Information Act.

21. **AMENDMENTS** - All amendments, modifications, alterations or changes to the agreement shall be in writing and signed by both parties. No amendment, modification, alteration or change may be made to this addendum without the express written approval of the Purchasing Division and the Attorney General.

ACCEPTED BY:

STATE OF WEST VIRGINIA	**VENDOR**
Spending Unit: _____	Company Name: CTB/McGraw-Hill LLC
Signed: _____	Signed: _____
Title: _____	Title: Mark Limbach Vice President Finance
Date: _____	Date: September 4, 2013

Attachment
PO#_____

This agreement constitutes the entire agreement between the parties, and there are no other terms and conditions applicable to the licenses granted hereunder.

Agreed

_____	_____
Signature Date	Signature Date
_____	_____
Title	Title
CTB/McGraw-Hill LLC	_____
Company Name	Agency/Division

CERTIFICATION AND SIGNATURE PAGE

By signing below, I certify that I have reviewed this Solicitation in its entirety; understand the requirements, terms and conditions, and other information contained herein; that I am submitting this bid or proposal for review and consideration; that I am authorized by the bidder to execute this bid or any documents related thereto on bidder's behalf; that I am authorized to bind the bidder in a contractual relationship; and that to the best of my knowledge, the bidder has properly registered with any State agency that may require registration.

CTB/McGraw-Hill LLC
(Company)


(Authorized Signature)

Mark Limbach, Vice President Finance
(Representative Name, Title)

831-393-6336 831-393-6635
(Phone Number) (Fax Number)

September 4, 2013
(Date)

ADDENDUM ACKNOWLEDGEMENT FORM
SOLICITATION NO.: EDD398716

Instructions: Please acknowledge receipt of all addenda issued with this solicitation by completing this addendum acknowledgment form. Check the box next to each addendum received and sign below. Failure to acknowledge addenda may result in bid disqualification.

Acknowledgment: I hereby acknowledge receipt of the following addenda and have made the necessary revisions to my proposal, plans and/or specification, etc.

Addendum Numbers Received:
(Check the box next to each addendum received)

[X]	Addendum No. 1	[ ]	Addendum No. 6
[ ]	Addendum No. 2	[ ]	Addendum No. 7
[ ]	Addendum No. 3	[ ]	Addendum No. 8
[ ]	Addendum No. 4	[ ]	Addendum No. 9
[ ]	Addendum No. 5	[ ]	Addendum No. 10

I understand that failure to confirm the receipt of addenda may be cause for rejection of this bid. I further understand that any verbal representation made or assumed to be made during any oral discussion held between Vendor's representatives and any state personnel is not binding. Only the information issued in writing and added to the specifications by an official addendum is binding.

CTB/McGraw-Hill LLC
Company

Mark Limbach Authorized Signature

August 30, 2013
Date

NOTE: This addendum acknowledgement should be submitted with the bid to expedite document processing.