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2010 Innovations Awards Application

Deadline: March 1, 2010

ID # (assigned by CSG): **10-W-07CA**

Please provide the following information, adding space as necessary:

State: ___California

Assign Program Category (applicant): _Government Operations and Technology

1. **Program Name:** State Contractors Official Regulatory Exam System (SCORE)
2. **Administering Agency:** State and Consumer Services Agency/Dept. Consumer Affairs
3. **Contact Person (Name and Title):** Jason Piccione, Systems Software Specialist
4. **Address:** 9821 Business Park Drive, Sacramento, CA 95827
5. **Telephone Number:** (916) 212-3810
6. **FAX Number:** (916) 361-3783
7. **E-mail Address:** JPICCIONE@CSLB.CA.GOV
8. **Web site Address:** WWW.CSLB.CA.GOV
9. **Please provide a two-sentence description of the program.**

SCORE streamlines and automates the testing, scoring, monitoring and processing of contractor candidates – enabling a seamless customer experience while helping to fulfill the agency goal of protecting consumers by licensing and regulating California’s construction industry.

10. **How long has this program been operational (month and year)? Note: the program must be between 9 months and 5 years old on March 1, 2010 to be considered.**

SCORE was implemented in March 2007.

11. **Why was the program created? What problem[s] or issue[s] was it designed to address?**

The SCORE system was created to provide California contractors – our customers – with a more efficient, effective and user friendly licensing process.

Central to the mission of the Contractors State License Board (CSLB) is providing licensing and certification of contractors statewide. And integral to that process is the development, maintenance, administration and security of the Contractors State License Board’s (CSLB) 45 licensing and certification examinations.

Per California law, all applicants for an initial contractor’s license must pass both the Law and Business and a trade-specific examination. And while the CSLB provided licensing examinations on a daily basis and eight test centers, the processes and technologies supporting our examination system was failing customers, staff and our enterprise at multiple levels:

- For our customers, the testing process proved to be too time-consuming and was prone to errors and malfunctions. System failures were persistent – averaging 50 failures per month – and the customer would have to wait for an exam proctor to restart the system. For walk-in customers, the registration and scheduling process was manual, tedious and time-consuming – taking upwards of 20 minutes when it should have taken no more than five minutes.
- For our customer-facing staff, the system demanded attention at one or more of the exam sites on a daily basis. The staff could fix some issues, but others could not be resolved in a timely manner. Staff would resort to work-arounds in order to keep the exams going – but these were short-term fixes that couldn't help system-wide, especially when the problems occurred in a remote exam site. Additionally, reviewing exams for accuracy and misconduct and auditing of comment forms and “scratch paper” proved all but impossible as too many staff were needed to manage the system.
- For our technical staff, the system severely limited adaptation, scalability and security as it was built on an obsolete platform (developed in Clipper) and supported in an outdated DOS environment. Capturing, encrypting, transferring and storing information was virtually impossible in the statewide distributed network infrastructure. And providing next-generation capabilities such as video and graphic-enhanced testing was unattainable.

Overall, from the enterprise perspective, a system was needed that could adapt to changing business conditions and support new business requirements. As economic conditions changed drastically in the state, our people, processes and technology had to adapt – and our old system prevented us from moving forward. The SCORE system was the innovative solution to both our near-term and long-term needs.

12. Describe the specific activities and operations of the program in chronological order.

The SCORE system brings an end-to-end solution to both customer and CSLB needs.

First, the system enables a more seamless and robust customer experience. When a customer starts the process, the exam proctoring staff uses an intuitive drag n' drop technique to place the candidate into an exam seat. The schedule is populated by a “real-time” mainframe to PC server call.

The candidate then enjoys a self-driven tour through several security and informational system screens. Using the tools at the exam seat and following the prompts; the candidate takes their own digital picture (before each exam), listens to “Kate”, a voice modulation that reads the candidate all of the rules and policies of the testing center. The system then guides the candidate through three security questions and digitally captures and encrypts their signature. Then they welcome “Kate” back for a thorough tutorial of the navigation and details of the actual exam functions.

Next, the candidate takes his/her exam with the help of many on-screen exam management and exam-feedback tools. The system also uses industry leading voice modulation software to provide a self-driven, yet comprehensive user tutorial, customized for each contractor candidate. Two of the security-industry's biometric (methods to identify people) tools were employed to safeguard the integrity of these examinations: facial recognition (achieved by having the candidate take a digital photograph of themselves prior to each exam) and handwriting (achieved by having the candidate sign a digital signature capture pad prior to each exam) while sitting at the exam seat.

All of this takes place while the proctoring staff track all current exam activity from right there in the test center, or from the Sacramento headquarters (or any other test center for that matter). They can view pictures and signatures for consistency between exams and between exam dates. The proctors can perform all necessary exam proctoring actions from in front of the SCORE Proctoring Application.

Lastly, the SCORE system administers and flows each test and candidate into the ever-increasing number of licensure exams given by the CSLB. All of this critical data is protected with 256 AES encryption and stored with secure redundancy.

13. Why is the program a new and creative approach or method?

The SCORE system represents the leading edge of both customer facing interface design, and enterprise process and system improvement. It's this balance of combining excellence in both the "front-office" and "back-office" that exemplifies a new and creative approach.

- From the front-office perspective, we delivered a state-of-the-art experience for our customers – synchronizing innovation in our processes and services with advanced video and speech tools, biometric standards and psychological strategies. All while being protected with a strong encryption algorithm to maintain the integrity of the exams.
- From the back-office perspective, we incorporated the entire exam development life cycle into the platform. The occupational analysis, item writing, pass point, and version creation are all incorporated into a single platform with a lean, redundant design to administer our high-stakes regulatory exams. This has enabled a new level of effectiveness and efficiency.

Together, we created a new value proposition for our enterprise, while positioning CSLB for the future.

14. What were the program's start-up costs? (Provide details about specific purchases for this program, staffing needs and other financial expenditures, as well as existing materials, technology and staff already in place.)

- a. Server hardware – existing
- b. Data protection and backup hardware - \$10,294
- c. Database software - \$40,941
- d. Report design software - \$1,132
- e. Infrastructure modifications (Network Switches) - \$8,774
- f. Voice modulation software - \$4,606
- g. Microsoft .NET Development Environment – existing
- h. Development control - \$715
- i. Digital cameras - \$6000
- j. Digital signature pads - \$100,000
- k. Contract for Entire X Middleware consulting - \$75,000
- l. Staff – existing

15. What are the program's annual operational costs?

Approximately \$27,000 per year.

16. How is the program funded?

Through CSLB's Special Funds.

17. Did this program require the passage of legislation, executive order or regulations? If YES, please indicate the citation number.

No.

18. What equipment, technology and software are used to operate and administer this program?

- The foundational applications are coded primarily in the Microsoft .NET Studio environment. Visual Basic .NET and a C# modules.
- The applications run against a Microsoft SQL Server 2005 database Business Objects Crystal Reports

- Software AG middleware product called EntireX. Utilizing the middleware, we use XML-based SOAP messaging to instantiate a mainframe program, retrieve its data, and parse the XML message back on the PC side. The success in this area may be one of the biggest achievements of this entire application.
- 192 bit AES encryption, which maintains a symmetric encryption key
Microsoft .NET framework 1.1, WIA (Windows Image Acquisition) class to capture and store the digital pictures
- 64 bit character based encryption to encrypt the stored digital signature
- 16 MB foot print version of a voice modulation software class to present the voice of the SCORE System: “Kate”.

19. To the best of your knowledge, did this program originate in your state? If YES, please indicate the innovator’s name, present address, telephone number and e-mail address.

Yes, SCORE was designed, development, and implement by CSLB staff; Jason Piccione, 9821 Business Park Drive, Sacramento, CA (916) 212-3810.

20. Are you aware of similar programs in other states? If YES, which ones and how does this program differ?

No.

21. Has the program been fully implemented? If NO, what actions remain to be taken?

SCORE is fully implemented.

22. Briefly evaluate (pro and con) the program’s effectiveness in addressing the defined problem[s] or issue[s]. Provide tangible examples.

The business issues that presented the opportunity to develop the SCORE system have all been resolved. Scalable platform, current technology, a foundation that can be built upon, distributed exam security, increased customer service are just a few of the business issues that were resolved. In the end, a mainstay of what we do is provide customer service to California citizens. To this end, one of the specific resolutions presented by the SCORE system was the amount of time a contractor candidate must wait from the time they entered the test center until they were able to start their exam. After a two-week time motion study in two (2) test centers, we found that the due to the old system’s extreme inefficiencies, the average time from “door to question 1” was 30 minutes. The SCORE system now shows us that the average time from “door to question 1” is fourteen (14) minutes, more than a 50% improvement. This is the tangible evidence that demonstrates technology directly affecting the end customer, a primary goal of the SCORE effort.

23. How has the program grown and/or changed since its inception?

After working out the productions bugs, the platform has grown more in content than function. The design phase of this development proved spot on, and so the function is very sharp. The content has grown in the amount of reports the system produces on an “on-demand” basis. The exam development modules of the platform of evolved also. There are several functional areas that require information-gathering in a workshop-type setting. The evolution of that direct and interactive process has been the biggest change in the SCORE platform. This change has succeeded in capturing an efficient and productive automated workshop environment.

24. What limitations or obstacles might other states expect to encounter if they attempt to adopt this program?

It depends on their business requirements; as a template/model we believe it could be utilized with modifications to meet their business requirements. If being used by other entities examining contractors, it is likely that 75% of the system could be utilized.

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2010 Innovations Awards Application Program Categories and Subcategories

Use these as guidelines to determine the appropriate Program Category for your state's submission and list that program category on page one of this application. Choose only one.

Infrastructure and Economic Development

- Business/Commerce
- Economic Development
- Transportation

Government Operations and Technology

- Administration
- Elections
- Information Systems
- Public Information
- Revenue
- Telecommunications

Health & Human Services

- Aging
- Children & Families
- Health Services
- Housing
- Human Services

Human Resources/Education

- Education
- Labor
- Management
- Personnel
- Training and Development
- Workforce Development

Natural Resources

- Agriculture
- Energy
- Environment
- Environmental Protection
- Natural Resources
- Parks & Recreation
- Water Resources

Public Safety/Corrections

- Corrections
- Courts
- Criminal Justice
- Drugs
- Emergency Management
- Public Safety

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This application is also available at www.csg.org.