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2011 Innovations Awards Application

DEADLINE: MARCH 28, 2011

ID # (assigned by CSG): 2011- _____

Please provide the following information, adding space as necessary:

State: California

Assign Program Category (applicant): Government Operations and Technology: Information Systems

1. **Program Name:** Secure File Transfer service
2. **Administering Agency:** California Technology Agency, Office of Technology Services
3. **Contact Person (Name and Title):** Adrian Farley, Acting Director, Office of Technology Services
4. **Address:**

1325 J Street # 1600
Sacramento, CA 95814
5. **Telephone Number:** (916) 319-9223
6. **FAX Number:** (916) 324-1734
7. **E-mail Address:** Adrian.farley@cio.ca.gov
8. **Web site Address:** n/a
9. **Please provide a two-sentence description of the program.**

Secure File Transfer (SFT) is an innovative statewide shared service operated by the California Technology Agency's Office of Technology Services (OTech) to provide a complete, secure, fully regulatory compliant solution for moving files and managing transfers of data from any Internet or California Government Enterprise Network-connected client private IP network to any other server or end user. SFT provides a single platform and common protocols for the state to securely transfer information across disparate technology platforms, applications, and formats, thereby allowing the state to improve information security, phase out antiquated technologies, and dramatically reduce the cost to securely transfer files.

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 28, 2011 to be considered.

SFT began operation June 2008.

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

California collects and uses hundreds of millions of records on its nearly 37 million citizens and 1 million businesses. Because much of this information is sensitive, the state needs secure solutions to prevent intrusion by hackers and identity thieves. However, California state and local governments have multiple, sometimes incompatible platforms to transfer data; use antiquated, insecure platforms; or frequently use solutions that cost more overall because each department uses its own siloed solution. The SFT service efficiently addresses several issues by providing a single secure, interoperable, cost effective solution that can be deployed to agencies in as little as three days. Issues addressed through SFT include:

- **Improve security and mitigate risk.**
 - Sending tapes, CDs, and other media by mail or courier opens the state to unnecessary risk of lost or stolen data.
 - When a tape, CD or printed report is lost, the state can spend hundreds of hours searching for it. A single lost file can require that the state print and send letters to thousands to notify Californians about a potential breach of their private information.
 - File Transfer Protocol (FTP) methods are not secure, as sniffers can easily capture sensitive information and user account credentials.
- **Reduce the cost and time required to transfer files.**
 - Moving paper, CDs, or tapes back and forth by mail or courier is costly and time-consuming.
- **Securely transfer data so agencies can phase out antiquated file storage and transfer methods.**
 - Email is not designed to handle large files.
 - Paper, tape, and CDs deteriorate over time, have a limited life span and are inherently insecure since they can be easily lost, stolen, or copied.
 - Many secure file transfer systems use cumbersome single protocol methods, meaning that the sender and recipient must both have the same software on their computer. This is a barrier to the secure exchange of files.
- **Reduce costs by providing a single, flexible solution.** Making a single system available to all California agencies, departments, and local governments means we can build a system once and leverage its use many times, reducing the overall cost to California government to securely exchange files. This aligns with California's IT Strategic Plan, which proposes fewer, more robust, shared services.
- **Ensure a stable, highly available system.** Any secure file transfer solution must be available when a customer needs it, with a backup system in place. Some department file transfer solutions did not provide a backup, causing outages during maintenance or incidents.
- **Provide a system that would be centrally managed but give administrative rights to departments.** Departments need administrative rights to update who has access to send and receive files securely.
- **Improve the speed and agility to deploy a managed file transfer solution.** Going through the usual procurement process would take six to eight months for departments to purchase and fully implement a secure file transfer solution. However, with the shared service model, departments can quickly procure the service with a simple service contract.

Specific examples of the problem included:

- The California Department of Social Services (DSS) knew that it could be vulnerable to data breaches by mailing printed reports and CDs containing confidential files. DSS wanted to reduce the risk of data breaches and the cost and time it took to print, handle, and mail monthly reports to California's 58 counties. The department also wanted to reduce the time spent responding to information security incidents arising from lost reports.
- In response to the growing public concern about accountability and transparency, the Governor required all departments to make publically available statement of interests, and travel expense claims. The Governor required a three-day timeframe to pull this information together but the state did not have the tools to securely accomplish this.
- The Board of Equalization (BOE) wanted to reduce time, money, and resources spent burning and mailing out 700 CDs each month. In addition, BOE wanted to reduce delivery time and insecure mail delivery.
- The Department of Motor Vehicles (DMV) wanted to reduce costs to move files via legacy methods: tape, virtual private network (VPN), value-added network (VAN), print and postal mailings by using the OTech SFT service. DMV also wanted the ability to add new users to the system and manage existing accounts.

The SFT service addresses all of these problems by providing a managed file transfer solution, built on an open, standard, secure platform. SFT is flexible enough to meet the needs of multiple agencies and their customers. This provides a single, scalable platform that reduces costs by eliminating the need for departments to have their own, duplicate, file transfer system. The State of California's SFT system is designed as a shared service built once for all to use on a subscription basis. As a shared service, it provides state, county, and city governments with cost savings, efficiencies, and security through economies of scale.

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

The timeline for key events in SFT implementation is as follows:

1. March, 2007: Initial build with delegated administration support for true shared service offering.
2. March, 2007: Technology Services Board provided with proposed rates.
3. April, 2007: Account costs discussed with potential customers.
4. June, 2007: Staffing issues discussed along with potential solutions to ensure effective service.
5. July 2007: Technology Service Board rates approved.
6. Nov, 2007 – June, 2008: Technical problems delayed production launch.
7. June, 2008: Final testing, service launch.

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

SFT is innovative for government for several reasons including:

- **Reduced cost:** SFT is a shared service built once for all of California governments to use on a subscription basis. SFT reduces costs by allowing California state and local governments to use the service without the cost to build or maintain their own, separate system. Until now, most government entities created and maintained a separate solution for themselves rather than leveraging a single enterprise service.

- **File visibility:** SFT provides end to end monitoring and tracking of file movements, file storage, and an audit capability.
- **SFT allows state, city, or county agencies to securely move files within the agency or to transfer files securely to external partners:** SFT also allows external partners to securely move files. For example, the DMV allows its customers like auto sellers and trucking companies to send vehicle and driver license information directly to them using SFT. Previously, these customers sent information via insecure or slower, more costly siloed methods such as postal mail, tape couriers, VPN and VAN contracts.
- **Flexibility and agility:** The shared service model provides flexibility and agility for government customers who can avoid many procurement roadblocks and quickly get set up with SFT. The shared service model also promotes competition and lowers the cost for an agency to move to a different solution because they have no infrastructure investment in SFT.
- **Delegated authority allows a shared service offering:** Delegated authority allows customers to manage their own files and user accounts, ensuring easy administration for each department. The vendor, Axway, changed their application on the Technology Agency's behalf, to allow for delegated administration. The feature is now standard in their offering and allows other organizations to provide shared service offerings.
- **Ease of use:** SFT is extremely secure and easy to use, including the following features:
 - A common interface;
 - Authentication through a web browser or almost any secure client software;
 - A web-based platform that allows users to send and receive different file types to and from different computing platforms (Unix, Linux, etc.)
 - Support for single sign-on; and
 - Easy point-and-click transfer of files ties everything together

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.)

Initial costs to develop the redundant, fail-over system cost approximately \$500,000. The effort involved about a year's worth of development time, working collaboratively with the vendor and agencies to ensure the system would meet the needs of agencies/departments.

By creating a shared service, the state has avoided millions of dollars in costs that would have been required for each department to create a separate, stand alone system or to use outdated file transfer methods.

So far, 30 departments use SFT. If each department were to buy a similar system on their own, it would have cost from \$125,000 to \$500,000, depending upon features. This equates to between \$3.75 million and \$15 million in savings if each department were to have set up their own file transfer solution.

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

SFT's annual operating costs are approximately \$720,000 per year, including indirect and overhead costs. Direct costs are primarily comprised of personnel, software and licensing, and infrastructure costs. Direct costs include:

- Personnel: The shared service is staffed primarily by a consultant and a technical supervisor at an annual cost of \$264,000. The Technology Agency is seeking to replace the consultant with permanent civil service staff to handle future systems, application and development workload.
- Software and licensing costs: Software and licensing costs are approximately \$228,000 annually.
- Infrastructure: Server, network, and other infrastructure costs are approximately \$120,000 annually.

The Technology Agency works with agencies to deploy the service in as little as three days, saving time and money compared to going through procurement. Delegated administration of accounts keeps central maintenance costs low as each department is responsible for the upkeep of their accounts (e.g., adding or deleting users).

Spreading operational costs across many departments has already resulted in significant cost reductions to the state's customers. As the program grows, costs per user will fall further, allowing additional rate reductions to customers.

One customer, DMV, has already experienced significant savings. By implementing SFT with 1,100 users, monthly costs to support their VAN were reduced in half (from \$16,000/month to \$8,000/month). Annual costs to operate their tape machines fell \$100,000, and \$90,000 in VPN support costs were eliminated. These savings are projected to be even higher when the DMV adds up to 60,000 users within the next couple of years, especially given that SFT rates are projected to decline as the user base grows.

16. How is the program funded?

SFT is funded through fees that are passed onto customers who use the solution. Fees to participating agencies/departments are as follows:

- Initial setup and consulting fees are between \$130 and \$375.
- SFT account costs participating agencies \$16 each per month, with an additional charge for data transfers that exceed 5GB per month per account. Most users do not exceed 5GB of use.

Rates are expected to decline as the user base grows.

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?

SFT was built using current technologies that combine to create an innovative offering. Axway Corporation's SecureTransport product is at the heart of the SFT service. SFT is hosted at OTech on a platform built to ensure high availability, security, ease use and a strong network backbone.

- **High availability:** The service uses four servers on a fully-redundant Linux platform in a Tier III data center. The four servers include: A public-facing primary and backup server in the perimeter for security and a primary and backup server at the back end utilizing proprietary protocols. The SFT system is built to ensure high availability; an incident on primary servers causes the system to automatically roll over to secondary servers. OTech staff is planning for a disaster recovery site.
- **Security:** All communication to/from the SFT service occurs through a secure VeriSign certificate. The system provides end-to-end security, tracking of file movements, file storage, and an audit capability. SFT complies with all laws, regulations, and best practices relating to the movement of sensitive data.

- **Ease of Use:** Customers connect to the SFT service via secured web browser or desktop client software. The system is user friendly and easy to learn, with point-and-click transfer of files.
- **Network backbone:** The network runs at speeds of 100 Mbps. Speed will soon be upgraded to 1GB. Individual connection speeds vary depending upon capabilities at customer sites, bandwidth usage, and the number of concurrent users.

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.

According to the vendor, Axway Corporation, only one other Axway customer is using their software in a “shared service” capacity. California is currently the only state doing so. The vendor anticipates that California’s success will compel other states to follow our lead.

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

No. A number of other state and governmental organizations use a managed file transfer solution but these are not shared service offerings available to all government organizations within the state. Instead, most managed file transfer solutions are developed as stove-piped systems. The State of California implemented its SFT service as a shared service so that all agencies (regardless of whether they are city, county, or state) may take advantage of the technology and cost savings without a large up front commitment of time or financial resources.

The difference is clear in the following example. A tax agency might create its own, stand alone file transfer service to transfer tax documents among the agency and its customers. This service would entail significant costs to set up and run. As a siloed system, other state and local tax agencies would also need to build their own secure file transfer system. With a shared service like SFT, all tax agencies in the state, including local agencies, could use SFT as a shared service, eliminating the need to separately procure, implement, and run the system.

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

Yes, the service has been fully implemented. Current efforts are focused at growing the service and implementing a disaster recovery node to ensure continuity of operations.

The state continues to actively promote the service to agencies, including forums at the state training center, presentations at industry conferences, email blasts, website, and security fairs. The DMV has also successfully marketed the new service to their customers, such as insurance companies, trucking companies and car dealers. As a result, 75% of former VPN users switched to the new SFT service.

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

Pros: The SFT service benefits millions of Californians and businesses since their information (e.g., drivers license records, health records) can be processed more quickly and securely at reduced cost. State agencies benefit as the solution reduces the risk and cost to handle and transmit physical media like paper, CDs, or tape. Agencies and taxpayers benefit from significantly reduced costs because the shared service is a single, scalable platform that eliminates the need for departments to have siloed, duplicate file transfer systems. The benefits of SFT include:

- **Improve security and reliability:** The SFT service provides a complete, secure, and fully regulatory compliant solution for moving files and managing file transfers. All communication to/from the SFT service occurs through a secure VeriSign certificate. The system provides end-to-end security, tracking

of file movements, file storage, and the ability to audit file movement. SFT eliminates the need to send tapes, CDs, and other media by mail or courier, thereby reducing the risk of lost or stolen data.

- **Dramatically reduce overall costs to securely transmit data by providing a single, flexible shared service solution.** The SFT service is available to all state, city, and county agencies and their private or public partners on a subscription basis at a fraction of the cost of siloed systems. By making a single, agile, low-cost system available to all California agencies, we build a system once and leverage its use many times, reducing the overall cost to California government to securely exchange files. SFT can quickly replace all other means and methods of moving files (such as paper, FTP, CD, email, tapes, VAN and VPN) for minor initial consulting fees and a flexible, low monthly subscription.
- **Leverage existing infrastructure investments:** The service is built using infrastructure already in place at OTech, including a highly-available Linux platform in a Tier III data center, and a network backbone running at speeds of 100 Mbps, which will soon to be upgraded to 1GB. By using existing hardware, we reduce the need to build costly, duplicative infrastructure.
- **Make the shared service solution agile and quick to deploy:** The shared service model makes it easy for departments to adopt a proven solution, without the lengthy delays of feasibility study reports. An agency can adopt SFT in as few as three days for entry initial setup and consulting fees as low as \$130. With the low initial cost, agencies can also move to a different solution without penalty if desired, spurring OTech to compete for business with the lowest rates possible.
- **Ensure high availability:** The SFT system is built to ensure high availability. The system contains primary and backup servers. An incident on primary servers causes the system to automatically roll over to secondary servers. OTech staff is planning for a disaster recovery site.
- **Provide ease of use:** A web-based platform that allows users to send and receive different file types to and from different computing platforms (Unix, Linux, etc.). Customers connect to the SFT service via secured web browser or desktop client software. The system is user friendly and easy to learn, with point-and-click transfer of files.
- **Provide a centrally managed solution with administrative rights at the department level:** OTech manages the overall solutions but provides the flexibility for agencies to manage their own access, ensuring both stability of the overall platform and agility of individual agencies.
- **Reduce cycle time to transfer files:** With SFT, customers receive time-sensitive data up to a week sooner than when files were sent on CDs, tape, or hard copy. Printing, mailing, and handling of reports and CDs have been eliminated, as has time spent responding to information security incidents due to mishandled reports.

Cons: This would require organizational change. Many organizations are content to stick with an existing solution they know rather than migrate to a better solution that would require changes to their existing processes.

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

The SFT service has grown significantly since its inception as shown below.

- **User base at inception:** The SFT service started with five departments and 100 user accounts.
- **Current user base:** The service now has 30 customer departments enrolled and more than 1,700 user accounts.
- **Future growth expectations:** The service is expected to grow by an additional 2,600 accounts within the next six to eight months. Beyond that, DMV anticipates a potential 60,000 accounts for their needs alone.

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

A state looking to create a shared service managed file transfer solution will encounter obstacles, which can be overcome given the significant benefits to a strong shared service offering. Obstacles include:

- Initial costs to create the system: Based on California’s experience, initial costs can exceed \$500,000. However, the long term benefits greatly exceed these costs.
- Time to procure and create the system: System implementation can take more than one year given procurement and time required to implement the system.
- Resistance to change and comfort with doing things “the old way.”