Public-Safety Agencies Test Free P25 ISSI Modeling Tool

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Several public-safety agencies, including officials in Houston, are using a free federal Public Safety Communications Research (PSCR) Project 25 (P25) Inter RF Subsystem Interface (ISSI) modeling and simulation tool. The tool is designed to evaluate system performance for various deployment configurations.

Since February, there have been 114 total downloads of the software to 35 different entities. The city of Houston and the San Francisco Bay Area are two jurisdictions that are exploring the software.

The P25 ISSI is designed to allow a P25 subsystem from one manufacturer to connect and interoperate with a P25 subsystem from a different vendor. The tool provides public-safety communications users with insight about how the ISSI works and offers a mechanism for simulating deployment configurations and parameter settings without setting up expensive test beds and demonstrations.

Houston officials downloaded the software Sept. 8 to help with its plans to connect to regional and state partners. "We have not defined all of the connections yet, but are in talks with the Lower Colorado River Authority (LCRA), a quasi-state agency that hosts a large regional radio system with many public-safety users, and Montgomery County Hospital District, a county agency north of Houston that has many volunteer fire department users," said Tom Sorley, Houston's deputy director radio communications

services.

The same day officials from Houston, LCRA and the hospital district participated in a planning session. "We are just beginning to collect the data to create the models in the tool," Sorley said. "We believe that it will be helpful. The joint workshop indicated that several issues could be predicted using the model."

"We are currently working with the city of Houston to use the ISSI simulation tool," said Dereck Orr, PSCR program manager. "We are working with them to get feedback to ensure the tool is usable by them and useful for them. Houston is a great opportunity for us, because it is an early ISSI adopter and is currently looking at tying together two different manufacturers' P25 systems through the ISSI."

As with all interoperability projects, relationships will be key to Houston's ISSI deployment, Sorley said. "While the tool looks promising, one of the biggest benefits we got out of the workshop was the interaction among the three entities and their technical staffs," he said. "We agreed to populate the tool, and once completed, get back together to run some simulations."

The simulation tool can provide feedback on overall system performance, including the audio quality and latency in setup. The tool is especially helpful for large deployment topologies where experimental setups and demonstrations would be too costly, according to the PSCR website.

The software can help with network planning based on application requirements and help troubleshoot potential issues in an experimental setup to forecast application expectations in a physical network. The tool facilitates quantitative and qualitative network measurements with user-specified incident scenarios. Quantitative measurements can reveal congestion on the link due to limited bandwidth and the

number of packets dropped, for example.

"The ISSI is a new technology and capability for public safety, so we felt there was a need to provide public-safety organizations with an opportunity to understand how this new technology will impact their existing and/or future networks," Orr said. "The PSCR wanted to develop a simulation tool by which they could model their networks and simulate a variety of situations so that they can prepare and plan accordingly prior to deploying the ISSI technology, thus giving them tools to make sure they get exactly what they want and need."

In July officials in Dallas tested the nation's first commercial P25 ISSI system linking Harris and Motorola networks.

PSCR is a joint program between the National Institute of Standards Technology (NIST) and the National Telecommunications and Information Administration (NTIA).

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