

Connections

INSIDE THIS ISSUE

Policies and Standards	2
CSEC, ECAC Roles Affirmed	3
Google Imagery (cont.)	3
Key ESInet Milestone Passed	4
Policies and Standards (cont.)	4



333 Guadalupe St.,
Suite 2-212,

Austin, Texas 78701

Telephone: 512.305.6911

Email: csecinfo@csec.texas.gov

Web: csec.texas.gov

[facebook.com/TXCSEC](https://www.facebook.com/TXCSEC)

twitter.com/CSEC911

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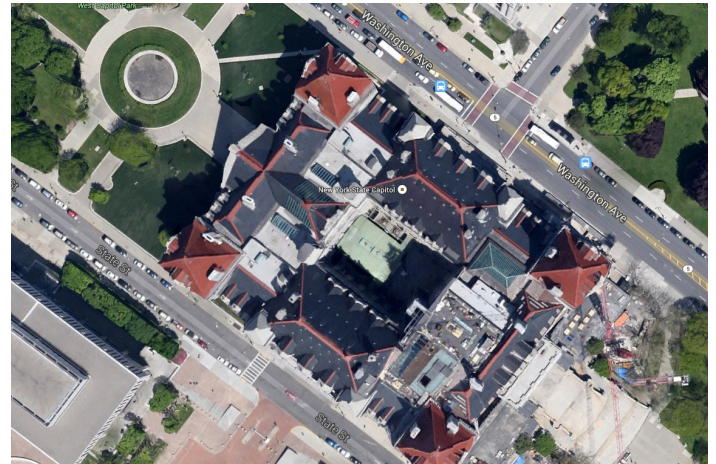
CSECSupportTeam@mcp911.com

Google Imagery Resource Takes Flight

The Texas Natural Resources Information System (TNRIS) announced recently that the Texas Google Hosted Imagery Service—which is a collaboration between the state of Texas and Google—is now available as a one-year pilot for use by all government agencies in the state.

The service provides high-definition, natural-color imagery for the entire state. The 6-inch ground resolution provided by the service compares favorably to the resolution of images provided by the Texas Orthoimagery Program (TOP) and the National Agriculture Imagery Program (NAIP).

Specifically, the resolution offered by Google Imagery



An example of high-definition orthoimagery available through Google Imagery. (TNRIS)

is four times higher than the 1/2-meter resolution provided by TOP images, and 16 times higher than the 1-meter resolution provided by NAIP images.

According to the TNRIS, the Texas Google Hosted Imagery Service is based on open standards, which means that it can be incorporated into a wide variety of GIS software and Web-mapping applications that support open-standard formats. These include the Esri suite of products, QGIS, and Global Mapper.

Google hosts the service and provides it as a Web map view. The advantage of this approach is that it saves agencies considerable money because they don't incur the costs associated with storing terabytes of data.

Use of the service is restricted to local, regional and state government entities and requires a license, as the imagery provided by the service is not in the public domain. ([Click here](#) to request a unique link to connect to the service.)

Qualifying agencies include the following:

Check Out CSEC's New Facebook Page

In order to better connect with stakeholders and keep them informed regarding its activities, CSEC has launched a new Facebook page. [Click here](#) to access the page.



ESInet Policies and Standards Are Adopted

The Texas Commission on State Emergency Communications (CSEC) approved during its March 10, 2015, meeting a series of policies and standards related to the implementation of the CSEC State-level Emergency Services Internet Protocol (IP) Network, or ESInet.

The recommendations (see below) were developed by three subcommittees of CSEC's Emergency Communications Advisory Committee (ECAC): Network, Security and Geographic Information System (GIS) Data.

NG9-1-1 GIS Data

The best sources of 9-1-1 data are local governmental geospatial databases; however, the ability of the CSEC State-level ESInet to function as designed will depend on the creation of a composite database compiled from the local databases; this in turn will require establishing a measure of consistency between the local databases.

Accordingly, this standard addresses the following major components: attribute standards and conventions; data layers; field name descriptions; synchronization and accuracy standards; topology standardization; and the synchronization process.

In a NG9-1-1 environment, GIS data is leveraged to route the call to the appropriate public safety answering point (PSAP) based on the location information of the caller.

A key component in NG9-1-1 emergency call routing is the Enterprise Geospatial Database Management System (EGDMS). The EGDMS accepts and coalesces geospatial data from 9-1-1 entities, performs quality control on the data, and refers erroneous data to the source 9-1-1 entity (or entities) for resolution.

The EGDMS also supplies data-provisioning feeds from the State-level 9-1-1 Geospatial Database to NENA i3-compliant Emergency Call Routing Functions/Location Validation Functions (ECRF/LVF) used for location validation and/or call routing to the correct PSAP, based on the caller's location. Within the PSAP, call-takers and dispatchers utilize the GIS data depicted on map displays.

Such a graphical representation aids telecommunicators in making faster and more accurate dispatch decisions—a vital consideration because the FCC estimated in 2013 that an additional 10,000 lives could be saved each year if response times were reduced by just one minute. However, if the data is inaccurate, emergency response could be delayed, putting lives at greater risk.

The next issue of *Connections* will provide more details on how the EGDMS functions and the importance of data accuracy.

Network Design, Implementation and Operations

The adoption of standards that will govern the design, implementation and operation of the CSEC State-level ESInet is imperative. Such standards will foster interoperability across multiple local, regional and statewide ESInets—both inside and outside of Texas—and will enable PSAPs to seamlessly share 9-1-1 information.

But rather than attempt to establish new standards, the Network Subcommittee recommended that CSEC adopt existing standards relevant to 9-1-1 systems. Given the vast number of 9-1-1 technology standards that exist, the Network Subcommittee began its search with those standards that previously had been identified and published by the National 911 Program.

The Network Subcommittee then focused on standards that apply specifically to the CSEC State-level ESInet. While standards that address internal PSAP operations, personnel training and carrier access networks are important to NG9-1-1 on a high level, they were considered by the subcommittee to be beyond the scope of the CSEC State-level ESInet implementation, and consequently were not included in its recommendation.

Network Security

Because the CSEC State-level ESInet interconnects numerous networks and

The ability of the CSEC state-level ESInet to function as designed will depend on the creation of a composite database compiled from local databases.

Resolution Reaffirms CSEC, ECAC Roles

A resolution was approved during the March 10, 2015, meeting of the Texas Commission on State Emergency Communications (CSEC) that describes the respective roles of CSEC and its Emergency Communications Advisory Committee (ECAC) in the development of the CSEC State-level Emergency Services Internet Protocol (IP) Network, or ESInet.

The resolution states that CSEC’s role is to make policy, provide strategic direction, and exercise oversight of the CSEC State-level

ESInet. Meanwhile, the ECAC advises the Commission on matters regarding the establishment and management of the CSEC State-level ESInet, provides for 9-1-1 entity collaboration, and ensures that the requirements of the state’s 9-1-1 entities are met.

The resolution also addresses the role of CSEC’s Executive Director. In addition to implementing and managing the CSEC State-level ESInet, the Executive Director’s role is to ensure that the 9-1-1 service provided by the state’s Regional Planning Commissions (RPCs) is

in accordance with adopted policies and standards.

Regarding the ECAC, CSEC Executive Director Kelli Merriweather said that the Committee and its subcommittees are playing a vital role in the development of the CSEC State-level ESInet.

“They are providing CSEC with knowledge, diversity and perspective that will aid the Commission greatly as it charts the course for this network, which will bring dramatic improvements to 9-1-1 service in the state of Texas,” Merriweather said. ■

“ECAC is providing CSEC with knowledge, diversity and perspective that will aid the Commission greatly as it charts the course for this network.”

*—Kelli Merriweather,
CSEC Executive Director*



Google Imagery Resource Takes Flight

Continued from page 1

- State agencies, departments, or divisions
- Regional Planning Commissions (RPCs)
- County governments
- River authorities
- City governments
- Tribal governments
- State universities

Contractors for any government entity in the state also are permitted to use the imagery as long as the project or program being performed directly supports the government entity, which will need to request a unique link for the contractor.

The cost of the service for the first year is pre-paid by CSEC, the Texas Water Development Board (TWDB), the Texas Commission on Environmental Quality (TCEQ) and the Texas Department of Transportation

Google Imagery At A Glance

Resolution:	15 cm
Accuracy:	1 meter
Format:	JPEG200
Tiling:	4,096 x 4,096 pixels
Spectral Bands:	Red, green and blue
Access:	Desktop GIS; Google Maps; Google Earth
More info:	state-and-local-gov@google.com

(TxDOT). Terms and costs after the first-year pilot are to be determined.

[Click here](#) to find additional information on the Texas Google Hosted Imagery Service. ■

Google hosts the service and provides it as a Web map view. The advantage of this approach is that it saves agencies considerable money.

ESInet project passes key milestone



The ability of the ECRF to function as designed will depend heavily on the quality of the Geographic Information System (GIS) data maintained by local 9-1-1 entities.

The document that defines the functional and technical requirements for the CSEC State-level ESInet is the result of a collaborative effort between CSEC staff, subject-matter experts Mission Critical Partners, system integrator Capgemini, and the ESInet customer focus group (CFG). CSEC thanks the CFG members for their time and expertise in making this effort a success.

The functional requirements define what a system or subsystem needs to do, while the technical requirements define how it is to be done. All of the requirements are based on the National Emergency Number Association (NENA) i3 elements; the i3 architecture provides the technological foundation for the CSEC State-level ESInet.

Specific elements that are covered include the following:

Border Control Function (BCF)—The BCF combines a session border controller and a firewall to govern external access to the network.

Emergency Call Routing Function (ECRF)—The ECRF determines which public safety answering point (PSAP) will receive the emergency call based on the caller's location, similar to the Automatic Number Identification (ANI)/Automatic Location Identification (ALI) function in legacy 9-1-1 systems.

The ability of the ECRF to function as designed will depend heavily on the quality of the Geographic Information System (GIS) data maintained by local 9-1-1 entities and aggregated into the Enterprise Geospatial Database Management System (EGDMS), as this data will be

leveraged in a NG9-1-1 environment to route calls; in legacy systems, the ANI/ALI database and the Master Street Address Guide are used in conjunction to determine the caller's location and to route the call.

Emergency Services Routing Proxy (ESRP)—The ESRP is a Session Initiation Protocol (SIP) proxy that selects the destination within an ESInet based on location and policy.

The document also covers the three gateways that will be needed as the state's legacy 9-1-1 systems transition to NG9-1-1. They include the following:

Legacy PSAP Gateway—This gateway provides an interface between an ESInet and a non-i3-compliant legacy PSAP, in order to enable the legacy PSAP to receive an emergency call via the ESInet; it also enables call transfers between compliant and non-compliant PSAPs.

Legacy Network Gateway—This gateway connects telecommunications provider central offices to an ESInet for call delivery.

Legacy Selective Router Gateway—Similar to the Legacy Network Gateway, it is designed to enable transport of an emergency call to a selective router. This in turn enables the transfer of calls from ESInet-connected PSAPs to those that are not connected to the network. ■

Policies and Standards

Continued from page 2

systems, it will be vulnerable to network security threats and risks. Accordingly, the Security Subcommittee's policy recommendations focus on preventing, responding to, and recovering from cybersecurity attacks, or any other event that could have a detrimental effect on the ability to handle 9-1-1 calls.

Specific recommendations include establishing the following:

- Controls for accessing data.
- Processes for data backup and recovery.
- Procedures for security incident management and remediation.
- Processes for security compliance audits.

More information regarding the ECAC subcommittee recommendations can be obtained by emailing CSEC at csecinfo@csec.texas.gov. ■