GEM-CALEA

The Generic Express Module for CALEA (GEM-CALEA) is a software product that implements the ASN.1 messages used across the J-STD-025 call data channel (CDC).

Background: Traditional wire-tapping techniques relying on main distribution frames become unworkable when the subscriber line is deployed using an integrated digital loop carrier (IDLC). Also, certain non-voice information such as Class 5 service interactions may now be used as evidence in a court of law. Telecommunications service providers are required to provide electronic surveillance for these line types and events, and local digital switch (LDS) vendors are expected to support this feature. These features are identified in *The Communications Assistance for Law Enforcement Act* (CALEA), and the interface to be used between local digital switches and collection equipment is defined in TIA/EIA/J-STD-025A. The call content channel (CCC) provides the subscriber voice while the CDC provides the call control information and subscriber data.

The following GEM-CALEA features simplify interface development:

- The CALEA ASN.1 LAESMessage data type defines all possible CDC protocol messages sent from the LDS to the collection equipment. GEM-CALEA provides an ANSI C structure that simplifies the specification and processing of these messages.
- GEM-CALEA provides an encode function and a decode function that allow the application to translate between the C structure and the corresponding ASN.1/BER buffer. E.g., an LDS reports a detected phone call by specifying the proper CDC message within the C structure, calling GEM-CALEA to encode it, and sending the encoded message to the collection equipment using a suitable transport such as TCP/IP.
- Input and output functions are provided for creating diagnostic tools such as simulators and high-level trace facilities.
- A generic BER decoder output utility allows low-level debugging of encoded CDC messages.