CDE #51400

THE AUTOMATED SECURE ALARM PROTOCOL

AN AMERICAN NATIONAL STANDARD THAT WORKS

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An introduction to a standard that enables the bypassing of call taking during alarm notifications to emergency communications centers.

By Bill Hobgood

The APCO/CSAA ANS 2.101.2-2014 technical standard — Alarm Monitoring Company to Public Safety Answering Point Computer-Aided Dispatch Automated Secure Alarm Protocol (ASAP) is an example of a private-public partnership that works. ASAP was designed to increase the efficiency and reliability in the electronic delivery of alarm notifications from alarm monitoring companies (AMCs) to emergency communications centers (ECCs). The "APCO/CSAA" indicates that ASAP is a joint standard. Whereas APCO supports public safety emergency communications, the former Central Station Alarm Association (CSAA) recently rebranded as The Monitoring Association (TMA), represents the alarm industry. ASAP was APCO's first technical standard to be approved by the American National Standards Institute.

THE PROBLEM

ECCs are faced with an increasing volume of 9-1-1 calls, which require human interaction to obtain the information necessary to send the right help to the right location. While priority must be given to answering 9-1-1 calls, ECCs also must answer their non-emergency lines. AMCs that deliver alarm notifications via telephone to ECCs must use 10-digit non-emergency numbers assigned by the ECCs. The AMCs calling via telephone experience frequent answering delays.

ASAP USES NLETS AND STATE MESSAGE SWITCHES FOR TRANSPORT

Vulnerabilities during the verbal exchanges of information between AMC operators and the public safety telecommunicators (PST) include difficulty in understanding each other due to differences in language accents, low telephone or headset volumes, and accidental transposition of street address information, sometimes leading to the dispatching of responders to the wrong address, resulting in tragic outcomes with loss of life.

THE VISION

As ideas began to evolve, the Security Industry Alarm Coalition reported that AMCs relay approximately 22,800,000 alarm notifications to ECCs across the United States annually to facilitate the dispatching of public safety responders. Some ECCs that use ASAP today had estimated that each alarm notification from the AMCs via telephone, on average, evolves into a total of between 2 ½ and 3 telephone calls. This includes follow-up calls from the AMCs to provide additional information, request cancellation of the dispatch, and/or respond to questions and requests from the ECCs. This means that potentially over 68,400,000 telephone calls between the ECCs and the AMCs could be reduced or eliminated using an automated data exchange.

ASAP evolved from an idea to develop a standardized data exchange format with three primary goals in mind:

1. Eliminate the telephone calls between the AMCs and the 9-1-1 ECCs.
2. Eliminate miscommunication between the AMC operators and the 9-1-1 PSTs.
3. Decrease processing and response times to alarm-related calls for service with the objective of an increase in law enforcement apprehensions made, a decrease in fire duration and damage, and better medical outcomes with lives saved.

THE EVOLUTION OF THE EXTERNAL ALARM INTERFACE EXCHANGE

In August of 2004, APCO and the CSAA kicked off a project to create and test a data exchange between an AMC and an ECC. In July 2006, the Alarm Interface Exchange went live as a pilot at York County, Virginia, followed by the city of Richmond, Virginia, to receive alarms from Vector Security electronically.

In January 2008, the Public Safety Data Interoperability (PSDI) project was launched, co-managed by APCO and the Integrated Justice Information Systems Institute (IJIS). The project recommended that the pilot, named "External Alarm Interface Exchange" be fully documented and presented to become a standard using the National Information Exchange Model as the data framework. APCO's Data Transfer Committee submitted the package to APCO's Standards Development Committee. In January of 2009, following approval by ANSI, APCO published APCO/CSAA ANS Standard 2.101.1-2008.

THE REBRANDING TO ASAP

In 2010, the International Justice and Public Safety Network (NLETS), became engaged and assigned messages keys: "ALQ" for traffic

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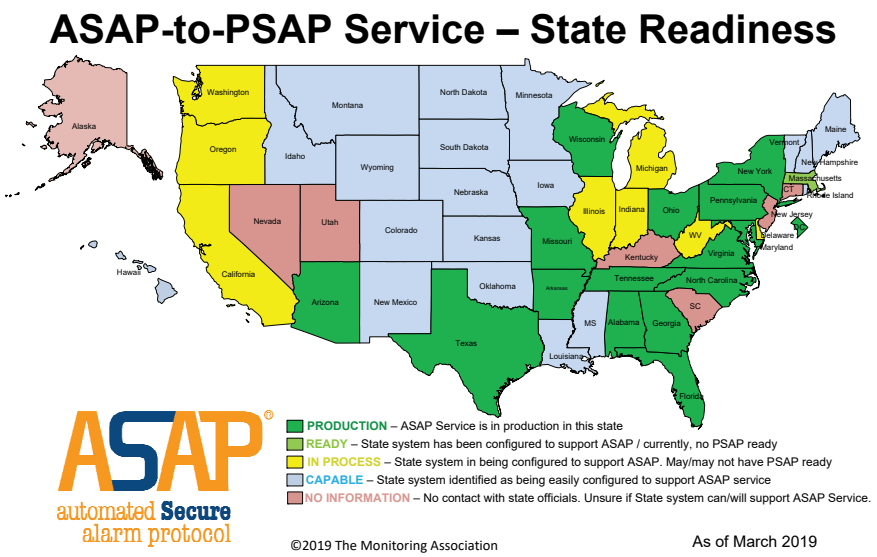


originating from the AMCs and "ALR" for responses originating from the CAD system. The use of Originating Agency Identifiers (ORIs) to route the messages via NLETS and the state switches was implemented. By 2012, a CSAA-managed message broker was implemented adhering to all NLETS security requirements while requiring alarm companies to be Underwriters Laboratories (UL) certified. The technical schema was enhanced to recognize the message broker, becoming version 3.3. The CSAA decided to rebrand the project in concert with the implementation of the message broker to be called "ASAP." In CSAA's outreach efforts, the catchy phrase "ASAP to the PSAP" was born.

ASAP WORKFLOW

The Monitoring Association owns the ASAP service. CAD interface and AMC automation solutions must be certified to operate with ASAP. Agencies must contact TMA at tma.us/asap-contact-us/ to participate and will be provided forms to complete.

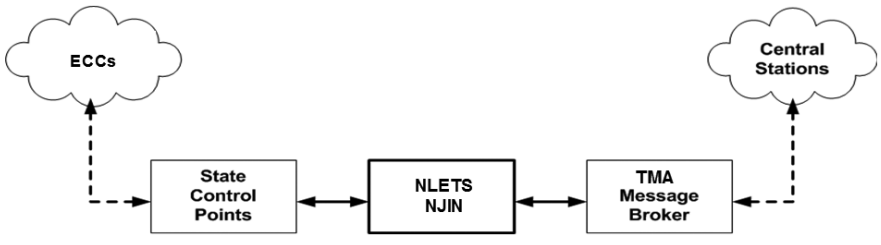
Once the project begins, there is a period of testing in both a test and production environment before a go-live date can be set. A brief is sent to all ASAP-participating AMCs describing the disciplines, agencies dispatched and addressing highlights. The AMCs will provide their lists of addresses monitored in the jurisdiction in spreadsheet format. The addresses are geo-validated against the agency's geographic information system (GIS) data. For any addresses that do not match the GIS, the ECC will have an opportunity to provide corrections. Each AMC will be tested with the ECC in a non-production environment. The ECC must sign a traffic authorization letter (TAL) for each AMC approved for production. The TALs are sent to the ASAP service to configure the message broker to allow the AMC to begin go-live activities. AMCs cannot send an alarm for any address that has not been validated by the CAD. At go-live, each AMC will transmit all the addresses monitored for the agency, referred to as the bulk address verification process. This is the final lookup of each address by the CAD system. The CAD will respond with an "Accept — Valid Address" or "Reject — Invalid Address" accordingly. Address verifications are throttled by the message broker to prevent overwhelming the CAD. The AMC is then considered to be "live" with the agency, but the AMC must follow up on any rejected addresses.

ASAP does not relieve AMCs of any responsibility. For some alarm types, such as a residential burglary alarm, AMCs are bound by local or state ordinances or their own company policies to perform call verification or enhanced call verification by contacting the alarm subscriber to determine if an alarm is real or false. Until the AMC is able to make that determination, the alarm is not sent to THE ECC. However, if the AMC is unable to make contact or if the alarm type necessitates immediate notification to the ECC — for example, a commercial hold-up or fire alarm, the AMC will transmit the alarm using ASAP if the dispatch agency uses ASAP.

AMCs must use a list of alarm event types defined by the standard. When the AMC sends an alarm to the agency, if the address and alarm event type are valid, the CAD system creates a call-for-service and responds with an "Accept" message including the CAD incident number. The alarm notification is generally delivered directly to the CAD system in less than two seconds and subsequently appears in the open call queue at the appropriate dispatch console position. Each CAD system has an alarm-event-to-CAD-nature translation table to display alarm event types that the agency PSTs are accustomed to seeing. As an example, a "tamper" alarm could be translated to a "burglary" alarm. Each ECC controls this table. If the agency is law enforcement dispatch only, fire and medical events are flagged as invalid alarm types.

The CAD returns a "reject" message to the AMC along with a meaningful error message for invalid addresses or event types. There are timers built into the AMCs' automation to notify the alarm operator if an alarm has not been acknowledged by the CAD system within 60 seconds. If necessary, the AMC can call the ECC via telephone. But this should be an exception rather than the rule.

A "CADUpdate" is sent to the AMC once the first unit has been dispatched and again when the first unit arrives on scene. The AMC operator can send "update" messages to the agency advising of additional details such as confirmation that a crime-in-progress or fire has been verified, a request for cancellation, or a response to a question from the ECC. The PST, and mobile computer users when authorized by the agency, can send requests to the AMC operator — for example, a request



for a key holder. AMCs cannot see any sensitive details from the call-for-service. A final "CADUpdate", with a disposition if available, is sent to the AMC when the last unit clears and the call-for-service is closed.

As of June 2019, ASAP had been implemented at 52 ECCs across the United States in 15 states plus the District of Columbia. Each ECC has realized the positive impact that ASAP offers. ASAP-user agencies have shared many success stories, from crime suspects being apprehended due to a faster law enforcement response, fires extinguished quickly by responders when no 9-1-1 call had been received to report the fire, and defibrillation started earlier for victims experiencing a medical emergency. The majority of the larger AMCs are participating, plus many regional companies. ●

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CDE EXAM #51400

1. ASAP evolved with what goal(s) in mind?
   a. Reduce the number of telephone calls between the AMCs and the 9-1-1 ECCs
   b. Eliminate miscommunication between the AMC operators and the 911 ECC telecommunicators
   c. Decrease processing and response times to alarm-related calls for service with the objective of an increase in law enforcement apprehensions made, a decrease in fire duration and damage, and better medical outcomes with lives saved
   d. All of the above

2. What was ASAP called when APCO and the CSAA kicked off a project to create and test a data exchange between an AMC and an ECC?
   a. Alarm company interface
   b. External Alarm Interface Exchange
   c. Alarm company to 9-1-1 Rapid Data Interface
   d. Alarm Feed

3. APCO/CSAA ANS Standard 2.101.1-2008 was APCO's first published technical standard.
   a. True
   b. False

4. Agencies, alarm monitoring companies and ECCs alike must contact The Monitoring Association to sign up for ASAP and must complete the paperwork process.
   a. True
   b. False

5. When the CSAA rebranded the External Alarm Interface Exchange project in 2012, what "catchy" phrase was born for outreach purposes?
   a. "ASAP to 911"
   b. "ASAP to the ECC"
   c. "ASAP to the PSAP"
   d. "ASAP to the PD"

6. ORIs are used to route ASAP messages via NLETS and the state switches between the alarm monitoring companies and the ECCs.
   a. True
   b. False

7. Which message keys were assigned by NLETS to facilitate the transmission of ASAP messages?
   a. "RQ" and "RR"
   b. "DQ" and "DR"
   c. "ALQ" and "ALR"
   d. None of the above

8. Alarm companies may transmit an alarm via the ASAP interface even if the address has not been validated by the ECC's CAD system.
   a. True
   b. False

9. The ECC is in control of alarm event to CAD problem nature codes and decides how the alarm company's event type will be mapped and displayed for the telecommunicator assigned to the dispatch console.
   a. True
   b. False

10. Which of the following features are characteristics of the ASAP program?
    a. Bi-directional messages in the form of "updates" between the alarm monitoring company operator and the ECC telecommunicator.
    b. "CADUpdates" from CAD notifying the alarm monitoring company when the first unit has been dispatched, the first unit has arrived on scene, and when the call has been closed including disposition information if available.
    c. An "Accept" message when the call-for-service is created containing the CAD incident number and a "Reject" message when an invalid address or alarm event type is received by the CAD.
    d. All of the above

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