



**IJIS Institute**

*Realize the Power of Information*



# 2009

August

## Priority Data Exchanges



## for Local Communication Centers

*A List of Data Exchanges Relating to  
Computer Aided Dispatch Systems*

*Public Safety Data Interoperability Program (PSDI)*

Scott Parker  
*Project Manager, IJIS Institute*

Steve Wisely  
*Director, Comm Center and 9-1-1 Services  
Department, APCO*

*Cover photo: City of Richmond, VA*

**U.S. Department of Justice  
Office of Justice Programs**  
810 Seventh Street, NW.  
Washington, DC 20531

The Honorable Eric H. Holder, Jr.  
*Attorney General*

The Honorable Laurie O. Robinson  
*Acting Assistant Attorney General*

The Honorable James H. Burch II  
*Acting Director, Bureau of Justice Assistance*

---

**Office of Justice Programs  
World Wide Web Home Page**  
[www.ojp.usdoj.gov](http://www.ojp.usdoj.gov)

---

**Bureau of Justice Assistance  
World Wide Web Home Page**  
[www.ojp.usdoj.gov/BJA](http://www.ojp.usdoj.gov/BJA)

---

**For grant and funding information contact  
U.S. Department of Justice, Office of Justice Programs  
Funding Opportunities**  
<http://www.ojp.usdoj.gov/funding>

---

This project was supported by Grant No. 2007-DD-BX-K155 awarded by the Bureau of Justice Assistance. The Bureau of Justice Assistance is a component of the Office of Justice Programs, which also includes the Bureau of Justice Statistics, the National Institute of Justice, the Office of Juvenile Justice and Delinquency Prevention, and the Office for Victims of Crime. Points of view or opinions in this document are those of the author and do not represent the official position or policies of the United States Department of Justice.

## Table of Contents

Table of Contents .....	ii
Tables .....	iv
Acknowledgements .....	1
1 Introduction .....	2
1.1 Management .....	2
1.2 Sponsor .....	2
2 Executive Summary .....	3
2.1 The PSDI Program .....	3
2.1.1 Other PSDI Deliverables .....	3
2.1.2 This Document .....	3
2.2 Participants .....	4
2.2.1 The PSDI Committee / contributors to this document .....	4
2.2.2 Sponsor Representative .....	6
2.2.3 Support Staff .....	6
2.3 Project Characteristics .....	6
2.3.1 Document Scope .....	6
2.3.2 Constraints .....	7
2.3.3 Methodology / Approach .....	7
3 Identified Exchanges .....	10
3.1 9-1-1 Related .....	10
3.1.1 Enhanced 9-1-1 Information to CAD .....	10
3.1.2 Next Generation 9-1-1 (NG9-1-1) Information to CAD .....	11
3.2 Telematics Related .....	12
3.2.1 Incident Notifications via Telematics (crash, disabled vehicle, etc.) .....	12
3.2.2 Track Stolen Vehicles via Telematics (e.g., LoJack®, OnStar®, etc.) .....	13
3.2.3 Gunshot Location Event .....	14
3.3 Mobile Related .....	15
3.3.1 Calls For Service (initial) .....	15
3.3.2 Updates to Call for Service .....	16
3.3.3 Multiple-Media Information to Mobile (video, photo, audio) .....	17
3.3.4 New Call for Service from a Field Unit .....	18
3.3.5 Call for Service Updates via MDC .....	19
3.3.6 GIS System / AVL Providing Closest Unit Recommendation .....	20
3.4 External - Incoming .....	21
3.4.1 New Call for Service from another CAD System (CAD-to-CAD) .....	21
3.4.2 New Call for Service from Other Agency (Public Works, Utilities, etc.) .....	22
3.4.3 External Alarm Information .....	23
3.4.4 Warrant Notifications from Other System .....	24
3.4.5 Restraining Order Notifications from Other System .....	25
3.4.6 Multiple-Media Information into CAD (video, photo, audio) .....	26
3.5 External - Outgoing .....	27
3.5.1 Call Information (to supplement EMS, EM, LE, or Fire Records System) .....	27
3.5.2 All Unit Broadcasts (BOLOs, etc.) .....	28
3.5.3 Call Information to Text Enabled Devices (PDAs, pagers, cell phones) .....	29
3.5.4 Alerts for Mass Casualty Incidents .....	30
3.5.5 Notification of New Incident as Appropriate .....	31
3.5.6 Transfer of Call for Service .....	32
3.5.7 Recorder & Logging Systems Comments (added by CAD) .....	33
3.5.8 Event Notifications to Text-Enabled Devices (pagers, cell phones) .....	34
3.5.9 Transfer ANI/ALI Data to Secondary PSAP .....	35

3.5.10	Update False Alarm Billing Systems .....	36
3.6	External – Miscellaneous.....	37
3.6.1	CAD System Inquiries (call volume, call history, unit availability) .....	37
3.6.2	Query for Personal Medical Data .....	38
3.6.3	Queries to other EOCs (EMnet, EMMA, etc.).....	39
3.6.4	Query Location (Involvement History) .....	40
3.6.5	Premises History.....	41
3.6.6	Supplemental Information (history, query returns, etc).....	42
3.7	Weather Related .....	43
3.7.1	Weather Products (RADAR, Satellite Imagery, Surface Analysis, etc).....	43
3.7.2	Weather Inquiries (Current Conditions, Forecast, Rain Levels, etc).....	44
3.8	Hazardous Materials Related .....	45
3.8.1	Hazardous Materials Database .....	45
3.8.2	Hazmat Updates.....	46
3.8.3	Hazmat Database Query (Plume Models, Chemtrek, CAMEO, etc.) .....	47
3.9	Transportation Related.....	48
3.9.1	Event Notifications to/from Transportation .....	48
3.9.2	Incident Notifications to/from Transportation .....	49
3.9.3	Requests for Assistance to/from Transportation.....	50
3.9.4	Traffic Evacuation Routes from Transportation.....	51
3.9.5	Query/Response for Current Road Conditions.....	52
3.9.6	Tactical Graphical Traffic Flow Summary from Transportation.....	53
3.10	Public Alerts.....	54
3.10.1	Amber Alerts.....	54
3.10.2	Public Warnings (Sirens, Giant Voice, Weather Radio, etc.).....	55
3.10.3	Broadcast Media Warnings and Alerts.....	56
3.11	Fire and EMS Specific .....	57
3.11.1	Station Toning for new Call.....	57
3.11.2	Call Information to Station Printers/FAX.....	58
3.12	Law Enforcement Specific.....	59
3.12.1	Law Enforcement Inquiries (NCIC, State, DMV, and Local) .....	59
3.12.2	Query Person (Wanted Status, Description, Mugshots, Criminal History).....	60
3.12.3	Query Vehicle (Owner Information, Description, Etc.) .....	61
3.12.4	Firearms License and Ownership Files .....	62
3.12.5	State Mental Health Database(s) .....	63
3.13	Analysis .....	64
3.13.1	Statistics for Analysis .....	64
3.13.2	GIS Data for Analysis.....	65
3.13.3	GIS Data for Situational Awareness .....	66
3.14	Other .....	67
3.14.1	Incoming Query for Information (Nonspecific).....	67
3.14.2	Outgoing Query for Information (Nonspecific) .....	68
4	Prioritization .....	69
4.1	Purpose and Cautionary Note.....	69
4.2	Methodology.....	69
4.3	High Priority Exchanges .....	70
4.4	Medium Priority Exchanges .....	71
4.5	Low Priority Exchanges .....	71
4.6	The Top 12.....	72
5	Conclusion.....	73
6	Appendix A - References.....	74
7	Appendix B – Exchange Development Matrix.....	75

8    Appendix C - Glossary ..... 78  
9    Appendix D - Exchange Checklist Worksheet ..... 80

**Tables**

Table 1 - High Priority Exchanges .....70  
Table 2 - Medium Priority Exchanges .....71  
Table 3 - Low Priority Exchanges.....71  
Table 4 - Top 12 Exchanges .....72

## Acknowledgements

The Association of Public-Safety Communications Officials – International (APCO) and the IJIS Institute acknowledge the hard work of the PSDI committee members in the development of this report, in particular, Bill Kellett, Bill Hobgood, David Mulholland, and James Slater.

This report, and the many ongoing activities of the Public Safety Data Interoperability Project, would not exist without the full support of the Bureau of Justice Assistance (BJA) of the Office of Justice Programs (OJP) in the U.S. Department of Justice (DOJ). The continuing leadership and guidance of BJA are key elements to the success of this project, from which first responders and public safety communications centers across the United States will derive benefits.

APCO International and the IJIS Institute are grateful for the support of the communications, law enforcement, emergency medical service, fire service, emergency management, and transportation practitioners, as well as the IJIS member companies and their professional representatives, who devote time and share their invaluable expertise for projects such as this.

Scott Parker  
Project Manager  
IJIS Institute

Stephen J. Wisely  
Interim Director  
Association of Public Safety Communication Officials-International (APCO)

# 1 Introduction

This document is part of a set of deliverables being produced by the IJIS Institute/ APCO Public Safety Data Interoperability Program (PSDI). The overall program is anticipated to encompass multiple projects, and is focused on advancing open, standards-based information sharing to support the emergency communications domains – law enforcement, fire, and EMS – and related homeland security domains. The results of this first project will set the foundation for future projects to create high-value, first responder National Information Exchange Model (NIEM) exchanges.

The goal of this initial project is to improve real-time information sharing capabilities in the emergency response environment. Primarily, the program aims to define a strategy for the adoption and use of NIEM as the standard for sharing critical information between emergency communications centers and public safety agencies, within and across jurisdictions, and with other relevant emergency management and intelligence domains of the federal government, as well as to define a CAD Exchange List of high-value exchanges.

## 1.1 Management

This project is co-managed by the IJIS Institute and APCO.

The IJIS Institute is a nonprofit corporation funded partly through grants from DOJ's Office of Justice Programs, Bureau of Justice Assistance (BJA). The Institute assists "national scope" efforts related to information sharing in justice and public safety. The Institute comprises a membership of approximately 250 companies active in supplying information technology products and services to justice and public safety agencies. IJIS Institute achieves its mission of advancing information sharing through the development and endorsement of standards, and by providing assistance to local, tribal, and state agencies. ([www.ijis.org](http://www.ijis.org))

The Association of Public Safety Officials-International (APCO) has a strong cadre of senior management executives and technical staff, as well as a committee structure that is well-positioned to support the IJIS Institute and affiliated organizations to undertake and successfully complete the project objectives. APCO has a long history of providing leadership in a wide variety of public safety projects and initiatives. Through the 70-plus-year history of APCO, it has been at the forefront of projects dedicated to the safeguarding of our citizens and improving public safety communications. APCO's qualified staff champions projects with goals to standardize processes, procedures, and services. ([www.apcointl.org](http://www.apcointl.org))

## 1.2 Sponsor

This project is funded by the Bureau of Justice Assistance's Edward Byrne Memorial Discretionary Grants Program. BJA is a component of the Office of Justice Programs of the U.S. Department of Justice. The BJA mission is to provide leadership and services in grant administration and criminal justice policy development to support local, state, and tribal justice strategies to achieve safer communities. One of the BJA's goals is to improve the functioning of the criminal justice system. To achieve these goals, BJA programs emphasize enhanced coordination and cooperation of federal, state, and local efforts. ([www.ojp.usdoj.gov/BJA](http://www.ojp.usdoj.gov/BJA))

## 2 Executive Summary

Public Safety Communications Centers in the United States are facing an era of dramatic and rapid change. This wave of change has two main drivers:

**Technology Innovation:** New forms of digital information are becoming increasingly important in emergency response, including images, text, video, audio, and geo-spatial data. New wireless phone technology provides an origination point for many of these incoming information types. In addition, this same technology makes it possible for the communications center to reach out to the public in ways never before possible.

**Business Process Innovation:** The face of emergency response in the U.S. is changing dramatically. In order to respond more effectively, the first responder community is concentrating more and more on effective coordination across jurisdictional and disciplinary boundaries. This focus on interoperability creates new challenges and opportunities for the communications center.

The IJIS institute/ APCO Public Safety Data Interoperability (PSDI) Program is chartered to assist communications centers confronting these imperatives for change.

### 2.1 The PSDI Program

The PSDI Program is a BJA-funded joint initiative of the IJIS Institute and APCO. The overall program is anticipated to encompass multiple projects, and is focused on advancing standards-based information sharing to support the emergency communications domains – law enforcement, fire, and EMS – and relevant homeland security domains. The results of this first project will set the foundation for future projects to create high-value, first responder National Information Exchange Model (NIEM) exchanges.

#### 2.1.1 Other PSDI Deliverables

In addition to this document, deliverables for the first phase of the PSDI Program include:

***Guide to Information Sharing and Data Interoperability for Local Communications Centers:*** this document highlights important emerging trends in Communications Center information sharing. It is aimed at the directors of public safety communications centers (to include Public Safety Answering Points [PSAP] or any agencies that answer emergency calls) who intend to plan for future growth.

**NIEM IEPD Development:** the PSDI Program will lead development efforts for new information exchanges. These efforts will be packaged as NIEM Information Exchange Package Documentations (IEPDs).

#### 2.1.2 This Document

This document is written for directors and other managers of public safety communications centers. Its aim is to provide an overview of high-value information exchanges that are relevant to these centers. Communications center directors and other planners may use this document to assess the current strengths, weaknesses and growth potential of their facilities.



In addition, this document provides a window into the future of data exchange in the Communications Center. Many of the exchanges described in this document are not yet in wide use, if at all. Directors and planners can use this information to understand emerging trends in data interoperability and to plan for future growth.

This document provides very specific descriptions of data exchanges. It is meant to be used in conjunction with the companion *Guide to Information Sharing and Data Interoperability for Local Communications Centers* document produced by the PSDI Program. The Guide provides broader information on concepts and trends that are driving Communications Center growth.

### **IMPORTANT - PLEASE READ**

Frequently, the initial reaction some readers will have to some of these exchanges is a feeling that, if implemented, the communications center will be overwhelmed with the amount of information coming into the center. This is not the case. Exchanges should be implemented to enhance the operations of a center and support your existing business processes – not to become a detriment to your operations.

When implementing any exchange, it can and should be configured with appropriate filters, conditions, and methodologies to aid your goals, Standard Operating Procedures (SOPs), and Memorandums of Understanding (MOUs). Specifics will need to be worked out with your implementation technologists. Some examples of configuration decisions that can impact exchange behavior are:

- When will the exchange actually be used - what will trigger it and under what circumstances, and is the trigger automatic or manual?
- What information will be exchanged – is it filtered based on recipient or type of call?
- Where does it go – straight into the CAD database/system, into the calls for service queue, or to a popup screen for a dispatcher to make a decision about it?

## **2.2 Participants**

### **2.2.1 The PSDI Committee / contributors to this document**

Ernie Blair, Director and CEO  
Huntsville-Madison County 9-1-1 Center (Alabama)  
(International Association of Emergency Managers (IAEM) representative)

MacNeil Cross, Chief (Ret)  
New York City Fire Department  
(Fire services representative)

Bill Kellett (Committee Chair), Technology Architect  
Microsoft  
(IJIS Institute representative)

David Finchum, Law Enforcement Product Manager  
BIO-key International  
(IJIS Institute representative)

Wayne Gisler, Assistant Deputy Director  
Traffic Engineering, Harris County Public Infrastructure Department (Houston, Texas)  
(Transportation representative)

Alan Harker, Product Line Manager  
Spillman Technologies  
(IJIS Institute representative)

Linda Hill, Consultant  
The Archer Group  
(IJIS Institute representative)

Bill Hobgood, Systems Developer Lead  
Department of Information Technology  
City of Richmond, Virginia  
(APCO representative)

Arthur Meacham, CAD System Manager  
Caddo Parish Communications District (Louisiana)  
(APCO representative)

Kevin McGinnis, MPS, EMT-P  
Program Advisor, NASEMSO  
(National Association of State EMS Officials (NASEMSO) representative)

David Mulholland, Commander  
Information Technology & Communications  
United States Park Law enforcement  
(Law Enforcement representative)

James F. Slater III, Deputy Executive Director  
Massachusetts Criminal History Systems Board  
Criminal Justice Information Services Division  
(Law Enforcement representative)

James Smalley, Manager  
Wildland Fire Protection  
(National Fire Protection Association (NFPA) representative)

Jonathan Spanos, PhD, Director  
Customer Support/Interoperability  
(National Emergency Management Association (NEMA) representative)

Barbara Thornburg, NENA Committee Resource Manager  
(NENA representative)

Charles Werner, Chief  
Charlottesville Fire Department (Virginia)  
(International Association of Fire Chiefs (IAFC) representative)

## 2.2.2 Sponsor Representative

Christopher Traver  
Senior Policy Advisor  
Bureau of Justice Assistance

## 2.2.3 Support Staff

Amanda Byrd  
Special Projects Manager  
APCO International

Scott Parker  
Project Manager  
IJIS Institute

Stephen J. Wisely  
Interim Director  
APCO International

## 2.3 Project Characteristics

### 2.3.1 Document Scope

As stated earlier, this document aims to provide a comprehensive overview of data exchanges for the communications center director. Therefore, *all* of the data exchanges discussed herein are relevant to the communications center. These data exchanges fall into three categories:

**Mature:** Many of these exchanges are currently in production in many communications centers. There is broad agreement on data standards and on the business processes involved in the exchange.

**Emerging:** These exchanges are currently in development and are not in wide use today in communications centers. Many different organizations may be championing various development efforts. The PSDI program promotes adoption of these emerging exchanges by publicizing the work of these organizations, helping to raise awareness among communications center directors.

**Future:** These exchanges are not currently in use or under development today. However, they have the potential to provide great value for communications centers. The PSDI Program helps to develop and promote these new types of exchanges.

For all categories, we define data exchanges using every type of information that may potentially be an input to, or output from, a Computer Aided Dispatch (CAD) system. Data sources are not limited to structured data; we also examine the use of unstructured data, such as text, video, images, and audio.

### 2.3.2 Constraints

The PSDI Program concentrates on information exchanges that involve the following communities: emergency medical services, emergency management, fire services, law enforcement, and transportation.

In addition, this document defines a small number of high-value exchanges that involve other communities, including hospitals, other communications centers, alarm centers, and the general public.

In order to be manageable, an additional constraint used for this exchange list was that exchanges must be current, or potential, data exchanges into, or out of, a CAD system.

### 2.3.3 Methodology / Approach

Section 3 of this document provides a detailed outline of data exchanges for the Communications Center. In order to develop this outline, the PSDI program began by defining relevant data exchanges, using the following methodology:

- **Define inputs** - inputs to the exchange may be automated or manual, structured or unstructured, formal or informal. They represent any source of information available to the communications center. Inputs included: Automatic Number Identification – Automatic Location Information (ANI-ALI); Alarm; Calls; Radio Transmission; Telematics; Geographic Information Systems (GIS); Mobile; Intelligent Transportation Systems (ITS); and Other.
- **Define outputs** - outputs of the exchange represent any type of information that the communications center is capable of presenting to other communities. Outputs included: Queries to external databases; RMS (multiple types); Mobile; Fire Station (toning, etc); Hospital; Other CAD; Public; GIS; ITS; and Other.
- **Delineate communities of interest** - once the inputs and outputs were defined, the various communities that may have interest in this type of information were determined. This clarifies the various groups that may be senders or receivers of information for a given exchange. Communities of interest included: Emergency Medical Service; Emergency Management; Fire Services; Law Enforcement; Transportation; and Other.
- **Exchange identification** - the inputs, outputs, and communities of interest were put into a matrix. A representation of this matrix is provided in Appendix B. This matrix assisted in focusing the creative process to specific domains and inputs/outputs. Exchanges were then listed in the matrix for each combination of community/input-output.
- **Exchange Consolidation/Expansion** - the raw list of exchanges was consolidated or expanded as appropriate.
- **Define exchange details** - once the list was finalized, the detailed data was written. These details include the following for each exchange:
  - Exchange Number
  - Primary Communities of Interest
  - IEPD Status
  - Directional Style
  - Typical Path
  - Connection To
  - Data Examples

- Typical Trigger Type(s)
- Examples of Triggering Event(s)
- Sample Scenario(s)
- Sample Business Rules(s)

The definitions of each detail are included in the sample template below.

Exchange #	Numerical sequence of the exchange in the list provided.
Primary Communities of Interest	Identifies the communities that are most likely to be impacted by the exchange - Emergency Medical Service, Emergency Management, Fire Services, Law Enforcement, Transportation, or Other.
IEPD Status	Identifies the known status of the exchange, whether it exists as a NIEM or non-NIEM exchange and where to find it.
Directional Style(s)	Identifies the basic direction style of the exchange among 4 choices: CAD → Ext (CAD pushes information to External system) Ext → CAD (External system pushes information to CAD) CAD ⇄ Ext (CAD sends query to External system; External system sends information to CAD) Ext ⇄ CAD (External system sends query to CAD; CAD sends information to External system)
Typical Path	Indicates the typical path for the exchange including query and response direction.
Connection to	Identifies the system to which the CAD is connecting.
Data Examples	Examples of data contained in the exchange (representative data only; not definitive; for illustration purposes only).
Typical Trigger Type(s)	Indicated typical trigger type - Automated/ Automatic or Manual.
Examples of Triggering Event(s)	Provides examples of triggering events (not definitive; for illustration purposes only).
Sample Scenario(s)	Provides sample scenario(s) (not definitive; for illustration purposes only).
Sample Business Rule(s)	Provides sample business rule(s) (not definitive; for illustration purposes only).

- **Priority Voting** - Once the exchanges were finalized, each PSDI Steering Committee member was able to “cast a vote” on the exchange priority (High, Medium, Low) and “Top 10”. See Section 4 for more detail on this process.

### **IMPORTANT REMINDER**

This document can't possibly come close to providing all the triggers, triggering events, scenarios, or business rules for each of the exchanges enumerated herein. Therefore, the methodology undertaken was to provide examples and/or samples of each. The reader is cautioned not to limit him/herself to

## 3 Identified Exchanges

### 3.1 9-1-1 Related

#### 3.1.1 Enhanced 9-1-1 Information to CAD

Exchange #	1
Primary Communities of Interest	<input checked="" type="checkbox"/> Emergency Medical Service <input checked="" type="checkbox"/> Emergency Management <input checked="" type="checkbox"/> Fire Services <input checked="" type="checkbox"/> Law Enforcement <input checked="" type="checkbox"/> Transportation <input checked="" type="checkbox"/> Other
IEPD Status	Non-NIEM Exchange - E9-1-1 ANI-ALI text-delimited files from telephone companies/MSAG providers
Directional Style(s)	<input type="checkbox"/> CAD → Ext (CAD pushes information to External system) <input checked="" type="checkbox"/> Ext → CAD (External system pushes information to CAD) <input type="checkbox"/> CAD ⇄ Ext (CAD sends query to External system; External system sends information to CAD) <input type="checkbox"/> Ext ⇄ CAD (External system sends query to CAD; CAD sends information to External system)
Typical Path	External System → CAD
Connection to	9-1-1 sources to CAD
Data Examples	phone number, name and address registered to the phone number; Ani-ALI
Typical Trigger Type(s)	<input checked="" type="checkbox"/> Automated/Automatic <input type="checkbox"/> Manual
Examples of Triggering Events	<ul style="list-style-type: none"> <li>• Reporting a theft to law enforcement.</li> <li>• Fire in progress.</li> <li>• Chest pains.</li> <li>• A wireless call from a vehicle.</li> <li>• TTY calls to 9-1-1.</li> </ul>
Sample Scenario(s)	<ul style="list-style-type: none"> <li>• A wireless caller is traveling in a vehicle and witnesses a 5 car crash, with injuries. An emergency response is required. The vehicle may, or may not, be equipped with a GPS device. A passenger in the vehicle dials 9-1-1.</li> </ul>
Sample Business Rule(s)	<ul style="list-style-type: none"> <li>• Based upon local business rules, the call may require creation of at least 3 CAD system tickets (Dispatch Reports): Law enforcement, Fire and EMS. Depending on the system type and setup, additional tickets based on specific crash situations may be entered manually into the CAD system by the call taker.</li> <li>• 9-1-1 ANI/ALI-relevant call data will be sent to the CAD system by the call taker. At a minimum, this will include location and caller information (name, phone number, and other data, if available).</li> <li>• Do not send data to the CAD system for duplicate calls on the same event.</li> <li>• The call taker manually enters additional, relevant data into the CAD system.</li> <li>• Dependent on the particular system setup in the PSAP, the mapping display may be populated before the call taker answers the call. The mapping display can be based on either location or a combination of call type &amp; location.</li> <li>• Dependent on local business rules, a call may display prior to being answered by call taker or at time of call taker answer, and it may be removed from display or converted to an incident display following completion of the call or upon call taker intervention.</li> <li>• Specific ANI/ALI data can be inserted into the call recording as the title of the recording.</li> <li>• ANI/ALI and TTY data to be inserted into call records can be anything in the ANI/ALI stream and the TTY communications stream based on business rules, including date and time of call/communication.</li> <li>• Dependent on business rules and the logging and recording application / equipment capabilities, multiple calls may be linked if related to a single incident.</li> </ul>

### 3.1.2 Next Generation 9-1-1 (NG9-1-1) Information to CAD

Exchange #	2
Primary Communities of Interest	<input checked="" type="checkbox"/> Emergency Medical Service <input checked="" type="checkbox"/> Emergency Management <input checked="" type="checkbox"/> Fire Services <input checked="" type="checkbox"/> Law Enforcement <input checked="" type="checkbox"/> Transportation <input checked="" type="checkbox"/> Other
IEPD Status	Unknown - NG9-1-1 XML file is under development and currently not NIEM specified. For more information visit <a href="http://www.its.dot.gov/ng911/index.htm">http://www.its.dot.gov/ng911/index.htm</a>
Directional Style(s)	<input type="checkbox"/> CAD → Ext (CAD pushes information to External system) <input checked="" type="checkbox"/> Ext → CAD (External system pushes information to CAD) <input type="checkbox"/> CAD ⇆ Ext (CAD sends query to External system; External system sends information to CAD) <input type="checkbox"/> Ext ⇆ CAD (External system sends query to CAD; CAD sends information to External system)
Typical Path	External System → CAD
Connection to	NG9-1-1 sources to CAD
Data Examples	phone number, name and address registered to the phone number; combinations of audio (voice), data/text, visual (still images and video)
Typical Trigger Type(s)	<input checked="" type="checkbox"/> Automated/Automatic <input type="checkbox"/> Manual
Examples of Triggering Events	<ul style="list-style-type: none"> <li>Someone calls 9-1-1 on a smartphone/PDA and includes an image or video of the incident.</li> <li>Someone texts an emergency call to 9-1-1.</li> <li>Someone video-calls an emergency call to 9-1-1 (looks similar to a web-conference).</li> <li>A sensor/device automatically calls 9-1-1 and provides data (optionally including image, video, or other data).</li> <li>TTY calls to 9-1-1.</li> </ul>
Sample Scenario(s)	<ul style="list-style-type: none"> <li>An emergency hold-up sensor is activated. Passing thru the NG9-1-1 system, it goes to the call taker and is automatically entered into the CAD system as a robbery in progress ticket. The call taker has a voice connection to the site, along with video feeds of the scene.</li> <li>A multi-vehicle accident includes hazardous materials leakage from a transport truck. A number of sensors in the area begin to detect dangerous chemicals in the air and activate, notifying the jurisdictional PSAPs via the NG9-1-1 system.</li> <li>A possible home invasion call is received from a teenager home alone and hiding in closet in an apartment. The address/location has triggered additional data acquired within the NG9-1-1 system, including a visual close-up of the property and the apartment's layout.</li> </ul>
Sample Business Rule(s)	<ul style="list-style-type: none"> <li>Based upon local business rules, the call may require creation of at multiple CAD system tickets – law enforcement, fire and EMS.</li> <li>Due to the emergency-in-progress nature of the call, a live link between the CAD system and first responders is activated to make available to the responding units the text conversation (SMS and TTY) between the caller and the call taker.</li> <li>If a live video feed is available, the dispatcher may request the caller to pan the scene, in order to provide the feed to responding units and increase situational awareness.</li> </ul>



## 3.2 Telematics Related

### 3.2.1 Incident Notifications via Telematics (crash, disabled vehicle, etc.)

Exchange #	3
Primary Communities of Interest	<input checked="" type="checkbox"/> Emergency Medical Service <input checked="" type="checkbox"/> Emergency Management <input checked="" type="checkbox"/> Fire Services <input checked="" type="checkbox"/> Law Enforcement <input checked="" type="checkbox"/> Transportation <input type="checkbox"/> Other
IEPD Status	Unknown
Directional Style(s)	<input type="checkbox"/> CAD → Ext (CAD pushes information to External system) <input checked="" type="checkbox"/> Ext → CAD (External system pushes information to CAD) <input type="checkbox"/> CAD ↔ Ext (CAD sends query to External system; External system sends information to CAD) <input type="checkbox"/> Ext ↔ CAD (External system sends query to CAD; CAD sends information to External system)
Typical Path	External System → CAD
Connection to	Telematics (OnStar®, etc.)
Data Examples	Call type, call location, narrative
Typical Trigger Type(s)	<input checked="" type="checkbox"/> Automated/Automatic <input type="checkbox"/> Manual
Examples of Triggering Events	<ul style="list-style-type: none"> <li>• Vehicle crash.</li> <li>• Disabled vehicle.</li> <li>• Medical emergency.</li> <li>• Other emergency when driver uses telematics provider (OnStar®, etc.) to access 9-1-1.</li> </ul>
Sample Scenario(s)	<ul style="list-style-type: none"> <li>• A vehicle runs off the road, hits a tree, and its air bags are deployed. A telematics-equipped vehicle automatically sends a data exchange with GIS/location info and vehicle description to a commercial call center which in turn sends it to the local PSAP.</li> <li>• A vehicle breaks down. Highly advanced Telematics systems will detect a problem with a “health” of the vehicle and will initiate a conversation with a commercial call center or may even allow the driver to call 9-1-1 by issuing a voice command. A manually triggered, data exchange, initiated as a result of the 911 call from the vehicle, which includes the GIS/location information and vehicle description is sent to the PSAP.</li> <li>• The driver or passenger is having chest pains. A button on the steering wheel of the telematics-equipped vehicle is pressed to connect to a commercial call center or to 9-1-1, depending on the subscribed service. After verification of the alarm by the monitoring company or if the alarm initiator does not respond to the monitoring companies requests for verification the data exchange is initiated to the PSAP that includes the GIS/location information and vehicle description.</li> <li>• In most cases, the telematics service will attempt to verify the event before sending data directly to the PSAP.</li> </ul>
Sample Business Rule(s)	<ul style="list-style-type: none"> <li>• The priority of the assignment and the amount and type of resources dispatched is determined by the local SOP.</li> <li>• Depending on the local SOP, more than one agency may be dispatched to an event. For example, law enforcement events may also require the response of fire and/or EMS in addition to law enforcement. Depending on whether the PSAP is a consolidated center or not, CAD system to CAD system exchanges may come into play (e.g., when the EMS dispatch agency is a secondary PSAP).</li> <li>• The dispatcher shall maintain communications with the telematics service in cases where there is no communication with the presumed victim(s).</li> </ul>

### 3.2.2 Track Stolen Vehicles via Telematics (e.g., LoJack®, OnStar®, etc.)

Exchange #	4
Primary Communities of Interest	<input type="checkbox"/> Emergency Medical Service <input type="checkbox"/> Emergency Management <input type="checkbox"/> Fire Services <input checked="" type="checkbox"/> Law Enforcement <input type="checkbox"/> Transportation <input type="checkbox"/> Other
IEPD Status	Unknown
Directional Style(s)	<input type="checkbox"/> CAD → Ext (CAD pushes information to External system) <input checked="" type="checkbox"/> Ext → CAD (External system pushes information to CAD) <input type="checkbox"/> CAD ⇄ Ext (CAD sends query to External system; External system sends information to CAD) <input type="checkbox"/> Ext ⇄ CAD (External system sends query to CAD; CAD sends information to External system)
Typical Path	External System → CAD
Connection to	Telematics (OnStar®, LoJack®, etc.)
Data Examples	Vehicle make, vehicle model, vehicle color, vehicle tag number, location
Typical Trigger Type(s)	<input checked="" type="checkbox"/> Automated/Automatic <input type="checkbox"/> Manual
Examples of Triggering Events	<ul style="list-style-type: none"> <li>Notification through an on-board navigation/security service that a vehicle has been stolen.</li> </ul>
Sample Scenario(s)	<ul style="list-style-type: none"> <li>A person believes their vehicle has been stolen. He/she contacts LoJack to activate LoJack. LoJack activates the signal; the signal is received by a LoJack receiver-equipped law enforcement vehicle in the area.</li> <li>A person believes their vehicle has been stolen. He/she contacts on-board navigation/service, such as On-Star, and reports his or her car missing; On-Star notifies law enforcement and begins GPS tracking – sending the data via an exchange to the local PSAP. The notification includes: vehicle tag, tag state, tag year, vehicle make, vehicle model, vehicle year, number of doors, VIN, vehicle owner, person reporting, location last seen, time last seen, distinguishing characteristics, current or last known GPS position, and direction of travel.</li> </ul>
Sample Business Rule(s)	<ul style="list-style-type: none"> <li>Dispatcher will issue voice announcement in addition to sending to assigned unit via MDC.</li> </ul>

### 3.2.3 Gunshot Location Event

Exchange #	5
Primary Communities of Interest	<input type="checkbox"/> Emergency Medical Service <input type="checkbox"/> Emergency Management <input type="checkbox"/> Fire Services <input checked="" type="checkbox"/> Law Enforcement <input type="checkbox"/> Transportation <input type="checkbox"/> Other
IEPD Status	Unknown
Directional Style(s)	<input type="checkbox"/> CAD → Ext (CAD pushes information to External system) <input checked="" type="checkbox"/> Ext → CAD (External system pushes information to CAD) <input type="checkbox"/> CAD ↔ Ext (CAD sends query to External system; External system sends information to CAD) <input type="checkbox"/> Ext ↔ CAD (External system sends query to CAD; CAD sends information to External system)
Typical Path	External System → CAD; External System → Mobile
Connection to	Telematics (via Gunshot Location Software)
Data Examples	Location
Typical Trigger Type(s)	<input checked="" type="checkbox"/> Automated/Automatic <input type="checkbox"/> Manual
Examples of Triggering Events	<ul style="list-style-type: none"> <li>• A gunshot is detected by gunshot location system (e.g. ShotSpotter, etc.).</li> </ul>
Sample Scenario(s)	<ul style="list-style-type: none"> <li>• A gunshot is recorded, its location triangulated, and the information is relayed to a centralized monitoring area. Information provides probable type and caliber of weapon (example, 9mm pistol) and location, generally within feet, of the shot(s). Law enforcement officers respond to the area, check for victims and suspects, then check location for evidence (such as spent casings, bullet holes).</li> <li>• Information may also be pushed directly to equipped mobile data computers in the field.</li> </ul>
Sample Business Rule(s)	<ul style="list-style-type: none"> <li>• Dispatcher will issue voice announcement in addition to sending to assigned unit via MDC.</li> <li>• The dispatcher shall notify all units in the area of, or in route to, any call within a specified distance to the reported gunshot event.</li> </ul>

### 3.3 Mobile Related

#### 3.3.1 Calls For Service (initial)

Exchange #	6
Primary Communities of Interest	<input checked="" type="checkbox"/> Emergency Medical Service <input type="checkbox"/> Emergency Management <input checked="" type="checkbox"/> Fire Services <input checked="" type="checkbox"/> Law Enforcement <input type="checkbox"/> Transportation <input type="checkbox"/> Other
IEPD Status	Unknown
Directional Style(s)	<input checked="" type="checkbox"/> CAD → Ext (CAD pushes information to External system) <input type="checkbox"/> Ext → CAD (External system pushes information to CAD) <input type="checkbox"/> CAD ⇄ Ext (CAD sends query to External system; External system sends information to CAD) <input type="checkbox"/> Ext ⇄ CAD (External system sends query to CAD; CAD sends information to External system)
Typical Path	CAD → Mobile
Connection to	Mobile Data Computer (MDC)
Data Examples	Call data including type, location, narrative
Typical Trigger Type(s)	<input checked="" type="checkbox"/> Automated/Automatic <input checked="" type="checkbox"/> Manual
Examples of Triggering Events	<ul style="list-style-type: none"> <li>A call for service is entered into the CAD system and assigned to appropriate units.</li> </ul>
Sample Scenario(s)	<ul style="list-style-type: none"> <li>A call for service is entered in the CAD system based on the information supplied by the caller. The location of the incident is verified by the CAD system and the call is assigned to the appropriate unit(s). The CAD system transmits the call data to the responding unit(s) and the call is displayed on the field units' Mobile Data Computer (MDC). The MDC allows the responding units to review call information and notes, plot the call location on a digital map, and update the call with responding unit status entries and assignment disposition codes for example; "responding to" and "arrived on scene". The CAD system is also used to transmit situational awareness updates to the MDC during the call for example; additional information regarding threats and conditions at the scene received from callers, other responders, and telematics that potentially impact on the safety and effectiveness of the responders.</li> <li>"Silent dispatch" – this enables a call such as a "burglary in progress" to be dispatched solely to the MDC, without the use of the voice radio in case the offenders are listening to a law enforcement scanner.</li> </ul>
Sample Business Rule(s)	<ul style="list-style-type: none"> <li>For highest priority emergency calls, the dispatcher will verify via radio the call has been received by the assigned units MDC.</li> <li>Assignment of resources is based on SOPs established and agreed to by all agencies participating in and supporting the jurisdictions 9-1-1 response.</li> <li>Data sharing across CAD and MDC platforms shall be based on SOPs established and agreed to by all agencies participating in and supporting the jurisdictions 9-1-1 response.</li> </ul>

### 3.3.2 Updates to Call for Service

Exchange #	7
Primary Communities of Interest	<input checked="" type="checkbox"/> Emergency Medical Service <input checked="" type="checkbox"/> Emergency Management <input checked="" type="checkbox"/> Fire Services <input checked="" type="checkbox"/> Law Enforcement <input type="checkbox"/> Transportation <input type="checkbox"/> Other
IEPD Status	Unknown
Directional Style(s)	<input checked="" type="checkbox"/> CAD → Ext (CAD pushes information to External system) <input type="checkbox"/> Ext → CAD (External system pushes information to CAD) <input type="checkbox"/> CAD ↔ Ext (CAD sends query to External system; External system sends information to CAD) <input type="checkbox"/> Ext ↔ CAD (External system sends query to CAD; CAD sends information to External system)
Typical Path	CAD → Mobile
Connection to	Mobile Units
Data Examples	additional narrative, change of location, suspect description
Typical Trigger Type(s)	<input checked="" type="checkbox"/> Automated/Automatic <input type="checkbox"/> Manual
Examples of Triggering Events	<ul style="list-style-type: none"> <li>Based on the type of call, the initial CAD incident is usually created and dispatched as quickly as possible. The initial call is based on the data received primarily from the original caller. Another caller may provide additional information about an incident in progress.</li> <li>The public safety unit arrived on the scene and contacts dispatch with important additional information.</li> </ul>
Sample Scenario(s)	<ul style="list-style-type: none"> <li>The original call is reported as a difficulty in breathing in a private house. Subsequent to the receipt and dispatch of the units to the original call a neighbor calls 9-1-1 reports hearing a gun shot at the same location.</li> </ul>
Sample Business Rule(s)	<ul style="list-style-type: none"> <li>Updates to a call in progress may involve a change in the call type. The revised call type should be sent to anyone involved with the call, whether another communications center or responding personnel.</li> <li>Established and agreed to SOPs must define the precise manner by which life safety hazards are communicated to responding and response agencies.</li> <li>Established and agreed to SOPs must define the precise manner by which receipt of life safety hazard are acknowledged by responding and response agencies.</li> <li>Established and agreed to SOPs must define the actions of response personnel once they have been notified of a life safety hazard.</li> <li>Established and agreed to SOPs must define the operational manner in which responding agencies react to call type changes, i.e., cancelling response, amending response, deferring response pending confirmation of need.</li> </ul>

### 3.3.3 Multiple-Media Information to Mobile (video, photo, audio)

Exchange #	8
Primary Communities of Interest	<input checked="" type="checkbox"/> Emergency Medical Service <input checked="" type="checkbox"/> Emergency Management <input checked="" type="checkbox"/> Fire Services <input checked="" type="checkbox"/> Law Enforcement <input type="checkbox"/> Transportation <input type="checkbox"/> Other
IEPD Status	Unknown
Directional Style(s)	<input checked="" type="checkbox"/> CAD → Ext (CAD pushes information to External system) <input type="checkbox"/> Ext → CAD (External system pushes information to CAD) <input type="checkbox"/> CAD ↔ Ext (CAD sends query to External system; External system sends information to CAD) <input type="checkbox"/> Ext ↔ CAD (External system sends query to CAD; CAD sends information to External system)
Typical Path	CAD → Mobile
Connection to	Mobile Data Computer (MDC)
Data Examples	Video, image, or audio file
Typical Trigger Type(s)	<input type="checkbox"/> Automated/Automatic <input checked="" type="checkbox"/> Manual
Examples of Triggering Events	<ul style="list-style-type: none"> <li>The communications center CAD system receives different types of media information related to a call in progress. This media could include a photograph, video, or audio. Depending on the available bandwidth, this multi-media information can be transferred from the CAD system to mobile units in the field or to other communication centers that are sharing the responsibility for managing the response to the call.</li> </ul>
Sample Scenario(s)	<ul style="list-style-type: none"> <li>The communications center receives a photo (or a more recent photo) of a child that is the subject of an Amber Alert. CAD sends this image to the mobile units. (See BOLO 3.5.2)</li> <li>The floor plan of a building involved in fire, specifically prepared to meet the needs of fire services, resides in the PSAP database. CAD sends the floorplan to the responding fire service units MDC.</li> </ul>
Sample Business Rule(s)	<ul style="list-style-type: none"> <li>Establishing jurisdiction- and agency-specific pre-incident protocols for the archiving, use, and dissemination of situational awareness materials are essential. Real-time exchanges of the large files that are required for multi-media situational awareness information must be predicated on the potential benefit derived from the information being available to the field personnel while an incident is in progress.</li> </ul>

### 3.3.4 New Call for Service from a Field Unit

Exchange #	9
Primary Communities of Interest	<input checked="" type="checkbox"/> Emergency Medical Service <input type="checkbox"/> Emergency Management <input checked="" type="checkbox"/> Fire Services <input checked="" type="checkbox"/> Law Enforcement <input type="checkbox"/> Transportation <input type="checkbox"/> Other
IEPD Status	Unknown
Directional Style(s)	<input type="checkbox"/> CAD → Ext (CAD pushes information to External system) <input checked="" type="checkbox"/> Ext → CAD (External system pushes information to CAD) <input type="checkbox"/> CAD ⇄ Ext (CAD sends query to External system; External system sends information to CAD) <input type="checkbox"/> Ext ⇄ CAD (External system sends query to CAD; CAD sends information to External system)
Typical Path	Mobile → CAD
Connection to	Mobile Unit (EMS, LE, Fire)
Data Examples	Call type, call location, narrative
Typical Trigger Type(s)	<input type="checkbox"/> Automated/Automatic <input checked="" type="checkbox"/> Manual
Examples of Triggering Events	<ul style="list-style-type: none"> <li>• Traffic problems (accidents, hit and runs, traffic tie-ups, disabled vehicles).</li> <li>• Traffic stops.</li> <li>• Suspicious circumstances.</li> <li>• Flag down.</li> </ul>
Sample Scenario(s)	<ul style="list-style-type: none"> <li>• An officer rolls up on a disabled vehicle that has just broken down in a travel lane and is impeding traffic. The officer uses the mobile data computer (MDC) to initiate a call for service and to notify the dispatcher he/she is on the scene.</li> <li>• An officer observes a vehicle speeding and invokes a traffic stop. The officer uses the MDC to initiate a traffic stop record and to notify the dispatcher regarding the location, the license plate information, and the other pertinent details about the stop.</li> <li>• An officer observes a suspicious package left next to a school after hours. The officer uses the MDC to initiate a call for service and to notify the dispatcher he/she is on the scene.</li> <li>• An EMS unit en route to hospital observes a disabled vehicle and stranded motorist in a hazardous location. The EMS provider uses the MDC to enter a call for service.</li> <li>• A fire unit returning to quarters comes upon a personal injury accident. The officer uses the mobile data computer onboard the apparatus to initiate a call for service and to notify the dispatcher the apparatus is on the scene of the incident.</li> </ul>
Sample Business Rule(s)	<ul style="list-style-type: none"> <li>• The use of the MDC by field units can facilitate communications and reduce voice channel loading creating a safer and more efficient work environment for responders.</li> <li>• SOPs for using MDCs in lieu of voice communications must be established and agreed to by all agencies participating in and supporting the jurisdiction's 9-1-1 response.</li> </ul>

### 3.3.5 Call for Service Updates via MDC

Exchange #	10
Primary Communities of Interest	<input checked="" type="checkbox"/> Emergency Medical Service <input type="checkbox"/> Emergency Management <input checked="" type="checkbox"/> Fire Services <input checked="" type="checkbox"/> Law Enforcement <input type="checkbox"/> Transportation <input type="checkbox"/> Other
IEPD Status	Unknown
Directional Style(s)	<input type="checkbox"/> CAD → Ext (CAD pushes information to External system) <input checked="" type="checkbox"/> Ext → CAD (External system pushes information to CAD) <input type="checkbox"/> CAD ↔ Ext (CAD sends query to External system; External system sends information to CAD) <input type="checkbox"/> Ext ↔ CAD (External system sends query to CAD; CAD sends information to External system)
Typical Path	Mobile → CAD
Connection to	Mobile Unit
Data Examples	additional narrative, change of location, suspect description
Typical Trigger Type(s)	<input checked="" type="checkbox"/> Automated/Automatic <input type="checkbox"/> Manual
Examples of Triggering Events	<ul style="list-style-type: none"> <li>• Acknowledgement of receipt of dispatched call for service via MDC</li> <li>• Unit status update: En-Route; Arrived; Disposition; Available/Clear Append notes / add supplemental information to Call-for-Service</li> <li>• Modify: Call Location; Unit's Location.</li> <li>• Queries routed via the CAD system to DMV/local/state/national databases.</li> <li>• Officer needs assistance/Mayday signal.</li> </ul>
Sample Scenario(s)	<ul style="list-style-type: none"> <li>• A responder using a MDC-equipped vehicle is assigned a call-for-service (CFS). The unit may acknowledge the call via radio or by pressing an "Acknowledgement" status button on the MDC. The responder initiates an en-route status from the MDC by pressing the corresponding status function key. Upon arrival, the responder initiates an arrived-on-scene status from the MDC by pressing the corresponding status function key. When the responder is ready to clear from the call, the responder initiates a Clear status change and includes one or more dispositions. The new status and dispositions are written to the file as part of the CFS documentation. The responder's status is changed by the CAD system to an available state.</li> <li>• The officer adds some free text notes related to the call via the MDC which become part of the call-for-service.</li> </ul>
Sample Business Rule(s)	<ul style="list-style-type: none"> <li>• Some agencies may prohibit use of the Emergency key on the MDC and want staff to use the Emergency button on the radio instead.</li> <li>• Local SOPs should require a disposition for all calls for service.</li> <li>• A disposition is required for law enforcement calls for service.</li> </ul>



### 3.3.6 GIS System / AVL Providing Closest Unit Recommendation

Exchange #	11
Primary Communities of Interest	<input checked="" type="checkbox"/> Emergency Medical Service <input type="checkbox"/> Emergency Management <input checked="" type="checkbox"/> Fire Services <input checked="" type="checkbox"/> Law Enforcement <input type="checkbox"/> Transportation <input type="checkbox"/> Other
IEPD Status	Unknown
Directional Style(s)	<input type="checkbox"/> CAD → Ext (CAD pushes information to External system) <input type="checkbox"/> Ext → CAD (External system pushes information to CAD) <input checked="" type="checkbox"/> CAD ↔ Ext (CAD sends query to External system; External system sends information to CAD) <input type="checkbox"/> Ext ↔ CAD (External system sends query to CAD; CAD sends information to External system)
Typical Path	CAD → External System → CAD
Connection to	GIS system, or AVL system
Data Examples	Unit designators and current locations
Typical Trigger Type(s)	<input checked="" type="checkbox"/> Automated/Automatic <input type="checkbox"/> Manual
Examples of Triggering Events	<ul style="list-style-type: none"> <li>• A new call for service.</li> </ul>
Sample Scenario(s)	<ul style="list-style-type: none"> <li>• A telephone call is received at a PSAP reporting a robbery in progress. The robbery is entered into the CAD system. The CAD system evaluates the location of all law enforcement units, identifies the closest law enforcement vehicles (with interface to GIS and/or AVL system), and recommends those units be dispatched even if they are not the assigned units for that area.</li> <li>• A wireless telephone call is received at a PSAP reporting a vehicle fire on an interstate highway. The vehicle fire is entered into the CAD system. The CAD system evaluates the location of all fire units, both in quarters and in mobile service, identifies the closest apparatus (with interface to GIS and/or AVL system) and recommends the closest units to be dispatched even if they are not the normally assigned units for that area.</li> <li>• This exchange assumes that a GIS system and/or AVL system is separate from the CAD system, and identified the data exchange between these systems to provide the functionality cited.</li> </ul>
Sample Business Rule(s)	<ul style="list-style-type: none"> <li>• The GIS system is updated on a regular/periodic basis.</li> <li>• Based on the priority/nature of the call and SOP, units may or may not be diverted from other calls for service to respond to the new call for service.</li> <li>• Local SOP may define circumstances under which the automatic release of the assignment to the units recommended by the AVLS will occur.</li> <li>• Local SOPs must define how the AVLS recommendation is integrated into the dispatch process and how much weight it should be given by the dispatcher prior to making a dispatch decision.</li> </ul>

## 3.4 External - Incoming

### 3.4.1 New Call for Service from another CAD System (CAD-to-CAD)

Exchange #	12
Primary Communities of Interest	<input checked="" type="checkbox"/> Emergency Medical Service <input checked="" type="checkbox"/> Emergency Management <input checked="" type="checkbox"/> Fire Services <input checked="" type="checkbox"/> Law Enforcement <input type="checkbox"/> Transportation <input type="checkbox"/> Other
IEPD Status	NIEM Exchange – LEITSC IEPD “CAD-to-CAD” is available. See LEITSC website for more information.
Directional Style(s)	<input checked="" type="checkbox"/> CAD → Ext (CAD pushes information to External system) <input type="checkbox"/> Ext → CAD (External system pushes information to CAD) <input type="checkbox"/> CAD ⇄ Ext (CAD sends query to External system; External system sends information to CAD) <input type="checkbox"/> Ext ⇄ CAD (External system sends query to CAD; CAD sends information to External system)
Typical Path	CAD → External System
Connection to	Other CAD system
Data Examples	incident type, location, narrative
Typical Trigger Type(s)	<input type="checkbox"/> Automated/Automatic <input checked="" type="checkbox"/> Manual
Examples of Triggering Events	<ul style="list-style-type: none"> <li>• Law enforcement events (all types).</li> <li>• Fire events (all types).</li> <li>• EMS events (all types).</li> </ul>
Sample Scenario(s)	<ul style="list-style-type: none"> <li>• A primary PSAP receives a 9-1-1 call reporting an accident with injury and a vehicle on fire. The primary PSAP is a non-consolidated center and handles law enforcement dispatch only – fire has its own CAD as does EMS. The call taker enters the call location and pertinent details into the CAD system. A call-for-service is created and placed into the pending call queue for the appropriate law enforcement radio operator. A call-for-service is sent electronically to the fire department's CAD system requesting a fire response. A call-for-service is sent electronically to the EMS agency's CAD system requesting an EMS response.</li> <li>• A primary PSAP receives a 9-1-1 call reporting a house fire. The jurisdiction affected has a mutual-aid or inter-jurisdictional dispatch agreement in place with another jurisdiction where the other jurisdiction will also dispatch resources to certain event types, which include a house fire event. A call-for-service is created and placed into the pending call queues for the appropriate law enforcement and fire radio operator. A call-for-service request is sent to the other jurisdiction requesting additional fire resources as prescribed by the agreement in place.</li> <li>• A medical complaint call is received directly by a PSAP. The PSAP enters the call into its CAD system. The PSAP determines that the event is not in their jurisdiction, so the call is electronically routed to the correct PSAP and the caller is forwarded as well.</li> </ul>
Sample Business Rule(s)	<ul style="list-style-type: none"> <li>• Based on SOP and areas of control/jurisdiction, the CAD event shall be routed or transferred to the appropriate communications center(s) responsible for the appropriate response.</li> </ul>

### 3.4.2 New Call for Service from Other Agency (Public Works, Utilities, etc.)

Exchange #	13
Primary Communities of Interest	<input checked="" type="checkbox"/> Emergency Medical Service <input type="checkbox"/> Emergency Management <input checked="" type="checkbox"/> Fire Services <input checked="" type="checkbox"/> Law Enforcement <input type="checkbox"/> Transportation <input type="checkbox"/> Other
IEPD Status	Unknown
Directional Style(s)	<input type="checkbox"/> CAD → Ext (CAD pushes information to External system) <input checked="" type="checkbox"/> Ext → CAD (External system pushes information to CAD) <input type="checkbox"/> CAD ⇆ Ext (CAD sends query to External system; External system sends information to CAD) <input type="checkbox"/> Ext ⇆ CAD (External system sends query to CAD; CAD sends information to External system)
Typical Path	Mobile → External System → CAD
Connection to	Mobile Unit (utility worker / public works, taxi, delivery driver, etc.)
Data Examples	Call type, call location, narrative
Typical Trigger Type(s)	<input type="checkbox"/> Automated/Automatic <input checked="" type="checkbox"/> Manual
Examples of Triggering Events	<ul style="list-style-type: none"> <li>• Crime in-progress.</li> <li>• Traffic problems (accidents, debris in road, disabled vehicles).</li> <li>• Parking violations.</li> <li>• Other notifications (zoning violation, animal control issues, etc.).</li> <li>• Person down in street (requiring EMS and depending on local procedures, fire rescue).</li> </ul>
Sample Scenario(s)	<ul style="list-style-type: none"> <li>• A public works employee comes across a downed tree blocking a road during a storm. The employee enters the event and location into their MDC and their system sends a data exchange to the local PSAP as a new call for service.</li> <li>• A delivery driver notices a case of animal cruelty while making a delivery. The driver enters the event into their system and it subsequently sends a message to the PSAP.</li> </ul>
Sample Business Rule(s)	<ul style="list-style-type: none"> <li>• These exchanges are vetted by call taker personnel prior to being forwarded to a dispatcher.</li> <li>• The amount of resources dispatched and event priority are dependent on the jurisdictions SOP.</li> <li>• Depending on the SOP, more than one agency may be dispatched to an event. For example, law enforcement events may also require the response of fire and/or EMS Responders in addition to law enforcement officers. Depending on whether the PSAP is a consolidated center or not, CAD system to CAD system exchanges may come into play (e.g., when the EMS dispatch agency is a secondary PSAP).</li> </ul>

### 3.4.3 External Alarm Information

Exchange #	14
Primary Communities of Interest	<input checked="" type="checkbox"/> Emergency Medical Service <input type="checkbox"/> Emergency Management <input checked="" type="checkbox"/> Fire Services <input checked="" type="checkbox"/> Law Enforcement <input type="checkbox"/> Transportation <input type="checkbox"/> Other
Status	NIEM Exchange available – See the IEPD Clearinghouse for the “External Alarm Interface Exchange IEPD”.
Directional Style(s)	<input type="checkbox"/> CAD → Ext (CAD pushes information to External system) <input checked="" type="checkbox"/> Ext → CAD (External system pushes information to CAD) <input type="checkbox"/> CAD ⇆ Ext (CAD sends query to External system; External system sends information to CAD) <input type="checkbox"/> Ext ⇆ CAD (External system sends query to CAD; CAD sends information to External system)
Typical Path	External System → CAD
Connection to	Alarm Monitoring Company
Data Examples	Business/residence name, address, alarm type, keyholder information
Typical Trigger Type(s)	<input type="checkbox"/> Automated/Automatic <input checked="" type="checkbox"/> Manual
Examples of Triggering Events	<ul style="list-style-type: none"> <li>• Medical alarm (allergic reaction, heart attack, fall, seizure).</li> <li>• Fire alarm (smoke/heat detector, manual pull, sprinkler/waterflow detector).</li> <li>• Gas detector alarm (natural gas, Carbon Monoxide, and Chlorine detectors).</li> <li>• Burglar alarm.</li> <li>• Robbery alarm (hold-up, panic, duress alarm).</li> </ul>
Sample Scenario(s)	<ul style="list-style-type: none"> <li>• An elderly person has a medical alert device that allows the individual to trigger a signal to the alarm company when experiencing a medical problem. The individual begins to experience chest pains and activates the device. The alarm monitoring company receives a notification that a medical alarm has been activated. The company's software application initiates the electronic transmission of medical alert information to the PSAP. Data transmitted to the PSAP includes: address, type of alarm, premises information, and information about the individual. Upon receipt, the PSAP's CAD system validates the address and creates a Call-for-Service. First responders are immediately dispatched to the premises.</li> <li>• A building fire starts and causes the sprinkler system to activate. A sprinkler/waterflow activation signal is transmitted to the alarm company. The company's software application initiates the electronic transmission of the fire alarm information to the PSAP. Data transmitted to the PSAP includes: address, type of alarm, and premises information including commercial versus residential, directions, on-site hazardous materials, etc. Upon receipt, the PSAP's CAD System validates the address within the PSAP's jurisdiction and creates a Call-for-Service. First responders are immediately dispatched to the premises.</li> <li>• A jewelry store is being robbed and a store employee triggers a push button signaling device to initiate a Hold-up alarm. An alarm monitoring service receives a signal that an alarm has been activated. The company's software application initiates the electronic transmission of alarm information to the PSAP. Data transmitted to the PSAP includes: address, type of alarm, and premises information including commercial versus residential and directions. Upon receipt of this data, the PSAP's CAD system validates the address and creates a Call-for-Service. Law enforcement first responders are immediately dispatched to the premises.</li> </ul>
Sample Business Rule(s)	<ul style="list-style-type: none"> <li>• Depending on local law, the SOP for the PSAP, or SOP for the alarm company, the alarm company may attempt to reach someone at the premises before initiating the electronic exchange.</li> <li>• If an address cannot be validated, and Latitude/Longitude coordinates are present in the data exchange, the CAD system will attempt to validate using geo-coordinates.</li> <li>• If the address and geo-coordinates (if present) cannot be validated, an electronic Rejection message will be returned by the PSAP to the alarm company. The alarm company operator is expected to take action according to alarm company procedures – i.e., call the PSAP to report the alarm.</li> </ul>

### 3.4.4 Warrant Notifications from Other System

Exchange #	15
Primary Communities of Interest	<input type="checkbox"/> Emergency Medical Service <input type="checkbox"/> Emergency Management <input type="checkbox"/> Fire Services <input checked="" type="checkbox"/> Law Enforcement <input type="checkbox"/> Transportation <input type="checkbox"/> Other
IEPD Status	Unknown
Directional Style(s)	<input type="checkbox"/> CAD → Ext (CAD pushes information to External system) <input checked="" type="checkbox"/> Ext → CAD (External system pushes information to CAD) <input checked="" type="checkbox"/> CAD ↔ Ext (CAD sends query to External system; External system sends information to CAD) <input type="checkbox"/> Ext ↔ CAD (External system sends query to CAD; CAD sends information to External system)
Typical Path	Mobile → CAD → External System → CAD → Mobile; External System → CAD
Connection to	Court case management system, state warrant management or justice information system
Data Examples	list of outstanding warrants including suspect and suspect's address
Typical Trigger Type(s)	<input checked="" type="checkbox"/> Automated/Automatic <input checked="" type="checkbox"/> Manual
Examples of Triggering Events	<ul style="list-style-type: none"> <li>• An officer (or dispatch) runs a query through NCIC or the equivalent state system. The query returns a warrant. A positive hit requires a confirmation query, a confirmation response, and a "locate" placed through the appropriate system (NCIC, state system, etc.).</li> <li>• An officer (or dispatch) runs a query through a local agency computer (law enforcement department or sheriff's office RMS) and receives information on a warrant not entered into the state or federal systems. Hit confirmation is required but generally done verbally.</li> <li>• An officer (or dispatch) runs a query directly to the state court system (including parole and probation office) and receives information on warrants that were recently issued but not yet entered into local, state, or federal databases, or that are local court system warrants only. Hit confirmations are generally done verbally.</li> <li>• The court system pushes warrant information directly to the law enforcement agency.</li> </ul>
Sample Scenario(s)	<ul style="list-style-type: none"> <li>• A law enforcement officer in the field stops a subject and requests a check of subject. Dispatch runs the subject through NCIC, the state system, and NLETS. The query returns a bench warrant issued from the court system for failure to appear on a theft charge. Dispatch requests confirmation, the originating agency responds with a confirmation, and the requesting agency then places a "locate" to advise the originating agency of warrant service.</li> <li>• A law enforcement officer has taken step one above, but then requests that the subject's name to be run through the local sheriff's office computer since only a portion of local warrants are entered into state and federal systems. A warrant for failure to appear for a DWI charge is identified. Dispatch calls the sheriff's office to confirm the warrant and is advised that the warrant is no longer valid. The subject is released on the scene.</li> <li>• A law enforcement officer has a subject under arrest for driving a stolen vehicle. The subject advises he is currently on probation. The officer runs the subject through judicial databases and determines the subject has a warrant for probation violation issued through the court system at request of the probation office. The officer calls the probation officer, confirms that there is a probation warrant, and confirms details on warrant service.</li> <li>• The court pushes a daily update at end of each day of warrants issued by the court that may not be entered into local, state, or federal databases. This may be as simple as a hard copy document or could possibly be tied to a CAD system. An officer stops a subject, dispatch checks the subject's against the daily warrant update list, and identifies that the subject was issued an arrest warrant based upon probable cause for distribution of cocaine earlier in the day. Dispatch contacts the agency/officer who obtained the warrant, confirms warrant validity, and determines prisoner transfer</li> </ul>
Sample Business Rule(s)	<ul style="list-style-type: none"> <li>• Automatic, periodic push of data to local CAD or RMS system.</li> <li>• Dispatcher will initiate a verification upon receipt of a Warrant Notification.</li> </ul>

### 3.4.5 Restraining Order Notifications from Other System

Exchange #	16
Primary Communities of Interest	<input type="checkbox"/> Emergency Medical Service <input type="checkbox"/> Emergency Management <input type="checkbox"/> Fire Services <input checked="" type="checkbox"/> Law Enforcement <input type="checkbox"/> Transportation <input type="checkbox"/> Other
IEPD Status	Unknown
Directional Style(s)	<input type="checkbox"/> CAD → Ext (CAD pushes information to External system) <input checked="" type="checkbox"/> Ext → CAD (External system pushes information to CAD) <input type="checkbox"/> CAD ↔ Ext (CAD sends query to External system; External system sends information to CAD) <input type="checkbox"/> Ext ↔ CAD (External system sends query to CAD; CAD sends information to External system)
Typical Path	External System → CAD
Connection to	Court case management system, state restraining order or justice information system
Data Examples	list of current restraining orders including victim, victim's address, suspect
Typical Trigger Type(s)	<input checked="" type="checkbox"/> Automated/Automatic <input type="checkbox"/> Manual
Examples of Triggering Events	<ul style="list-style-type: none"> <li>• A person contacts the dispatch center or has direct contact with law enforcement and advises that a person with a restraining order is violating the order.</li> <li>• A law enforcement officer contacts a subject, requests a wanted check by name, and the query results reveal a restraining order.</li> </ul>
Sample Scenario(s)	<ul style="list-style-type: none"> <li>• An officer is driving down the street when he is flagged down by a distraught female who points at a vehicle and advises that her ex-husband, who was issued a restraining order the prior week, has been following her all day. The officer contacts the subject, requests a warrant and restraining order check, and the query returns restraining order information on the subject advising that the subject is not to make contact with the complainant (the female) or be within 500 feet of the complainant.</li> <li>• An officer responds to a loud noise/disturbance call in a picnic pavilion at a neighborhood park. During contact, the officer runs the name of a disorderly subject. Dispatch advises that the subject has a restraining order against him and is not to be in contact with his ex-girlfriend or her daughter. The officer determines that neither the ex-girlfriend nor the daughter are present and takes no action ... OR ... the officer determines that the ex-girlfriend's daughter is sitting at the picnic table causing the subject to be in violation of the restraining order. The officer makes an arrest on the violation of the restraining order.</li> </ul>
Sample Business Rule(s)	<ul style="list-style-type: none"> <li>• Automatic, periodic push of data to local CAD or RMS system.</li> <li>• Dispatcher will initiate a verification upon receipt of a Restraining Order Notification.</li> </ul>

### 3.4.6 Multiple-Media Information into CAD (video, photo, audio)

Exchange #	17
Primary Communities of Interest	<input checked="" type="checkbox"/> Emergency Medical Service <input checked="" type="checkbox"/> Emergency Management <input checked="" type="checkbox"/> Fire Services <input checked="" type="checkbox"/> Law Enforcement <input checked="" type="checkbox"/> Transportation <input type="checkbox"/> Other
IEPD Status	Unknown
Directional Style(s)	<input type="checkbox"/> CAD → Ext (CAD pushes information to External system) <input checked="" type="checkbox"/> Ext → CAD (External system pushes information to CAD) <input checked="" type="checkbox"/> CAD ↔ Ext (CAD sends query to External system; External system sends information to CAD) <input type="checkbox"/> Ext ↔ CAD (External system sends query to CAD; CAD sends information to External system)
Typical Path	External System → CAD; CAD → External System → CAD
Connection to	Multiple External Sources Possible (examples: ITS, ACN, Mobile Unit)
Data Examples	Video, image, or audio file
Typical Trigger Type(s)	<input checked="" type="checkbox"/> Automated/Automatic <input checked="" type="checkbox"/> Manual
Examples of Triggering Events	<ul style="list-style-type: none"> <li>• Traffic crash observed by a Transportation camera.</li> <li>• A "gunshot" audio alarm trigger causes video camera activation and automatic camera aiming with PSAP notification.</li> <li>• A law enforcement officer on a routine car stop triggers a video-recording system alarm to the PSAP when the suspect draws a weapon.</li> </ul>
Sample Scenario(s)	<ul style="list-style-type: none"> <li>• Automatic crash notification (ACN) system in crashing car sends audio and video of occupants, as well as vehicular crash data, to ACN monitoring center CAD system and from there (or directly from vehicle in some systems) to the PSAP CAD system (in whatever flow through locally from CAD system to CAD system is specified). A responding ambulance requests an ACN feed from the PSAP. Crash data (impact speed/direction, rollover/airbag/belt status and other information) appear on the ambulance mobile data unit. The crew selects "crash video replay" and views five seconds of pre-impact and 30 seconds of post-impact recorded video. The crew selects "live feed audio/video" and can see and assess both occupants seen in the crash video. When hospital destinations are determined, the crew requests the same live feeds to those facilities while passengers are extricated, treated and transported.</li> <li>• A multi-vehicle crash on an urban highway involving a tank truck roll-over and fire is seen on traffic management center (TMC) cameras, triggering refocusing of neighboring cameras and the routing of a law enforcement helicopter with an aerial video platform. The PSAP coordinates with the TMC CAD system and the law enforcement CAD system to obtain video feed and time-lapse photos as requested by agencies. Scene responders receive aerial photos encompassing the scene and surrounding ingress/egress routes and ramps to determine the best approaches to the scene given traffic, smoke, and other hazards. TMS cameras and the aerial camera provide close photo surveillance of the tanker to determine vehicle type and damage, the extent of the fire/smoke threat, and placarding. These photos are sent to responding units and fire and emergency management command centers. Live video from the aerial unit is also provided to these centers to begin plume mapping/projection and evacuation planning. Based on aerial video and photos of the scene and surrounding ramps and roadways, law enforcement and transportation safety responders begin traffic rerouting and the dispatch of variable message signs and barrier devices.</li> <li>• A law enforcement officer stops a vehicle for failure to stop at a red light. His dash camera is activated for the stop. Upon approaching the car, the officer sees a pistol emerge from the driver side window. The officer activates an emergency button, notifying the PSAP of an "emergency monitor" request, while he orders the weapon dropped. The PSAP routes the dash camera's feed to a law enforcement supervisor who witnesses the action. The pistol is discharged skyward and then dropped. The PSAP receives immediate notification that a gunshot monitor in the area has picked up the discharge and is training rooftop cameras toward the noise. GIS verifies that these are related to the same event, so both video feeds go to split screens in front of the supervisor.</li> </ul>
Sample Business Rule(s)	<ul style="list-style-type: none"> <li>• Wherever possible data feeds are routed to a real time data base where they can be monitored by authorized responders and supervisors with little PSAP staff interaction.</li> <li>• GIS verification of alarm trigger locations is done ASAP to isolate events and assign appropriate audio/video/other input supervision and routing.</li> </ul>



## 3.5 External - Outgoing

### 3.5.1 Call Information (to supplement EMS, EM, LE, or Fire Records System)

Exchange #	18
Primary Communities of Interest	<input checked="" type="checkbox"/> Emergency Medical Service <input checked="" type="checkbox"/> Emergency Management <input checked="" type="checkbox"/> Fire Services <input checked="" type="checkbox"/> Law Enforcement <input type="checkbox"/> Transportation <input type="checkbox"/> Other
IEPD Status	Unknown
Directional Style(s)	<input checked="" type="checkbox"/> CAD → Ext (CAD pushes information to External system) <input type="checkbox"/> Ext → CAD (External system pushes information to CAD) <input type="checkbox"/> CAD ⇄ Ext (CAD sends query to External system; External system sends information to CAD) <input type="checkbox"/> Ext ⇄ CAD (External system sends query to CAD; CAD sends information to External system)
Typical Path	CAD → External System
Connection to	Records Management System
Data Examples	Time received, time dispatched, time units arrived, assigned units, disposition
Typical Trigger Type(s)	<input checked="" type="checkbox"/> Automated/Automatic <input type="checkbox"/> Manual
Examples of Triggering Events	<ul style="list-style-type: none"> <li>Completion of a call for service.</li> </ul>
Sample Scenario(s)	<ul style="list-style-type: none"> <li>Upon completion of a call for service, the CAD system automatically sends the call data (call location, call type, complainant, dispatcher, time call received, time dispatched, assigned units, time of arrival, time of departure, time cleared, disposition, dispatcher notes, etc.) to the appropriate records systems to include EMS, emergency management, law enforcement, and fire. This information is used by the receiving records system for their reporting needs and for historical record.</li> <li>This exchange relates to CAD feeding call data to an EMS, emergency management, law enforcement, and/or fire Records system. Depending on the receiving systems, multiple different exchanges may be needed.</li> </ul>
Sample Business Rule(s)	<ul style="list-style-type: none"> <li>Filters remove sensitive law enforcement data from EMS, emergency management, and fire exchanges.</li> <li>Data sharing SOP(s) must be developed in consultation with all agencies sharing and receiving the data product to insure compliance with all local, state, and federal data protection and preservation regulations.</li> </ul>



### 3.5.2 All Unit Broadcasts (BOLOs, etc.)

Exchange #	19
Primary Communities of Interest	<input checked="" type="checkbox"/> Emergency Medical Service <input checked="" type="checkbox"/> Emergency Management <input type="checkbox"/> Fire Services <input checked="" type="checkbox"/> Law Enforcement <input checked="" type="checkbox"/> Transportation <input type="checkbox"/> Other
IEPD Status	Unknown
Directional Style(s)	<input checked="" type="checkbox"/> CAD → Ext (CAD pushes information to External system) <input type="checkbox"/> Ext → CAD (External system pushes information to CAD) <input type="checkbox"/> CAD ↔ Ext (CAD sends query to External system; External system sends information to CAD) <input type="checkbox"/> Ext ↔ CAD (External system sends query to CAD; CAD sends information to External system)
Typical Path	CAD → External Systems/Mobile
Connection to	Various (Mobile, External Systems, ITS, Other CAD, etc.)
Data Examples	person and vehicle information, last known location, narrative
Typical Trigger Type(s)	<input type="checkbox"/> Automated/Automatic <input checked="" type="checkbox"/> Manual
Examples of Triggering Events	<ul style="list-style-type: none"> <li>• Amber Alerts.</li> <li>• Missing persons (children, elderly).</li> <li>• Hot pursuits.</li> <li>• Hazardous materials alerts.</li> <li>• Weather alerts.</li> </ul>
Sample Scenario(s)	<ul style="list-style-type: none"> <li>• An Alzheimer's patient wandered away from a senior center event several hours ago. It is now getting dark and the temperature is expected to fall below freezing tonight. The BOLO automatically alerts all call takers and dispatchers in the multi-agency communications facility through the CAD system and all public safety units (law enforcement, fire, and EMS) are notified by radio and automatically by MDT. Automated GIS allows a polygon to be created around the incident site that projects maximum probable movement of the Alzheimer's patient during the time elapsed since he was determined missing. A map can automatically be sent by MDT to responders to advise them of the best areas to look. Automatic telephone notification systems (e.g., Reverse 9-1-1) call telephone subscribers within the polygon alerting the public.</li> </ul>
Sample Business Rule(s)	<ul style="list-style-type: none"> <li>• When to invoke expensive systems such as automatic telephone notification systems.</li> <li>• When an Amber Alert is received, the alert will automatically go out to all mobile units and receiving systems.</li> </ul>

### 3.5.3 Call Information to Text Enabled Devices (PDAs, pagers, cell phones)

Exchange #	20
Primary Communities of Interest	<input checked="" type="checkbox"/> Emergency Medical Service <input checked="" type="checkbox"/> Emergency Management <input checked="" type="checkbox"/> Fire Services <input checked="" type="checkbox"/> Law Enforcement <input type="checkbox"/> Transportation <input type="checkbox"/> Other
IEPD Status	Unknown
Directional Style(s)	<input checked="" type="checkbox"/> CAD → Ext (CAD pushes information to External system) <input type="checkbox"/> Ext → CAD (External system pushes information to CAD) <input type="checkbox"/> CAD ↔ Ext (CAD sends query to External system; External system sends information to CAD) <input type="checkbox"/> Ext ↔ CAD (External system sends query to CAD; CAD sends information to External system)
Typical Path	CAD → External System
Connection to	PDAs, Pagers, Cell Phones, etc.
Data Examples	Call type, location, narrative
Typical Trigger Type(s)	<input checked="" type="checkbox"/> Automated/Automatic <input type="checkbox"/> Manual
Examples of Triggering Events	<ul style="list-style-type: none"> <li>• Fire alarms received by fire department dispatch require alerting volunteer or other fire personnel to respond. Depending on the type of alarm/communication system used, the dispatch center would use a special key or code to notify individuals or companies of the type of emergency.</li> <li>• Report of a fire.</li> <li>• Report of a bank robbery.</li> </ul>
Sample Scenario(s)	<ul style="list-style-type: none"> <li>• A fire department inspector/investigator may not be in the office (at a scene, in court, etc.) and be required at a fire scene to begin or aid in an investigation. Volunteer firefighters would normally be at regular jobs during the day, at home at night, etc. Some volunteers are assigned to stations during the evening hours for certain days or times during the week and weekend. A caller reports a structure fire. The 9-1-1 operator enters the data into the CAD system, and the CAD system automatically begins paging the community's volunteer firefighters. The CAD system also begins to send text messages to those same firefighters via the short message service (SMS).</li> <li>• A silent alarm is received from a local bank. The CAD system dispatches on-duty officers via SMS to prevent a radio dispatch from being heard by the robbery suspect(s).</li> </ul>
Sample Business Rule(s)	<ul style="list-style-type: none"> <li>• The system used shall be compatible with the equipment selected for use by the department and comply with the requirements of the NFPA 1221 Standard for the Installation, Maintenance and Use of Public Fire Service Communication Systems.</li> <li>• All in-progress hostage incidents are sent to the Hostage Negotiation Team and SWAT.</li> <li>• All calls involving a death are sent to an investigations supervisor.</li> </ul>

### 3.5.4 Alerts for Mass Casualty Incidents

Exchange #	21
Primary Communities of Interest	<input type="checkbox"/> Emergency Medical Service <input type="checkbox"/> Emergency Management <input type="checkbox"/> Fire Services <input type="checkbox"/> Law Enforcement <input type="checkbox"/> Transportation <input checked="" type="checkbox"/> Other
IEPD Status	Unknown
Directional Style(s)	<input checked="" type="checkbox"/> CAD → Ext (CAD pushes information to External system) <input type="checkbox"/> Ext → CAD (External system pushes information to CAD) <input type="checkbox"/> CAD ⇄ Ext (CAD sends query to External system; External system sends information to CAD) <input type="checkbox"/> Ext ⇄ CAD (External system sends query to CAD; CAD sends information to External system)
Typical Path	CAD → External System
Connection to	Hospital
Data Examples	Narrative, incident type, location, victim ETA
Typical Trigger Type(s)	<input type="checkbox"/> Automated/Automatic <input checked="" type="checkbox"/> Manual
Examples of Triggering Events	<ul style="list-style-type: none"> <li>• Air crashes.</li> <li>• Severe weather (tornadoes, floods, hurricanes, etc.).</li> <li>• Terrorist events (bombings, chemical/biological attacks, etc.).</li> <li>• Multi-vehicle highway accidents.</li> </ul>
Sample Scenario(s)	<ul style="list-style-type: none"> <li>• A commercial passenger plane develops a control surface failure and crashes just short of the local airport onto a congested highway, killing all 89 onboard and nine in automobiles on the highway. All responding public safety agencies in the county must be notified/dispatched and updated as the event evolves. Additionally, predetermined mutual aid agencies in adjacent counties are notified, as well as mortuary services, pastoral care/counseling agencies, the NTSB, the FBI, and other federal agencies.</li> </ul>
Sample Business Rule(s)	<ul style="list-style-type: none"> <li>• Predetermine trigger points for notification of various agencies based on number of fatalities/scope of event.</li> </ul>

### 3.5.5 Notification of New Incident as Appropriate

Exchange #	22
Primary Communities of Interest	<input type="checkbox"/> Emergency Medical Service <input type="checkbox"/> Emergency Management <input type="checkbox"/> Fire Services <input type="checkbox"/> Law Enforcement <input type="checkbox"/> Transportation <input checked="" type="checkbox"/> Other
IEPD Status	Unknown
Directional Style(s)	<input checked="" type="checkbox"/> CAD → Ext (CAD pushes information to External system) <input type="checkbox"/> Ext → CAD (External system pushes information to CAD) <input type="checkbox"/> CAD ↔ Ext (CAD sends query to External system; External system sends information to CAD) <input type="checkbox"/> Ext ↔ CAD (External system sends query to CAD; CAD sends information to External system)
Typical Path	CAD → External System
Connection to	Hospital or other agency/entity, or to another agency also making a response to the same incident (shared response)
Data Examples	Call type, location, narrative
Typical Trigger Type(s)	<input type="checkbox"/> Automated/Automatic <input checked="" type="checkbox"/> Manual
Examples of Triggering Events	<ul style="list-style-type: none"> <li>• A call is received requiring first responder services that are shared by more than one communications center – either by design or due to jurisdiction (e.g., a center that dispatches for law enforcement (only) receives a 9-1-1 call for a traffic accident; the center routinely transfers appropriate calls to a second center that handles fire and EMS).</li> <li>• An EMS call results in a transport of a victim to the hospital, so a “new incident” exchange is sent to the hospital (although not considered a new event for EMS/communications, it is a new event for the hospital).</li> </ul>
Sample Scenario(s)	<ul style="list-style-type: none"> <li>• The communications center that has the CAD system does not dispatch any EMS vehicles. A law enforcement officer on the scene identifies a need for an ambulance at the scene. The CAD system could send the data for a new EMS incident to the CAD system that does dispatch EMS units.</li> <li>• An EMS call results in a transport of a victim to the hospital. En route, the CAD system sends a description of the call and notes/information entered by the responding/assigned EMS unit(s) to the hospital emergency room. This information is reviewed by ER staff to assist with preparations for treatment of the incoming patient.</li> </ul>
Sample Business Rule(s)	<ul style="list-style-type: none"> <li>• The agencies involved in this exchange will need to define the business process to be followed based on the type of call and the priority. Typically, a new incident is created by a call taker and then routed to the appropriate dispatcher based on call type and location. If this process is to be followed, it will be necessary to have a correlation between the call types used in the agency originating this exchange and the agency that will be handling the newly created call.</li> <li>• Once EMS determines that a victim/patient will be transported to the hospital ER, an event notification is sent with all available information.</li> </ul>

### 3.5.6 Transfer of Call for Service

Exchange #	23
Primary Communities of Interest	<input checked="" type="checkbox"/> Emergency Medical Service <input checked="" type="checkbox"/> Emergency Management <input checked="" type="checkbox"/> Fire Services <input checked="" type="checkbox"/> Law Enforcement <input checked="" type="checkbox"/> Transportation <input checked="" type="checkbox"/> Other
IEPD Status	NIEM Exchange – LEITSC IEPD available. See LEITSC web site for more information.
Directional Style(s)	<input checked="" type="checkbox"/> CAD → Ext (CAD pushes information to External system) <input type="checkbox"/> Ext → CAD (External system pushes information to CAD) <input type="checkbox"/> CAD ↔ Ext (CAD sends query to External system; External system sends information to CAD) <input type="checkbox"/> Ext ↔ CAD (External system sends query to CAD; CAD sends information to External system)
Typical Path	CAD → External System
Connection to	Other CAD System(s)
Data Examples	Call type, location, narrative
Typical Trigger Type(s)	<input type="checkbox"/> Automated/Automatic <input checked="" type="checkbox"/> Manual
Examples of Triggering Events	<ul style="list-style-type: none"> <li>• Supports CAD-to-CAD Call for Service (CFS) when the originating agency wishes to transfer ownership of the incident/CFS from their agency and CAD system to another agency and CAD system. This IEP has two versions: detailed and summary.</li> </ul>
Sample Scenario(s)	<ul style="list-style-type: none"> <li>• This scenario envisions the need to either transfer a misrouted CFS or forward incident information to external agencies that are responding to the CFS. The data requirements of the exchanges focus on those pieces of information that relay the most salient aspects of an incident, such as caller details, staging information and key CFS identifiers.</li> <li>• The Summary CFS is used to provide skeleton information about a call when transferring it to another PSAP.</li> <li>• The Detailed CFS provides information about the incident and is intended for both dissemination of incident information and coordination of responding units.</li> </ul>
Sample Business Rule(s)	<ul style="list-style-type: none"> <li>• The specific business rules must be developed by each agency based on the responsibilities and charter for the communication center and based on the mutual aid agreements that are currently in place. This exchange is designed to support real-time data exchanges and status information among mutual aid agencies.</li> </ul>

### 3.5.7 Recorder & Logging Systems Comments (added by CAD)

Exchange #	24
Primary Communities of Interest	<input type="checkbox"/> Emergency Medical Service <input type="checkbox"/> Emergency Management <input type="checkbox"/> Fire Services <input type="checkbox"/> Law Enforcement <input type="checkbox"/> Transportation <input checked="" type="checkbox"/> Other
IEPD Status	Unknown
Directional Style(s)	<input checked="" type="checkbox"/> CAD → Ext (CAD pushes information to External system) <input type="checkbox"/> Ext → CAD (External system pushes information to CAD) <input type="checkbox"/> CAD ↔ Ext (CAD sends query to External system; External system sends information to CAD) <input type="checkbox"/> Ext ↔ CAD (External system sends query to CAD; CAD sends information to External system)
Typical Path	CAD → External System
Connection to	Recorder and/or Logging Systems
Data Examples	narrative added to call for service by dispatchers and call-takers
Typical Trigger Type(s)	<input checked="" type="checkbox"/> Automated/Automatic <input type="checkbox"/> Manual
Examples of Triggering Events	<ul style="list-style-type: none"> <li>• Additional information gathered during the call-taking process.</li> <li>• Additional information gathered during the call progression after dispatch is made.</li> </ul>
Sample Scenario(s)	<ul style="list-style-type: none"> <li>• As a call taker is entering a call-for-service, the caller provides a description of the suspect vehicle used in a crime. This additional information is added to the call-for-service in the CAD system and the CAD system passes the information to the recorder system to be included with the recording of the call to 9-1-1 and as a searchable field.</li> <li>• During the progression of a call-for-service, one of the assigned officers provides a description of suspects, including a possible suspect's name. This comment is added to the call-for-service in the CAD system and the CAD system passes the comment to the recorder/logging system as a reference to the event and becomes a searchable field.</li> </ul>
Sample Business Rule(s)	<ul style="list-style-type: none"> <li>• It is assumed that the recorder provider's Application Programming Interface (API) has been installed on the CAD system.</li> </ul>

### 3.5.8 Event Notifications to Text-Enabled Devices (pagers, cell phones)

Exchange #	25
Primary Communities of Interest	<input checked="" type="checkbox"/> Emergency Medical Service <input checked="" type="checkbox"/> Emergency Management <input checked="" type="checkbox"/> Fire Services <input checked="" type="checkbox"/> Law Enforcement <input type="checkbox"/> Transportation <input type="checkbox"/> Other
IEPD Status	Unknown
Directional Style(s)	<input checked="" type="checkbox"/> CAD → Ext (CAD pushes information to External system) <input type="checkbox"/> Ext → CAD (External system pushes information to CAD) <input type="checkbox"/> CAD ⇄ Ext (CAD sends query to External system; External system sends information to CAD) <input type="checkbox"/> Ext ⇄ CAD (External system sends query to CAD; CAD sends information to External system)
Typical Path	CAD → External System
Connection to	The destination for this exchange is a wide range of mobile, text-enabled devices, including pagers and cell phones.
Data Examples	Event type, location, date/time, units responding
Typical Trigger Type(s)	<input type="checkbox"/> Automated/Automatic <input checked="" type="checkbox"/> Manual
Examples of Triggering Events	<ul style="list-style-type: none"> <li>• Major weather events, such as flooding, tornadoes, etc.</li> <li>• Warnings and notifications regarding service availability of ambulances, fire apparatus, etc.</li> <li>• Warnings and notifications regarding traffic problems and road closures.</li> <li>• Requests for off-duty personnel to report to work.</li> </ul>
Sample Scenario(s)	<ul style="list-style-type: none"> <li>• A major storm causes a number of disruptions for responders. These disruptions may not be related to any single, specific call type, but may impact responders on any response. The CAD system keeps users alerted to these issues by sending messages to their pagers and mobile phones.</li> <li>• Over the course of the storm, these messages include:               <ul style="list-style-type: none"> <li>○ Closure of a main highway due to a mud slide. The notification helps first responders plan alternate routes to their calls.</li> <li>○ Warning of frequent lightning strikes. This notification raises awareness for first responders and affects how they may use certain equipment.</li> <li>○ Notification that ambulance calls have spiked severely, and no ambulance availability is expected for at least two hours. This notification may alert law enforcement that they should transport people requiring medical attention in their patrol cars if at all possible.</li> </ul> </li> </ul>
Sample Business Rule(s)	<ul style="list-style-type: none"> <li>• These notifications may be automatic, or may be created manually in an ad hoc manner.</li> <li>• An example of an automatic notification might be a warning regarding lack of availability of a certain resource. For example, if the CAD system sees that ambulance calls are severely backed up, it might automatically generate a notification.</li> <li>• An example of a manual, ad hoc notification might be a warning regarding a road closure. In this case, CAD system personnel might manually enter the informational message and tell the CAD system to transmit it.</li> </ul>

### 3.5.9 Transfer ANI/ALI Data to Secondary PSAP

Exchange #	26
Primary Communities of Interest	<input type="checkbox"/> Emergency Medical Service <input type="checkbox"/> Emergency Management <input type="checkbox"/> Fire Services <input type="checkbox"/> Law Enforcement <input type="checkbox"/> Transportation <input checked="" type="checkbox"/> Other
IEPD Status	Unknown
Directional Style(s)	<input checked="" type="checkbox"/> CAD → Ext (CAD pushes information to External system) <input type="checkbox"/> Ext → CAD (External system pushes information to CAD) <input type="checkbox"/> CAD ↔ Ext (CAD sends query to External system; External system sends information to CAD) <input type="checkbox"/> Ext ↔ CAD (External system sends query to CAD; CAD sends information to External system)
Typical Path	CAD → External System
Connection to	Other CAD
Data Examples	ANI-ALI data
Typical Trigger Type(s)	<input type="checkbox"/> Automated/Automatic <input checked="" type="checkbox"/> Manual
Examples of Triggering Events	<ul style="list-style-type: none"> <li>The primary PSAP is a call answering PSAP only and hands off calls to a secondary PSAP (such as law enforcement, fire, or EMS) for dispatch. The PSAP has ANI/ALI data to hand off to the secondary PSAP.</li> </ul>
Sample Scenario(s)	<ul style="list-style-type: none"> <li>A person, using a wireless phone, dials 9-1-1 and the call is received at a PSAP which is not the correct PSAP to dispatch for the emergency.</li> </ul>
Sample Business Rule(s)	<ul style="list-style-type: none"> <li>ANI/ALI data will be transferred to the chosen secondary PSAP, along with the voice caller, by the call taker. Dependent on local business rules, all data involved may be transferred or only selected key data, such as customer name, location/address, call type, phone number, date/time, and any caller/address/phone number specific data.</li> <li>The call taker will stay on the line until told to release by the secondary PSAP.</li> </ul>



### 3.5.10 Update False Alarm Billing Systems

Exchange #	27
Primary Communities of Interest	<input type="checkbox"/> Emergency Medical Service <input type="checkbox"/> Emergency Management <input checked="" type="checkbox"/> Fire Services <input checked="" type="checkbox"/> Law Enforcement <input type="checkbox"/> Transportation <input type="checkbox"/> Other
IEPD Status	Unknown
Directional Style(s)	<input checked="" type="checkbox"/> CAD → Ext (CAD pushes information to External system) <input type="checkbox"/> Ext → CAD (External system pushes information to CAD) <input type="checkbox"/> CAD ↔ Ext (CAD sends query to External system; External system sends information to CAD) <input type="checkbox"/> Ext ↔ CAD (External system sends query to CAD; CAD sends information to External system)
Typical Path	CAD → External System
Connection to	Agency billing system
Data Examples	CAD data filtered by type (=Alarm Call) and disposition (=false) during specified date/time range
Typical Trigger Type(s)	<input checked="" type="checkbox"/> Automated/Automatic <input checked="" type="checkbox"/> Manual
Examples of Triggering Events	<ul style="list-style-type: none"> <li>• A false alarm is a situation in which someone has deliberately activated the fire alarm system, knowing that there is no danger. For example, a student activating a manual pull station when there is no fire would be classified as a malicious false alarm. An unwanted alarm or nuisance alarm is one when the fire alarm system is activated, but not under conditions where a fire exists. For example, a smoke alarm placed in, or near, a shower and activated by the shower steam would be considered an unwanted or nuisance alarm.</li> <li>• Multiple calls for alarms in which no fire was involved are the most common trigger. After a certain number of such false alarms, the fire department may charge the owner/occupant for the cost of the response.</li> </ul>
Sample Scenario(s)	<ul style="list-style-type: none"> <li>• On a predetermined periodic basis, the CAD system sends alarm response data to an external Alarm Billing system for monthly processing.</li> </ul>
Sample Business Rule(s)	<ul style="list-style-type: none"> <li>• NFPA 72 National Fire Alarm Code.</li> <li>• NFPA 1221 Standard for the Installation, Maintenance and Use of Public Fire Service Communication Systems.</li> <li>• NFPA 101 Life Safety Code.</li> </ul>

### 3.6 External – Miscellaneous

#### 3.6.1 CAD System Inquiries (call volume, call history, unit availability)

Exchange #	28
Primary Communities of Interest	<input checked="" type="checkbox"/> Emergency Medical Service <input checked="" type="checkbox"/> Emergency Management <input checked="" type="checkbox"/> Fire Services <input checked="" type="checkbox"/> Law Enforcement <input type="checkbox"/> Transportation <input type="checkbox"/> Other
IEPD Status	Unknown
Directional Style(s)	<input type="checkbox"/> CAD → Ext (CAD pushes information to External system) <input type="checkbox"/> Ext → CAD (External system pushes information to CAD) <input type="checkbox"/> CAD ↔ Ext (CAD sends query to External system; External system sends information to CAD) <input checked="" type="checkbox"/> Ext ↔ CAD (External system sends query to CAD; CAD sends information to External system)
Typical Path	External System/Mobile → CAD → External System/Mobile
Connection to	Mobile Unit, Handheld Device, Various
Data Examples	call volume, call history, unit availability
Typical Trigger Type(s)	<input type="checkbox"/> Automated/Automatic <input checked="" type="checkbox"/> Manual
Examples of Triggering Events	<ul style="list-style-type: none"> <li>• A large-scale emergency scenario (e.g., a major weather event) is occurring. Leadership desires information concerning the use and availability of resources in order to determine the need for activating off-duty personnel or requesting assistance from neighboring jurisdictions.</li> <li>• The officer in charge of a law enforcement midnight shift wants information regarding night burglaries during the last seven days in order to assign a targeted patrol unit.</li> <li>• An agency monitors system statistics periodically (every few hours or at beginning of each shift for example) to ensure appropriate performance.</li> </ul>
Sample Scenario(s)	<ul style="list-style-type: none"> <li>• A major snowstorm hits a county which does not normally experience heavy snowfall. Roads cannot be cleared efficiently and traffic accidents spike dramatically. Ambulance teams must respond to a large number of accidents with injuries. EMS leadership responds to this situation by making periodic inquiries to the CAD system, asking for utilization and availability information regarding ambulances. Utilization data indicates that most of the serious accidents are occurring on a major highway that runs through the southern portion of the county. EMS leadership directs ambulance teams stationed in the northern portion of the county to re-positioning themselves closer to the southern highway. This enables more efficient use of resources and faster response time. As the day progresses, EMS leadership notes that, even with re-positioning, calls for service are coming closer to exceeding the county's ability to respond. This information enables leadership to act before the situation escalates out of control. Leadership contacts neighboring counties, asking them to position available ambulances near their borders, enabling quicker response in a mutual aid scenario.</li> <li>• A jurisdiction has had an unusually high number of nighttime burglaries during the summer. The midnight shift commander (law enforcement) wants to direct a couple units specifically to patrol those areas getting hit hardest. The officer in charge queries CAD for all burglaries that occurred in the last seven days between the hours of midnight and 6:00 a.m. The results are plotted on a map, shared with the assigned units, and extra patrol is assigned to the burglary "hot spots".</li> </ul>
Sample Business Rule(s)	<ul style="list-style-type: none"> <li>• Unit availability queries shall be monitored during times of severe weather, natural disasters, and critical events (e.g. aircraft accidents) in order that effective and appropriate countermeasures are taken when needed (mutual aid requests, activate off-duty personnel, request National Guard assistance, etc.).</li> <li>• On the fly, law enforcement statistics requests shall be provided as soon as practical.</li> </ul>

### 3.6.2 Query for Personal Medical Data

Exchange #	29
Primary Communities of Interest	<input checked="" type="checkbox"/> Emergency Medical Service <input type="checkbox"/> Emergency Management <input type="checkbox"/> Fire Services <input type="checkbox"/> Law Enforcement <input type="checkbox"/> Transportation <input type="checkbox"/> Other
IEPD Status	Unknown
Directional Style(s)	<input type="checkbox"/> CAD → Ext (CAD pushes information to External system) <input type="checkbox"/> Ext → CAD (External system pushes information to CAD) <input checked="" type="checkbox"/> CAD ↔ Ext (CAD sends query to External system; External system sends information to CAD) <input type="checkbox"/> Ext ↔ CAD (External system sends query to CAD; CAD sends information to External system)
Typical Path	Mobile → CAD → External System → CAD → Mobile
Connection to	Medical Database(s)
Data Examples	medical history data
Typical Trigger Type(s)	<input type="checkbox"/> Automated/Automatic <input checked="" type="checkbox"/> Manual
Examples of Triggering Events	<ul style="list-style-type: none"> <li>• EMS, or private ambulance crew, treating an unconscious patient.</li> <li>• EMS, or private ambulance crew, treating a patient whose injuries prevent them from sharing medical history information.</li> </ul>
Sample Scenario(s)	<ul style="list-style-type: none"> <li>• An unconscious patient is being treated by EMS. The EMS personnel require the patient's recent health status, medication, vital signs, and allergy history in order to assist in establishing the cause of unconsciousness and select the most appropriate treatment for the patient. The EMS personnel access the local hospital or private company that maintains the emergency health record. They provide their authority code and receive the medical history record.</li> </ul>
Sample Business Rule(s)	<ul style="list-style-type: none"> <li>• Must adhere to HIPAA rules.</li> <li>• Summary emergency health record is data transmission only. Voice transmissions do not identify patient name and are for critical, select information only.</li> <li>• Authorizing data must be incorporated into request for data.</li> </ul>

### 3.6.3 Queries to other EOCs (EMnet, EMMA, etc.)

Exchange #	30
Primary Communities of Interest	<input type="checkbox"/> Emergency Medical Service <input checked="" type="checkbox"/> Emergency Management <input type="checkbox"/> Fire Services <input type="checkbox"/> Law Enforcement <input type="checkbox"/> Transportation <input type="checkbox"/> Other
IEPD Status	Unknown
Directional Style(s)	<input type="checkbox"/> CAD → Ext (CAD pushes information to External system) <input type="checkbox"/> Ext → CAD (External system pushes information to CAD) <input checked="" type="checkbox"/> CAD ↔ Ext (CAD sends query to External system; External system sends information to CAD) <input type="checkbox"/> Ext ↔ CAD (External system sends query to CAD; CAD sends information to External system)
Typical Path	CAD → External System → CAD
Connection to	External Databases
Data Examples	narrative information
Typical Trigger Type(s)	<input type="checkbox"/> Automated/Automatic <input checked="" type="checkbox"/> Manual
Examples of Triggering Events	<ul style="list-style-type: none"> <li>Natural or manmade events requiring multiple EMA jurisdictions to interact and exchange information.</li> </ul>
Sample Scenario(s)	<ul style="list-style-type: none"> <li>A strong storm system with a history of heavy damage is entering an area from a neighboring county. Spotter reports and damage reports from the neighboring EOC are available to assist in warning the population of the next county. Information collected in the next county would then be available as the storm progresses to additional counties. 9-1-1 and public safety, as well as outside entities such as the National Weather Service, the American Red Cross, the Salvation Army, and storm spotters, could be readily advised of the storm history and projected path.</li> </ul>
Sample Business Rule(s)	<ul style="list-style-type: none"> <li>As collected information leads to issuing a warning to the public and public safety responders, warning systems can be automatically triggered, such as outdoor alert systems and weather alert radios, as well as public safety radios, pagers, MDTs, and PDAs.</li> </ul>

### 3.6.4 Query Location (Involvement History)

Exchange #	31
Primary Communities of Interest	<input type="checkbox"/> Emergency Medical Service <input type="checkbox"/> Emergency Management <input checked="" type="checkbox"/> Fire Services <input checked="" type="checkbox"/> Law Enforcement <input type="checkbox"/> Transportation <input type="checkbox"/> Other
IEPD Status	Unknown
Directional Style(s)	<input type="checkbox"/> CAD → Ext (CAD pushes information to External system) <input type="checkbox"/> Ext → CAD (External system pushes information to CAD) <input checked="" type="checkbox"/> CAD ↔ Ext (CAD sends query to External system; External system sends information to CAD) <input type="checkbox"/> Ext ↔ CAD (External system sends query to CAD; CAD sends information to External system)
Typical Path	Mobile → CAD → External System → CAD → Mobile; CAD → External System → CAD
Connection to	LE RMS
Data Examples	list of previous calls for service at a location including date, type of call, responding units
Typical Trigger Type(s)	<input checked="" type="checkbox"/> Automated/Automatic <input checked="" type="checkbox"/> Manual
Examples of Triggering Events	<ul style="list-style-type: none"> <li>• Domestic assault call for service.</li> <li>• Hostage situation call for service.</li> <li>• Criminal investigation.</li> </ul>
Sample Scenario(s)	<ul style="list-style-type: none"> <li>• A caller reports that she has been assaulted by her live-in boyfriend. The ALI information is used by the CAD system to query the local RMS for a list of all prior incidents at the address. The information returned from the RMS database is transmitted to the responding officers, along with a photo of the boyfriend.</li> <li>• An investigator checks the agency RMS for information needed for a search warrant affidavit. The RMS locates an incident report and then queries the CAD system for details on the original 9-1-1 call.</li> <li>• The PSAP receives a 9-1-1 call about a possible hostage situation at a home. The caller provides the street address, and the entry triggers a CAD inquiry of the local RMS system for all records related to that address. The inquiry also returns records for incidents that have occurred at the addresses adjacent to the provided address.</li> <li>• The PSAP receives a call about a fire in a warehouse. The RMS is queried and returns previous fire and EMS responses to mitigate hazardous materials releases and exposures related to the production of Methamphetamine.</li> </ul>
Sample Business Rule(s)	<ul style="list-style-type: none"> <li>• The CAD system is aware of all of the external systems to which it can submit inquiries.</li> <li>• The officer in the field must have a device capable of displaying both text and photos.</li> <li>• Street addresses and landmarks must be properly and accurately geo-coded in both the CAD system and the RMS.</li> </ul>

### 3.6.5 Premises History

Exchange #	32
Primary Communities of Interest	<input checked="" type="checkbox"/> Emergency Medical Service <input type="checkbox"/> Emergency Management <input checked="" type="checkbox"/> Fire Services <input checked="" type="checkbox"/> Law Enforcement <input type="checkbox"/> Transportation <input type="checkbox"/> Other
IEPD Status	Unknown
Directional Style(s)	<input type="checkbox"/> CAD → Ext (CAD pushes information to External system) <input type="checkbox"/> Ext → CAD (External system pushes information to CAD) <input checked="" type="checkbox"/> CAD ↔ Ext (CAD sends query to External system; External system sends information to CAD) <input type="checkbox"/> Ext ↔ CAD (External system sends query to CAD; CAD sends information to External system)
Typical Path	CAD → External System → CAD
Connection to	Mobile Unit
Data Examples	List of recent calls for service at the location, list of persons with outstanding warrants who have used that address as a home address previously
Typical Trigger Type(s)	<input checked="" type="checkbox"/> Automated/Automatic <input type="checkbox"/> Manual
Examples of Triggering Events	<ul style="list-style-type: none"> <li>• A call for service at a location that had a recent response (law enforcement, EMS, or fire).</li> <li>• A call for service at a location where a person has outstanding warrants.</li> <li>• A call for service at a location where a person has been flagged with an alert.</li> <li>• A call for service at a location that has been flagged as having hazardous materials on site.</li> </ul>
Sample Scenario(s)	<ul style="list-style-type: none"> <li>• A law enforcement officer is dispatched to an unknown trouble at 123 Main Street based on a 9-1-1 hang-up call. The CAD system auto-populates the address of the telephone call. The CAD premises history records shows that law enforcement officers have been called to that location on multiple occasions, including three calls within the past two months for domestic violence. The premises history also alerts for a resident known to fight law enforcement and to be in possession of a handgun.</li> <li>• A call for a person bleeding from the head is generated to a PSAP, resulting in a Call for Service. A premises history returns with a recent domestic violence call. EMS requests a joint law enforcement response.</li> <li>• A call for is received for a carbon monoxide alarm. Recent calls to the address indicate that an emotionally disturbed person keeps calling the PSAP saying she is suffering from carbon monoxide poisoning. Fire and EMS will require a law enforcement officer to also respond to deal with the caller.</li> </ul>
Sample Business Rule(s)	<ul style="list-style-type: none"> <li>• If the system provides an alert, the dispatcher shall review it and pass the information to responding units.</li> <li>• Many systems can provide automatic alerts for new calls of service based on prior activity at the location (e.g., a notification that law enforcement responded to the same address two days ago for a domestic, and last night for a trespassing) or on known residents if entered into the call (e.g., John Doe address of record is the same as the call for service, and John Doe has two outstanding warrants for bad checks).</li> <li>• Generally a premises history is recorded when a call for service with a specific location is entered into a CAD system. Localities with disparate dispatch capabilities may systematically link law enforcement and fire/EMS CAD systems and RMS for full premises history. In addition, many systems handle manual alerts to be added – like hazardous materials, unfriendly dogs, and persons prone to or threatening violence.</li> </ul>

### 3.6.6 Supplemental Information (history, query returns, etc)

Exchange #	33
Primary Communities of Interest	<input checked="" type="checkbox"/> Emergency Medical Service <input checked="" type="checkbox"/> Emergency Management <input checked="" type="checkbox"/> Fire Services <input checked="" type="checkbox"/> Law Enforcement <input type="checkbox"/> Transportation <input type="checkbox"/> Other
IEPD Status	NIEM Exchange – Existing exchange available via LEITSC
Directional Style(s)	<input type="checkbox"/> CAD → Ext (CAD pushes information to External system) <input type="checkbox"/> Ext → CAD (External system pushes information to CAD) <input type="checkbox"/> CAD ↔ Ext (CAD sends query to External system; External system sends information to CAD) <input checked="" type="checkbox"/> Ext ↔ CAD (External system sends query to CAD; CAD sends information to External system)
Typical Path	External System → CAD → External System
Connection to	RMS
Data Examples	person, location, object, or offense information
Typical Trigger Type(s)	<input checked="" type="checkbox"/> Automated/Automatic <input type="checkbox"/> Manual
Examples of Triggering Events	<ul style="list-style-type: none"> <li>• Supports response to an RMS Query which requests information based on person, location, object, or offense. This response is designed to provide high-level information about the existence of more information while the actual detailed response would be supported based on the IEP/IEPD built to support that particular type of information (such as a Warrant, Protection Order, etc.)</li> </ul>
Sample Scenario(s)	<ul style="list-style-type: none"> <li>• This exchange of supplemental information has been documented as a part of the LEITSC project and is currently available. The same principles should apply to RMS data obtained from a query to a records management system from any agency served by the CAD system.</li> </ul>
Sample Business Rule(s)	<ul style="list-style-type: none"> <li>• The transfer of query results must be constrained by the applicable privacy and security regulations.</li> <li>• Supplemental information should only be shared with a party that would have had the approval to have obtained that information from the primary source.</li> <li>• The historical retention of any supplemental information must consider the ability to have the query results purged if necessary.</li> </ul>

## 3.7 Weather Related

### 3.7.1 Weather Products (RADAR, Satellite Imagery, Surface Analysis, etc)

Exchange #	34
Primary Communities of Interest	<input checked="" type="checkbox"/> Emergency Medical Service <input checked="" type="checkbox"/> Emergency Management <input checked="" type="checkbox"/> Fire Services <input checked="" type="checkbox"/> Law Enforcement <input checked="" type="checkbox"/> Transportation <input checked="" type="checkbox"/> Other
IEPD Status	Unknown
Directional Style(s)	<input type="checkbox"/> CAD → Ext (CAD pushes information to External system) <input checked="" type="checkbox"/> Ext → CAD (External system pushes information to CAD) <input type="checkbox"/> CAD ↔ Ext (CAD sends query to External system; External system sends information to CAD) <input type="checkbox"/> Ext ↔ CAD (External system sends query to CAD; CAD sends information to External system)
Typical Path	External System → CAD
Connection to	Weather Service(s)
Data Examples	Warning or Advisory narrative and location
Typical Trigger Type(s)	<input checked="" type="checkbox"/> Automated/Automatic <input type="checkbox"/> Manual
Examples of Triggering Events	<ul style="list-style-type: none"> <li>• National Weather Service Advisory or Warning.</li> <li>• Ongoing feed.</li> </ul>
Sample Scenario(s)	<ul style="list-style-type: none"> <li>• The interface provides ongoing data feed into CAD from the National Weather Service (or similar weather service).</li> <li>• The interface provides a feed when a major weather alert is announced for the jurisdiction.</li> </ul>
Sample Business Rule(s)	<ul style="list-style-type: none"> <li>• Upon receipt, the dispatcher will forward to Mobile Data Terminals (MDCs) and issue a verbal announcement over the radio.</li> </ul>



### 3.7.2 Weather Inquiries (Current Conditions, Forecast, Rain Levels, etc)

Exchange #	35
Primary Communities of Interest	<input checked="" type="checkbox"/> Emergency Medical Service <input checked="" type="checkbox"/> Emergency Management <input checked="" type="checkbox"/> Fire Services <input checked="" type="checkbox"/> Law Enforcement <input checked="" type="checkbox"/> Transportation <input type="checkbox"/> Other
IEPD Status	Unknown
Directional Style(s)	<input type="checkbox"/> CAD → Ext (CAD pushes information to External system) <input type="checkbox"/> Ext → CAD (External system pushes information to CAD) <input checked="" type="checkbox"/> CAD ⇄ Ext (CAD sends query to External system; External system sends information to CAD) <input type="checkbox"/> Ext ⇄ CAD (External system sends query to CAD; CAD sends information to External system)
Typical Path	CAD → External System → CAD
Connection to	Mobile Unit
Data Examples	weather narrative and location, forecast, wind speed and direction
Typical Trigger Type(s)	<input type="checkbox"/> Automated/Automatic <input checked="" type="checkbox"/> Manual
Examples of Triggering Events	<ul style="list-style-type: none"> <li>• Water rescue Fire units responding to a river rescue call need to know the current river level.</li> <li>• First responders responding to a hazardous materials incident need to know the current wind speed and direction.</li> <li>• Firefighters engaged in a wild fire suppression operation need to know the current weather conditions, including humidity, wind speed and direction and forecast.</li> </ul>
Sample Scenario(s)	<ul style="list-style-type: none"> <li>• A citizen has reported a boat overturned and the boat's occupants are hanging onto tree limbs extending into the water. Water rescue units are dispatched. The responding units use their MDC to obtain information about the current level of the river in order to assess the level of effort and the hazard factor. In the event that there is heavy rainfall underway, responding units can utilize the MDC to inquire about the rate of rainfall.</li> <li>• Law enforcement officers encounter river rafters, swimmers, and other individuals in the river who are not wearing life jackets when the river is above a certain level as required by local ordinance. The officers use their MDCs to obtain the current river level. If the river level exceeds the threshold that requires a lifejacket, the river dwellers are issued a summons.</li> <li>• An explosion at a chemical plant has occurred. Responding HAZMAT units have determined that the chemical's plume is highly toxic. They use the MDC to determine the direction and speed of the wind in order to predict the volatile areas that will be affected and how quickly an evacuation must be initiated.</li> <li>• Several wild fires have broken out and Fire command uses the MDC often to determine the current wind direction and speed. This information will help Fire commanders anticipate a subsequent fire storm and evacuate the firefighters who are in the potential fire storm's path of destruction.</li> <li>• All scenarios reflect a query from a MDC to CAD and a response exchange from CAD back to the MDC.</li> </ul>
Sample Business Rule(s)	<ul style="list-style-type: none"> <li>• The automatic CAD response to a weather query carries a dependency that there is a CAD interface to the National Weather Service, or a weather service provider.</li> <li>• All weather queries shall have an official purpose/need.</li> </ul>

## 3.8 Hazardous Materials Related

### 3.8.1 Hazardous Materials Database

Exchange #	36
Primary Communities of Interest	<input checked="" type="checkbox"/> Emergency Medical Service <input checked="" type="checkbox"/> Emergency Management <input checked="" type="checkbox"/> Fire Services <input checked="" type="checkbox"/> Law Enforcement <input checked="" type="checkbox"/> Transportation <input type="checkbox"/> Other
IEPD Status	Unknown
Directional Style(s)	<input type="checkbox"/> CAD → Ext (CAD pushes information to External system) <input type="checkbox"/> Ext → CAD (External system pushes information to CAD) <input checked="" type="checkbox"/> CAD ↔ Ext (CAD sends query to External system; External system sends information to CAD) <input type="checkbox"/> Ext ↔ CAD (External system sends query to CAD; CAD sends information to External system)
Typical Path	CAD → External System → CAD; Mobile → External System → Mobile
Connection to	GIS system
Data Examples	Material names and descriptions, material location, response descriptions
Typical Trigger Type(s)	<input checked="" type="checkbox"/> Automated/Automatic <input checked="" type="checkbox"/> Manual
Examples of Triggering Events	<ul style="list-style-type: none"> <li>• A possible hazardous materials incident occurs at a manufacturing plant.</li> <li>• An alarm (fire, burglary, etc) call is received by the PSAP.</li> </ul>
Sample Scenario(s)	<ul style="list-style-type: none"> <li>• A fire alarm is received by the PSAP. The site is either known, or flagged in the CAD system, as having hazardous materials on site. The CAD system automatically or via manual prompt, sends a query to a hazardous materials database. The response provides specific locations of materials, building layouts, material type, and proper responses to identified threat. The dispatcher notifies the proper hazardous materials officials to respond and first responders.</li> <li>• This functionality could also be used by first responders themselves via MDCs.</li> </ul>
Sample Business Rule(s)	<ul style="list-style-type: none"> <li>• Based on call for service address or location type, the hazmat database will be queried.</li> <li>• Users must have appropriate access to hazardous materials database.</li> </ul>

### 3.8.2 Hazmat Updates

Exchange #	37
Primary Communities of Interest	<input checked="" type="checkbox"/> Emergency Medical Service <input checked="" type="checkbox"/> Emergency Management <input checked="" type="checkbox"/> Fire Services <input checked="" type="checkbox"/> Law Enforcement <input checked="" type="checkbox"/> Transportation <input type="checkbox"/> Other
IEPD Status	Unknown
Directional Style(s)	<input type="checkbox"/> CAD → Ext (CAD pushes information to External system) <input checked="" type="checkbox"/> Ext → CAD (External system pushes information to CAD) <input type="checkbox"/> CAD ↔ Ext (CAD sends query to External system; External system sends information to CAD) <input type="checkbox"/> Ext ↔ CAD (External system sends query to CAD; CAD sends information to External system)
Typical Path	External System → CAD
Connection to	Hazmat Database
Data Examples	Material names and descriptions, material location, response descriptions
Typical Trigger Type(s)	<input checked="" type="checkbox"/> Automated/Automatic <input type="checkbox"/> Manual
Examples of Triggering Events	<ul style="list-style-type: none"> <li>• New Hazmat Database Entry (automatic feed/update to CAD).</li> <li>• Periodic updates provided on regular basis.</li> </ul>
Sample Scenario(s)	<ul style="list-style-type: none"> <li>• A railroad car overturns. Placards indicate possible hazmat onboard. The dispatcher queries the CAD hazmat database for related information (materials list, response suggestions, building models/floor plans, GIS maps, and plume models). The dispatcher makes this information available to responding units.</li> <li>• A fire is reported at an industrial site. Upon call entry into the CAD system, the CAD system automatically notifies the dispatcher of related hazmat information (materials list, response suggestions, building models/floor plans, GIS maps, and plume models). The dispatcher makes this information available to responding units.</li> <li>• This exchange relates to the update of a CAD or CAD-connected database from a separate hazmat database.</li> </ul>
Sample Business Rule(s)	<ul style="list-style-type: none"> <li>• Automatic, periodic push of data to local CAD system.</li> <li>• Dispatcher will initiate a hazmat query for any fire reported at an industrial site.</li> <li>• Dispatcher will initiate a hazmat query for any placarded vehicle involved in a traffic crash.</li> </ul>

### 3.8.3 Hazmat Database Query (Plume Models, Chemtrek, CAMEO, etc.)

Exchange #	38
Primary Communities of Interest	<input checked="" type="checkbox"/> Emergency Medical Service <input checked="" type="checkbox"/> Emergency Management <input checked="" type="checkbox"/> Fire Services <input checked="" type="checkbox"/> Law Enforcement <input checked="" type="checkbox"/> Transportation <input type="checkbox"/> Other
IEPD Status	Unknown
Directional Style(s)	<input type="checkbox"/> CAD → Ext (CAD pushes information to External system) <input checked="" type="checkbox"/> Ext → CAD (External system pushes information to CAD) <input checked="" type="checkbox"/> CAD ↔ Ext (CAD sends query to External system; External system sends information to CAD) <input type="checkbox"/> Ext ↔ CAD (External system sends query to CAD; CAD sends information to External system)
Typical Path	CAD → External System → CAD; External System → CAD
Connection to	Hazmat Database
Data Examples	Material names and descriptions, material location, response descriptions
Typical Trigger Type(s)	<input checked="" type="checkbox"/> Automated/Automatic <input checked="" type="checkbox"/> Manual
Examples of Triggering Events	<ul style="list-style-type: none"> <li>• Overturned or leaking tanker truck or railroad tank car.</li> <li>• Leaking fuel tank.</li> <li>• Fire/explosion at site known to contain hazardous materials.</li> <li>• Imbedded sensors placed around the location of a major outdoor music festival indicate the presence of a hazardous substance.</li> <li>• An on-scene hazmat commander uses a MDT to access hazmat databases via the CAD system.</li> </ul>
Sample Scenario(s)	<ul style="list-style-type: none"> <li>• A railroad car overturns. Placards indicate possible hazmat material on board. Using the placard number, the dispatcher initiates a query via CAD to a separate hazmat database for related information (materials list, response suggestions, building models/floor plans, GIS maps, and plume models). The dispatcher makes this information available to responding units.</li> <li>• A fire is reported at an industrial site. Upon call entry into the CAD system, the CAD system has the location previously flagged as a hazmat location, and automatically queries a separate hazmat database for related hazmat information (materials list, response suggestions, building models/floor plans, GIS maps, and plume models). The dispatcher makes this information available to responding units.</li> <li>• The fire hazmat commander at an industrial fire scene needs building drawings to determine where the fire is in relation to hazmat storage tanks. The fire hazmat commander connects to the CAD database through his or her MDT and extracts this graphical information, as well as specifics on the chemicals stored in the tanks. This information is provided to the fire Incident Commander who directs firefighting efforts to successfully prevent the fire from reaching the portions of the building containing the hazmat tanks.</li> <li>• This exchange relates to the query of a separate hazmat database by CAD.</li> </ul>
Sample Business Rule(s)	<ul style="list-style-type: none"> <li>• Automatic, based on location (must be already 'flagged' in CAD system) or location type.</li> <li>• Dispatcher will initiate a hazmat query for any fire reported at an industrial site.</li> <li>• Dispatcher will initiate a hazmat query for any placarded vehicle involved in a traffic crash.</li> </ul>

## 3.9 Transportation Related

### 3.9.1 Event Notifications to/from Transportation

Exchange #	39
Primary Communities of Interest	<input checked="" type="checkbox"/> Emergency Medical Service <input checked="" type="checkbox"/> Emergency Management <input checked="" type="checkbox"/> Fire Services <input checked="" type="checkbox"/> Law Enforcement <input checked="" type="checkbox"/> Transportation <input type="checkbox"/> Other
IEPD Status	Non-NIEM Exchange – ITS/PS Project exchanges developed in GJXDM and IEEE 1512 with Transformation Stylesheets in-between. See the IEPD Clearinghouse for more information.
Directional Style(s)	<input checked="" type="checkbox"/> CAD → Ext (CAD pushes information to External system) <input checked="" type="checkbox"/> Ext → CAD (External system pushes information to CAD) <input checked="" type="checkbox"/> CAD ↔ Ext (CAD sends query to External system; External system sends information to CAD) <input checked="" type="checkbox"/> Ext ↔ CAD (External system sends query to CAD; CAD sends information to External system)
Typical Path	External System → CAD; CAD → External System; CAD → External System → CAD
Connection to	Intelligent Transportation Systems (ITS)
Data Examples	pre-planned events; list of closed road segments, current detours, list of road segments under construction
Typical Trigger Type(s)	<input checked="" type="checkbox"/> Automated/Automatic <input checked="" type="checkbox"/> Manual
Examples of Triggering Events	<ul style="list-style-type: none"> <li>Transportation to public safety - road construction, road closings.</li> <li>Public safety to Transportation - concerts, firework displays.</li> </ul>
Sample Scenario(s)	<ul style="list-style-type: none"> <li>Transportation has a scheduled road construction project (bridge resurfacing) about to take place on Maple Street at the James River bridge. This will result in the Maple St / James River bridge being closed between June 1st and July 1st. A designated detour will be established by Transportation. This construction will likely impact emergency response through that area, especially during rush hours. Transportation shares the details with public safety via the Event Information exchange. Public safety receives the exchange and uses the information to alter EMS, fire, and law enforcement responses that would normally use that bridge during the affected time periods. By sharing the event details, public safety can diminish the impact of the bridge closing (staging emergency equipment on the far side of the bridge in advance, for example). In addition to EMS, fire, and law enforcement, other consumers of the exchange could be: schools (for bus route planning) and the media.</li> <li>Public safety has a dignitary coming to visit the local university on February 1 for a one day speech to a public audience. The speech will be given at the university's auditorium. This will result in several road closings between the airport and the auditorium prior to the event (for the arrival), the area of the auditorium during the event, and road closings after the event (for the return trip). Due to the anticipated short duration of the road closings, no detours are planned for the arrival or departure. Public safety shares this information with Transportation via the Event Information exchange. Transportation receives the exchange and uses the information to plan their maintenance work around the closed roads on Feb 1. By sharing the event details, Transportation can minimize the negative impact on their resources (divert work crews on Feb. 1 to projects not negatively impacted). In addition to Transportation, the media, and schools could be other potential consumers of this exchange/information.</li> </ul>
Sample Business Rule(s)	<p>Transportation to public safety:</p> <ul style="list-style-type: none"> <li>If the road will be closed for more than 1 hour, then notify the appropriate public safety jurisdiction(s) – for example, if on a city road, notify the city law enforcement, or if on an interstate, notify the state law enforcement/highway patrol, etc.</li> <li>If the closed road is a major artery or expressway, then initiate the incident action plan (includes public safety notification).</li> </ul> <p>Public safety to Transportation:</p> <ul style="list-style-type: none"> <li>If a determination is made that the road(s) need to be closed for a dignitary visit, then notify appropriate Transportation entities.</li> <li>If the event is determined to be "high impact", then initiate the exchange at least one week in advance; if "low impact", initiate the exchange at least two days in advance.</li> </ul>

### 3.9.2 Incident Notifications to/from Transportation

Exchange #	40
Primary Communities of Interest	<input checked="" type="checkbox"/> Emergency Medical Service <input checked="" type="checkbox"/> Emergency Management <input checked="" type="checkbox"/> Fire Services <input checked="" type="checkbox"/> Law Enforcement <input checked="" type="checkbox"/> Transportation <input type="checkbox"/> Other
IEPD Status	Non-NIEM Exchange – ITS/PS Project exchanges developed in GJXDM and IEEE 1512 with Transformation Stylesheets in-between. See the IEPD Clearinghouse for more information.
Directional Style(s)	<input checked="" type="checkbox"/> CAD → Ext (CAD pushes information to External system) <input checked="" type="checkbox"/> Ext → CAD (External system pushes information to CAD) <input type="checkbox"/> CAD ⇄ Ext (CAD sends query to External system; External system sends information to CAD) <input type="checkbox"/> Ext ⇄ CAD (External system sends query to CAD; CAD sends information to External system)
Typical Path	CAD → External System → CAD; External System → CAD → External System
Connection to	Intelligent Transportation Systems (ITS)
Data Examples	incident type, location, narrative
Typical Trigger Type(s)	<input checked="" type="checkbox"/> Automated/Automatic <input type="checkbox"/> Manual
Examples of Triggering Events	Transportation to public safety: <ul style="list-style-type: none"> <li>• Traffic Crash</li> <li>• Adverse Weather Conditions</li> <li>• Bridge Collapse</li> <li>• Emergency Detour</li> </ul> Public safety to Transportation: <ul style="list-style-type: none"> <li>• Debris</li> <li>• Disabled Vehicle</li> <li>• Traffic Accident</li> <li>• Hazardous Material Spill</li> <li>• Bomb Threat</li> </ul>
Sample Scenario(s)	<ul style="list-style-type: none"> <li>• Transportation's Roadway Weather Information System (RWIS) detects ice forming on the interstate bridges. This situation may result in an increase of traffic crashes and may hinder emergency responses using the interstate. Additionally, ice detected on the interstate is most likely indicative of other local roadways as well. Transportation shares the details with public safety via the Incident Notification exchange. Public safety receives the exchange and uses the information to warn EMS, fire, and law enforcement responders. Additionally, law enforcement responders are instructed to monitor the bridges and attempt to slow down traffic speeds in the area. By sharing the incident, public safety can attempt to diminish the impact of the adverse weather conditions. In addition to EMS, fire, and law enforcement, other consumers of the exchange could be: schools (for bus route planning), the media, and local business and schools, which may decide to close early.</li> <li>• Public safety receives a report of a crash via a 9-1-1 call. This incident may result in traffic delays and additional crashes. PS shares this information with Transportation via the Incident Notification exchange. Transportation receives the exchange and uses the information to check their cameras to verify the crash and obtain additional information. They also check their speed detection system to ascertain if traffic flow has been compromised. Depending on crash severity, Transportation may also dispatch their service patrol to assist public safety and provide motorists warnings and alternate routes via the dynamic message signs.</li> </ul>
Sample Business Rule(s)	Transportation to public safety: <ul style="list-style-type: none"> <li>• If ice detector indicates ice, then send a notification.</li> <li>• If ice detector indicates no ice, then send an incident status update.</li> </ul> Public safety to Transportation: <ul style="list-style-type: none"> <li>• If a crash call is received, then send a notification.</li> <li>• If a crash call is received and determined to be a previously reported crash, then do not send a notification.</li> </ul>

### 3.9.3 Requests for Assistance to/from Transportation

Exchange #	41
Primary Communities of Interest	<input type="checkbox"/> Emergency Medical Service <input type="checkbox"/> Emergency Management <input type="checkbox"/> Fire Services <input checked="" type="checkbox"/> Law Enforcement <input checked="" type="checkbox"/> Transportation <input type="checkbox"/> Other
IEPD Status	Non-NIEM Exchange – ITS/PS Project exchanges developed in GJXDM and IEEE 1512 with Transformation Stylesheets in-between. See the IEPD Clearinghouse for more information.
Directional Style(s)	<input type="checkbox"/> CAD → Ext (CAD pushes information to External system) <input type="checkbox"/> Ext → CAD (External system pushes information to CAD) <input checked="" type="checkbox"/> CAD ⇄ Ext (CAD sends query to External system; External system sends information to CAD) <input checked="" type="checkbox"/> Ext ⇄ CAD (External system sends query to CAD; CAD sends information to External system)
Typical Path	CAD → External System → CAD; External System → CAD → External System
Connection to	Intelligent Transportation Systems (ITS)
Data Examples	assistance type needed, location, narrative; response; reply
Typical Trigger Type(s)	<input type="checkbox"/> Automated/Automatic <input checked="" type="checkbox"/> Manual
Examples of Triggering Events	Transportation to public safety: <ul style="list-style-type: none"> <li>• Help with directing traffic</li> <li>• Speed enforcement for hazardous work zones</li> </ul> Public safety to Transportation: <ul style="list-style-type: none"> <li>• Barricades for hazmat incident or extended duration accidents</li> <li>• Messages for dynamic message signs</li> </ul>
Sample Scenario(s)	<ul style="list-style-type: none"> <li>• Transportation is working on setting up a detour in relation to an emergency closure of an on ramp, but traffic is heavy and they are having a hard time rerouting traffic. Transportation sends a Request for Service to public safety to assist with traffic control. The request is evaluated and a Yes/No Response is returned. Note: the response can be qualified in the free text portion of the exchange (example: "yes, but not until a certain time").</li> <li>• Public safety is working a crash that resulted in a stop sign being destroyed. Public safety sends a Request for Service exchange to Transportation requesting the sign be replaced. The request is evaluated and a Yes/No Response is returned. Note: the response can be qualified in the free text portion of the exchange (example: "yes, but not until a certain time").</li> </ul>
Sample Business Rule(s)	Transportation to public safety – Request: <ul style="list-style-type: none"> <li>• If a determination is made that Public Safety assistance would be beneficial, send an appropriate Request for Service exchange.</li> </ul> Transportation to public safety – Reply: <ul style="list-style-type: none"> <li>• Send response within X min, if request is of a critical nature.</li> <li>• Send response within X hours, if request is non-critical.</li> </ul> Public safety to Transportation – Request: <ul style="list-style-type: none"> <li>• If a Transportation infrastructure asset is damaged or destroyed, send an appropriate Request for Service exchange.</li> </ul> Public Safety to Transportation – Reply: <ul style="list-style-type: none"> <li>• If request is older than three hours time, reply with no.</li> <li>• If request was for specific asset and the asset is not in use, then yes.</li> </ul>

### 3.9.4 Traffic Evacuation Routes from Transportation

Exchange #	42
Primary Communities of Interest	<input type="checkbox"/> Emergency Medical Service <input checked="" type="checkbox"/> Emergency Management <input type="checkbox"/> Fire Services <input checked="" type="checkbox"/> Law Enforcement <input type="checkbox"/> Transportation <input type="checkbox"/> Other
IEPD Status	Unknown
Directional Style(s)	<input type="checkbox"/> CAD → Ext (CAD pushes information to External system) <input checked="" type="checkbox"/> Ext → CAD (External system pushes information to CAD) <input checked="" type="checkbox"/> CAD ↔ Ext (CAD sends query to External system; External system sends information to CAD) <input type="checkbox"/> Ext ↔ CAD (External system sends query to CAD; CAD sends information to External system)
Typical Path	Mobile → CAD → External System → CAD → Mobile
Connection to	Intelligent Transportation Systems (ITS)
Data Examples	evacuation route information
Typical Trigger Type(s)	<input checked="" type="checkbox"/> Automated/Automatic <input checked="" type="checkbox"/> Manual
Examples of Triggering Events	<ul style="list-style-type: none"> <li>• Periodic update.</li> <li>• Upon request.</li> <li>• Upon receipt of an emergency weather alert or bombing incident.</li> </ul>
Sample Scenario(s)	<ul style="list-style-type: none"> <li>• A hurricane is predicted to strike within 72 hours and an evacuation order is pending. In preparation, CAD obtains the current evacuation routes from Transportation (either from an existing file in the case of periodic updates, or by data request, or from ITS in the case of an automatic trigger in the ITS system. Dispatch now has the updated evacuation routes to provide to public safety and to reference during the evacuation.</li> </ul>
Sample Business Rule(s)	<ul style="list-style-type: none"> <li>• If on-hand evacuation route file is more than 60 days old, request updated file.</li> </ul>



### 3.9.5 Query/Response for Current Road Conditions

Exchange #	43
Primary Communities of Interest	<input checked="" type="checkbox"/> Emergency Medical Service <input checked="" type="checkbox"/> Emergency Management <input checked="" type="checkbox"/> Fire Services <input checked="" type="checkbox"/> Law Enforcement <input checked="" type="checkbox"/> Transportation <input type="checkbox"/> Other
IEPD Status	Non-NIEM Exchange – GJXDM/IEEE 1512 exchange is available – see IEPD Clearinghouse
Directional Style(s)	<input type="checkbox"/> CAD → Ext (CAD pushes information to External system) <input type="checkbox"/> Ext → CAD (External system pushes information to CAD) <input checked="" type="checkbox"/> CAD ⇄ Ext (CAD sends query to External system; External system sends information to CAD) <input type="checkbox"/> Ext ⇄ CAD (External system sends query to CAD; CAD sends information to External system)
Typical Path	CAD → External System → CAD
Connection to	Intelligent Transportation System (ITS)
Data Examples	current or last known road conditions for a specified road segment
Typical Trigger Type(s)	<input type="checkbox"/> Automated/Automatic <input checked="" type="checkbox"/> Manual
Examples of Triggering Events	<ul style="list-style-type: none"> <li>• Checking route for a dignitary visit.</li> <li>• Checking route for a critical response.</li> </ul>
Sample Scenario(s)	<ul style="list-style-type: none"> <li>• In preparation for a dignitary visit, public safety desires a road conditions report for each road on the anticipated route. A Request for Road Conditions exchange is sent to Transportation for each road. Transportation responds with a Road Conditions exchange for each road.</li> </ul>
Sample Business Rule(s)	<ul style="list-style-type: none"> <li>• If a dignitary visit is planned, verify the road conditions two hours prior to arrival.</li> </ul>

### 3.9.6 Tactical Graphical Traffic Flow Summary from Transportation

Exchange #	44
Primary Communities of Interest	<input checked="" type="checkbox"/> Emergency Medical Service <input checked="" type="checkbox"/> Emergency Management <input checked="" type="checkbox"/> Fire Services <input checked="" type="checkbox"/> Law Enforcement <input type="checkbox"/> Transportation <input type="checkbox"/> Other
IEPD Status	Unknown
Directional Style(s)	<input type="checkbox"/> CAD → Ext (CAD pushes information to External system) <input checked="" type="checkbox"/> Ext → CAD (External system pushes information to CAD) <input checked="" type="checkbox"/> CAD ↔ Ext (CAD sends query to External system; External system sends information to CAD) <input type="checkbox"/> Ext ↔ CAD (External system sends query to CAD; CAD sends information to External system)
Typical Path	External System → CAD
Connection to	Intelligent Transportation Systems (ITS)
Data Examples	traffic flow information including routes and average speeds
Typical Trigger Type(s)	<input checked="" type="checkbox"/> Automated/Automatic <input checked="" type="checkbox"/> Manual
Examples of Triggering Events	<ul style="list-style-type: none"> <li>• Periodic push from traffic operations centers to CAD systems.</li> <li>• Manual push in the case of major events (large crashes, natural disasters, etc.)</li> </ul>
Sample Scenario(s)	<ul style="list-style-type: none"> <li>• Roadway sensors detect a significant drop in flow on a highway from 55 mph to 20 mph. This change in traffic speeds indicates a potential issue on the roadway and the data (information) is pushed to the PSAP CAD system. Via traffic cameras, a traffic information center employee monitors a truck that has lost its contents on a lane of a highway, causing the lane to shut down and traffic to slow in the other lanes. The employee denotes this incident in a traffic flow map, and the data is pushed to the PSAP CAD system.</li> <li>• A traffic information center enters information that a roadway will be closed for maintenance by the highway administration. This information is placed into the traffic flow map and the data is pushed to the PSAP CAD system.</li> </ul>
Sample Business Rule(s)	<ul style="list-style-type: none"> <li>• A Tactical Traffic Flow will be provided to CAD when the event is expected to last longer than one hour.</li> </ul>

## 3.10 Public Alerts

### 3.10.1 Amber Alerts

Exchange #	45
Primary Communities of Interest	<input type="checkbox"/> Emergency Medical Service <input type="checkbox"/> Emergency Management <input type="checkbox"/> Fire Services <input checked="" type="checkbox"/> Law Enforcement <input checked="" type="checkbox"/> Transportation <input checked="" type="checkbox"/> Other (Center for Missing Children, etc.)
IEPD Status	Non-NIEM Exchange – Amber Alert IEPD in GJXDM. See IEPD Clearinghouse for more information. Also, several data frames exist in IEEE 1512.2 (Transportation standard) that support the transfer of information associated with Amber Alerts, but none are specifically designated for this purpose. This approach was used in the interest of minimizing redundant message exchanges. Coordination to assess the different user requirements addressed by the GJXDM and the IEEE 1512 messages should be considered, in order to determine whether to (1) build an exchange between the two standards, or (2) develop a “case specific” data frame to address Amber Alerts.
Directional Style(s)	<input checked="" type="checkbox"/> CAD → Ext (CAD pushes information to External system) <input type="checkbox"/> Ext → CAD (External system pushes information to CAD) <input type="checkbox"/> CAD ⇄ Ext (CAD sends query to External system; External system sends information to CAD) <input type="checkbox"/> Ext ⇄ CAD (External system sends query to CAD; CAD sends information to External system)
Typical Path	CAD → External System
Connection to	ITS and Public Entities (websites, radio stations, TV stations, etc.)
Data Examples	missing child name and description, suspect name and vehicle, last known location and date/time
Typical Trigger Type(s)	<input checked="" type="checkbox"/> Automated/Automatic <input checked="" type="checkbox"/> Manual
Examples of Triggering Events	<ul style="list-style-type: none"> <li>• Situation involving a missing or endangered child.</li> <li>• Kidnapping.</li> </ul>
Sample Scenario(s)	<ul style="list-style-type: none"> <li>• A child does not return home from school. Upon investigation, public safety learns that the last time the child was seen was approximately one mile from school, walking down Seattle Street, talking with an individual in a red truck, Washington State license plate 123-ERO.</li> <li>• An elderly man who requires regular medication was seen leaving an assisted living community in a personal vehicle. After a lengthy search, the individual is located and the event is concluded.</li> <li>• An elderly individual leaves home driving a car to the grocery store and does not return home. (In Florida, a “Silver Alert” could be issued.) This alert goes to sign boards on highways.</li> </ul>
Sample Business Rule(s)	<ul style="list-style-type: none"> <li>• These situations will always be triggered by Law Enforcement to a statewide call center, and then routed to the Office of Emergency Management. This results in requests to Transportation to utilize assets (e.g., dynamic message signs, cameras, license plate cameras, toll tag readers, traveler information websites, etc.) to assist in locating a missing person and/or a person of interest.</li> <li>• Messages also need to support the closure of events triggering Amber Alerts.</li> <li>• There is a need for acknowledgement of messages received and posted, as well as any special needs to extend the message beyond a regionally-established standard period.</li> </ul>

### 3.10.2 Public Warnings (Sirens, Giant Voice, Weather Radio, etc.)

Exchange #	46
Primary Communities of Interest	<input type="checkbox"/> Emergency Medical Service <input checked="" type="checkbox"/> Emergency Management <input type="checkbox"/> Fire Services <input type="checkbox"/> Law Enforcement <input type="checkbox"/> Transportation <input type="checkbox"/> Other
IEPD Status	Unknown
Directional Style(s)	<input checked="" type="checkbox"/> CAD → Ext (CAD pushes information to External system) <input type="checkbox"/> Ext → CAD (External system pushes information to CAD) <input type="checkbox"/> CAD ↔ Ext (CAD sends query to External system; External system sends information to CAD) <input type="checkbox"/> Ext ↔ CAD (External system sends query to CAD; CAD sends information to External system)
Typical Path	CAD → External System
Connection to	Public Entities (sirens, Giant Voice, Weather Radio, Emergency Broadcast System, etc.)
Data Examples	message to initiate siren, message to silence siren
Typical Trigger Type(s)	<input type="checkbox"/> Automated/Automatic <input checked="" type="checkbox"/> Manual
Examples of Triggering Events	<ul style="list-style-type: none"> <li>• Severe weather.</li> <li>• Hazardous materials incidents.</li> <li>• Nuclear plant accidents.</li> </ul>
Sample Scenario(s)	<ul style="list-style-type: none"> <li>• The local nuclear power plant has had an accident resulting in an emergency shut-down, which may lead to a dangerous release of radioactive steam. A predetermined zone surrounding the plant must be evacuated according to a well-established protocol based on anticipated radiation release and plume models.</li> </ul>
Sample Business Rule(s)	<ul style="list-style-type: none"> <li>• Based on the zone to be evacuated, specific notification methods and devices should be used.</li> </ul>

### 3.10.3 Broadcast Media Warnings and Alerts

Exchange #	47
Primary Communities of Interest	<input checked="" type="checkbox"/> Emergency Medical Service <input checked="" type="checkbox"/> Emergency Management <input checked="" type="checkbox"/> Fire Services <input checked="" type="checkbox"/> Law Enforcement <input checked="" type="checkbox"/> Transportation <input type="checkbox"/> Other
IEPD Status	Unknown
Directional Style(s)	<input checked="" type="checkbox"/> CAD → Ext (CAD pushes information to External system) <input type="checkbox"/> Ext → CAD (External system pushes information to CAD) <input type="checkbox"/> CAD ⇄ Ext (CAD sends query to External system; External system sends information to CAD) <input type="checkbox"/> Ext ⇄ CAD (External system sends query to CAD; CAD sends information to External system)
Typical Path	CAD → External System
Connection to	Public Entities
Data Examples	narrative
Typical Trigger Type(s)	<input type="checkbox"/> Automated/Automatic <input checked="" type="checkbox"/> Manual
Examples of Triggering Events	<ul style="list-style-type: none"> <li>• Traffic advisories and road conditions.</li> <li>• Lost Alzheimer's patient.</li> <li>• Amber Alerts / lost child.</li> <li>• Severe weather warnings and alerts.</li> <li>• Hazardous materials alerts and nuclear plant alerts.</li> <li>• Evacuation notices.</li> <li>• "Courtesy" notification to broadcast media to assist dispatching reporters to major news events.</li> </ul>
Sample Scenario(s)	<ul style="list-style-type: none"> <li>• The local fire department has a policy to advise media outlets whenever a working fire is significant enough to use all apparatus and staff dispatched on the initial alarm. The department has alerted the media by telephone in the past, but certain outlets have complained that the department "played favorites" in the order of placing the telephone calls to the outlets, allowing other outlets to "scoop" them. By using the CAD system to simultaneously text media owned pagers/cell phones, all media outlets are notified at the same time. The public is quickly and efficiently advised of any hazards or road closings due to the fire and all media outlets are notified simultaneously for their coverage on the 10:00 p.m. news.</li> <li>• A dam is upstream from a township and is on the verge of failure. Breach of the dam will be devastating to the town below. EMA must immediately notify citizens through all means available, including Broadcast outlets. The system described in 3.2.31 allows immediate and simultaneous text notification through the CAD system to media cell phones, pagers, and e-mail. Media outlets can quickly and efficiently "break-in" to programming to alert residents of the impending danger, and provide evacuation instructions.</li> </ul>
Sample Business Rule(s)	<ul style="list-style-type: none"> <li>• There must be a clear definition of when it is appropriate to initiate these media advisories. The CAD system can be set up to automatically send certain notifications based on key words or event types. Human intervention may be desired to properly screen notifications.</li> <li>• Media outlets must be set up in advance to receive these warnings and alerts.</li> <li>• There must be a clear definition of when it is appropriate to initiate these warnings and alerts.</li> <li>• Media outlets must be set up in advance to receive these warnings and alerts.</li> </ul>

## 3.11 Fire and EMS Specific

### 3.11.1 Station Toning for new Call

Exchange #	48
Primary Communities of Interest	<input checked="" type="checkbox"/> Emergency Medical Service <input type="checkbox"/> Emergency Management <input checked="" type="checkbox"/> Fire Services <input type="checkbox"/> Law Enforcement <input type="checkbox"/> Transportation <input type="checkbox"/> Other
IEPD Status	Unknown
Directional Style(s)	<input checked="" type="checkbox"/> CAD → Ext (CAD pushes information to External system) <input type="checkbox"/> Ext → CAD (External system pushes information to CAD) <input type="checkbox"/> CAD ⇆ Ext (CAD sends query to External system; External system sends information to CAD) <input type="checkbox"/> Ext ⇆ CAD (External system sends query to CAD; CAD sends information to External system)
Typical Path	CAD → External System
Connection to	Station Toning Device
Data Examples	instructions for toning device
Typical Trigger Type(s)	<input checked="" type="checkbox"/> Automated/Automatic <input checked="" type="checkbox"/> Manual
Examples of Triggering Events	<ul style="list-style-type: none"> <li>• Fire call for service.</li> <li>• EMS call for service.</li> </ul>
Sample Scenario(s)	<ul style="list-style-type: none"> <li>• A fire or EMS call for service is entered into the CAD system. Once the dispatcher assigns the units, the CAD system (internally) looks up the appropriate stations of the responding units. The CAD system then sends an electronic message (exchange) to the station's toning device. The message contains information on which tones and/or recordings are appropriate. The toning device audibly sounds the alerts in the station.</li> </ul>
Sample Business Rule(s)	<ul style="list-style-type: none"> <li>• All fire/EMS calls will be dispatched via radio in addition to toning.</li> </ul>

### 3.11.2 Call Information to Station Printers/FAX

Exchange #	49
Primary Communities of Interest	<input checked="" type="checkbox"/> Emergency Medical Service <input type="checkbox"/> Emergency Management <input checked="" type="checkbox"/> Fire Services <input type="checkbox"/> Law Enforcement <input type="checkbox"/> Transportation <input type="checkbox"/> Other
IEPD Status	Unknown
Directional Style(s)	<input checked="" type="checkbox"/> CAD → Ext (CAD pushes information to External system) <input type="checkbox"/> Ext → CAD (External system pushes information to CAD) <input type="checkbox"/> CAD ⇄ Ext (CAD sends query to External system; External system sends information to CAD) <input type="checkbox"/> Ext ⇄ CAD (External system sends query to CAD; CAD sends information to External system)
Typical Path	CAD → External System
Connection to	Printer or FAX machine
Data Examples	Call type, location, narrative
Typical Trigger Type(s)	<input checked="" type="checkbox"/> Automated/Automatic <input type="checkbox"/> Manual
Examples of Triggering Events	<ul style="list-style-type: none"> <li>• Call for service.</li> </ul>
Sample Scenario(s)	<ul style="list-style-type: none"> <li>• When a call for service is assigned to an EMS or fire department enabled with a "Rip and Run" printer or fax, a copy of the call details is sent electronically to the appropriate printer/fax. The responding units grab the info off the printer/fax on the way to the call. Hence the slang term, "Rip and Run".</li> </ul>
Sample Business Rule(s)	<ul style="list-style-type: none"> <li>• All fire department calls will be provided via radio in addition to a copy of the call shall be sent to the appropriate station printer/fax.</li> </ul>

## 3.12 Law Enforcement Specific

### 3.12.1 Law Enforcement Inquiries (NCIC, State, DMV, and Local)

Exchange #	50
Primary Communities of Interest	<input type="checkbox"/> Emergency Medical Service <input type="checkbox"/> Emergency Management <input type="checkbox"/> Fire Services <input checked="" type="checkbox"/> Law Enforcement <input type="checkbox"/> Transportation <input type="checkbox"/> Other
IEPD Status	Unknown
Directional Style(s)	<input type="checkbox"/> CAD → Ext (CAD pushes information to External system) <input type="checkbox"/> Ext → CAD (External system pushes information to CAD) <input checked="" type="checkbox"/> CAD ⇄ Ext (CAD sends query to External system; External system sends information to CAD) <input type="checkbox"/> Ext ⇄ CAD (External system sends query to CAD; CAD sends information to External system)
Typical Path	Mobile → CAD → External System → CAD → Mobile
Connection to	Mobile Unit
Data Examples	criminal history, vehicle registration info, drivers license info and status, stolen vehicle/property hit
Typical Trigger Type(s)	<input type="checkbox"/> Automated/Automatic <input checked="" type="checkbox"/> Manual
Examples of Triggering Events	<ul style="list-style-type: none"> <li>• A law enforcement officer, conducting an investigation, requests a criminal history check, drivers license check, vehicle registration, stolen property check, etc.</li> </ul>
Sample Scenario(s)	<ul style="list-style-type: none"> <li>• A law enforcement officer makes traffic stop and runs the vehicle tag (for registration) and the drivers' license (for driver status) through CAD via MDC.</li> <li>• A law enforcement officer is investigating a suspicious person and runs the name, social security number, and date of birth through CAD via MDC to verify identify and check for outstanding arrest warrants.</li> <li>• For all exchanges, CAD processes the query and submits to the appropriate database(s) (NCIC, State, DMV, and/or local files).</li> </ul>
Sample Business Rule(s)	<ul style="list-style-type: none"> <li>• Information returned over the MDC is governed by applicable privacy laws and may not be disseminated.</li> </ul>



### 3.12.2 Query Person (Wanted Status, Description, Mugshots, Criminal History)

Exchange #	51
Primary Communities of Interest	<input type="checkbox"/> Emergency Medical Service <input type="checkbox"/> Emergency Management <input type="checkbox"/> Fire Services <input checked="" type="checkbox"/> Law Enforcement <input type="checkbox"/> Transportation <input type="checkbox"/> Other
IEPD Status	NIEM Exchange – Nlets now handles NIEM exchanges.
Directional Style(s)	<input type="checkbox"/> CAD → Ext (CAD pushes information to External system) <input type="checkbox"/> Ext → CAD (External system pushes information to CAD) <input checked="" type="checkbox"/> CAD ↔ Ext (CAD sends query to External system; External system sends information to CAD) <input type="checkbox"/> Ext ↔ CAD (External system sends query to CAD; CAD sends information to External system)
Typical Path	Mobile → CAD → External System → CAD → Mobile; CAD → External System → CAD
Connection to	External Databases (NCIC, FBI, State Database, DMV, local RMS, etc.)
Data Examples	Hit confirmation, person descriptors, mugshot, criminal history information
Typical Trigger Type(s)	<input checked="" type="checkbox"/> Automated/Automatic <input checked="" type="checkbox"/> Manual
Examples of Triggering Events	<ul style="list-style-type: none"> <li>• Vehicle stop.</li> <li>• Field interview.</li> <li>• Arrest/booking.</li> <li>• Missing person investigation.</li> </ul>
Sample Scenario(s)	<ul style="list-style-type: none"> <li>• An officer pulls a vehicle over for speeding and requests a warrant/missing person check on the driver and passenger. Queries are made of the state and FBI wanted and missing person files, the state and FBI criminal history files, and the Records Management System for previous arrest and involvements.</li> <li>• An officer stops to talk to a suspicious person, obtains a name and DOB from the party, and asks the call center to run same for wanted/missing person information and for any prior incidents involving the individual.</li> <li>• An officer places a B&amp;E suspect under arrest. He obtains a name, DOB, and address from the subject and calls the CAD center to request a wants/warrants check and a criminal history check. He takes a picture of the subject with his cell phone and sends it to the call center. The center then submits the picture to the local facial recognition system.</li> <li>• An arrested subject is brought to the local lockup facility to be booked. Data from the CAD system is downloaded into the booking system and used to populate various booking forms and court documents.</li> </ul> <p>THIS IS A CATEGORY OF EXCHANGES – MULTIPLE EXCHANGES HANDLE THESE TYPES QUERIES/RESPONSES.</p>
Sample Business Rule(s)	<ul style="list-style-type: none"> <li>• The CAD system is aware of all of the external systems to which it can submit inquiries.</li> <li>• Requests generated to systems external to the CAD system must adhere to local, state, and/or national data exchange standards.</li> <li>• Criminal history checks may only be initiated by authorized persons for authorized purposes.</li> </ul>

### 3.12.3 Query Vehicle (Owner Information, Description, Etc.)

Exchange #	52
Primary Communities of Interest	<input type="checkbox"/> Emergency Medical Service <input type="checkbox"/> Emergency Management <input type="checkbox"/> Fire Services <input checked="" type="checkbox"/> Law Enforcement <input type="checkbox"/> Transportation <input type="checkbox"/> Other
IEPD Status	NIEM Exchange – NIets now handles NIEM exchanges.
Directional Style(s)	<input type="checkbox"/> CAD → Ext (CAD pushes information to External system) <input type="checkbox"/> Ext → CAD (External system pushes information to CAD) <input checked="" type="checkbox"/> CAD ↔ Ext (CAD sends query to External system; External system sends information to CAD) <input type="checkbox"/> Ext ↔ CAD (External system sends query to CAD; CAD sends information to External system)
Typical Path	Mobile → CAD → External System → CAD → Mobile; CAD → External System → CAD
Connection to	External Databases (NCIC, FBI, State Database, DMV, local RMS, etc.)
Data Examples	Hit confirmation, vehicle descriptions, owner information
Typical Trigger Type(s)	<input checked="" type="checkbox"/> Automated/Automatic <input checked="" type="checkbox"/> Manual
Examples of Triggering Events	<ul style="list-style-type: none"> <li>• Vehicle stop.</li> <li>• Report of a hit and run.</li> </ul>
Sample Scenario(s)	<ul style="list-style-type: none"> <li>• An officer stops to assist a disabled motorist, and she notices what appears to be fresh damage to the right front end of the vehicle. She calls in a description of the vehicle, including registration number, to the CAD center and requests a search of all available databases for incidents involving the vehicle.</li> <li>• A caller reports witnessing a hit and run. He relays a description of the vehicle, including a partial registration number, to the call taker. A partial plate search is conducted of the local, state, and national hot files, as well as of the state DMV files. Two responses from the state DMV files are returned, and the information is forwarded to the responding officers. In addition, the owner information returned on both DMV records is then run against the local, state, and FBI wanted/missing person databases, the state and FBI criminal record databases, and the local RMS database. The CAD system also generates a driver's license check to the state DMV on both owners. All of this information, including the owners' driver's license photos, is sent back to the responding officers.</li> </ul> <p>THIS ENTRY ACTUALLY REPRESENTS AN ENTIRE CATEGORY OF EXCHANGES – MULTIPLE EXCHANGES HANDLE THESE TYPES QUERIES/RESPONSES.</p>
Sample Business Rule(s)	<ul style="list-style-type: none"> <li>• The CAD system is aware of all of the external systems to which it can submit inquiries.</li> <li>• The officer in the field must have a device capable of displaying both text and photos.</li> </ul>

### 3.12.4 Firearms License and Ownership Files

Exchange #	53
Primary Communities of Interest	<input type="checkbox"/> Emergency Medical Service <input type="checkbox"/> Emergency Management <input type="checkbox"/> Fire Services <input checked="" type="checkbox"/> Law Enforcement <input type="checkbox"/> Transportation <input type="checkbox"/> Other
IEPD Status	Unknown
Directional Style(s)	<input type="checkbox"/> CAD → Ext (CAD pushes information to External system) <input type="checkbox"/> Ext → CAD (External system pushes information to CAD) <input checked="" type="checkbox"/> CAD ↔ Ext (CAD sends query to External system; External system sends information to CAD) <input type="checkbox"/> Ext ↔ CAD (External system sends query to CAD; CAD sends information to External system)
Typical Path	Mobile → CAD → External System → CAD → Mobile; CAD → External System → CAD
Connection to	External Firearms License Information Database(s)
Data Examples	verification of license, person name, address, list of weapons registered to person
Typical Trigger Type(s)	<input type="checkbox"/> Automated/Automatic <input checked="" type="checkbox"/> Manual
Examples of Triggering Events	<ul style="list-style-type: none"> <li>• Call involving a domestic assault.</li> <li>• Vehicle stop.</li> <li>• Warrant service.</li> <li>• Criminal investigation.</li> </ul>
Sample Scenario(s)	<ul style="list-style-type: none"> <li>• A caller reports a possible domestic assault in an adjacent apartment. The caller provides the names of the people occupying the apartment, and a query of the local and state firearms license databases is launched by the CAD system. A query of local and state gun sale transaction databases is also performed.</li> <li>• During a routine traffic stop, the officer notices a firearm on the back seat. The operator of the vehicle claims to own the gun and also to have a license to possess it, but he does not have the license in his possession. The officer asks the CAD center to verify that the subject has a valid license as well as to try and determine if the weapon found in the car actually belongs to him. Inquiries are launched on the subject's name, DOB, and address, as well as on the serial number of the weapon in the car, against the local and state firearms license and gun sale transaction files.</li> <li>• Two detectives are planning to serve a warrant on an individual at his home. A request is made to the call center to try and determine if the subject has a firearms license, as well as to determine if the subject has purchased any weapons. A query of the local and state firearms license and gun sale transaction files is conducted. In addition, the subject's address is used to query the local RMS to determine if there are other people living in the home who may have firearms licenses and/or who may have purchased firearms.</li> <li>• Detectives are investigating a homicide involving a firearm. A weapon is recovered at the scene, and a request is made to search the local and state gun sale transaction files via the weapon's serial number. A record within the gun sale file returns the name and address of the purchaser. This information is run against the local and state firearms license files, and the information on the sale and on the licensee, including a photo of the license holder, is transmitted back to the detectives at the scene.</li> </ul>
Sample Business Rule(s)	<ul style="list-style-type: none"> <li>• One or more electronic files of firearms license and/or gun sale transactions must be available for the CAD system to query.</li> <li>• The officer in the field must have a device capable of displaying both text and photos.</li> </ul>

### 3.12.5 State Mental Health Database(s)

Exchange #	54
Primary Communities of Interest	<input type="checkbox"/> Emergency Medical Service <input type="checkbox"/> Emergency Management <input type="checkbox"/> Fire Services <input checked="" type="checkbox"/> Law Enforcement <input type="checkbox"/> Transportation <input type="checkbox"/> Other
IEPD Status	Unknown
Directional Style(s)	<input type="checkbox"/> CAD → Ext (CAD pushes information to External system) <input type="checkbox"/> Ext → CAD (External system pushes information to CAD) <input checked="" type="checkbox"/> CAD ↔ Ext (CAD sends query to External system; External system sends information to CAD) <input type="checkbox"/> Ext ↔ CAD (External system sends query to CAD; CAD sends information to External system)
Typical Path	Mobile → CAD → External System → CAD → Mobile; CAD → External System → CAD
Connection to	External Medical Information Database(s)
Data Examples	verification of mental health status (if positive hit), person descriptors and address, psychiatric history
Typical Trigger Type(s)	<input type="checkbox"/> Automated/Automatic <input checked="" type="checkbox"/> Manual
Examples of Triggering Events	<ul style="list-style-type: none"> <li>• Field interview.</li> <li>• Warrant service.</li> <li>• Arrest.</li> <li>• Booking.</li> </ul>
Sample Scenario(s)	<ul style="list-style-type: none"> <li>• An officer stops to talk to an individual who appears to be acting erratically. He obtains a name and address, but the subject is not sure about his DOB. The officer asks the CAD center to find out what it can on the subject. An inquiry is made of the local RMS, as well as of the state mental health database.</li> <li>• An officer is heading to the home of an individual to serve a warrant. He requests a search of local, state, and federal files for wants/warrants and for any record of a firearms license or gun sale transactions. He also requests a search of the state mental health files.</li> <li>• A subject is placed under arrest for DUI. The arresting officer requests a check of the state mental health system for any indication that the subject may be suicidal or may otherwise be a danger to himself and/or others.</li> <li>• A subject is being booked at the local lockup. In addition to the usual warrant and other inquiries, the booking officer asks the center to check the state mental health files for any indication that the subject may be suicidal or may otherwise be a danger to himself and/or others.</li> </ul>
Sample Business Rule(s)	<ul style="list-style-type: none"> <li>• The CAD system is aware of all of the external systems to which it can submit inquiries.</li> <li>• State law must permit routine access to mental health records by public safety officials.</li> </ul>

### 3.13 Analysis

#### 3.13.1 Statistics for Analysis

Exchange #	55
Primary Communities of Interest	<input checked="" type="checkbox"/> Emergency Medical Service <input checked="" type="checkbox"/> Emergency Management <input checked="" type="checkbox"/> Fire Services <input checked="" type="checkbox"/> Law Enforcement <input type="checkbox"/> Transportation <input type="checkbox"/> Other
IEPD Status	Unknown
Directional Style(s)	<input checked="" type="checkbox"/> CAD → Ext (CAD pushes information to External system) <input type="checkbox"/> Ext → CAD (External system pushes information to CAD) <input type="checkbox"/> CAD ⇄ Ext (CAD sends query to External system; External system sends information to CAD) <input checked="" type="checkbox"/> Ext ⇄ CAD (External system sends query to CAD; CAD sends information to External system)
Typical Path	CAD → External System
Connection to	External System (RMS or GIS for example)
Data Examples	All call data for calls occurring during specified date range and in specified area (beat, zone, all)
Typical Trigger Type(s)	<input checked="" type="checkbox"/> Automated/Automatic <input checked="" type="checkbox"/> Manual
Examples of Triggering Events	<ul style="list-style-type: none"> <li>• Periodic (monthly is likely).</li> <li>• Upon request/manual.</li> </ul>
Sample Scenario(s)	<ul style="list-style-type: none"> <li>• Each month a crime analyst for a jurisdiction compiled response data to generate a report including number of calls for service, type of calls, disposition statistics, etc. The crime analysts make a query into the CAD system and inserts the data into a crime analysis software package and creates his/her report from there.</li> <li>• Every year the fire department analyzes their calls for service with particular attention to location of the calls and response times. The purpose of the effort is to determine if a new fire station needs to be created, if an existing fire station needs to be moved, or apparatus should be reallocated. The fire department obtains the data from CAD and conducted their analysis.</li> </ul>
Sample Business Rule(s)	<ul style="list-style-type: none"> <li>• Verify the data is current to the period being analyzed.</li> </ul>

### 3.13.2 GIS Data for Analysis

Exchange #	56
Primary Communities of Interest	<input checked="" type="checkbox"/> Emergency Medical Service <input checked="" type="checkbox"/> Emergency Management <input checked="" type="checkbox"/> Fire Services <input checked="" type="checkbox"/> Law Enforcement <input type="checkbox"/> Transportation <input type="checkbox"/> Other
IEPD Status	Unknown
Directional Style(s)	<input checked="" type="checkbox"/> CAD → Ext (CAD pushes information to External system) <input type="checkbox"/> Ext → CAD (External system pushes information to CAD) <input type="checkbox"/> CAD ↔ Ext (CAD sends query to External system; External system sends information to CAD) <input checked="" type="checkbox"/> Ext ↔ CAD (External system sends query to CAD; CAD sends information to External system)
Typical Path	CAD → External System
Connection to	GIS System
Data Examples	All call data for calls occurring during specified date range and in specified area (beat, zone, all)
Typical Trigger Type(s)	<input type="checkbox"/> Automated/Automatic <input checked="" type="checkbox"/> Manual
Examples of Triggering Events	<ul style="list-style-type: none"> <li>• Entry of incident into CAD.</li> <li>• Reception of telephone call with ANI/ALI populated into the CAD.</li> </ul>
Sample Scenario(s)	<ul style="list-style-type: none"> <li>• A call regarding a person who appears to be trying to break into cars in a parking lot is entered into the CAD system. An officer is dispatched and ultimately makes an arrest for theft. Data from this call can be ported into a crime mapping/crime analysis program to evaluate multiple issues (other thefts that may have occurred within proximity, possibility of linkage to other crimes, etc.)</li> <li>• During investigation into a series of rapes, criminal investigators using GIS-based data from the CAD system recover data regarding telephone calls received within a certain proximity of the crimes (dates, times, locations, phones called from, etc.)</li> </ul>
Sample Business Rule(s)	<ul style="list-style-type: none"> <li>• Information, including GIS based data, is ported from the CAD system into a crime mapping/crime analysis program (software).</li> </ul>

### 3.13.3 GIS Data for Situational Awareness

Exchange #	57
Primary Communities of Interest	<input checked="" type="checkbox"/> Emergency Medical Service <input checked="" type="checkbox"/> Emergency Management <input checked="" type="checkbox"/> Fire Services <input checked="" type="checkbox"/> Law Enforcement <input type="checkbox"/> Transportation <input type="checkbox"/> Other
IEPD Status	Unknown
Directional Style(s)	<input checked="" type="checkbox"/> CAD → Ext (CAD pushes information to External system) <input type="checkbox"/> Ext → CAD (External system pushes information to CAD) <input type="checkbox"/> CAD ↔ Ext (CAD sends query to External system; External system sends information to CAD) <input type="checkbox"/> Ext ↔ CAD (External system sends query to CAD; CAD sends information to External system)
Typical Path	CAD → External System
Connection to	GIS System
Data Examples	All call data for calls occurring during specified date range and in specified area (beat, zone, all)
Typical Trigger Type(s)	<input checked="" type="checkbox"/> Automated/Automatic <input type="checkbox"/> Manual
Examples of Triggering Events	<ul style="list-style-type: none"> <li>Creation of an incident within the CAD system ports information into a situational awareness tool. This information may be as simple as location, date/time, and type of incident, or the situational awareness tool may allow additional information, including direct linkage to the CAD event, to be ported into the tool and available for users.</li> </ul>
Sample Scenario(s)	<ul style="list-style-type: none"> <li>A law enforcement department is using a real-time situational awareness tool during patrol. This tool automatically maps select types of incidents onto a map or satellite image. Incidents are populated real-time from the CAD system based on business rules established by the agency. Law enforcement officers in cruisers can access these maps/images using web-services and filter views by incident/time. This allows officers to have a full understanding of other incidents on-going or incidents that occurred in prior shifts.</li> <li>Multiple agencies are handling a large scale incident that transcends jurisdictions and disciplines. In compliance with National Incident Management System requirements, a tool is being used that imports real time data from the CAD system directly relative to the incident or within pre-defined distances in and around the incident. Incident commanders and responders can access these situational awareness tools in the field in order to better understand what is occurring in the incident and tangent to the incident that may impact it.</li> </ul>
Sample Business Rule(s)	<ul style="list-style-type: none"> <li>Information is entered into the CAD system.</li> <li>Based upon pre-defined business rules, information may be automatically exported into the situational awareness tool.</li> <li>The CAD system may have capability to manually push information to situational awareness tool.</li> <li>The CAD system continues to update the status of the incident in the situational awareness tool until the incident is closed.</li> <li>The situational awareness tool may have the capability to link directly to the CAD event (user sees brief information on the incident in a pop-up window in the situational awareness tool and can click links which open up the CAD event window in read only mode).</li> </ul>

## 3.14 Other

### 3.14.1 Incoming Query for Information (Nonspecific)

Exchange #	58
Primary Communities of Interest	<input checked="" type="checkbox"/> Emergency Medical Service <input checked="" type="checkbox"/> Emergency Management <input checked="" type="checkbox"/> Fire Services <input checked="" type="checkbox"/> Law Enforcement <input checked="" type="checkbox"/> Transportation <input checked="" type="checkbox"/> Other
IEPD Status	Unknown
Directional Style(s)	<input type="checkbox"/> CAD → Ext (CAD pushes information to External system) <input type="checkbox"/> Ext → CAD (External system pushes information to CAD) <input type="checkbox"/> CAD ↔ Ext (CAD sends query to External system; External system sends information to CAD) <input checked="" type="checkbox"/> Ext ↔ CAD (External system sends query to CAD; CAD sends information to External system)
Typical Path	External System → CAD → External System
Connection to	Other CAD or Records System(s)
Data Examples	status of equipment, list of available units, searches for specific keywords
Typical Trigger Type(s)	<input type="checkbox"/> Automated/Automatic <input checked="" type="checkbox"/> Manual
Examples of Triggering Events	<ul style="list-style-type: none"> <li>Query initiated by another authorized and connected system to the CAD.</li> </ul>
Sample Scenario(s)	<ul style="list-style-type: none"> <li>A neighboring jurisdiction is dealing with a very large traffic incident. This jurisdiction is seeing a spike in calls for ambulance service, and is beginning to worry that its available ambulance teams will not be able to provide sufficient service. This jurisdiction initiates automated requests from its CAD system to the CAD systems of all neighboring jurisdictions. These automated requests ask for information regarding current availability of ambulance teams in each jurisdiction. The responding jurisdictions with the most available ambulance teams are the most likely to be able to respond to a mutual aid request. The requesting jurisdiction then calls these other jurisdictions to ask them to "lean forward" toward the accident site, and be ready for probable mutual aid requests.</li> <li>A second scenario involves a jurisdiction that is seeing an unusual spike in calls for service that involve patients having difficulty breathing. This jurisdiction makes an automated CAD request to all neighboring jurisdictions, asking if these other CAD systems are also experiencing a spike in this type of call. If other jurisdictions are also experiencing a spike in this type of call, it may indicate a large-scale incident involving a noxious gas. By comparing information from multiple CAD systems, we are able to piece together an early warning of a large-scale incident that is beginning to unfold.</li> </ul>
Sample Business Rule(s)	<ul style="list-style-type: none"> <li>All connections are governed by current MOUs.</li> <li>All query responses are filtered based on privacy requirements and applicable law.</li> </ul>



### 3.14.2 Outgoing Query for Information (Nonspecific)

Exchange #	59
Primary Communities of Interest	<input checked="" type="checkbox"/> Emergency Medical Service <input checked="" type="checkbox"/> Emergency Management <input checked="" type="checkbox"/> Fire Services <input checked="" type="checkbox"/> Law Enforcement <input checked="" type="checkbox"/> Transportation <input checked="" type="checkbox"/> Other
IEPD Status	Unknown
Directional Style(s)	<input type="checkbox"/> CAD → Ext (CAD pushes information to External system) <input type="checkbox"/> Ext → CAD (External system pushes information to CAD) <input checked="" type="checkbox"/> CAD ↔ Ext (CAD sends query to External system; External system sends information to CAD) <input type="checkbox"/> Ext ↔ CAD (External system sends query to CAD; CAD sends information to External system)
Typical Path	CAD → External System → CAD
Connection to	Other CAD or Records System(s)
Data Examples	status of equipment, list of available units, searches for specific keywords
Typical Trigger Type(s)	<input checked="" type="checkbox"/> Automated/Automatic <input checked="" type="checkbox"/> Manual
Examples of Triggering Events	<ul style="list-style-type: none"> <li>• Query of another authorized and connected system to the CAD.</li> <li>• CAD transmits scheduled request for update from hospital emergency room(s) for availability to receive patients. Hospital system returns updated availability.</li> <li>• When a high priority (critical care) EMS call is created, a query is sent to the local hospital emergency room(s) confirming ER availability.</li> </ul>
Sample Scenario(s)	<ul style="list-style-type: none"> <li>• A neighboring jurisdiction is dealing with a very large traffic incident. This jurisdiction is seeing a spike in calls for ambulance service, and is beginning to worry that its available ambulance teams will not be able to provide sufficient service. This jurisdiction initiates automated requests from its CAD system to the CAD systems of all neighboring jurisdictions. These automated requests ask for information regarding current availability of ambulance teams in each jurisdiction. The responding jurisdictions with the most available ambulance teams are the most likely to be able to respond to a mutual aid request. The requesting jurisdiction then calls these other jurisdictions to ask them to "lean forward" toward the accident site, and be ready for probable mutual aid requests.</li> <li>• A second scenario involves a jurisdiction that is seeing an unusual spike in calls for service that involve patients having difficulty breathing. This jurisdiction makes an automated CAD request to all neighboring jurisdictions, asking if these other CAD systems are also experiencing a spike in this type of call. If other jurisdictions are also experiencing a spike in this type of call, it may indicate a large-scale incident involving a noxious gas. By comparing information from multiple CAD systems, we are able to piece together an early warning of a large-scale incident that is beginning to unfold.</li> <li>• An EMS call results in a transport of a victim to the hospital. A query is sent to the local hospital emergency room(s) requesting ER availability. Based on hospital ER availability, the EMS unit responds to the appropriate ER.</li> </ul>
Sample Business Rule(s)	<ul style="list-style-type: none"> <li>• All connections are governed by current MOUs.</li> <li>• All query responses are filtered based on privacy requirements and applicable law.</li> </ul>

## **4 Prioritization**

Once the exchange list in Section 3 was finalized, the PSDI Steering Committee undertook the task of prioritizing all 59 exchanges. This section describes that effort as well as the results.

### **4.1 Purpose and Cautionary Note**

The purpose of this prioritization is to assist decision makers with their determination of exchange priority, thereby supporting your planning for future information sharing enhancements. Priority as recommended by the PSDI Steering Committee should be considered a recommendation.

Readers are cautioned however, to implement the exchanges of most value to your local community without regard to the PSDI assessment. The PSDI assessment is merely provided as opinion. Note also that since this section's purpose is to assist with implementation decisions, these priorities are not intended to reflect whether the exchange is already developed or not.

### **4.2 Methodology**

On an individual basis, PSDI Steering Committee members rated each exchange as either "High", "Medium", or "Low" priority and, in addition, voted for what they each felt were the "Top 10" critical exchanges.

Instructions provided to the members included a request to "vote without regard or bias to your own domain (law enforcement, fire, EMS, emergency management, or Transportation) – i.e., please vote based on what you feel would be most beneficial to the general public."

Where an exchange had an equal number of votes in two categories (i.e. tied) the exchange is reflected in the higher-priority category.

## 4.3 High Priority Exchanges

Paragraph	Section	Exchange
3.1.1	9-1-1 Related	E9-1-1 Information to CAD
3.1.2	9-1-1 Related	NG9-1-1 Information to CAD
3.2.1	Telematics Related	Incident Notifications via Telematics (crash, disabled vehicle, etc.)
3.3.1	Mobile Related	Calls For Service (initial)
3.3.2	Mobile Related	Updates to Call for Service
3.3.4	Mobile Related	New Call for Service from a Field Unit
3.3.5	Mobile Related	Call for Service Updates via MDC
3.4.1	External - Incoming	New Call for Service from Another CAD System (CAD-to-CAD)
3.4.2	External - Incoming	New Call for Service from Other Agency (Public Works, Utilities, etc.)
3.4.3	External - Incoming	External Alarm Information
3.5.1	External - Outgoing	Call Information (to supplement EMS, EM, LE, or Fire Records System)
3.5.2	External - Outgoing	All Unit Broadcasts (BOLOs, etc.)
3.5.4	External - Outgoing	Alerts for Mass Casualty Incidents
3.5.6	External - Outgoing	Transfer of Call for Service
3.5.9	External - Outgoing	Transfer ANI/ALI data to Secondary PSAP
3.6.4	External - Miscellaneous	Query Location (Involvement History)
3.6.5	External - Miscellaneous	Premises History
3.9.2	Transportation Related	Incident Notifications to/from Transportation
3.10.1	Public Alerts	Amber Alerts
3.10.3	Public Alerts	Broadcast Media Warnings and Alerts
3.11.1	Fire and EMS Specific	Station Toning for new Call
3.12.1	Law Enforcement Specific	Law Enforcement Inquiries (NCIC, State, DMV & Local)
3.12.2	Law Enforcement Specific	Query Person (Wanted Status, Description, Mugshots, Criminal History)
3.12.3	Law Enforcement Specific	Query Vehicle (Owner Information, Description, Etc.)
3.13.3	Analysis	GIS Data for Situational Awareness

Table 1 – High Priority Exchanges

## 4.4 Medium Priority Exchanges

Paragraph	Section	Exchange
3.2.2	Telematics Related	Track Stolen Vehicles via Telematics (e.g., LoJack®, OnStar®, etc.)
3.2.3	Telematics Related	Gunshot Location Event
3.3.3	Mobile Related	Multiple-Media Information to Mobile (video, photo, audio)
3.3.6	Mobile Related	GIS System / AVL Providing Closest Unit Recommendation
3.4.4	External - Incoming	Warrant Notifications from Other System
3.4.5	External - Incoming	Restraining Order Notifications from Other System
3.4.6	External - Incoming	Multiple-Media Information into CAD (video, photo, audio)
3.5.3	External - Outgoing	Call Information to Text Enabled Devices (PDAs, pagers, cell phones)
3.5.5	External - Outgoing	Notification of new incident as appropriate
3.5.7	External - Outgoing	Recorder & Logging Systems Comments (added by CAD)
3.5.8	External - Outgoing	Event Notifications to Text Enabled Devices (pagers, cell phones)
3.5.10	External - Outgoing	Update False Alarm Billing Systems
3.6.6	External - Miscellaneous	Supplemental Information (history, query returns, etc)
3.8.1	Hazardous Materials Related	Hazardous Material Database
3.8.2	Hazardous Materials Related	Hazmat Updates
3.9.1	Transportation Related	Event Notifications to/from Transportation
3.9.3	Transportation Related	Requests for Assistance to/from Transportation
3.9.4	Transportation Related	Traffic Evacuation Routes from Transportation
3.9.6	Transportation Related	Tactical Graphical Traffic Flow Summary from Transportation
3.10.2	Public Alerts	Public Warnings (Sirens, Giant Voice, Weather Radio, etc.)
3.11.2	Fire and EMS Specific	Call Information to Station Printers/FAX
3.12.4	Law Enforcement Specific	Firearms License and Ownership Files

Table 2 – Medium Priority Exchanges

## 4.5 Low Priority Exchanges

Paragraph	Section	Exchange
3.6.1	External - Miscellaneous	CAD System Inquiries (call volume, call history, unit availability)
3.6.2	External - Miscellaneous	Query for Personal Medical Data
3.6.3	External - Miscellaneous	Queries to other EOCs (EMnet, EMMA, WebEOC, etc.)
3.7.1	Weather Related	Weather Products (RADAR, Satellite Imagery, Surface Analysis, etc)
3.7.2	Weather Related	Weather Inquiries (Current Conditions, Forecast, Rain Levels, etc)
3.8.3	Hazardous Materials Related	Hazmat Database Query (Plume Models, Chemtrek, CAMEO, etc.)
3.9.5	Transportation Related	Query/Response for Current Road Conditions
3.12.5	Law Enforcement Specific	State Mental Health Database(s)
3.13.1	Analysis	Statistics for Analysis
3.13.2	Analysis	GIS Data for Analysis
3.14.1	Other	Incoming Query for Information (Nonspecific)
3.14.2	Other	Outgoing Query for Information (Nonspecific)

Table 3 – Low Priority Exchanges

## 4.6 The Top 12

Due to ties in the voting results, the top 12 exchanges are included.

“Ranking” is determined by the number of votes – i.e., the first four exchanges were tied with the highest number of votes, so they ranked “1”.

Paragraph	Section	Exchange	Rank
3.1.1	9-1-1 Related	E9-1-1 Information to CAD	1
3.3.1	Mobile Related	Calls For Service (initial)	
3.4.1	External - Incoming	New Call for Service from Another CAD System (CAD-to-CAD)	
3.4.3	External - Incoming	External Alarm Information	
3.1.2	9-1-1 Related	NG9-1-1 Information to CAD	2
3.5.6	External - Outgoing	Transfer of Call for Service	3
3.2.1	Telematics Related	Incident Notifications via Telematics (crash, disabled vehicle, etc.)	4
3.3.2	Mobile Related	Updates to Call for Service	
3.3.4	Mobile Related	New Call for Service from a Field Unit	
3.3.5	Mobile Related	Call for Service Updates via MDC	
3.3.6	Mobile Related	GIS System / AVL Providing Closest Unit Recommendation	
3.10.3	Public Alerts	Broadcast Media Warnings and Alerts	

Table 4 – Top 12 Exchanges

## 5 Conclusion

As stated earlier, it is hoped that this document will assist communication center directors and managers with the planning for, and implementation of, data exchanges to further local data sharing and interoperability capabilities.

Although the PSDI Steering Committee attempted to identify all the exchanges that go into or come out of a CAD system, there are likely some missing. Additionally, as technology evolves and more domains of interest are identified as appropriate to connect to communication centers, this list is bound to grow. Nevertheless, a total of 57 specific exchanges and two non-specific (catch-all) exchanges were defined.

Regardless of how many exchanges a particular communication center may have already implemented, this list should prove to be a valuable aid for planning future data exchanges.

## 6 Appendix A - References

- **JTTAC Training & Technical Assistance Opportunities** - The Office of Justice Programs (OJP), Bureau of Justice Assistance (BJA), supports comprehensive training and technical assistance programs to advance the successful implementation of justice information sharing across the country. BJA coordinates the implementation of this training and technical assistance through a strategic partnership of national stakeholder organizations known collectively as the Justice Information Sharing Training and Technical Assistance Committee (JTTAC). JTTAC represents several organizations that play significant leadership roles assisting jurisdictions across the country needing training and technical assistance. It is through the collective efforts of the JTTAC members, combined with funding from BJA, that numerous courses and assistance opportunities are available to the field. JTTAC resources are available at <http://www.it.ojp.gov/jttac>.
- **Fire Protection Handbook**, 20th Edition. Quincy MA: NFPA, 2008. (Section 1 - Safety in the Built Environment; Section 4 - Human Factors in Emergencies; Section 12 - Non-Emergency Fire Department Functions; and Section 14 - Detection and Alarm)
- **IEPD Clearinghouse** - The Information Exchange Package Documentation (IEPD) Clearinghouse provides information on a variety of IEPDs that have been submitted by individuals and organizations who have implemented the Global Justice XML Data Model (Global JXDM) and the National Information Exchange Model (NIEM). The Clearinghouse can be accessed at <http://it.ojp.gov/default.aspx?area=implementationAssistance&page=1108>.
- **LEITSC** - The Law Enforcement Information Technology Standards Council offers technical assistance to law enforcement agencies that are in the process of procuring or updating a Computer Aided Dispatch (CAD) system and/or a Records Management System (RMS). The technical assistance is driven by an agencies use of the Standard Functional Specifications for Law Enforcement CAD and/or RMS and is provided at no cost. Law enforcement agencies can leverage this opportunity when developing a request for proposal (RFP) for CAD systems or RMS. ([www.leitsc.org/index.html](http://www.leitsc.org/index.html))
- **National Information Sharing Standards (NISS) Knowledgebase and Helpdesk** - here users are able to search the NIEM knowledge base, ask questions of the help desk, and provide feedback on NIEM. (<http://it.ojp.gov/gjxdm/helpdesk/>)
- **NIEM** - the National Information Exchange Model (NIEM) is a partnership of the U.S. Department of Justice and the Department of Homeland Security. It is designed to develop, disseminate and support enterprise-wide information exchange standards and processes that can enable jurisdictions to effectively share critical information in emergency situations, as well as support the day-to-day operations of agencies throughout the nation. NIEM enables information sharing, focusing on information exchanged among organizations as part of their current or intended business practices. The NIEM exchange development methodology results in a common semantic understanding among participating organizations and data formatted in a semantically consistent manner. NIEM will standardize content (actual data exchange standards), provide tools, and managed processes. ([www.niem.org](http://www.niem.org))

## 7 Appendix B – Exchange Development Matrix

This is a copy of the Exchange Development Matrix used by the PSDI Steering Committee to demonstrate part of the process. This matrix assisted in focusing the creative process to specific domains and their respective inputs (data going into a CAD system) and outputs (data originating from a CAD system). Exchanges were then listed in the matrix for each combination of community/input-output. Note that during the course of identifying exchanges and editing the document, some exchanges were combined or added, therefore this matrix does not reflect the final/complete listing of exchanges presented.

Source / Target	EMS	EM	Fire	LE	Trans	Other
(Input) ANI-ALI						1 - E911 input of caller info to CAD 2 - NG911 input of caller info to CAD 3 - E911 input of caller location info to standalone mapping systems (Mapstar) 4 - NG911 input of caller location info to standalone mapping systems (Mapstar) 5 - E911 ANI/ALI tags of caller info to call records in recording systems for search and replay purposes. 6 - NG911 ANI/ALI tags of caller info to call records in recording systems for search and replay purposes
(Input) ALARM	1 - Medical Alert info to CAD		1 - Fire Alarm info to CAD 2 - Medical Alert Info to CAD (when Fire 1st Responder Program is used) 3 - Gas Detector Alarm info to CAD	1 - Burglar Alarm info to CAD 2 - Hold-up/Panic/Duress Alarm (Robbery in progress) info to CAD 3 - Tamper Alarm info to CAD (tamper with alarm equipment detected) 4 - Trouble Alarm info to CAD (treated as a burglar alarm)		
(Input) CALLS	1 - Call Entry Info to CAD based on Situation Reported by Caller (numerous event types) 2 - 3 -		1 - Call Entry Info to CAD based on Situation Sighted by Field Unit (numerous event types) 2 - 3 -	1 - Call Entry Info to CAD based on Situation Sighted by Field Unit (numerous event types) 2 - 3 -		
(Input) RADIO TRANSMISSION	1 - Call Entry Info to CAD based on Situation Sighted by Field Unit (numerous event types)		1 - Call Entry Info to CAD based on Situation Sighted by Field Unit (numerous event types)	1 - Call Entry Info to CAD based on Situation Sighted by Field Unit (numerous event types)		1 - Call Entry Info to CAD based on Situation Sighted by Other Agency (Works, Utilities, etc) Field Unit (numerous event types)
(Input) TELEMATICS	1 - Incident Notifications (crash, etc)		1 - Incident Notifications (crash, etc)	1 - Incident Notifications (crash, disabled vehicle, etc) 2 - Track stolen vehicles		
(Input) GIS	1 - GIS routing data used by CAD coupled with AVL data to recommend closest units for dispatch 2 - CAD call for service location validated against GIS data (address, intersection, or lat/long) 3 - Hazardous material storage facilities (as reported by Tier II)		1 - GIS routing data used by CAD coupled with AVL data to recommend closest units for dispatch 2 - CAD call for service location validated against GIS data (address, intersection, or lat/long) 3 - Hazardous material storage facilities (as reported by Tier II)	1 - GIS routing data used by CAD coupled with AVL data to recommend closest units for dispatch 2 - CAD call for service location validated against GIS data (address, intersection, or lat/long)		



(Input) MOBILE	1 - Call Update info to CAD (numerous types - on scene, request assistance, clear, en-route, etc) 2 - Inquiries (Current Weather Conditions, Forecast, River Levels) 3 - Multiple-media inputs (video, photo, audio)	1 - Inquiries (Current Weather Conditions, Forecast, River Levels Rain Rates, etc) 2 - Inquiries to CAD (call volumes, first responder availability) 3 - Multiple-media inputs (video, photo, audio)	1 - Call Update info to CAD (numerous types - on scene, request assistance, clear, en-route, etc) 2 - Inquiries (Current Weather Conditions, Forecast, River Levels) 3 - Premise history for call location 4 - Multiple-media inputs (video, photo, audio)	1 - Call Update info to CAD (numerous types - on scene, request assistance, clear, en-route, report to follow, etc) 2 - Inquiries (NCIC, State, DMV & Local) 3 - Inquiries (Current Weather Conditions, Forecast, River Levels) 4 - Premise history for call location 5 - Multiple-media inputs (video, photo, audio)		
(Input) ITS	1 - Incident Notifications (crash, disabled vehicle, etc) 2 - Event Notifications (closed roadway, detours, etc) 3 - Requests for Assistance 4 - Multiple-media info (video, photo, audio)	1 - Requests for Assistance 2 - Multiple-media info (video, photo, audio)	1 - Incident Notifications (crash, disabled vehicle, etc) 2 - Event Notifications (closed roadway, detours, etc) 3 - Requests for Assistance 4 - Multiple-media info (video, photo, audio)	1 - Incident Notifications (crash, disabled vehicle, etc) 2 - Event Notifications (closed roadway, detours, etc) 3 - Requests for Assistance 4 - Multiple-media info (video, photo, audio)		
(Input) OTHER	1 - New call for service based on Situation Reported by another CAD System (numerous event types) 2 - AVL data used by CAD to recommend closest units for dispatch 3 - New call for service based on SMS message from GSM equipped cell phones (includes image capture) 4 - New call for service based on e-mail or Internet form 5 - New call for service based on TDD/TTY call		1 - New call for service based on Situation Reported by another CAD System (numerous event types) 2 - AVL data used by CAD to recommend closest units for dispatch 3 - New call for service based on SMS message from GSM equipped cell phones (includes image capture) 4 - New call for service based on e-mail or Internet form 5 - New call for service based on TDD/TTY call	1 - New call for service based on Situation Reported by another CAD System (numerous event types) 2 - AVL data used by CAD to recommend closest units for dispatch 3 - New call for service based on SMS message from GSM equipped cell phones (includes image capture) 4 - New call for service based on e-mail or Internet form 5 - New call for service based on TDD/TTY call 6 - Track stolen vehicles (LOJACK) 7 - Warrant notifications from the court/state warrant system 8 - Restraining Order notifications from the court/state system		1 - Calls initiated by private mobile services (OnStar, etc)
(Output) Queries to external databases	1 - Query for Personal Medical Data (as regulated and allowed by HIPAA rules)	1 - Queries to other EOCs (EMnet, EMMA, etc)	1 - Queries to Hazardous Materials databases	1 - Query Person for Wanted status, description, mugshot, involvements history, previous arrests 2 - Query Vehicle for involvements, driver history, description 3 - Query Location for involvements history 4 - Firearms license and ownership files 5 - State mental health database(s)	1 - Query for current road conditions	
(Output) RMS (multiple types)	1 - Call Info (to supplement EMS report) 2 - Statistics for Analysis 3 - Multiple-media info (video, photo, audio)	1 - Call Info (to supplement EM report / incident) 2 - Statistics for Analysis 3 - Multiple-media info (video, photo, audio)	1 - Call Info (to supplement Fire report) 2 - Statistics for Analysis 3 - Multiple-media info (video, photo, audio)	1 - Call Info (to supplement LE report) 2 - Statistics for Analysis 3 - Multiple-media info (video, photo, audio)	1 - Statistics for Analysis	
(Output) Mobile	1 - Calls for Service (initial) 2 - Updates to Calls for Service 3 - Supplemental Info (history, query returns, etc) 4 - Multiple-media info (video, photo, audio)	1 - Multiple-media info (video, photo, audio)	1 - Calls for Service (initial) 2 - Updates to Calls for Service 3 - Supplemental Info (history, query returns, etc) 4 - Multiple-media info (video, photo, audio)	1 - Calls for Service (initial) 2 - Updates to Calls for Service 3 - Supplemental Info (history, query returns, etc) 4 - All unit broadcasts (BOLOs, etc) 5 - Multiple-media info (video, photo, audio)		

(Output) Fire Station (toning, etc)	1 - Station Toning for new Call 2 - Call info to text enabled devices (pagers, cell phones)		1 - Station Toning for new Call 2 - Call info to text enabled devices (pagers, cell phones) 3 - Call info to station printers			
(Output) Hospital						1 - Alerts for Mass Casualty Incidents 2 - Notification of new incident as appropriate 3 -
(Output) Other CAD						1 - Transfer of Call for Service 2 - Shared Call for Service 3 - Queries for info
(Output) Public						1 - Amber Alerts 2 - Traffic & Incident info (as appropriate) 3 -
(Output) GIS	1 - GIS Data for Analysis	1 - GIS Data for Analysis	1 - GIS Data for Analysis	1 - GIS Data for Analysis	1 - GIS Data for Analysis	
(Output) ITS					1 - Request for Assistance 2 - Event Info 3 - Incident Info 4 - Multiple-media info (video, photo, audio)	
(Output) OTHER	1 - Significant event notifications to text enabled devices (pagers, cell phones)	1 - Significant event notifications to text enabled devices (pagers, cell phones)	1 - Significant event notifications to text enabled devices (pagers, cell phones) 2 - Update False Alarm Billing Systems	1 - Call info to text enabled devices (pagers, cell phones) 2 - Significant event notifications to text enabled devices (pagers, cell phones) 3 - Update False Alarm Billing Systems		1 - Transfer ANI/ALI data to secondary PSAP in concert with transfer of the voice caller 2 - Comments added by CAD to recorder/logging systems

## 8 Appendix C – Glossary

AAA .....	American Automobile Association
ACN .....	Automatic Crash Notification
ANI-ALI .....	Automatic Number Identification – Automatic Location Information
APCO .....	Association of Public Safety Communications Officials International
API .....	Application Programming Interface
ASAP .....	As Soon As Possible
AVL .....	Automatic Vehicle Locator
AVLS .....	Automatic Vehicle Locator System
B&E .....	Breaking and Entering
BJA .....	Bureau of Justice Assistance
BOLO .....	“Be On Look Out” message or announcement
CAD .....	Computer Aided Dispatch system
CAMEO .....	Computer-Aided Management of Emergency Operations
CFS .....	Call for Service
CPE .....	Customer Premise Equipment
CRT .....	Cathode Ray Tube (computer monitor)
DMV .....	Division of Motor Vehicles
DOB .....	Date of Birth
DOJ .....	Department of Justice
DOT .....	Department of Transportation
DUI .....	Driving Under the Influence
DWI .....	Driving While Intoxicated
EDP .....	Electronic Data Processing
EM .....	Emergency Management
EMA .....	Emergency Management Agency
EMMA .....	Enhanced Multi-Media Architecture
EMnet .....	Emergency Medicine Network
EMS .....	Emergency Medical Service
EMT .....	Emergency Medical Technician
EOC .....	Emergency Communications Center
ER .....	Emergency Room
ETA .....	Estimated Time of Arrival
FAX .....	Facsimile
FBI .....	Federal Bureau of Investigation
FCC .....	Federal Communications Commission
FD .....	Fire Department
GIS .....	Geographic Information System (aka digital map)
GJXDM .....	Global Justice XML Data Model
GPS .....	Global Positioning Service/System
HAZMAT .....	Hazardous Material
HIPAA .....	Health Information Privacy Act of 1999
IAEM .....	International Association of Emergency Managers
IAFC .....	International Association of Fire Chiefs
IEEE .....	Institute of Electrical & Electronics Engineers
IEP .....	Information Exchange Package (actual data transferred via a standardized exchange)
IEPD .....	Information Exchange Package Documentation (a “developer’s kit” for implementation of an IEP)
IJIS .....	Integrated Justice Information Sharing (see also IJIS Institute)

IJIS Institute.....	Integrated Justice Information Sharing Institute
IR .....	Infrared
ITS.....	Intelligent Transportation System
JXDM.....	Justice XML Data Model (aka GJXDM)
LE.....	Law Enforcement
LED .....	Light Emitting Diode
LEITSC.....	Law Enforcement Information Technology Standards Council
MDC.....	Mobile Data Computer
MDT .....	Mobile Data Terminal
MOU .....	Memorandum of Understanding
MSAG .....	Master Street Address Guide
NAEMSO .....	National Association of State EMS Officials
NCIC .....	National Crime Information Center
NEMA.....	National Emergency Management Association
NEMSIS .....	National EMS Information System
NENA .....	National Emergency Number Association
NFIRS.....	National Fire Incident Reporting System
NFPA .....	National Fire Protection Association
NG9-1-1 .....	Next Generation 9-1-1
NIEM.....	National Information Exchange Model
NISS.....	National Information Sharing Standards
NLETS.....	The International Justice and Public Safety Network
NPSTC .....	National Public Safety Telecommunications Council
NTSB .....	National Transportation Safety Board
OJP.....	Office of Justice Programs
PDA.....	Personal Data Accessory
PS.....	Public Safety
PSAP .....	Public Safety Answering Point
PSDI .....	Public Safety Data Interoperability (Project)
PSTN .....	Public Switched Telephone Network
RADAR.....	RADio Detection And Ranging
RFP .....	Request For Proposal
RMS.....	Records Management System
RWIS .....	Roadway Weather Information System
SMS .....	Short Message Service (cell phone text message)
SOG .....	Standard Operating Guideline
SOP.....	Standard Operating Procedure(s)
SSN.....	Social Security Number
SWAT.....	Special Weapons And Tactics unit
TDD.....	Telecommunication Device for the Deaf
TMC .....	Traffic Management Center
TTY.....	Text Telephone (also sometimes called a TDD)
UV .....	Ultraviolet
VIN.....	Vehicle Identification Number
VoIP.....	Voice over IP
XML.....	eXtensible Markup Language

## 9 Appendix D - Exchange Checklist Worksheet

This chart is provided to aid you in determining your list of priority exchanges.

Sample entries:

Exchange	Need	Priority	Notes
Exchange "A"	Yes	1	high priority
Exchange "B"	Yes	2	medium priority
Exchange "C"	No	n/a	we already have this exchange implemented
Exchange "D"	No	n/a	not interested in this exchange at this time

The below table includes all exchanges identified in this document.

Exchange	Need	Priority	Notes
3.1.1-E9-1-1 Information to CAD			
3.1.2-NG9-1-1 Information to CAD			
3.2.1-Incident Notifications via Telematics (crash, disabled vehicle, etc.)			
3.2.2-Track Stolen Vehicles via Telematics (e.g., LoJack®, OnStar®, etc.)			
3.2.3-Gunshot Location Event			
3.3.1-Calls For Service (initial)			
3.3.2-Updates to Call for Service			
3.3.3-Multiple-Media Information to Mobile (video, photo, audio)			
3.3.4-New Call for Service from a Field Unit			
3.3.5-Call for Service Updates via MDC			
3.3.6-GIS System / AVL Providing Closest Unit Recommendation			
3.4.1-New Call for Service from Another CAD System (CAD-to-CAD)			
3.4.2-New Call for Service from Other Agency (Public Works, Utilities, etc.)			
3.4.3-External Alarm Information			
3.4.4-Warrant Notifications from Other System			
3.4.5-Restraining Order Notifications from Other System			
3.4.6-Multiple-Media Information into CAD (video, photo, audio)			
3.5.1-Call Information (to supplement EMS, EM, LE, or Fire Records System)			
3.5.2-All Unit Broadcasts (BOLOs, etc.)			
3.5.3-Call Information to Text Enabled Devices (PDAs, pagers, cell phones)			
3.5.4-Alerts for Mass Casualty Incidents			
3.5.5-Notification of new incident as appropriate			
3.5.6-Transfer of Call for Service			
3.5.7-Recorder & Logging Systems Comments (added by CAD)			
3.5.8-Event Notifications to Text Enabled Devices			

(pagers, cell phones)			
3.5.9-Transfer ANI/ALI data to Secondary PSAP			
3.5.10-Update False Alarm Billing Systems			
3.6.1-CAD System Inquiries (call volume, call history, unit availability)			
3.6.2-Query for Personal Medical Data			
3.6.3-Queries to other EOCs (EMnet, EMMA, etc.)			
3.6.4-Query Location (Involvement History)			
3.6.5-Premises History			
3.6.6-Supplemental Information (history, query returns, etc)			
3.7.1-Weather Products (RADAR, Satellite Imagery, Surface Analysis, etc)			
3.7.2-Weather Inquiries (Current Conditions, Forecast, Rain Levels, etc)			
3.8.1-Hazardous Material Database			
3.8.2-Hazmat Updates			
3.8.3-Hazmat Database Query (Plume Models, Chemtrek, CAMEO, etc.)			
3.9.1-Event Notifications to/from Transportation			
3.9.2-Incident Notifications to/from Transportation			
3.9.3-Requests for Assistance to/from Transportation			
3.9.4-Traffic Evacuation Routes from Transportation			
3.9.5-Query/Response for Current Road Conditions			
3.9.6-Tactical Graphical Traffic Flow Summary from Transportation			
3.10.1-Amber Alerts			
3.10.2-Public Warnings (Sirens, Giant Voice, Weather Radio, etc.)			
3.10.3-Broadcast Media Warnings and Alerts			
3.11.1-Station Toning for new Call			
3.11.2-Call Information to Station Printers/FAX			
3.12.1-Law Enforcement Inquiries (NCIC, State, DMV & Local)			
3.12.2-Query Person (Wanted Status, Description, Mugshots, Criminal History)			
3.12.3-Query Vehicle (Owner Information, Description, Etc.)			
3.12.4-Firearms License and Ownership Files			
3.12.5-State Mental Health Database(s)			
3.13.1-Statistics for Analysis			
3.13.2-GIS Data for Analysis			
3.13.3-GIS Data for Situational Awareness			
3.14.1-Incoming Query for Information (Nonspecific)			
3.14.2-Outgoing Query for Information (Nonspecific)			