Unified Computer-Aided Dispatch Functional Requirements (UCADFR): Its Use and Future

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Agenda
- PSDI Projects Background
- Current UCAD Deliverables
- UCADFR
  - Why a Standard?
  - The Development Process
  - A Look at the Draft Standard
- High Priority Information Sharing Needs for Emergency Communications and First Responders

PSDI Program
To advance information exchange within the local communication center and first responder communities
- Emergency Communications
- Law Enforcement
- Fire
- EMS
- Emergency Management
- Transportation
Background Projects

- LEITSC CAD/RMS Project
- IJIS ITS/PS Project
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UCAD Project

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Current Bookshelf
(including UCAD Project deliverables)
Methodology

1. Assemble the UCAD Project Team
2. Build on:
   1. LEITSC LE CAD Functional Specifications
   2. PSDI Revision Assessment
3. Use:
   1. SME Project Group
   2. External Reviewers (organizations)
4. Develop:
   1. Unified CAD Functional Requirements (UCADFR)
   2. Recommendations for Maintenance of the UCADFR
   3. High Priority Information Sharing Needs for Emergency Communications and First Responders
5. Standardize the UCADFR (APCO ANS Process)
6. Conduct Outreach
7. Document Lessons Learned & Project Recommendations

*** = more detail in a moment

Detail: Project Team

Industry
- James Dundas, Northrop Grumman
- Matthew Schreiner, Motorola
- Henry Unger, Hitachi Systems, Inc.

Communications
- Peggy Feinleib, Grays Harbor Comm., WA
- Jerry Schlekker, City of Portland, OR
- Lance Terry, City of Norman, OK

EMS
- Karen Jacobson, NEMSIS
- Chris Kummer, Hennepin EMS, MN
- Greg Means, MD, NC EMS & Unvr. of NC

Fire Services
- Evan Bestland, Palm Beach Co. Fire Rescue, FL
- Donald Bowers, Fairfax Co. Fire & Rescue, VA
- Daniel Stilwell, Seattle Fire Department, WA
- Dennis Wood, Prince George’s Co.Fire/EMS, MD

Law Enforcement
- Bret Groek, City of Woodway TX
- Norine Plett, LA Co. Sheriff, CA
- Dave Roberts, MCP
- Mike Rossa, Maryland State Police

Project Management Team
- Bill Holzer, APCO & City of Richmond VA
- Paul Holcombe, IJIS Institute
- Randy Kent, IJIS Institute
- Scott Parker, IJIS Institute
- Chris Brewer, Bureau of Justice Assistance
- Steve Wisely, APCO

Detail: UCADFR Development

UCADFR Standard published
APCO ANS Process / Public Review
BJA approval
Final review
Feedback reconciliation
External Review (29 Orgs solicited)
Edited and filled in gaps
Formed 3 work groups / writing assignments
Solidified function list
Determined format & changed to “Functional Requirements”
Adoption of LEITSC CAD Functional Specifications & PSDI Revision Assessment
Formulation of Project Team
Detail: External Review
29 Orgs Were Solicited for Feedback, 10 Responded (35%)
- American Ambulance Association (AAA)
- Association of Public-Safety Communications Officials International, Emerging Technologies Committee (APCO ET)
- City of Westminster, Colorado
- IJIS Institute’s Public Safety Technology Standards Committee (IPSTSC)
- Institute for Intergovernmental Research (IIR)
- International Association of EMS Chiefs (IAEMSC)
- International Association of Fire Chiefs (IAFC)
- International Association of Fire Fighters (IAFF)
- National Fire Information Council (NFIC)
- SEARCH, The National Consortium for Justice Information and Statistics

A Look at the UCADFR Document

What Are We Standardizing?
The UCADFR, once made into an American National Standard, will standardize a 'Master List' of CAD Functions ... as a reference for Practitioners and Industry.

The UCADFR will NOT standardize which functions need/should be in a CAD System!
### Function Matrix (LEITSC) - 28

**Business Function: Law Enforcement Dispatch**
- Call Taking
- Dispatch Decision Support
- BOLO
- Dispatch Units
- Unit Status Management
- Call Management
- Supplemental Resources Tracking
- Call Disposition

**Business Function: CAD System Administration**
- Geofile Maintenance
- Security
- Logging
- Configuration
- Table Maintenance
- Communication Center Relocation
- CAD Catch-Up

**Business Function: Support Services**
- BOLO
- Emergency Operations Center

**Business Function: Call Management and Management Reporting**
- Dispatch Supervisor Support
- CAD Management Reporting
- Training and Testing

**Business Function: Interfaces**
- Primary
- Additional Interfaces
- Locational Systems Interfaces
- Administration Interfaces
- Communications Interfaces
- Public Awareness Messaging
- Emergency Operations Interface

### Function Matrix (Revision) - 30

**Business Function: Call Management and Management Reporting**
- Dispatch Supervisor Support
- CAD Management Reporting
- Training and Testing

**Business Function: Interfaces**
- Primary
- Additional Interfaces
- Locational Systems Interfaces
- Administration Interfaces
- Communications Interfaces
- Public Awareness Messaging
- Emergency Operations Interface

**Additional Business Functions**
- CAD Incident Type
- Unit Recommendation Based on Input from Other Jurisdictions
- Predetermined and User Defined Timers
- Hospital Status/Availability and Hospital Recommendation
- Additional Attributes
- Exception Reason Tracking
- Add Next Generation Functions
- Multiple Simultaneous Calls to Single Unit
- Rostering
- Mileage Tracking
- Hydrant Location and Status
- Additional Unit Dispositions
- Strike Team/Task Force Designations
- Unit Rotation (aka Unit Load Balancing)
- Conditional Availability of Apparatus
- Ability to Route to a "Decision Dispatcher"
- Linking an Audio File to the CAD Dispatch Record
### Function Matrix (Revision) - 30

- Add Destination Locations: X X X
- Alerting: X X
- Move Up (“Fill-In” and “Station Fill”): X X
- Staffed versus Unstaffed Units: X X
- Cross-Staffing/Crew Counting/Shared Staffing: X X
- System Status Management (Dynamic Resource Deployment): X
- Station Dispatch (versus Unit Dispatch): X X
- Run Cards/Response Plans: X X
- Adjustable Dispatch Levels: X X X
- Adjustable Response Plans: X X X
- Hospital Status/Availability and Hospital Recommendation: X X X
- Additional Attributes: X X X
- CAD Incident Type: X X X
- Unit Recommendation Based on Input from Other Jurisdictions: X X X
- Predetermined and User Defined Timers: X X X
- Unit Status Timers: X X X
- Patient Tracking: X X X
- Additional Unit Status: X X X
- Strike Team/Task Force Designations: X X X
- Unit Rotation (aka Unit Load Balancing): X X X
- Conditional Availability of Apparatus: X X X
- Ability to Route to a “Decision Dispatcher”: 
- Linking an Audio File to the CAD Dispatch Record: X X X
- Rostering: X X X
- Mileage Tracking: X X X
- Hydrant Location and Status: X
- Additional Unit Dispositions: X X X
- Exception Reason Tracking: X X X
- Add Next Generation Functions: X X X
- Multiple Simultaneous Calls to Single Unit: X X X

### Function Matrix (Revision) +29=59

- Notifications: X X X
- Contact List: X X X
- Scheduled Events: X X X
- Special Dispatch Areas: X X X
- EMD/Call Triage: X X X
- Premises Information/Hazards: X X X
- Public Safety Flight Tracking: X X X
- Channel Designations: X X X
- Suspicious Activity Reporting Functionality: X X X
- Geo-fencing: X X X
- Communications Center Standard Operating Procedures: X X X
- Incident/Premises/Unit Standard Operating Procedures: X X X
- Snapshot/Incident Replay: X X X
- Pre-Release or Pre-Alerting: X X X
- Remote Access: X X X
- Integration/Interfaces with Other Systems: X X X
- CAD Workstation-to-CAD Workstation Messaging: X X X
- Secondary Incident Location: X X X
- Vehicle/Unit Change: X X X
- Automatic Routing: X X X
- Scheduling: X X X
- Incident Command Support: X X X
- Single Discipline Call to a Combined Discipline Call: X X X
- Narrative Field “Shorthand” (Auto Text): X X X
- Command Line/GUI: X X X
- Time Stamps: X X X
- Bypassed Units: X X X
- Post Dispatch Response Re-evaluation: X X X
- Unit Status Transition Matrix: X X X
2.17 Alarm Processing

Alarm monitoring companies are notified whenever an alarm remotely on the panel is triggered. A standard panel interface is available to receive the details of the alarm. An example of an alarm is shown in Figure 2.17. This interface allows the panel to send real-time information about the alarm to the company. The Alarm Monitoring Company (AMC) is the entity responsible for receiving the alarm information and taking appropriate actions.

When evaluating an alarm, the AMC should verify the following:

1. The alarm is valid and not a false or prank call.
2. The location of the alarm is accurate and not a false positive.
3. The alarm is urgent and requires immediate action.

In cases where the alarm is valid, the AMC should take the following actions:

1. Notify the appropriate authorities and emergency services.
2. Dispatch the necessary resources to the location.
3. Coordinate with local authorities and emergency services.

If the alarm is determined to be false or prank, the AMC should:

1. Notify the police or other appropriate authorities.
3. Inform the client about the false alarm.

In cases where the alarm is urgent and requires immediate action, the AMC should:

1. Dispatch the necessary resources to the location.
2. Coordinate with local authorities and emergency services.
3. Ensure the safety and security of the area.

Relevant Technical Standards/Specifications

- APCO: 2.17.2.012 Contact Information Exchange: Americas National Standard (also known as: Automated Interface Alarm Protocol (AIAP))
UCADFR: Example #2

4.15 Station Dispatch

Station dispatch refers to the function of dispatching a station to an incident rather than specific units. An example would be dispatching a rural volunteer fire department station to a motor vehicle crash, if no response is confirmed by the station that was dispatched, then a unit from a nearby jurisdiction would be dispatched.

Sample Requirements

In order to support the Station Dispatch function, the CAD system:

- [Shall/Should] provide the capability to dispatch a fire and/or EMS station to an incident regardless of the number of units or personnel that station is assigned to or on duty.

Relevant Technical Standards / Guidelines

Note at this time (see section 1.5 for more information on pending updates).

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UCADFR: Example #3

3.11 Be On the Look-Out / Attempt to Locate

July 11, 2012 (3:00 p.m.) to 3:00 p.m. on TOMAC, also known as an Attempt to Locate (ATL), alert can be a CAD function or part of an EMS system, however, a BOLO file should be accessible from either system based on the identifying name, address or hazard entered. BOLO can be created and maintained in a table in the CAD system. BOLO data may be entered as a dispatch or may be created by anyone who has been given the required security clearance to create or maintain the table.

Both an EMS interface and a MDC interface should support the creation and transmission of a BOLO back to the CAD system. A BOLO should be assigned an expiration date, either by the person who creates it or for the system, based on department policy and available system resources. A typical BOLO file would include the name of the BOLO, address, date, range of effectiveness, subject version, nature of BOLO, and subject version, date, and range of effectiveness. BOLO information, subject vehicle information, location, and contact information. There should be a mechanism to search the BOLOs, to print them in a report, and to purge the BOLOs out of the data range. There should be a mechanism to automatically notify the originating source of the BOLO anytime a BOLO hits.

- An unidentified white male traveling north on a red, Dodge minivan having Texas license plate ABC-123 may be in possession of stolen goods.
- That same individual is operating the same vehicle with a major fuel leak, causing a safety hazard for both that individual and other motorists.

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UCADFR: Example #3 (cont’d)

Sample Requirements

In order to support the Be On the Look-Out / Attempt to Locate function, the CAD system:

- [Shall/Should] support creation and distribution of any BOLO entered into the system.
- [Shall/Should] provide a BOLO structure to include all necessary information such as the nature of the BOLO, priority, date, range of effectiveness, subject version, and vehicle information, location, and contact information.
- The system [Shall/Should] allow narrative fields for additional information.
- [Shall/Should] support the means for BOLO information to be easily searchable, printable, and have the ability to automatically populate an incident sheet referencing any particular name, address, or vehicle information.
- [Shall/Should] flag the field (automatically) with configurable visual and audible alerts.
- [Shall/Should] support a workflow recorder for initial BOLO creation and any additional edits.

Relevant Technical Standards / Guidelines

Note at this time (see section 1.5 for more information on pending updates).
UCADFR: Standards

In an effort to promote information sharing and interoperability, the UCADFR makes reference to numerous models and standards including, but not limited to:

1. National Information Exchange Model (NIEM)
2. Global Reference Architecture (GRA)
3. NFPA 950: Standard for Data Development and Exchange for the Fire Service
4. NENA 56-004: TTY/TDD Communications Standard Operating Procedure Model Recommendation
6. Many others...

UCADFR: Stats

- 18 months in development
- 116+ functions in 10 functional areas
  - 28 from LEITSC
  - 59 from Revision Assessment
  - 29 developed by UCAD Project Team
- 788 Sample RFP Requirements (based on count of “shall/should”)
- ~20 Standards and Guidelines Referenced

* = interfaces are presented in groups and do not include all possible interfaces

UCADFR: Section 1.5

1.5 UCADFR as a Standard

Updates to the Standard

As an ongoing process, this document is subject to periodic updates via the APCO American National Standard (ANSI) process. Any stakeholder may submit suggested additions, modifications, or deletions to APCO for consideration in the next version. Decisions on modifications are made by a committee of subject matter experts. Potential modifications include but are not limited to:

- Functions
- Descriptions
- Sample Requirements
- Technical References / Guidelines

To submit suggestions, email standard@apco.org and put “suggestion for UCADFR standard” in the subject line.

Pending Modifications

It’s important to stay informed of the latest approved pending modifications to this standard. To do so, visit: http://www.standard.org/standards/technical/proposed-modifications.html.
The Recommendations for the Maintenance of the UCADFR

- APCO American National Standards (ANS) Process selected for standardization and maintenance
- The review period will be quarterly (initially)
- The SME Review Committee shall be representative of emergency communications, LE, Fire, EMS, and industry
- The UCAD Project committee will serve as the initial SME Review Committee

The High Priority Information Sharing Needs for Emergency Communications and First Responders Document

"HPISNECFR"

High Priority Information Sharing Needs...

12 current needs were identified:
1) NG9-1-1 EIDD
2) Standardize the EIDD as the Interface for CAD-to-EMS, CAD-to-FIRE, & CAD-to-LE
3) Global First Responder/Emergency Communications Information Sharing (FRRCIS) Task Team
4) NIEM Emergency Communications Domain
5) Situational Awareness via CAD
6) Broadband / LTE Application Programming Interfaces (APIs)
7) National Suspicious Activity Reporting Initiative (NSI) for CAD
8) Standard Functional Specifications for Fire & Rescue RMS
9) Standard Functional Specifications for EMS RMS
10) Standard License Plate Reader (LPR) Interface / Exchange
11) Floor Plan Sharing
12) Precision Indoor Personnel Location & Tracking (a.k.a. Firefighter Tracking)
Q&A
APCO International is the world’s largest organization of public safety communications professionals. It serves the needs of public safety communications practitioners worldwide—and the welfare of the general public as a whole—by providing complete expertise, professional development, technical assistance, advocacy and outreach.

Thank You For Attending!!!

Please help us keep the UCADFR up to date!

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