Memorandum

CITY OF DALLAS

DATE: April 18, 2008

TO: Members of the Public Safety Committee

SUBJECT: **Computer Aided Dispatch (CAD) Overview**

Attached is the briefing material on "Computer Aided Dispatch (CAD) Overview" to be presented to Members of the Public Safety Committee on Monday, April 21, 2008.

Ramon F. Miguez, P.E.
Assistant City Manager

Attachment

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COMPUTER AIDED DISPATCH (CAD) OVERVIEW

Dallas City Council Public Safety Committee

April 21, 2008

Key Focus Area

Public Safety

Agenda

- Background
- Reasons for Replacing Mainframe CAD system
- Current Status
  - Issues & Resolution
    - CAD
    - Interfaces
- Additional Capabilities
- Next Steps
  - Implementation Plan
  - Cost & Budget

Background

- On June 8, 2005 Council approved the purchase of a new Computer Aided Dispatch (CAD) system from TriTech Software Systems.
- On August 22, 2007 the TriTech CAD system replaced the 30-year old mainframe CAD system to support 9-1-1, DPD, and DFR communications centers. The central core dispatching system has worked well from the first day and continues to perform well.
- TriTech CAD system has brought the Public Safety communications systems up to current state of the art technology enabling more efficient use of resources, improved the quality of mission critical services to the citizens of Dallas, and improved the ability to respond to the changing operational needs of Dallas' first responders.
- It has also greatly improved data information sharing between DPD and DFR.

Reasons for Replacing Mainframe CAD System

- ✓ Replace a 30-year old technology
- ✓ Combine the two separate CAD systems into a single CAD system shared by DFR and DPD.
- Improve interoperability
  - ✓ Between DPD and DFR
  - ✓ Share data with regional partners
- Improve speed of call taking and dispatching
- ✓ Improve user interface functionality
  - ✓ Drag and drop dispatching
  - ✓ Audible and visual alerts
  - ✓ Split screen user interface
  - ✓ Color coded status changes with timers and warning

Reasons for Replacing Mainframe CAD System (Cont.)

- ✓ Configurable system to meet changing business practices without custom programming
- ✓ Enhance functionality

Current Status

- The central core dispatching system has worked well from the first day and continues to perform well.
- Throughout the life of any new system, errors will occur that must be resolved. The CAD system and the various **interfaces** to the CAD system have encountered errors which some have been resolved and work continues to resolve others.

Current Status:

CAD Issues & Resolution

- **Border Streets:** 
  - ☑ Issues with streets that border an adjacent city. The 911 call taker must currently enter an exact address or pre-defined alias to prevent any problems.
  - Resolution:
    - ☑ TriTech has a fix for this issue that will be released in July 2008.

- **Improper Sequencing of Messages** 
  - In the event of a swap, the system sends a disregard message before assigning the new equipment.
  - Resolution:
    - TriTech VisiNet In-Car Mobile Computer software

- ✓ **Erroneous messages** 
  - ✓ Erroneous confirmation messages are sent to the mobile computer.
  - Resolution:
    - ✓ TriTech has fixed this issue, April 2008.

Current Status:

Interface Issues & Resolution

- **Suspect/Record Check**
  - ✓ TX DPS
    - ✓ TX DPS system returns the suspect information slowly.
    - Resolution:
      - ✓ Improved return times from "30 minutes - 2 hours" to "10 seconds - 1 minute"
  - Regional
    - ✓ Returns of suspect information is slow.
    - Returns of suspect information is inconsistent.
    - Resolution:
      - ✓ Improved return times from "30 minutes - 2 hours" to "10 seconds - 1 minute"
      - CIS to migrate the Regional database off the mainframe

- **On Occasions Equipment Dispatched from Wrong Location**
  - On occasions, the calculation to determine the closest fire equipment for an incident assignment is incorrect.
  - Resolution:
    - Improving the GIS data accuracy will improve the selection of fire equipment assigned to an incident.

Current Status:

Interface Issues & Resolution

- **GeoFence (**feature that automatically places the unit "at scene" when it comes within a certain proximity to the incident location)
  - Current software on the in-car vehicle computers will not allow the option for Police to turn on this feature and Fire Rescue turned off the feature.
  - Resolution:
    - TriTech VisiNet In-Car Mobile Computer software

- **Citywide car-to-car messaging and BOLOs** (Be On the Look Out)
  - Allow Officers in the field to transmit BOLOs division-wide or citywide instead of having to rely on dispatcher.
  - Resolution:
    - TriTech VisiNet In-Car Mobile Computer software

- **Station Alerting**
  - On occasions the stations speakers are not sounding audible alert messages.
  - Resolution:
    - Install Locution system upgrade, October 2008
    - ✓ Upgrade Locution computer hardware
    - Install a standalone PC to run the Locution desktop application
    - Wiring infrastructure improvement

Current Status:

Interface Issues & Resolution

- **Slow system** 
  - ✓ Occasional system slow down in dispatch centers has been corrected.
  - At times, data transmitted to vehicles is slow.
    - ✓ Suspect/Records Check
    - Submitting reports is still slow
  - Resolution:
    - TriTech VisiNet In-Car Mobile Computer software
- **Clearing dispatch calls automatically (Ghost Clears) issue** 
  - On occasions, calls assigned by automatic dispatch or the dispatcher are cleared before a police officer, EMT personnel, or firefighter can view the call on the MDC.
    - The current process change is for the dispatcher to verify by radio that the call was received.
  - Resolution:
    - TriTech VisiNet In-Car Mobile Computer software
- **Inaccurate AVL Data** 
  - The accuracy of the AVL information is off 100 – 200 meters.
  - Resolution:
    - ✓ Changed Automated Vehicle Location (AVL) distance to 400 meters.
    - Change AVL polling distance to 200 meters.

Current Status:

Interface Issues & Resolution

- **Early Logoff** 
  - ✓ The system allows an officer to logoff without clearing active incidents. This issue has been addressed with training.
  - Resolution:
    - TriTech VisiNet In-Car Mobile Computer software
- **Information display is cluttered** 
  - The incident screen displays a lot of detail information
    - Premise history and other shared comments makes it difficult to locate and read the incident information.
  - Resolution:
    - TriTech VisiNet In-Car Mobile Computer software

Additional Capabilities Requested

- **Re-sequence call comments** 
  - The ability to have the most recent comments appears first.
  - Resolution:
    - TriTech VisiNet In-Car Mobile Computer software
- **Stacked Calls Queue** (Call Transitions) 
  - Officers want the ability to move from one call to another in no particular order.
  - Resolution:
    - TriTech VisiNet In-Car Mobile Computer software
- **Call Reviewing** 
  - The capability to easily see call comments for all incidents.
  - Resolution:
    - TriTech VisiNet In-Car Mobile Computer software
- **Creation of Reports** 
  - Vehicle license plate check and who checked it
  - Individual's record was checked and who checked it
  - Search by complainant's name for calls
  - Search by beat for calls during a time period
  - Resolution:
    - TriTech VisiNet In-Car Mobile Computer software

Additional Capabilities Requested

- **Dispatch Recommend** 
  - CAD needs to be able to recommend closest appropriate element to call (i.e. Patrol Rifle Equipped, Spanish speaker, multiple Officers, Crisis Intervention Trained, etc.) request
  - Resolution:
    - Validate current geographic data

Next Steps

- Pilot and implement TriTech's In-Car Mobile Computer Software
- Locution hardware and infrastructure upgrade at the Fire Stations
- Migrate the Regional Warrant database off the mainframe
- Accelerate the replacement of the old Mobile Computers with new Mobile Computers in both DPD and DFR vehicles.

Next Steps:

Pilot Program - TriTech In-Car Mobile Computer Software

- The objective of the pilot program is to model and test the TriTech In-Car Mobile Computer Software.
- The pilot program will consist of 15 firefighters/EMS personnel and 15 patrol officers.
- The pilot program consist of three components:
  I. Lab – the objective is to model and test the TriTech mobile software that will be used by DFR and DPD.
  II. Field testing – test the TriTech mobile software in actual day-to-day environment.
  III. Train the Trainers – train DFR and DPD personnel that will train the employees in each agency.

Next Steps:

Implementation Plan - TriTech In-Car Mobile Computer Software

- Pilot Program
  - ✓ April 2008 – Procure server hardware and configure for testing
  - – April 2008 – Configure In-Car Mobile Computer Software Test environment
  - – May 2008 – Lab design and testing
  - – June to July 2008 – Field testing and Train-the-Trainer training
- June 2008 – present to Council for approval of full roll-out pending successful pilot
- Full Roll Out
  - August 2008 – February 2009 – Training DPD and DFR personnel
  - September 2008 – June 2009
    - Accelerate the replacement of the old Mobile Computers with new Mobile Computers
    - VisiNet In-Car Mobile Computer software
- Meeting this very aggressive schedule will require the use of contract labor for the installation of new Mobile Computer equipment.

Next Steps:

Cost and Budget TriTech Software and Services

- TriTech Software and Services
  - In-Car Mobile Client Software $ 3,493,700
  - Consulting Services $ 686,620
  - Software Support & Maintenance $ 767,074
  - Radio Network Solution $ 581,815
  - Total $ 5,529,209

- Current Fiscal Year 08 Budget Funds
  - Grants $ 1,100,000

- Fiscal Year 09 Requested Funds $ 4,429,209

Next Steps:

Implementation Plan - Locution Hardware and Infrastructure

- ✓ Define DFR requirements for Locution upgrade
  - ✓ Completed March 2008
- ✓ Procure server and PC hardware
  - ✓ Completed March 2008
- ✓ Install server hardware Locution server
  - ✓ Completed April 2008
- Configure TriTech Server interface
  - April 2008 – May 2008 Test interface between TriTech and Locution
- June 2008 – Full roll out of Locution PC at each Station
- September 2008 – Install Locution software upgrade and test
- September 2008 – present to Council for approval of Fire Station infrastructure upgrade
- October 2008 – November 2008 - Upgrade Fire Station infrastructure

Next Steps:

Cost and Budget Location Hardware and Infrastructure Upgrade

- Location Hardware and Infrastructure Upgrade

Servers and PCs upgrade	$	134,575
Uninterrupted Power Supply (UPS)	$	132,000
Amplifier equipment	$	64,400
Infrastructure upgrade	$	384,325
Total	$	715,300

- Current Fiscal Year 08 Budget Funds

911 Funding	$	109,000
Total	$	109,000

- Fiscal Year 09 Requested Funds $ 606,300

Next Steps: Implementation Plan - Regional Warrant Database Migration

- ✓ November 2007 – December 2007 - Define requirements for Regional Warrant database
- ✓ January 2008 – February 2008 – Develop new Regional Warrant database
- March 2008 – Test new Regional Warrant database
- April 2008 – Roll Out of new Regional Warrant database

Next Steps:

Cost and Budget
Regional Warrant database Mainframe Migration

- Regional Warrant database Migration Off the Mainframe
  - Requirements and development $ 338,000

  Total $ 338,000

- Current Fiscal Year 08 Budget Funds
  - Current Funds $ 138,000

  Total $ 138,000

- Fiscal Year 09 Requested Funds $ 200,000

Next Steps:

Implementation Plan – In-Car Mobile Computer Replacement

- Accelerate the 3 year replacement plan of the old In-Car Mobile Computers to 18 months.
- March 2008 – July 2008 – Install new In-Car Mobile Computers.

Next Steps: Cost and Budget In-Car Mobile Computer Replacement

- In-Car Mobile Computer hardware replacement and installation

575 new replacement Mobile Computers	$ 4,479,250
400 new DVRs for police patrol vehicles	$ 1,768,000
Broadband/wireless access	$ 376,320
Increase memory in 600 DPD mobile computers	$ 234,000
In Car Console construction	$ 226,619
Installation	$ 485,735
Total	$ 7,569,924

- Current Fiscal Year 08 Budget Funds

Equipment Notes 2007	$ 4,500,000
Equipment Notes 2005	$ 331,000
Total	$ 4,831,000

- Fiscal Year 09 Requested Funds $ 2,738,924

Summary

- The central core dispatching system has worked well from the first day and continues to perform well.
- The **interfaces** to the CAD systems must be fixed.
  - Current FY 08 Budget Funds $ 6,178,000
  - Requested FY 09 Funds $ 7,794,433
- Cannot underestimate the training that it will take for DPD and DFR to become familiar with the new TriTech In-Car Mobile Computer Software.

Questions