Marin County Sheriff's Office

MEMORANDUM

Date: December 5, 2005
To: Marin County Fire Operations Chief's Committee
From: Bill McMurray, Communications Manager
Regarding: MOSCAD Fire Station Alerting System

RECOMMENDATION

Proceed with deployment of the MOSCAD Fire Station Alerting System in a systematic manner.

GOALS

#1 Provide a reliable fire station alerting mechanism that meets NFPA 1221 requirements

#2 Move Ross Valley and Southern Marin regions onto the MERA fire dispatch system (FD DISP, Zone F and Zone G) as quickly as possible

#3 Provide a reliable public warning siren alerting mechanism

#4 Disconnect the patch with conventional radio channel F-6 and stop use of over-the-air alerting of fire stations and public warning sirens.

ACTION PLAN SUMMARY

1) Ross Valley region: Corte Madera FD, Larkspur FD, Kentfield FD, Ross FD, Ross Valley FD

   a) The RTU's appear to be ready to operate in the real world but they will need to be interfaced with the station audio and lights.

   b) Stations may cut over one at a time, but the transition onto MOSCAD needs to be done as quickly as possible. Each department must have all their stations completed in the same day. Novato FD took one full day to migrate their five stations, so it is reasonable to expect that it will take no less than two days to migrate all of the stations in the Ross Valley region (nine stations).

   c) As each station is cut over, the alerting of that station will be by MOSCAD only. CAD can handle both the MOSCAD and the Orbacom over-the-air systems simultaneously for each department or neighboring departments.

   d) When the last fire station in the Ross Valley region is cut over to MOSCAD, operations in that region to switch from the "G" zone to the "F" zone and dispatching will be performed on FD DISP, conjoined with Novato FD, not over the air on F-6.

2) Southern Marin region: Southern Marin FD, Mill Valley FD, Tiburon FD

   a) These RTU's need to be adjusted and station preparations need to be completed.

   b) As with the Ross Valley region, stations may cut over one at a time, but the transition onto MOSCAD needs to be done as quickly as possible. Each department must have all their stations completed in the same day. Depending on the experience in Ross Valley, it is reasonable to expect that it will take two days to migrate all of the stations in the Southern Marin region (seven stations).

c) As each station is cut over, the alerting of that station will be by MOSCAD only. CAD can handle both the MOSCAD and the Orbacom over-the-air systems simultaneously for each department or neighboring departments.

d) When the last fire station in the Southern Marin region is cut over to MOSCAD, dispatching will be performed on FD DISP, conjoined with Novato FD and the Ross Valley fire departments. When this is done, the station alerting will be done on MOSCAD, not over the air on F-6.

3) Conventional Channel-6 (46.500 MHz)

a) When the station in the Southern Marin region have completed their migration to MOSCAD and dispatching is performed on FD DISP, MERA will remove the patch between CTRL G-2

b) Conventional Channel-6 and, and the conventional Channel-6 resource will be removed from the Gold Elite communications console control system.

4) West Marin region: Marin County FD, Stinson Beach FD, Bolinas FD, Inverness FD and Skywalker Ranch FB (Muir Beach FD and Nicasio FD are not scheduled for MOSCAD RTU control)

a) The fire stations in West Marin (as well as Marin City and Throckmorton stations) need to be adjusted and tested. This can be done following that same work effort in the Southern Marin region.

b) As with the other region, stations may cut over one at a time, but the transition onto MOSCAD needs to be done as quickly as possible. The Marin County FD stations ought to be cut over first, and then the Inverness FD and Skywalker Ranch can be cut over. Obviously the distance between stations will affect the cutover planning; however the seven stations ought to be completed on two days.

c) As each station is cut over, the alerting of that station will be by MOSCAD only. CAD can handle both the MOSCAD and the Orbacom over-the-air systems simultaneously for each department or neighboring departments.

d) The West Marin region dispatching will remain on the patched MERA H-2/Conventional Channel-4 until the Bolinas Intelli-Repeater site is functioning. The Woodacre ECC can continue over-the-air alerting of the volunteer fire department pagers on Channel-4 until other provisions are made for that service.

5) Public Warning Sirens (Mill Valley, Corte Madera, Stinson Beach, Muir Woods Park)

a) Motorola has contracted with ProComm to install the RTU interface to the sirens. At Mill Valley FS06 and Corte Madera FS14, the siren is controlled through the fire station RTU. The other sirens have stand alone RTU's.

b) As each siren is cutover, alerting for that siren will be handled by MOSCAD at Marin Comm, or in the case of the Corte Madera sirens, Twin Cities PD. Provisions will need to be made to train Twin Cities PD and Novato PD personnel in the operation of the MOSCAD In-Touch Software for their roles in the system.

c) When all of the Mill Valley sirens are cut over to MOSCAD, Mill Valley PD will order disconnect the remaining communications links to their old conventional radio Channel-51 and that resource will be removed from the MERA Gold Elite communications console system.

d) The siren at the Throckmorton Ridge fire station will be installed when the new station is ready for occupancy.

e) The Stinson Beach siren is currently in limbo; ProComm is not installing that RTU. MERA will need to facilitate that change.

6) San Rafael region: San Rafael FD and Marinwood FD

a) This plan does not address the San Rafael because they have a significant issue involving their CAD interface.

7) Outstanding issues

a) Disposition of Conventional Channel-13 (46.120 MHz) – Fire Mutual Aid

b) Disposition of Fire RED and Fire BLUE conventional low band Fire Tactical Channels

MOSCAD Fire Station Alerting System

TEST PARAMETERS AND SUMMARY

Test date

November 30, 2005

Test participants

Marin Comm – Rich Brothers and Bill McMurray
MERA – Richard Chuck
Novato FD – Al Mello

Introduction

System users have had lingering concerns about the MOSCAD Fire Station Alerting system because of inconsistent behavior of the alerting in Novato for the past few months. MERA and Motorola, as well as the County CAD vendor Northrop Grumman, have been working on the vexing problems. In recent weeks, several programming issues on the Remote Terminal Units were identified and remedied in the Novato stations, as well as in the San Rafael and Ross Valley region stations.

We also encountered an unrelated problem with the CAD system failing over to the back up Front End Processor; this problem has also been resolved and tested to make sure it is working properly.

Marin Comm, MERA and Novato FD orchestrated a series of tests with many fire stations to make certain the MOSCAD system is working in a reasonable manner with three fire dispatch centers operating on the system simultaneously.

With the assistance of personnel at designated stations (N1, N2, N3, N4, N5, 13R, 15, 17, 19, and two RTU's at the Radio Shop), four specific tests were performed to evaluate the routine functionality and functionality under extreme conditions:

1) Simultaneous input of MOSCAD alerts to all of the listed stations from two MOSCAD stations and one CAD station on the primary Front End Processor (FEP);

2) Simultaneous input of MOSCAD alerts to all of the listed stations from two MOSCAD stations and one CAD station on the back up FEP;

3) Simultaneous input of MOSCAD alerts to all of the listed stations from two MOSCAD stations into the primary FEP and the CAD station on the back up FEP;

4) Seven minutes of continuous inputting of MOSCAD alerts to all of the above listed stations and twelve other stations that were not staffed with fire personnel observing the RTU. This test was simply looking for system errors caused by data conflicts due to radio channel overload. The additional twelve stations were: 14, 16, 18, 20, 21, 51, 52, 54, 55, 56, 57 and 58. In this test, we added one more MOSCAD station and one more CAD station to input alerts into the primary FEP.

The first three tests were intended to evaluate real world activity, albeit a heavier load than we might normally expect, such as an dispatch to a major fire such as the Mt. Tam Mutual Threat Zone – the equivalent of three dispatch centers alerting eleven fire stations simultaneously under varying FEP configurations – first the primary, then the secondary, and an attempt to produce a conflict between the two FEP's.

The last test (#4) was intended to stress the system as much as possible. To add to the data "chaos", at about the four minute mark, we added a system check into the mix. That is where the FEP "interrogates" each station RTU to make certain that it is operational. This test lasted a full seven minutes of non-stop alerting, including the last three minutes with the system check. Richard Chuck was monitoring the MERA MOSCAD analog data channel – it was non-stop data noise for the duration of the test.

We concluded the test with the mutual observation that the system worked much better than any of us had anticipated. It appears that the remedial work at the fire station RTU's was effective, and separate testing of the CAD fail-over process demonstrated that feature worked as intended also. There were two RTU failures, one of the test boxes at the Radio Shop and fire station 55 during test #4. We were able to reset the alarm on station 55 without any further problems and the test box appears to have an unrelated problem.