

April 16, 2018

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**RE: MERA Next Generation Radio Communications Contract – Existing System Support**

Motorola has offered to investigate methods to support the existing MERA system during an extended deployment schedule. This investigation includes identifying potential sources of discontinued equipment to augment the existing Marin County spare equipment pool as well as extending the existing Motorola maintenance agreement. Of course, the best method to avoid support concerns is to quickly migrate to the new ASTRO 25 system.

Currently, the Marin County Communications group maintains the existing system with a Technical Support service agreement over the phone from Motorola. During the extended deployment schedule, Motorola will provide an additional year of Technical Support with commercially reasonable efforts for the existing system. The existing SmartZone system is beyond its support period so this extension is an exception to our normal support policy.

The other concern is the availability of replacement parts to supplement the existing spares managed by Marin County. MERA staff compiled a list of equipment/items that are critical to ensure continued operation of MERA's current T-band system through cutover to the Next Generation system. Motorola has investigated the availability of these parts from various sources, internally and externally.

The list includes equipment formerly manufactured by Motorola and other equipment which was sourced from Motorola third party suppliers. All of this equipment has been cancelled and is no longer available for sale as new product.

**Motorola Manufactured Equipment**

Motorola has been able to locate very limited sources of the following categories of equipment. In the event of a catastrophic failure of the existing MERA system and exhaustion of the current MERA spares, Motorola could use these refurbished components to help to restore the system while repairs are made to the damaged components. Since

these parts are also used to support a global customer base with similar circumstances, we will monitor their availability and update you if they become depleted.

<b>System Component</b>	<b>Potential System Impact</b>	<b>Current Depot Support</b>
6809 Central Site Controller Boards & Firmware: CSC, ACB, TSC, TIB, DCB boards	The prime site controllers are redundant so a failure of a single board should not impact service on the system allowing time to repair and restore the system.	Commercially reasonable efforts to repair these components are available through Motorola.
6809 Site Controller Boards & Firmware: RESC, IRB, RIB, RTIB boards	Loss of a card could affect either one site in a simulcast impacting coverage or a channel in the simulcast cell impacting capacity.	Commercially reasonable efforts to repair these components are available through Motorola.
6809 Central Site Controller Power supplies Model # CL1756 Model # CL1696	Loss of a remote site controller power supply could affect the system coverage. These solid state power supplies are very reliable and are not affected by the aging capacitor issues of older models.	Commercially reasonable efforts to repair these components are available through Motorola.
ASTRO Tac Comparator Controller board & Wireline board	Failures of these components could result in loss of a channel impacting system capacity.	Repairs supported until 12/31/2020
Gold Elite Power supplies	These power supplies are load sharing and loss of a single power supply typically does not affect the dispatch console system.	Repairs supported until 12/31/2018. Commercially reasonable efforts will be available after this date.
Embassy Switch components including MEGEG Boards	The Embassy switch serves as the centralized audio switch for radio sites and dispatch consoles. Failure modes in this device are complex and may affect system capacity and functionality depending on specific devices and configurations.	Repairs supported until 12/31/2018. Commercially reasonable efforts will be available after this date.
Quantar boards	Single channels may be affecting impacting system capacity.	Repairs supported until 12/31/2020.
Smart-X protocol converters	An entire site or simulcast could be impacted by a failure of this device which would affect system coverage.	Repairs supported until 12/31/2020.

Motorola still has the capability to program codeplugs and provide firmware for the 6809 controller boards.

**Third Party Equipment with Potential Alternatives**

Motorola has been so far been unable to locate any sources of the following parts. In the event of a failure of one of these components, substitution of an alternative which performs the same or similar function may be the best course. These alternatives could be incorporated into the new system.

<b>Component</b>	<b>System Impact</b>	<b>Potential Alternatives</b>
Vega 225M tone remote adapter	This would affect a deskset at a single location.	Equivalent adapters are available from other vendors such as GAI-Tronics.
La Marche power systems	The DC power systems have redundancy so loss of one component would likely not have an impact. Channels may need to be reduced or a microwave link may be lost. In either case the system would continue to operate though its capacity or coverage may be impacted.	Equivalent DC power systems from other vendors such as Eltek are available and could be implemented and reused for the new system.
All FSA boards and controllers	This could result in the loss of automatic alerting of a fire station. Voice communications could be used as a backup in the interim.	Repair of FSA 4000 is offered on a commercially reasonable basis.  Portions of the new Fire Station Alerting (FSA) system could be implemented early with alternate interfaces reusing the existing system to serve the impacted stations. Alternate procedures may need to be implemented while the replacement is installed.
Efratom GPS controllers	Failure of one of these time frequency standards will cause decay in system audio as the frequency drifts.	Alternate time frequency standards compatible with the new system could be implemented as an interim solution.
Constellation and Tru-Point microwave	Failure of these components would like only affect a single link. Alternate routing in the backhaul should protect the system while an alternate is implemented.	Components to replace modules in these particular microwave assemblies are not readily available, however, complete replacement of a link with new equipment could resolve a failure.

**Unique Third Party Equipment Components with no Alternative**

Some of the items on the list are not available and do not have a current alternative. Motorola has also contacted other customers undergoing similar migrations. In particular, San Bernardino County and Sacramento County are replacing systems with similar components as

the MERA system. Since these are customer assets, Motorola can only assist in connecting MERA with these administrators. However, the administrators of these systems have expressed willingness to transfer their decommissioned assets to MERA to help support another public safety system. Their inventory may include some of these unique elements as well as items from the previous categories.

<b>Component</b>	<b>Support Options</b>
T Bar boards	Commercially reasonable efforts to repair these components are available through Motorola.
TeNsr/Zhone DSM II Board	DSM IIs are still available from Zhone for compatible models of the channel bank. Repairs are typically available for five years after cancellation of a product.
Fujitsu Multiplex	Motorola needs more detail on the particular multiplexer used in the system to determine specific support options.
Larus loop switch cards	Motorola has been unable to find support for these units.
Universal Simulcast Controller Interface (USCI) boards TRN7349A	Commercially reasonable efforts to repair these components are available through Motorola.

Refurbished equipment also is available for purchase through other sources such as Sunny Communications (<https://used-radios.com>).

In the event of an extensive failure of the existing MERA system beyond the ability of Marin County Communications to support on their own with their existing spares, Motorola has identified options for repair and support. Motorola will be available to assist with those restoration efforts when requested by Marin County.

If you have any additional questions, please contact me at 619-203-3795, or you can email me at [Kent.Martin@MotorolaSolutions.com](mailto:Kent.Martin@MotorolaSolutions.com).

Sincerely,



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