

Deficiency #1. EQUIPMENT FAILURES	
CIO/OFT Assessment of the Deficiency's Remediation by M/A-COM	CIO/OFT Deficiency Final Disposition
<p>From the November 2008 System Integration Test (SIT): 15 instances of equipment failures occurred which required M/A-COM service action. Equipment failures are still excessive. Failure statistics are as follows:</p> <ul style="list-style-type: none"> • 5 of 18 or (28%) of mobile radios (note- one radio had 2 instances of failure) • 8 of 30 or (27%) of portable radios • 1 of 1 or (100%) Fixed Radio Access Terminal (FRATs) <p>After the October 15 certification date and the expiration of the 45-day cure period, M/A-COM programmed and configured all subscriber equipment for the SIT. Subsequent to this action, and before SIT could begin, 100% of the mobile and V-TAC radios required a second programming and configuration reload.</p> <p>Types of failures revealed during SIT included:</p> <ul style="list-style-type: none"> • Mobile Radio Backlighting Failures (multiple). • Defective Portable Radio hardware (transmitter, Push-To-Talk switch). • Portable radio with "black screen" that rendered it inoperable. • A mobile radio with a stuck volume control. • A portable radio with a corrupted radio configuration. • A portable radio that would no longer enter off-network modes or change OpenSky profiles. <p>The above failures occurred throughout the November test period and were experienced by all test teams.</p> <p>In addition, instances of unintentional "open microphone" events were observed similar to findings during the July SIT. This refers to a radio's microphone turning on without user intervention and the subsequent risk of audio from the user being transmitted unintentionally.</p> <p>By comparison, existing radio equipment failure rates for New York State Police are less than 1% (Source: State Police data).</p> <p>Summary: While M/A-COM did remediate some of the issues seen during the July SIT, significant equipment failure issues remain, such as the open microphone and portable radio transmitter problems. Additionally, several new hardware and software issues were observed.</p>	<p>Not Remediated</p>

Deficiency #2. UNINTERRUPTED ROAMING	
CIO/OFT Assessment of the Deficiency's Remediation by M/A-COM	CIO/OFT Deficiency Final Disposition
<p>From the November 2008 SIT:</p> <ul style="list-style-type: none"> • Testing revealed improvements with roaming performance, but instances of "lost audio" during hand-offs were identified. <p>The evaluation of Roaming and Handoffs Communications was performed per requirements defined in the RFP Section 2.10 Continuous Network Availability: ...seamless handoff/roaming requiring no active monitoring or manual switching.... (e.g. re-keying), section 1.01 (B) (8). Uninterrupted roaming throughout the system and the proposed "seamless handoff" solution by the prime contractor.</p> <p>The minimum acceptable Audio Quality (transmitted and received) utilized during the evaluation process was "Speech understandable with repetition only rarely required. Some noise/distortion."</p> <p>Summary: Test results demonstrated that audio quality was not consistently acceptable while roaming during active voice transmit/receive. The roaming/handoff test was conducted with two approaches; short transmissions and long transmissions.</p> <p>During short transmissions, the handoff in most cases occurred between voice transmissions, nevertheless about 15% of the transmissions had 2-40 seconds of lost or poor audio prior to or during the handoff.</p> <p>During long transmissions, when handoffs occurred during active talking, there was 2-10 seconds of lost audio every time.</p>	Not Remediated
Deficiency #3. PROJECT DELAYS	
CIO/OFT Assessment of the Deficiency's Remediation by M/A-COM	CIO/OFT Deficiency Final Disposition
<p>From November 2008 SIT: Technical problems still exist which would require further remediation and testing leading to further project delays.</p> <p>Summary: The project delays to date are directly related to M/A-COM's inability to deliver a SWN radio technology solution that meets contract acceptance criteria.</p>	Not Remediated

Deficiency #4. CONFORMANCE TESTING FAILURES	
CIO/OFT Assessment of the Deficiency's Remediation by M/A-COM	CIO/OFT Deficiency Final Disposition
<p>From the November 2008 SIT: SIT results indicate that a significant number of deficiencies remain unremediated.</p> <p>On October 15, 2008, M/A-COM certified the system was ready for State testing. As part of the certification, M/A-COM indicated that their conformance testing had identified five minor issues. CIO/OFT testing, however, found a far more significant number of problems. Based on this discrepancy, CIO/OFT finds that M/A-COM's conformance test methodology and protocol is flawed and deficient, since it has continuously failed to identify significant deficiencies with the system.</p> <p>CIO/OFT executed a number of M/A-COM provided test scenarios included in M/A-COM's "User Test Guide." Several problems were identified. Noteworthy were two scenarios involving extended coverage with Vehicular Repeaters, the Vehicular Tactical Network (V-TAC). To validate CIO/OFT test results, M/A-COM ran the same scenarios with CIO/OFT observing. M/A-COM test results mirrored CIO/OFT test results. This confirmed the reliability and validity of CIO/OFT's test results and methodologies.</p> <p>Summary: M/A-COM failed to adequately plan, design, and execute a reliable Conformance Test. Software and hardware problems discovered during the SIT point to lack of sufficient and effective regression testing. Collectively, this has contributed to four failed Operational Tests dating back to September 2007.</p>	Not Remediated
Deficiency #5. QUALITY ASSURANCE	
CIO/OFT Assessment of the Deficiency's Remediation by M/A-COM	CIO/OFT Deficiency Final Disposition
<p>From the November 2008 SIT: SIT results show M/A-COM's quality assurance process remains deficient, as evidenced by its failure to remediate deficiencies. Of particular significance is the high software and equipment failure rates experienced by the CIO/OFT test team for the subscriber radios.</p> <p>Summary: Quality assurance has not been satisfactorily remediated based on the SIT results.</p>	Not Remediated

Deficiency #6. VEHICULAR REPEATERS	
CIO/OFT Assessment of the Deficiency's Remediation by M/A-COM	CIO/OFT Deficiency Final Disposition
<p>From the November 2008 SIT: The SIT revealed issues remained with M/A-COM's Vehicular Repeater, the Vehicular Tactical Network (V-TAC).</p> <p>Deficiencies identified include:</p> <ul style="list-style-type: none"> • Long attachment times when portables attach to the network after leaving V-TAC attachment. • Inconsistent operation and instability of portables attached to V-TAC in network extension mode. • Portables lost their V-TAC connection and are not able to reconnect to the network for prolonged period of time even though a strong signal is available. • Frequent detachment of portables (manually and automatically attached) from the V-TAC even with acceptable signal strengths in the -85dBm to -95dBm range. • Instances when portables in good coverage from V-TAC (-77dBm) detached from the V-TAC and reattached shortly thereafter while in idle mode. • Inconsistent operation of portables in XCOV mode with multiple V-TACs: Some portables experienced acceptable transmit/receive and seamlessly switched from one V-TAC to the other without problems. Other portables had more disrupted communications and experienced significant amounts of detachment from V-TACs before reattachment occurred. Some portables were attaching to the V-TAC with poor signal strength, while a V-TAC with better signal was available. • Inconsistent operation and repeated failures of selective call function on portables attached to V-TAC in XCOV mode. • Portables attached to V-TAC experience frequent delays receiving grant tones and instances of no tone indicators, including loss of transmitted audio after receiving a grant tone. • The counter (client alias display) of the V-TAC does not always accurately represent how many clients are actually attached to the V-TAC and often reported portable radios that were no longer attached to the V-TAC. • Inconsistent operation and repeated failures of emergency declaration function on portables attached to a V-TAC. • Portables received remove tones when trying to transmit in close proximity to a V-TAC. • Experienced two occasions when a V-TAC could not acquire a communication channel to support extended network mode. • Observed digital audio bursts (noise) at the end of transmission from the portable attached to V-TAC. • V-TAC pre-empt a portable attached to the V-TAC during portable transmit. • A V-TAC voice transmission can be pre-empted by the attachment event of a 	<p>Not Remediated</p>

<p>portable to the same V-TAC.</p> <p>Summary: The V-TAC did not provide stable and reliable performance.</p>	
<p>Deficiency #7. EMERGENCY CALLS</p>	
<p>CIO/OFT Assessment of the Deficiency's Remediation by M/A-COM</p>	<p>CIO/OFT Deficiency Final Disposition</p>
<p>From the November 2008 SIT: Problems continue to exist with emergency call behavior and functionality. Deficiencies identified include:</p> <ul style="list-style-type: none"> • One instance where two emergencies were declared, but the console log showed four emergency declarations. • One instance when an emergency was declared in the PRB from a mobile radio. The emergency was cleared without user action 10 seconds after the declaration. However, the emergency was still present on the mobile radio which declared the emergency. • Any user, who has previously declared an emergency, will clear all other active emergencies in the act of clearing their own emergency. • When an emergency is declared and active and a second emergency is declared by another radio on the talk group, the alert tone associated with the second emergency declaration is not heard by the other radios. • Several instances when emergency declarations initiated by radios were not logged/received at the console. • Radios stayed in the default emergency group after the emergency was cleared and did not revert to original Talk Group. • One instance when a second emergency was declared during the "Hot Mic" period of a previously declared emergency, causing the radio declaring the second emergency to get stuck in "emergency pending" mode. The second radio also lost its "VRS+" radio registration status. The radio had to be turned off and rebooted to clear the lockup. • Multiple occasions when the "Hot Mic" period did not occur after a radio declared an emergency. • Instances when the "Hot Mic" period occurred prior to the emergency alert tone. • If a select call is in progress with an active emergency set, the declaration of a second emergency does not pre-empt the select call and neither the emergency tone nor "Hot Mic" audio is heard by the radios in active select call mode. <p>Summary: Deficiencies with the emergency call function have not been remediated.</p>	<p>Not Remediated</p>

Deficiency #8. DATA THROUGHPUT	
CIO/OFT Assessment of the Deficiency's Remediation by M/A-COM	CIO/OFT Deficiency Final Disposition
<ul style="list-style-type: none"> M/A-COM submitted a revised data coverage acceptance test plan in October 2008 at approximately the same time its remediation test results were received. M/A-COM modified the test methodology for PRB mobile data throughput without CIO/OFT review. M/A-COM claims a passing test result using this new methodology, which employs averaging versus discrete results. CIO/OFT has not concurred with this change. Test conditions were setup to reflect ideal data performance and not "real world" application (i.e. voice registration turned off, roaming turned off). The test results for certain lab tests are over 1 year old and are based on a much earlier version of software than is currently in use in the PRB. <p>Summary: M/A-COM submitted a revised acceptance test plan with results that demonstrated a passing result. However CIO/OFT has not accepted this revised methodology because the test methodology, which directly impact results, was changed unilaterally by M/A-COM. There are also concerns over the version of software used for conducting the testing. M/A-COM has not demonstrated to the state that regression testing was performed with the new version of the software.</p>	Not Remediated
Deficiency #9. SYSTEM-WIDE CALL TYPE	
CIO/OFT Assessment of the Deficiency's Remediation by M/A-COM	CIO/OFT Deficiency Final Disposition
<p>From the November 2008 SIT: Test results revealed this feature is functional and test results were satisfactory.</p>	Remediated
Deficiency #10. NETWORK-WIDE CALL TYPE	
CIO/OFT Assessment of the Deficiency's Remediation by M/A-COM	CIO/OFT Deficiency Final Disposition
<p>From the November 2008 SIT: Test results revealed this feature is functional and test results were satisfactory. It should be noted, however, that the first test attempt by CIO/OFT failed due to incorrect coverage class: Site PRB1555 (A097) which was not included in the Network All-Call. This was quickly corrected and resolved by M/A-COM.</p>	Remediated
Deficiency #11. SYSTEM ACCESS TIME	
CIO/OFT Assessment of the Deficiency's Remediation by M/A-COM	CIO/OFT Deficiency Final Disposition
<ul style="list-style-type: none"> M/A-COM conducted technical tests in October 2008 to verify this requirement, however the test results do not indicate contractual compliance as the measured times reported exceed contractual requirements. 	Not Remediated

<p>Summary: The results submitted by M/A-COM document that contractual requirements have not been met. No further explanation from M/A-COM was provided.</p>	
<p>Deficiency #12. NETWORK RELIABILITY</p>	
<p>CIO/OFT Assessment of the Deficiency's Remediation by M/A-COM</p>	<p>CIO/OFT Deficiency Final Disposition</p>
<p>From the November 2008 SIT:</p> <ul style="list-style-type: none"> • A period of gateway unavailability occurred after M/A-COM performed site servicing and did not reactivate the gateway connection. M/A-COM does not have a method to monitor gateway status, therefore automatic detection of the problem did not occur. In this instance, the outage exceeded 24 hours before it was detected. This occurred at the start of the November testing. • One instance, on November 14th, a cell site in northern Erie County was unavailable for over 9 hours due to a leased circuit outage. • Multiple instances of momentary site connectivity losses were experienced with a cell site in Chautauqua County. This is due to ongoing issues with a leased circuit to this site. During a power outage in the area on November 18th, this site also experienced a leased circuit outage of approximately two hours due to loss of the leased line circuit. • Several other cell sites experienced momentary losses of connectivity due to ISM (unlicensed) radio link issues. • The total measured site connectivity outage time was over 14 hours for the 3 week SIT period. This does not include the 24+ hours of gateway outage. • In the 3 week SIT period alone, M/A-COM far exceeded the maximum permitted outage time (52.6 minutes) for an entire year. <p>Summary: Multiple instances of network outages indicated network reliability remains unremediated. For the 3 week SIT period, there were over 14 hours of outages due to site connectivity, as well as 24+ hours of gateway outages.</p> <p>Additionally, M/A-COM's Network Operations Center (NOC) does not have alarms to monitor gateway status and, therefore, can not troubleshoot.</p>	<p>Not Remediated</p>
<p>Deficiency #13. OFF-SYSTEM CALL OPTIONS</p>	
<p>CIO/OFT Assessment of the Deficiency's Remediation by M/A-COM</p>	<p>CIO/OFT Deficiency Final Disposition</p>
<p>From the November 2008 SIT:</p> <ul style="list-style-type: none"> • Testing revealed functionality is available and meets contractual requirements. • Deficiencies in configuration and training were noted, causing test execution difficulties. • Testers' consensus was that coverage and ease of communication in P25 mode exceeded those present with OpenSky VTAC modes. 	<p>Remediated</p>

<p>Summary: Features are available and met contractual requirements.</p>	
<p>Deficiency #14. FULL-DUPLEX MODE</p>	
<p>CIO/OFT Assessment of the Deficiency's Remediation by M/A-COM</p>	<p>CIO/OFT Deficiency Final Disposition</p>
<ul style="list-style-type: none"> The contractual requirement for full-duplex was clearly specified in the Request for Proposal (RFP) and reiterated in the Official RFP Modifications, Clarifications and Answers to Questions (see <i>Question and Answer #310 as incorporated in the SWN Contract</i>). Additionally, M/A-COM did not take exception to this requirement or initiate a change order request. <p>Summary: Full-duplex mode is a contract requirement and M/A-COM radios provided to date do not support this feature.</p>	<p>Not Remediated</p>
<p>Deficiency #15. TOWER HAZARD-LIGHT MONITORING</p>	
<p>CIO/OFT Assessment of the Deficiency's Remediation by M/A-COM</p>	<p>CIO/OFT Deficiency Final Disposition</p>
<ul style="list-style-type: none"> The contract requires that tower hazard-light monitoring is the responsibility of the prime contractor. This is a State requirement and is in addition to any FCC requirements for tower hazard-light monitoring. <p>Summary: The RFP requirement stands as per the contract.</p>	<p>Not Remediated</p>
<p>Deficiency #16. GATEWAYS</p>	
<p>CIO/OFT Assessment of the Deficiency's Remediation by M/A-COM</p>	<p>CIO/OFT Deficiency Final Disposition</p>
<p>From November 2008 SIT: Gateway testing identified the following deficiencies:</p> <ul style="list-style-type: none"> Consistent and acceptable voice quality was not demonstrated. Poor audio or audio imbalance when communicating through the gateways continued to be experienced. Hamburg Police Department: Poor audio quality from the Hamburg Police system to OpenSky was repeatedly experienced. During testing of the Hamburg Police Department Gateway, the SWN dispatch console could not transmit on any talk group associated with the gateway. New York State Park Police and Park Operations: During testing of New York State Park Police and Park Operations Gateways, the SWN dispatch console could not transmit on any talk group associated with the gateways. A console-generated patch involving two gateway talk groups was unsuccessful and caused interference across both patched systems. 	<p>Not Remediated</p>

<p>Summary: Gateways continue to experience numerous deficiencies with audio quality and audio balance between legacy and OpenSky equipment. In addition, interoperability between two gateways (talk group patching) was not functional.</p>	
<p>Deficiency #17. CALLER ALIAS</p>	
<p>CIO/OFT Assessment of the Deficiency's Remediation by M/A-COM</p>	<p>CIO/OFT Deficiency Final Disposition</p>
<p>From the November 2008 SIT:</p> <ul style="list-style-type: none"> • Instances were found when the display of caller alias on the radio had significant time delay, especially evident on portables attached to the V-TAC in network extension mode. • During selective call to the console, alias of the callee (console alias) was not displayed on the radio placing selective call. The line of the display remained empty for the duration of selective call. <p>Summary: Deficiencies associated with alias display continue.</p>	<p>Not Remediated</p>
<p>Deficiency #18. DIGITAL VOICE BUFFERING</p>	
<p>CIO/OFT Assessment of the Deficiency's Remediation by M/A-COM</p>	<p>CIO/OFT Deficiency Final Disposition</p>
<p>From the November 2008 SIT: Testing confirms the feature is available and functional.</p>	<p>Remediated</p>
<p>Deficiency #19. OVER-THE-AIR PROVISIONING (OTAP)</p>	
<p>CIO/OFT Assessment of the Deficiency's Remediation by M/A-COM</p>	<p>CIO/OFT Deficiency Final Disposition</p>
<p>From November 2008 SIT:</p> <ul style="list-style-type: none"> • SIT assessment found Over-The-Air-Provisioning (OTAP) was completed for the applications that M/A-COM listed as capable of OTAP, but the duration to complete was long and some set-up problems were encountered. • M/A-COM has recently indicated that certain applications cannot be loaded over-the-air and instead require direct cable connection. • The test had to be restarted part way through the execution when it was learned that M/A-COM was executing the test from their Lowell, Massachusetts facility instead of the PRB NOC. M/A-COM's PRB NOC staff, where the CIO/OFT observer was present, was unaware that any test was being performed. Additionally, a M/A-COM senior engineer had to be sent to the NOC from the field to conduct the downloads. • On average, the portable radios took three hours to upgrade, while the mobile radios took one hour to upgrade, for those applications that can be completed via OTAP. The V-TAC download time was not observed. <p>Summary: Deficiencies associated with OTAP continue.</p>	<p>Not Remediated</p>