GENESIS SOFTWARE SOLUTION BRIEF

GENWATCH3® UEM ENHANCEMENT

CONTROL THE CLUTTER • IMPROVE WORKLOAD PRIORITIZATION • TAKE OUT THE GUESSWORK

GenWatch3® Unified Event Manager (GW3 UEM) is an enhancement to GenWatch3 ATIA (GW3 ATIA) and allows Radio System Managers to monitor Simple Network Management Protocol (SNMP) traps from devices operating on a Motorola ASTRO® 25 radio system. (Note, a device could be anything that is able to send SNMP.) By using the GW3 UEM software, Radio System Managers are able to capture, assign the severity of, and organize these traps, which helps them address each quickly, and prioritize workloads more efficiently.

All traps are sent to GW3 via the Motorola UEM Northbound Interface (NBI), or direct from an SNMP enabled device, and are classified as either an event or an alarm. Each time the Motorola UEM polls a device on the system, an 'event' record is created. SNMP enabled devices "send", not poll for, an alarm record.

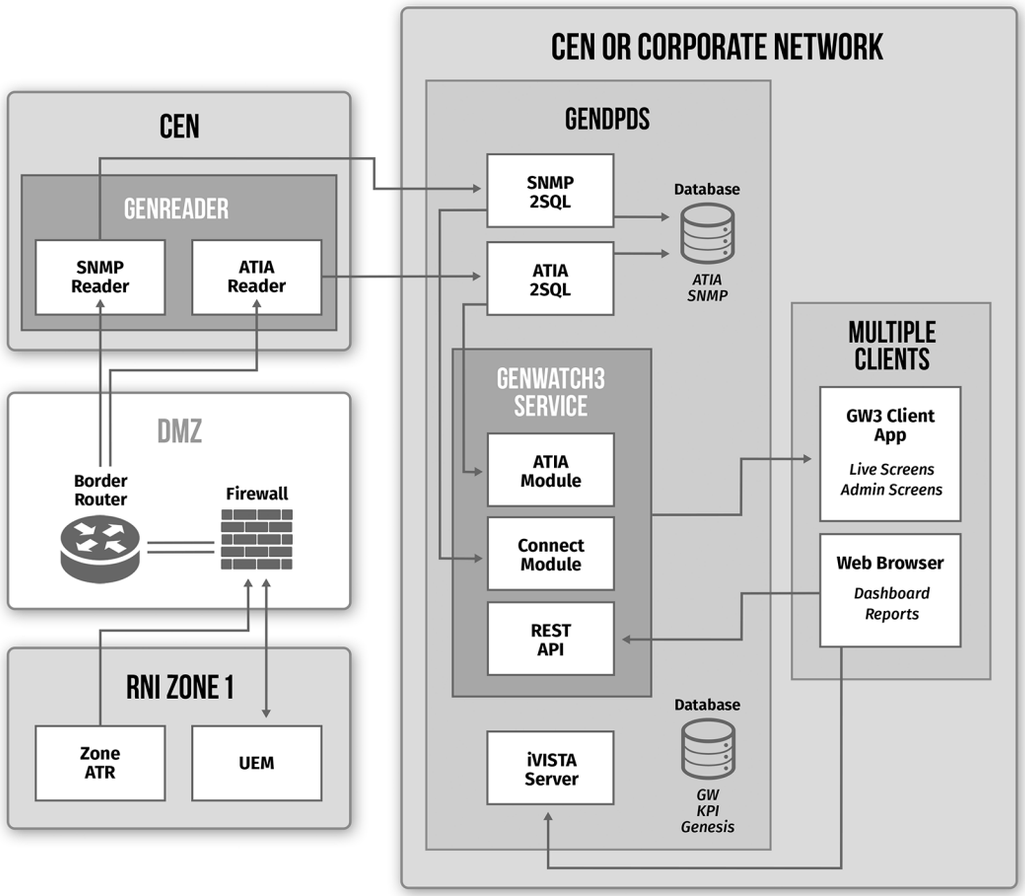

Figure 1: Basic Single Zone System Diagram with UEM

Once an event or alarm occurs, it is processed and centrally stored in the same Microsoft SQL datatables as GW3 ATIA for as long as needed. From there, Radio System Managers are able to run reports and/or generate important notifications on specific events and/or alarms. GW3 UEM related activity is viewable in the Activity Module within the GW3 desktop application, as well as in the iVISTA browser-delivered solution.

To address the large volume of events and alarms received by the Motorola UEM, the GW3 UEM is able to "throttle" the number sent to a more manageable rate. Those same events can also be "filtered" based on what a Radio System Manager would like to see, and/or "forwarded" to an upstream manager. Filtered events or alarms are still being archived even though they may not appear within iVISTA.

Figure 1 shows what a basic single zone system diagram with GW3 UEM would look like. The Motorola UEM port sends the SNMP traps, again through the NBI, to a GW3 Reader (Reader). The Reader listens for that data via UDP and passes it to the GW3 Data Processor (DP) as TCP/IP. The DP then takes the packets, parses them out, and sends them to the GW3 Data Server (DS), which writes the information into SQL datatables. The DP also provides the data feed to the GW3 Host (Host) for the desktop application Modules and iVISTA. All GW3 Clients connect to the Host. If connection issues arise between the Reader and the DP, the Reader will buffer for about 30 days to avoid losing any data.

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GENWATCH3® ATIA AND MOTOROLA LICENSES ARE REQUIRED

As previously mentioned, GW3 UEM is an enhancement to GW3 ATIA; therefore GW3 ATIA must be deployed first. The GW3 UEM software resides on the same Reader and DPDS as GW3 ATIA so no additional hardware is needed. The software license is also perpetual and licensed by the zone. Prior to installing and using GW3 UEM, Motorola will need to license the NBI.

GENWATCH3 UEM COMPLIES WITH IT SECURITY BEST PRACTICES

The GW3 UEM, as well as GW3 ATIA, software complies with IT Security best practices. iVISTA, in particular, is SSL encrypted and supports up to TLS 1.2. Since iVISTA is a browser-delivered solution, it can be deployed securely on the internet or intranet and has no limit to the number of users that can be given secure login credentials.

MANAGE ALL EVENT OR ALARM ACTIVITY IN A CENTRALIZED VIEW

The GW3 UEM activity is displayed within the iVISTA Map Display. This is the same map used to show the GW3 ATIA traffic. iVISTA includes a map tile server, Open Street Maps, to view the location of each monitored device requiring no internet connection to run the application. Radio System Managers may choose to use an ESRI or any GIS map as well as Google Maps.

Devices are manually assigned to a location on the map. The devices' current alarm state, as reported by the Motorola UEM, is shown and represented by a pin icon (***Figure 2***).

The color of the pin represents the severity level of any or all alarms at a particular location. If desired, a Radio System Manager can elect to set a Severity Threshold which would change the color of the pin icon to either green or red thereby simplifying what is seen. If, for example, the Severity Threshold is set to "Major", all alarms with that classification or above will have a red pin color. Anything below "Major" would have a green pin color. The threshold is set and activated from the gear icon located on the left-hand menu of the iVISTA Map Display under the SNMP section (***Figure 2***).

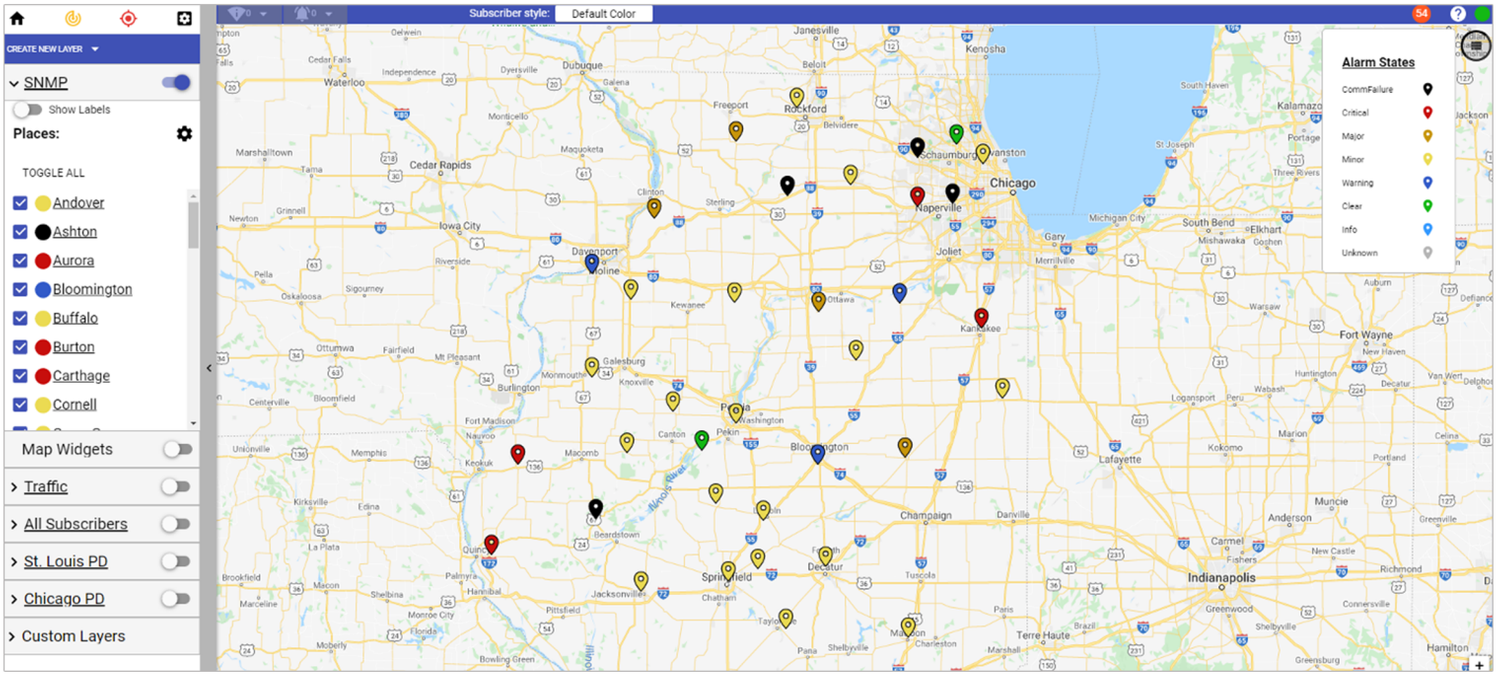

Figure 2: GW3 UEM Enhancement Map Display with Standard Pin Colors

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Selecting each pin icon will open up a window (***Figure 3***) with the timestamp, most severe alarm status of all devices at that site, and another link to view the list of devices operational at that site.

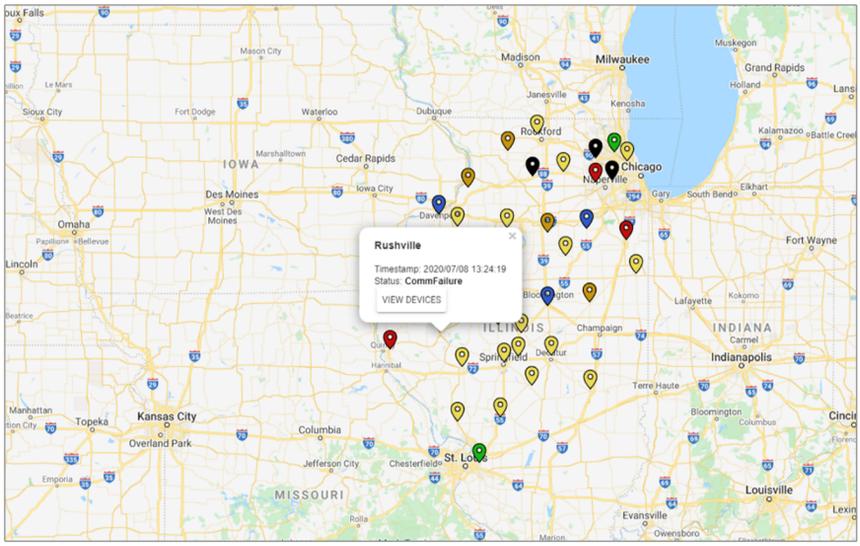

Figure 3: Pin Window

Clicking on the additional link will pop up a secondary window (***Figure 4***) with more information about each device at that location; its description based on what's received from the Motorola UEM, the IP address and current alarm status. The square in the lower right-hand corner of the device window will allow a Radio System Manager to see a historic list of all events related to that device.

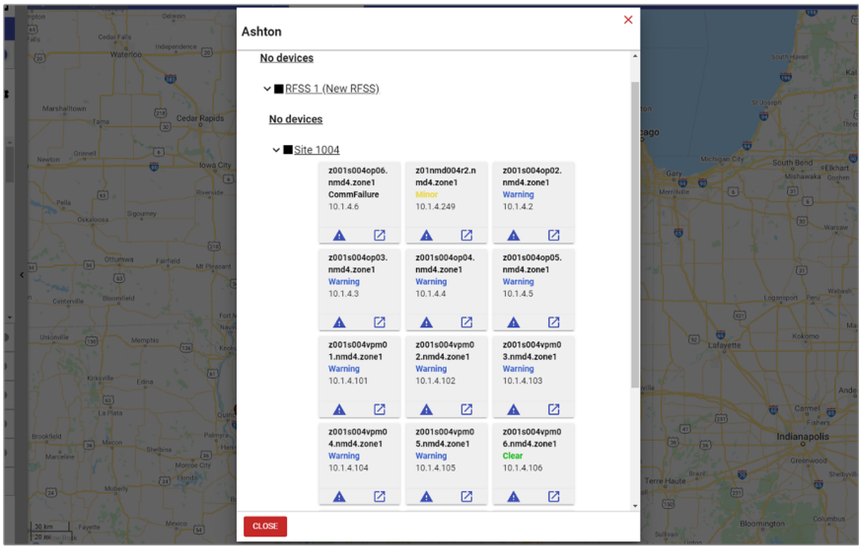

Figure 4: Device Window

Selecting the triangle icon on the lower left-hand corner provides a list of alarms for that device and includes the alarm state, the start and end time and date of the alarm, its location, device, and description as seen in ***Figure 5***.

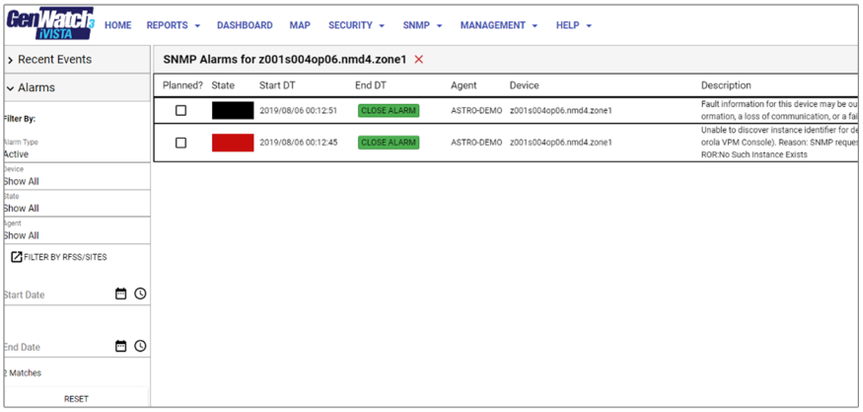

Figure 5: Device Alarms List

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INFORMATION CAN BE FILTERED FOR TRENDING AND REPORTING

With all system-wide events or alarms on one screen, GW3 UEM allows Radio System Managers to filter the view for historical trending and more precise reporting. Filtering is done by type, device, alarm state, agent (ie, which Motorola UEM) and the time-stamp received by the Motorola UEM (***Figure 6***). Should an alarm generate as a result of a planned outage, selecting "Planned" from the list of records will make sure it is flagged as such within the report.

One of the most powerful tools in GW3 is the reporting capabilities. As mentioned, Motorola UEM data is received by GW3 through the NBI and archived packet by packet for as long as desired. Reports are generated in iVISTA with views specific to GW3 UEM such as Site Availability (e.g., Failsoft and Site Trunking events) and Channel Availability (e.g., Illegal Carriers and Device Malfunctions).

Each report is filtered based on a set of parameters. Radio System Managers, or other authorized users, may select a time and date, as well as other resource considerations before running the report. Results are then viewed in a browser window or downloaded into Microsoft Excel for sorting, additional filtering and printing to a PDF. For recurring reports, iVISTA includes the ability to schedule reports to be run on a specified cadence.

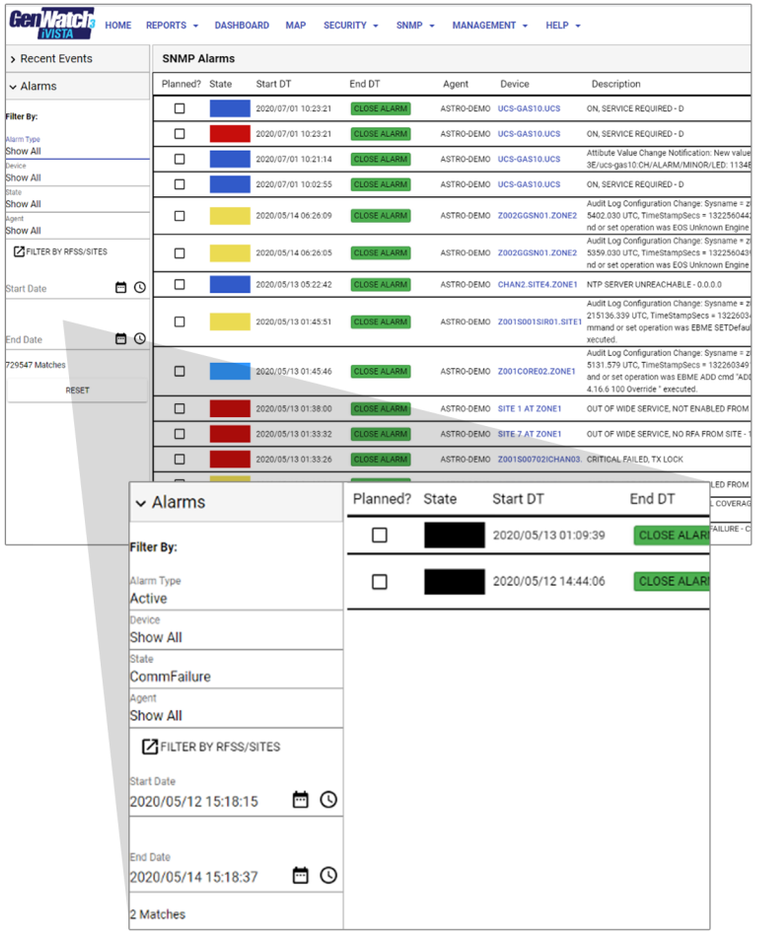

Figure 6: System-Wide List of SNMP Alarms with Alarms Filter

GENWATCH3® UEM HAS A ONE-WAY CONNECTION TO THE MOTOROLA UEM

When an alarm has been dealt with and that device is back up and running, it can be manually cleared from iVISTA within the SNMP Alarm screen (***Figure 6***) . Alarms are able to be cleared from iVISTA automatically as well, but this is dependent upon GW3 receiving the closure notification from the Motorola UEM. The GW3 UEM has a one-way connection to the Motorola UEM through the NBI.

TRIGGER HELPS MAINTAIN AWARENESS OF SYSTEM PERFORMANCE

Using GW3 UEM with the desktop application's Trigger Module allows Radio System Managers to create and set notifications on specific alarms and events by specifying the presence of an event, for example entering into Site Trunking mode, lack of an event or periodic evaluation. These real-time notifications may be sent in the form of an email (with the use of an Email Gateway), SNMP trap, external relay activation, or desktop alert.

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EXTENDED SERVICE AGREEMENT OPTIONS THAT PROTECT YOUR INVESTMENT

Genesis provides a 1-year standard warranty on all Genesis software products which begins on the date of installation (i.e., the software goes live). Beyond the standard warranty period, Genesis offers two tiers of extended support; Essential Service Agreement (ESA) and Premium Lifecycle Agreement (Lifecycle).

At a high-level, ESA's cover all things software related, while Lifecycle includes support on software, as well as hardware and third-party software (eg. Microsoft® Windows). Each executed agreement has a minimum of one year, however, multi-year agreements are also available upon request.

Figure 7 lists the services provided with each agreement. A few of the services can be added ala carte to any ESA. For more detail, including contact information and the Genesis hardware replacement policy, please refer to the "Genesis Service Agreement Overview" document.

CONTACT GENESIS

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SERVICE PROVIDED	PREMIUM LIFECYCLE	ESSENTIAL SERVICE
Multi-year Pricing	✓	✓
Phone, Email and/or Remote In Assistance (During Regular Business Hours)	✓	✓
24/7 "On-Call" Availability for Complete Software Failure	✓	✓
Software Updates and Version Upgrades	✓	✓
Hardware Refreshes	✓	
Hardware Warranty Extensions	✓	
On-Site Services	✓	ALA CARTE
Third Party Software Replacement	✓	
Training Following Software Upgrades	✓	ALA CARTE
Quarterly Preventative Maintenance Checks (Remote Only)	✓	

Figure 7: Genesis Service Agreement Overview Matrix