DIMETRA TETRA INFRASTRUCTURE SOFTWARE FEATURES CATALOGUE

MOTOROLA SOLUTIONS

This catalogue provides an overview of licensed software features available for Motorola Solutions DIMETRA™ X Core release 9.1.0 and DIMETRA Express release 1.5

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SECURITY

Protect your mission critical radio system from unauthorised access or malicious disruption with authentication and encryption of all your communication

SECURITY

Air Interface Authentication

Air Interface Authentication ensures that only the authorised subscribers can be registered on the network. With DIMETRA X Core, this feature includes the CRYPTR 2 module, which provides secure, tamper-proof storage of key material.

Security Group Partitioning

Security Group Partitioning is an option in DIMETRA, controlled through User Configuration Manager. It allows radios, talkgroups, and other system elements to be allocated to security groups managed by different system managers. Most managers are given access only to their own security groups. Partitioning the system into security groups is done via a single user designated the “super manager”, who has visibility and control of all the system configuration parameters.

Air Interface Encryption (AIE)

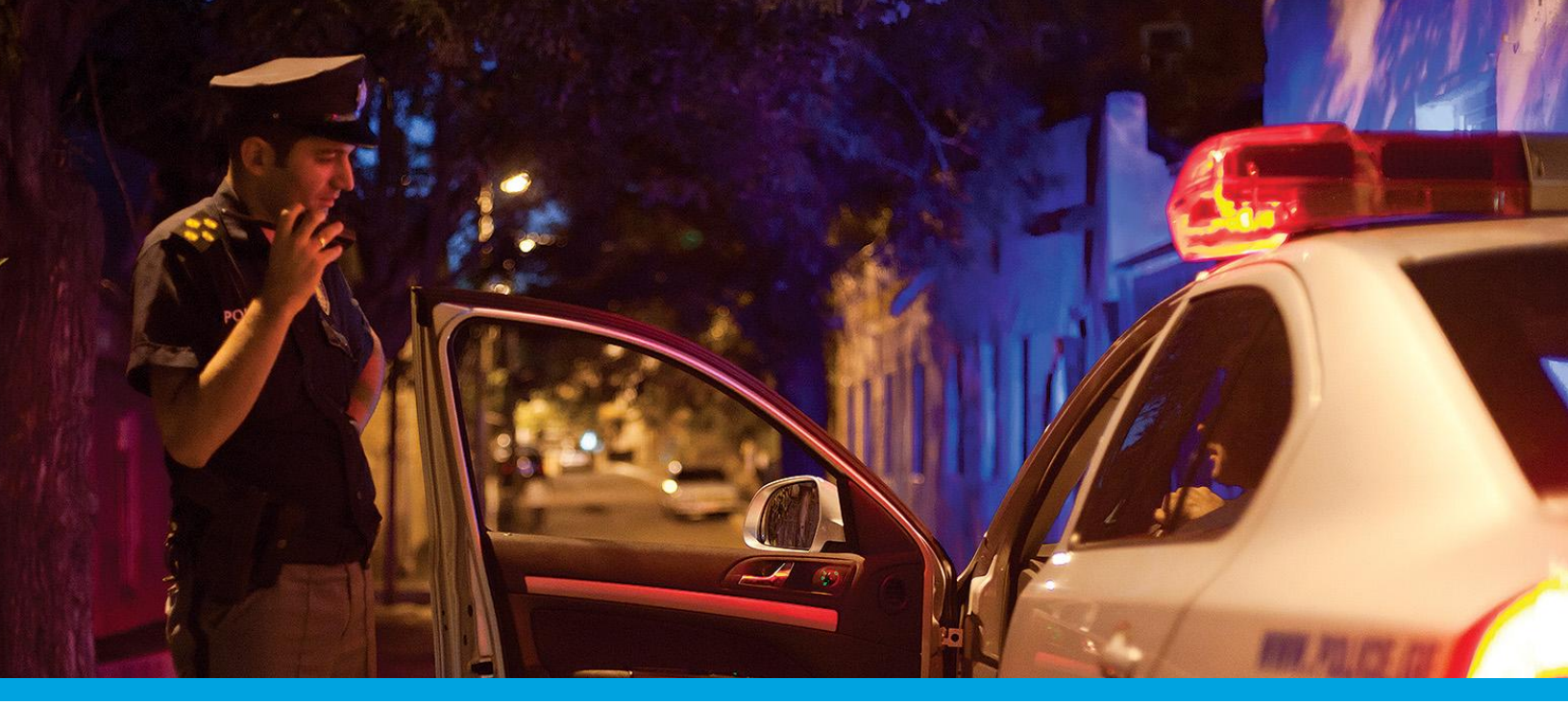
Air Interface Encryption (AIE) enables the encryption of user and signaling data over the air interface, between Mobile Station (MS) and the network and is supported on all system topologies.

Supported encryption algorithms: TEA1, TEA2 and TEA3.

NOTE: Requires Air Interface Authentication

Temporary Disable

Temporary Disable or “stun” is the ability to “stun” a radio by a remote command. The radio reacts to specific signaling from the Switch and Management Infrastructure (SwMI) to “stun” the radio making it unusable.



SECURITY

Permanent Disable

Permanent Disable or Permanent Kill is the ability to "kill" a radio by a remote command. The radio reacts to specific signaling from the Switch and Management Infrastructure (SwMI) to "kill" the radio making it unusable.

When "Killed" the radio will:

- Erase all encryption key material
- Delete the codeplug to remove all personalization
- Delete firmware

Group Cipher Key (GCK)

Group Cipher Keys (GCK) provides cryptographic separation between talkgroups (as each talkgroup uses a different Air Interface Encryption key) providing an enhanced level of Air Interface Encryption (AIE).

Over the Air Rekeying (OTAR)

Over The Air Rekeying (OTAR) allows keys to be updated without recalling radios. Specific key sets can be updated from the Switch and Management Infrastructure (SwMI).

NOTE: Requires Air Interface Encryption

Secondary Authentication Center

Secondary Authentication Center is a secondary standby Authentication Center, providing enhanced reliability.

SECURITY

Network Authentication (User management and service enhanced access control)

The Network Authentication option is a security function which centralises the authentication of Users and is an enhancement to the standard DIMETRA management User account / Service technician login process.

Network Authentication requires users to provide proof of their identity before being granted access to the system e.g. by providing either of the following:

- A valid account name and password
- A Personal Identification Number (PIN) together with a token code

Network authentication is implemented by the Authentication Manager which runs as a virtual machine on the Performance and Security Management Server (PSMS), which is a standalone server. A secondary PSMS can be deployed for redundancy and takes the role of a Replica server.

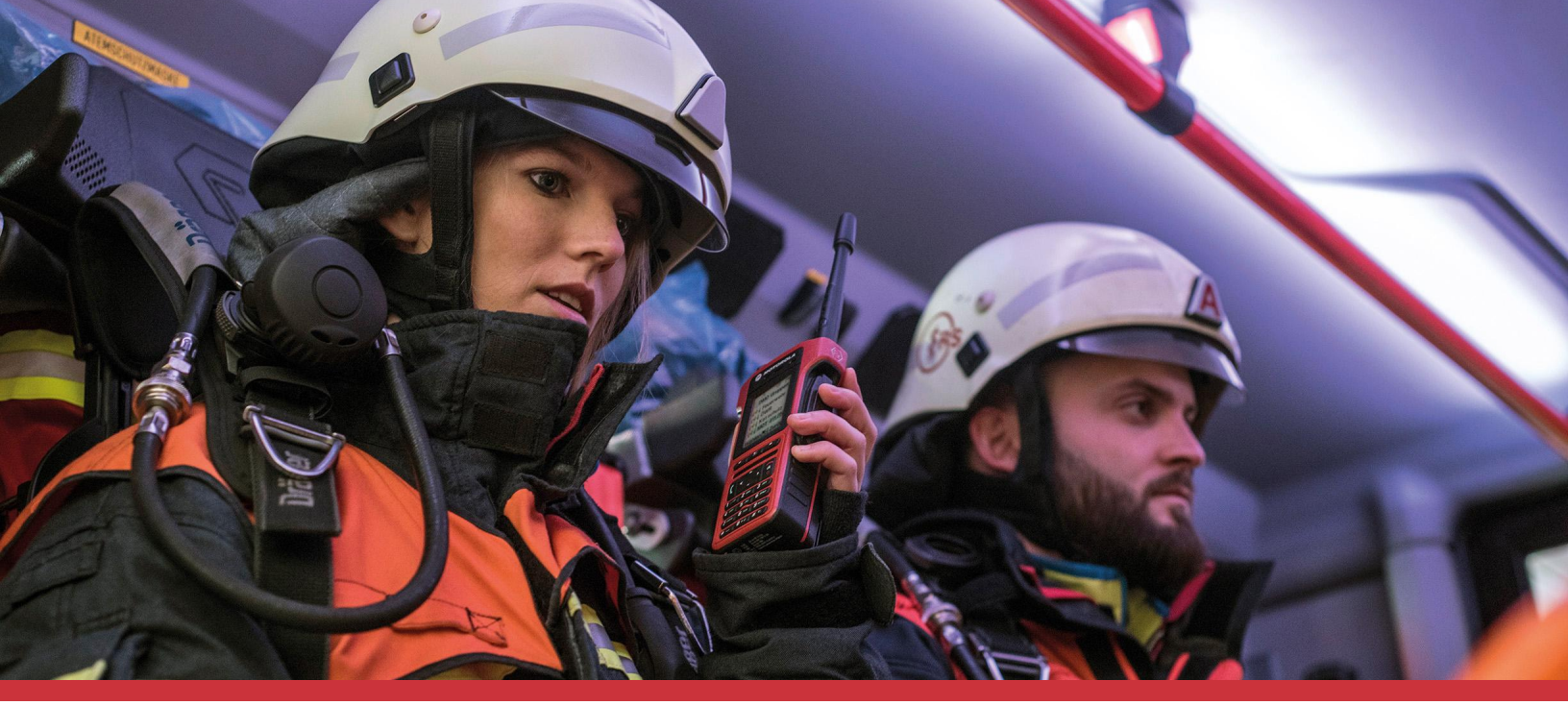
Network Authentication is supported for Windows Servers, Windows Workstations, Linux Servers, Terminal Servers, Control Sites devices (i.e. MCC7500 Consoles and Dispatch Communication Servers) and Firewalls including the Service Access Firewall.

Key Manager (KM)

The Key Manager (KM) generates the Air Interface Authentication keys for the Mobile Station (MS) as well as providing the Authentication Centre (AuC) and key management functionality for DIMETRA Express.

DATA

Easily enhance your mission critical voice communications to enable data for a safer, quicker and more effective response



DATA

Short Data Messaging Service To Group Short Data Service

The point to multipoint Short Data Messaging Services (SDS) or 'Mobile Station-to-Group' functionality is provided by the Group Message Server (GMS), which is hosted on the Short Data Router (SDR) physical device, together with the Short Data Transfer Service (SDTS) and SDR functionalities. When the MS sends an Short Data (SD) message to a Group Short Subscriber Identity (GSSI), the SDR intercepts it, and forward it to the GMS, which then convert it into a broadcast SD message that is returned to the SDR and sent. A broadcast region is associated with each GSSI.

A MS will receive the SDS to group broadcast message whether it has been sent to its selected talkgroup GSSI or to a GSSI in its scan list. The Base Transmitting Site (BTS) will only send the message on the channels indicated by the SD broadcast message 'channel selection'-bits (which can be set for Main Control Channel (MCCH) and / or Packet Data Control Channel (PDCH)). These bits are controlled by the data host application.

Enable Secondary Common Control Channel

Common Secondary Control Channel (C-SCCH) is the ability to have more than one Control Channel available at a Cell – allowing more control channel activity.

The Control Channel is used for nearly all signalling between radios and infrastructure and has to handle registration, authentication, call control, short data, mobility and many other functions.

This feature is aimed at customers who have high mobility, call-setup or Short Data usage requirements.

3 x Enable Secondary Common Control Channel

Allows up to 3 timeslots to be configured as Common Secondary Control Channels to provide additional control channel capacity at the site.

DATA

Packet Data Service

The Packet Data Service (PDS) is a bearer service that allows two parties in a TETRA system to communicate using the IP protocol in three different ways:

- Mobile Station (MS) to MS via fixed host (this transfer is initiated by a MS to another MS)
- MS to fixed host (This transfer is initiated by an MS to a host)
- Fixed host to MS (This transfer is initiated by a host to an MS)

The PDS is an implementation of the standard TETRA Packet Data Sub Net Dependant Convergence Protocol (SNDCP) allocated to the TETRA air interface. The PDS can be used by IP based applications via a set of interfaces. These interfaces provide transportation service for applications, which needs to use the IP protocol.

Two interfaces exist for the PDS:

- Customer specific Ethernet/WAN connection with VPN from a Customer Enterprise Router to the GPRS Gateway Support Node (Infrastructure Packet Data Interface)
- Peripheral Equipment Interface (PEI) based Point to Point Protocol (PPP) link (Multi-Slot Packet Data Interface)

Packet Data Billing services are available.

Increased Short Data Capacity

This feature enables customers to purchase additional capacity licenses to increase the short data capacity supported. The licenses are in blocks of 50,000 messages per hour, up to a maximum of 600,000 messages per hour.

Short Data Store-and-Forward

With the Store-and-Forward (S&F) service, even if the destination Mobile Station is not available, the Dimetra system will ensure that the message will be delivered later, once the destination is available.

The S&F service is hosted on the Short Data Router (SDR) – which is part of the Dimetra Switch and Management Infrastructure (SwMI).

The operator can prevent the S&F of specific SDS message types, and thereby not have to configure each subscriber. This is achieved by configuring each SDR with a list of barred Protocol Identifiers (PIDs) used in the SDS message. If an SDS message has a PID which is in the list of blocked PIDs and the target Mobile Station (MS) is available, the SDR makes one attempt at sending the message to the target MS. If sending the message has failed, an error report is returned to the originator and the failed delivered message will not be stored on the S&F server.

DATA

Secondary Short Data Router

This license is required to provide Short Data Router (SDR) redundancy.

In the event of failure of the active SDR application, the service is automatically transferred to the standby SDR. Failure of the SDR application is reported to a network operator using Unified Event Manager (UEM) server.

NOTE: Data resilience is only supported for full data redundancy (short data and packet data). It is not supported to have redundant short data without redundant packet data.

Secondary Packet Data Gateway

This license is required to provide Packet Data Router (PDR) and Radio Network Gateway (RNG) server redundancy.

In the event of failure of the active PDR or RNG the service is automatically transferred to the standby PDR. Failure of the PDR or RNG application is reported to a network operator using Unified Event Manager (UEM) server.

NOTE: Data resilience is only supported for full data redundancy (short data and packet data). It is not supported to have redundant packet data without redundant short data.

TETRA Enhanced Data Service

TETRA Enhanced Data Service (TEDS) gives the ability to provide secure, reliable, higher speed data on a TETRA network. It can be used for enhanced web access, graphic images, and richer data applications.

WORKFORCE MANAGEMENT

Make sure that users are able to carry-out their job roles in the most efficient ways

WORKFORCE MANAGEMENT

Barring Incoming Calls/Barring Outgoing Calls (BIC/BOC)

The Barring of Incoming Calls / Barring of Outgoing Calls (BIC / BOC) feature provides the ability to control each user's ability to initiate and receive calls depending on the identity of the other call party. BIC / BOC allows control over talkgroup access from a system console rather than returning each individual radio for reprogramming.

This feature could be used in conjunction with RUA / RUI to further enhance the level of radio pooling. If you want to make sure that security employees are able to communicate on special security object groups, without other users listening, then you need BIC / BOC to exclude all other users.

Key Benefits:

- Offers management capability on pooled mobile subscriber devices.
- Offers Fleet Managers' faster and more flexible talkgroup management.
- Enforces talkgroup discipline; manages system traffic capacity and increases security; and controls private and group calls.

Call Forward

The Call Forward (CF) feature allows redirecting any individual incoming calls addressed to a Control Room Head Number (CRHN), a Dispatch Console User or a Radio User to another destination.

Forwarding can be done to a Mobile Station (MS) or a Radio User, a Control Room Head Number (CRHN), a Dispatch Console User or a Telephone number (forwarding is via the DIMETRA telephone interconnect gateway). Individual calls can be initiated from the PABX side.

The feature can be configured to be controlled either via the UCS, where the user is not able to enable or disable individual Call Forward capabilities, or directly by the user.

The Call Forward feature is controlled by a Network Management licence.

WORKFORCE MANAGEMENT

Call Wait

The Call Wait feature is implemented according to the TETRA supplementary service Call Waiting.

Call Wait can be used when a Calling party, which can be a Mobile Station (MS), a Dispatch Console including a Control Room Head Number (CRHN), or a Phone user, sets up an individual call to an MS or radio user (RUA/RUI) – aka Called party, which is engaged in an ongoing individual or group call. The Called party is then alerted that a new call is incoming and the Calling party is informed that the call is waiting.

The Called party has the choice to accept the new call in which case their ongoing call ends and the new call proceeds.

The Called party may also reject the new call, in which case the Calling party is informed accordingly.

Control Room Individual Calls

Call Take/Hold/Transfer are part of a series of individual call processing features which are supported on MCC 7500C, MCC7500S Dispatch Consoles (running Windows 10), DCS or S-DCs client devices connected to a 3rd party ICCS solution using the MCC7500 API.

Call Take

The Call Take feature is designed to work exclusively with the Control Room Head Number (CRHN) feature and is controlled by a Network Management licence. This feature gives a more flexible handling of individual calls in a Control Room and provides the dispatchers with a full overview of the individual call activity targeted to a CRHN.

The dispatcher can see the incoming individual calls of the CRHN in the Call Take queue even when the dispatcher is involved in another individual call.

From the Call Take queue any dispatcher associated to the CRHN can take a call, terminate a call or transfer a call on hold, if the Call Hold / Call transfer features are available.

Call Hold

The Call Hold feature enables a Dispatch Console user to put a call on hold in order to answer or initiate a new individual call.

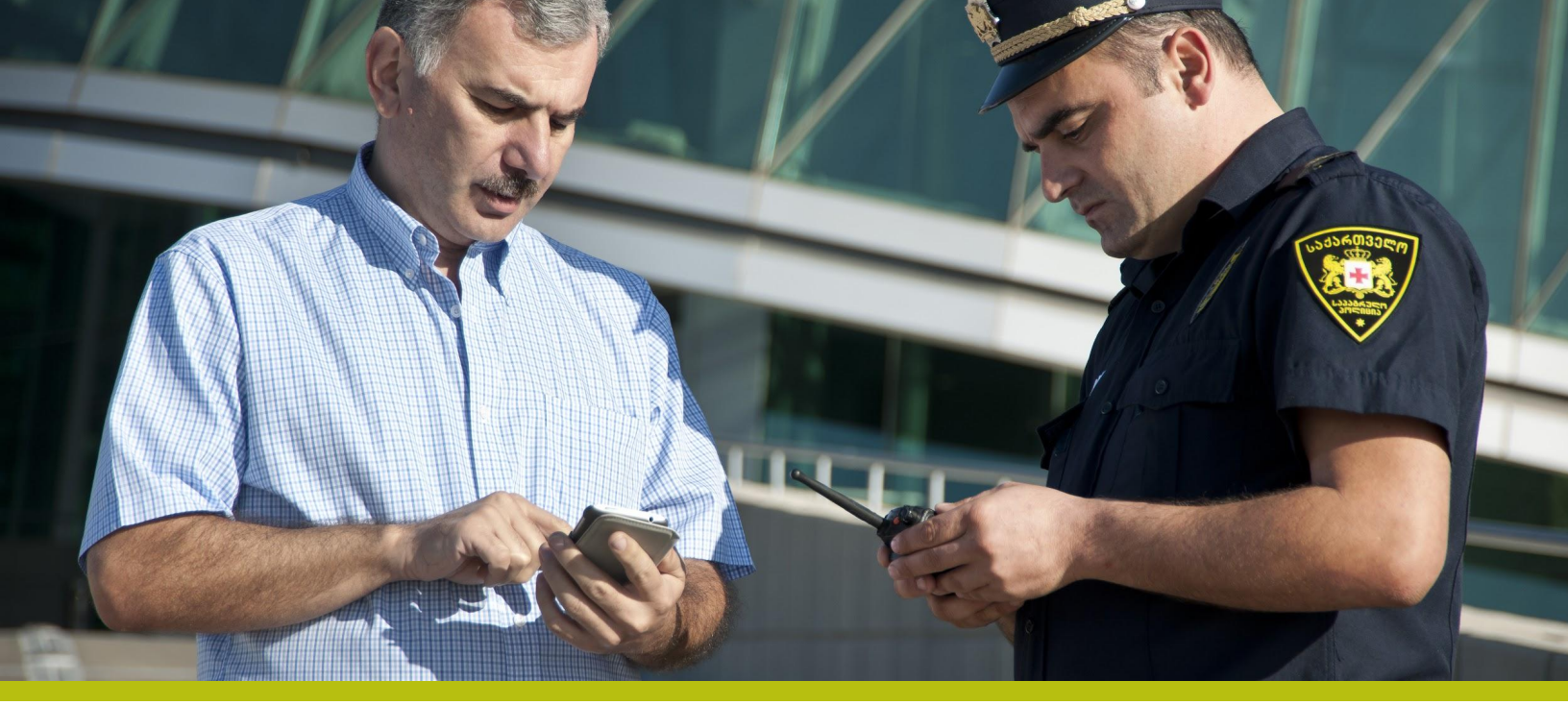
A call can be put on private hold in which case it can only be seen and taken by the dispatcher putting it on hold or it can be put on public hold in which case it can be seen and taken by other dispatchers in the Control Room.

Call Transfer

The Call Transfer feature enables a Dispatch Console to connect two other parties / users into one active individual call while releasing the resources at the Dispatch Console position.

One of the involved users is put on Hold, either public or private, while the other party participates in the active individual call with the Dispatch Console user initiating the Call Transfer.

After the Call Transfer, the Dispatch Console is disconnected from the call, while the 2 users are connected together in the active individual call.



WORKFORCE MANAGEMENT

Console Telephony

The Console Telephone Interconnect feature is a console feature provided by the MCC7500 API.

The Console Telephone Interconnect feature uses the existing Telephony Interconnect (TI) call feature provided today for Mobile Station (MS). That is, the MTIG, ETG, ZC signalling and audio setup is reused and expanded to support not only MS but also Console TI calls.

Inbound calls towards consoles may either be addressed using individual ISSI or be addressed to a Control Room Head Number (CRHN). Call routing and the use of Direct Dial In number and prefixed ISSI are both supported in the same way as MS TI calls.

Dynamic Shared Service

The Static Shared Service Algorithm (SSSA) controls the sharing of voice channels between Dispatch and Telephone Interconnect service. The maximum number of simultaneous interconnect calls allowed and the maximum interconnect call length can be adjusted for each two hour time period in the day starting on the hour. Both parameters can be set for each site individually.

The Dynamic Shared Service Algorithm (DSSA) is an optional purchasable feature which supplements the Telephone Interconnect service by dynamically controlling the sharing of voice channels between Dispatch and Interconnect Service. It controls both the maximum number of simultaneous interconnect calls at a given site as well as the maximum length of an interconnect call at that site to ensure adequate access to voice channels for dispatch service. The periodic adjustment of channels available for interconnect is based on traffic loading and customer entered target levels of service.

WORKFORCE MANAGEMENT

10 Call Telephone Interconnect

The Telephone Interconnect call service gives full duplex communication between a Mobile Station (MS) and a Private Automatic Branch Exchange (PABX), IP-PABX or Public Switched Telephone Network (PSTN) user. PSTN access is via the PABX. Full duplex means that both parties in the call can transmit and listen at the same time.

The 10 Call Interconnect License allows up to 10 simultaneous full duplex communications at any one time.

The service allows a MS to initiate a Telephone Interconnect call by requesting an individual call to the Individual Short Subscriber Identity (ISSI) reserved for the Motorola Telephone Interconnect Gateway (MTIG-E1 or MTIG-IP) and including the required external exchange number in the called request.

During call set up, call-progress tones are provided to the calling party.

An Enhanced Telephone Gateway (ETG) is required to connect more than one PABX.

Both MTIG-E1 and MTIG-IP are allowed to be mixed in a System, at System level or Cluster level, but cannot co-exist in a Zone.

NOTE: DIMETRA Express supports 2 simultaneous calls as standard with up to 10 calls being supported with the addition of licenses. DIMETRA Express only supports MTIG IP.

Object Call

This feature enables radio users to join and call talkgroups without having talkgroups programmed in the radio.

Object call is a feature primarily designed for use in environments where multiple agencies or individuals are engaged in supporting tasks or missions of limited timeframe. For example, in an airport an 'object' could be an aircraft arriving at a gate needing servicing, therefore requiring various teams (flight preparations could include baggage handlers, catering teams, mechanics, and the airline staff).

These radio users require collaborative or team communication capabilities, usually for a short period, before moving on to work on another task with potentially different agencies or individuals.

With this feature, individual radio users have the flexibility and freedom to dial-into an "Object Talkgroup" for the duration of the task being worked on, or they can simply dial-in to deliver a single instruction.

Key Benefits:

- Beneficial to radio users who change talkgroups several times a day relating to new tasks without having to reprogram the radio; therefore enhancing collaboration and efficiency
- Object Call eliminates talkgroup admin and provisioning effort that would otherwise be required for short-duration, task-orientated talkgroups
- Communication is simplified by identifying talkgroups with a user-defined task code

WORKFORCE MANAGEMENT

Extended Range

The Extended Range feature enables longer distance communications between a Base Station and a Mobile Station (MS) to enlarge the coverage area of the Base Station, specifically to facilitate airborne (Air-Ground-Air Communications) and marine (Land-Sea-Land Communications) communications.

The extended range capability allows cell boundaries to be extended from 50 to approximately 83 Km radius.

NOTE: All Motorola Solutions subscriber devices support the signaling for extended range service. However Motorola Solutions does not certify devices for use in airborne or marine applications; such device certifications must be obtained from a third party:

- Certification will always be required for use in aircraft.
- Subscriber Class feature used to control access.
- Local regulations may require certification for use in ship-to-shore-to-ship applications.

Supported by MTS base stations and the MTM5400 and MTM5500 mobile radios.

The MTM5400 and MTM5500 require re-packaging by 3rd party before suitable for aircraft use.

Radio User Identity / Radio User Authentication

Radio User Identity / Radio User Authentication (RUI / RUA) is a DIMETRA Network and Terminal feature that allows an individual to use any radio from a pool of radios and register the radio to their specific identity.

User can pick up and register the radio with their user identity. Individual calls and SDS messages for the user are then sent to the radio.

Restrictions can be placed on the capabilities of radios / users based on the user identity.

Agency Priority Matrix

Agency Priority Matrix is a DIMETRA system feature that provides agencies, or a subset of agencies, with exclusive use of specific RF channels.

This is accomplished by having the zone controller in the system steer calls to channel resources that are configured with the appropriate agency or user group designation. The use of this feature allows the segregation of users enabling preferential service to a select set or sets of users.

WORKFORCE MANAGEMENT

Energy Economy Mode

The Energy Economy Mode feature increases the radio battery life, thereby extending the users operational capabilities.

Inter System Interface (ISI) Gateway

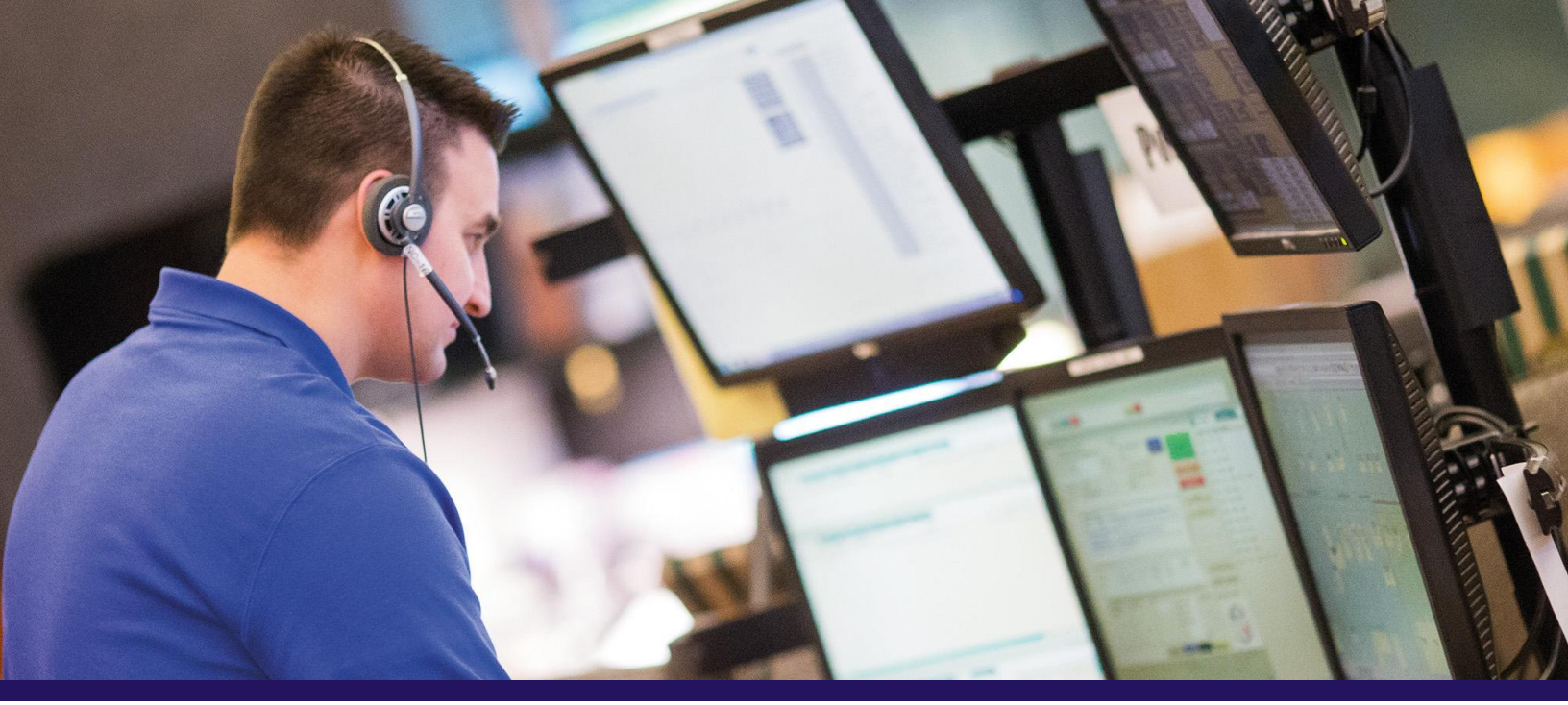
The Inter System Interface (ISI) Gateway provides the capability to interconnect a DIMETRA X Core system with up to two different Foreign Networks (e.g. host country with DIMETRA X Core System and up to two other national networks with or without DIMETRA X Core.).

The ISI feature provides an interface between the local DIMETRA X Core system (Home Network) and the Foreign TETRA compliant ISI system (Foreign Network) allow authorised Mobile Station (MS) to migrate between the connected systems and maintains communicates with their Home Network or communicate with MS on the Foreign Network.

NOTE: Only a subset of the suite of TETRA services is supported across the Gateway.

CONTROL ROOM

Take advantage of next generation control room capabilities



CONTROL ROOM

Dispatch Communications Server Operator Position

The Dispatch Communications Server (DCS) feature enables radio dispatch communications in a Control Room connected to a Dimetra radio network.

Compared to the previous solutions, such as the MCC 7500 Integrated Command and Communication System (ICCS) Gateway. It consolidates hardware into a single server which offers support for up to 10 dispatch positions. Additionally, audio is offered in Pulse Code Modulation over IP (PCMoIP) format, bringing the solution to full IP support in the interface.

NOTE: For DIMETRA Express a Maximum of 10 DCS positions are supported.

5 Control Room Head Number

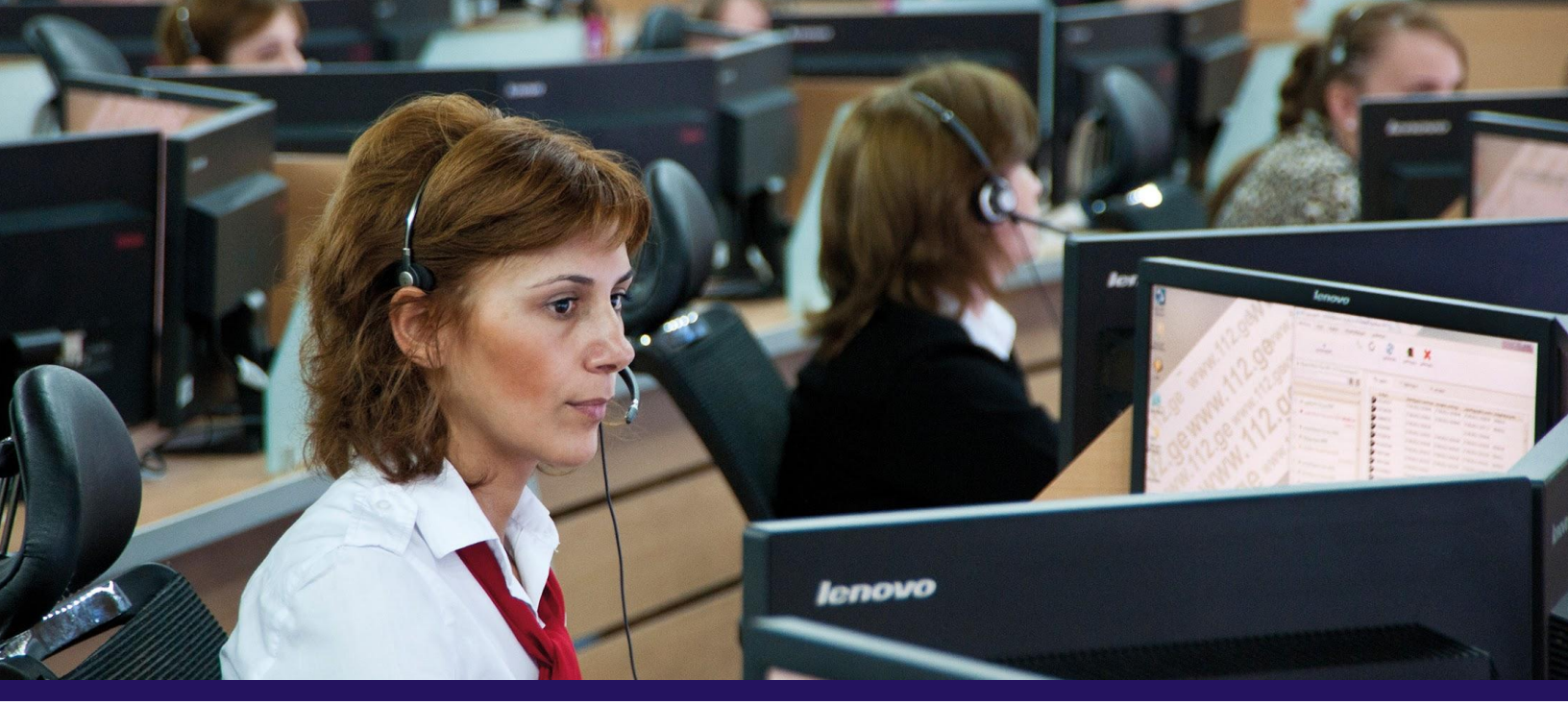
The Control Room Head Number (CRHN) feature defines a group of Consoles as a "Head Number" and allows an agency located in a dispatch control room to be uniquely identified in terms of call address, regardless of the Dispatch Consoles assigned to the agency.

The CRHN feature is designed to operate either with Motorola Solutions' MCC 7500 consoles or via a Dispatch Communication Server (DCS) subsystem or an End-to-End Encrypted (E2EE) Integrated Command and Communication System (ICCS) system, interfaced through the DCS, Secure DCS (S-DCS) or ICCS Gateway (ICCS GW).

From a logical point of view this unique identity materialises in a Head Number ISSI (Individual Short Subscriber Identity) assigned to the agency in that customer dispatch control room. Therefore there are not individual numbers / IDs per dispatcher and it is up to the customer dispatch system to decide which Dispatch Console deals with which call, instead of the individual user calling an individual Dispatch Console.

When the CRHN feature is used directly with Motorola Solutions' MCC 7500 Dispatch Consoles the Head Number groups a number of consoles in a control room under one unique address and the infrastructure allocates the call to a particular Dispatch Console.

The Head Number ISSI is employed by the radio or console users to place private calls towards an agency in a control room and it is also the number displayed in the radio or console when the user receives a private or a group call from an agency's console in a specific control room.



CONTROL ROOM

10+10 Voice Call Logging

This license supports logging 10 simultaneous Group calls and 10 simultaneous Private calls / Telephone Interconnect calls.

DIMETRA X Core supports Voice Logging of Group calls (clear / AIE and E2EE); Private calls (clear / AIE and E2EE); and Telephone Interconnect calls (clear / AIE).

Motorola Solutions offers two certified and supported logging solutions that are provided by NICE, a third party vendor. They both include an Archiving Interface Server (AIS) and one of the following NICE logging solutions:

- The NICE Inform Lite Voice Logging solution that supports clear / AIE logging.
- The NICE Inform Voice Logging solution that supports clear / AIE and E2EE logging.

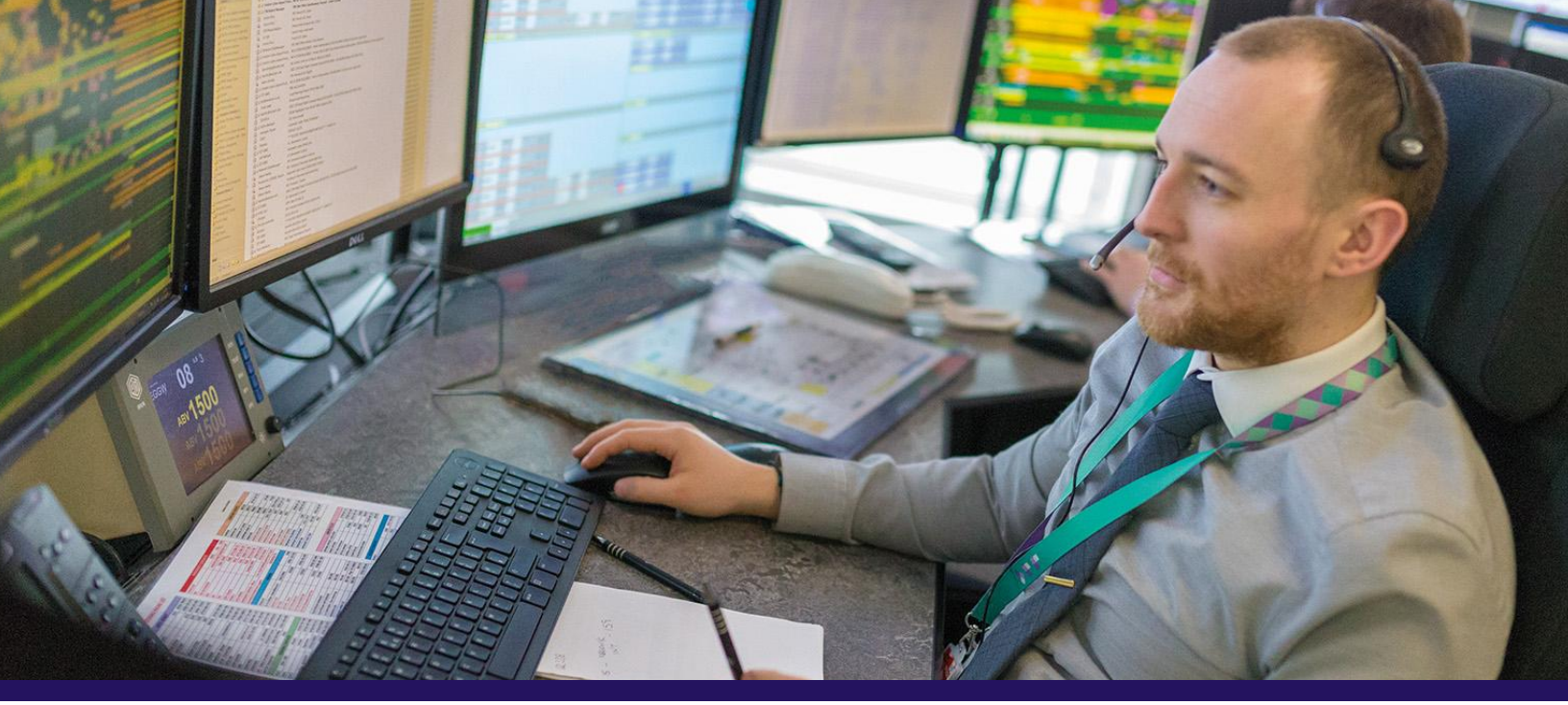
The Voice Logging feature for Group, Private and Telephone Interconnect calls is license controlled and can be enabled or disabled from the Network Management Terminal (NMT).

NOTE:

- Other 3rd party vendor logging recorder and replay stations are available however they are not integrated into DIMETRA X Core or certified by the DIMETRA Product Group.
- For DIMETRA Express a Voice Logging API is provided for use by 3rd party vendors.

Discreet Listening Individual Calls

MCC 7500 Discreet Listening (DL) is a feature that enables real-time listening to one to one radio communications and / or telephone calls involving specific radio users. The Discreet Listening application enables the listener to listen to calls involving radio users without their knowledge.



CONTROL ROOM

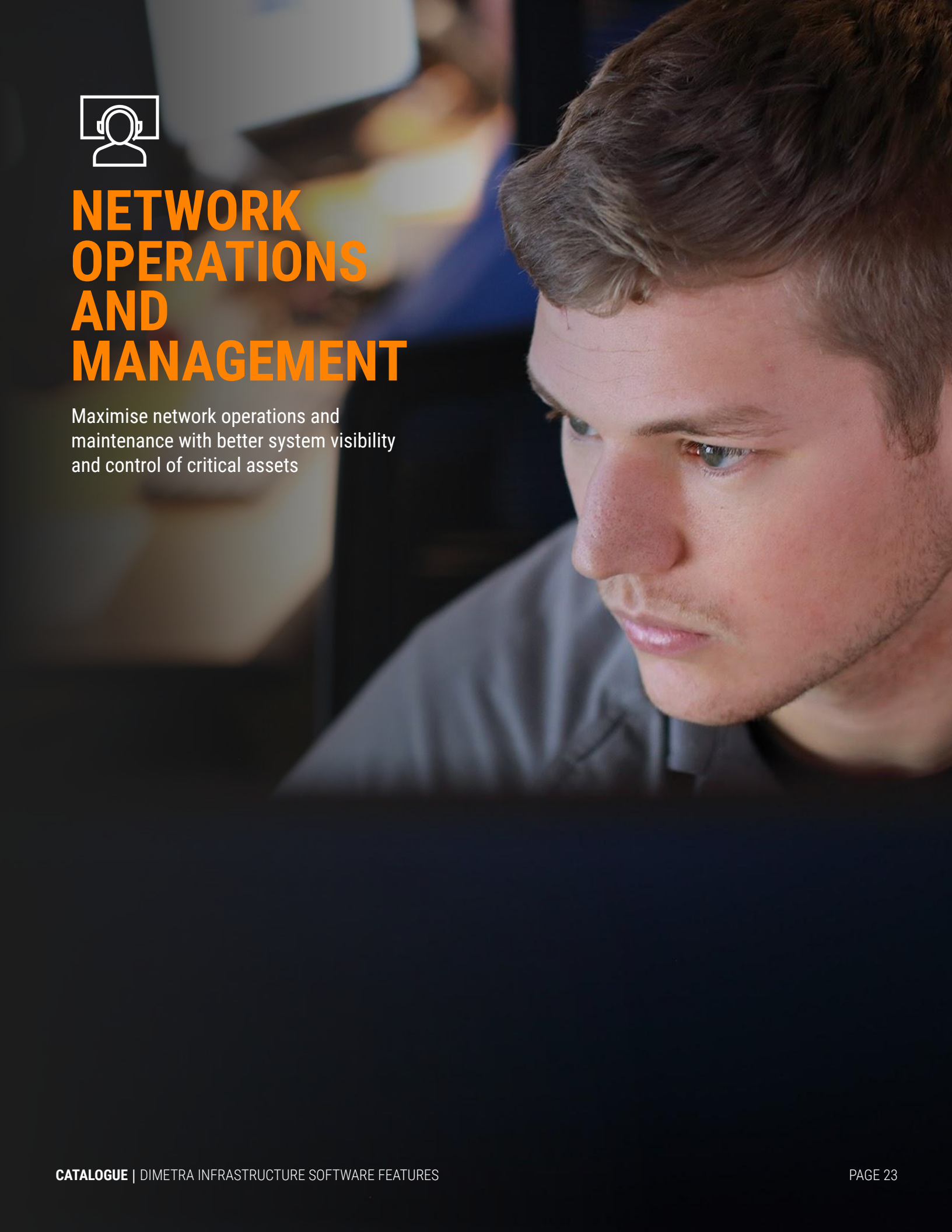
Secure Dispatch Communications Server Operator Position

The Secure Dispatch Communications Server (S-DCS) subsystem can be used only at remote Control Sites and is used instead of the MCC 7500S Integrated Command and Communication System (ICCS) Gateway.

The advantage of the S-DCS for larger Control Sites is that it eliminates 50% of the rack mount PCs and replaces them with one server per every ten ICCS positions – Communication Control Entity (CCE) nodes.

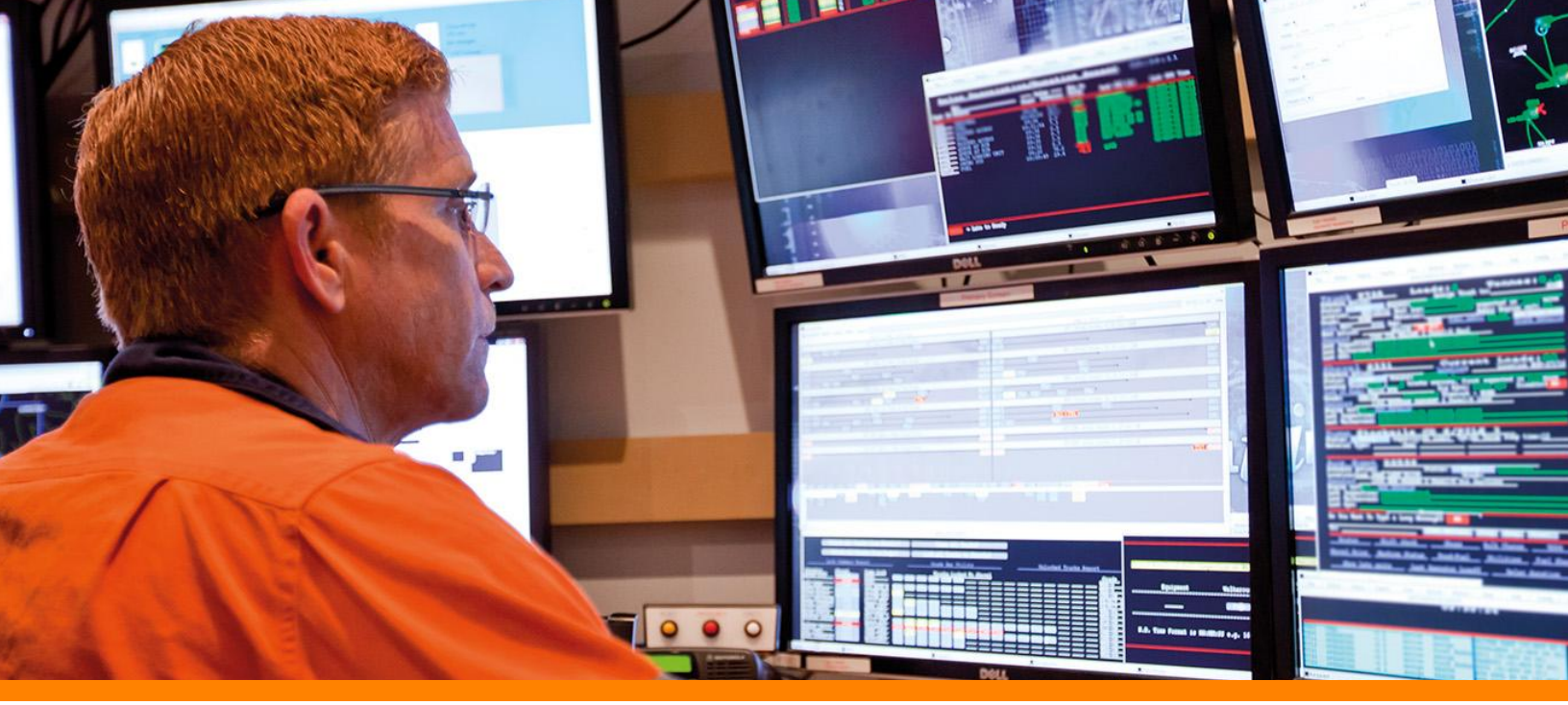
The server is similar to the Clear DCS server except that it only runs the CCE function and not the 'Audio Gateway' function.

Secure audio is still handled by the rack-mount Audio Processing Entity (APE) and Console CryptR. The APE provides analogue audio which may be multiplexed onto an E1 using the same multiplexer as previously used for the MCC 7500S ICCS Gateway.



NETWORK OPERATIONS AND MANAGEMENT

Maximise network operations and maintenance with better system visibility and control of critical assets



NETWORK OPERATIONS AND MANAGEMENT

Zone Performance Reports

Zone Performance Reports allows licensed users to produce reports on historical and dynamic usage of infrastructure and radio resources. These reports present statistical data that is gathered over predefined time intervals for the purpose of monitoring and analyzing zones, sites, channels, talkgroups and Mobile Station (MS) users. Reports can be sent to the monitor screen, a printer, or saved as PDF, XML, HTML or Comma Separated Value (CSV) files. They can be created from data collected over the following time intervals:

- 15 minute intervals for the last 24 hours
- 60 minute intervals for the last 10 days
- 24 hour intervals for the last 2 months
- Monthly intervals for the last 12 months

In addition to the standard reports, custom reports may be created from available historical data. The Crystal Reports application can be used to modify the standard reports or to create a new report from scratch.

WebRCM

The Radio Control Manager (RCM) is a network management application, which can provide features to Network Managers or to dispatchers depending on the needs of the organisation. This application is accessed via a web browser.

Dynamic Regrouping with Radio Control Manager

This feature allows a Radio Control Manager (RCM) user to add and remove talkgroups from the talkgroup list of a subscriber.

A Dynamic Regrouping command can also be used to re-name an existing talkgroup, and to assign a new Class of Usage (CoU), a form of priority.

NETWORK OPERATIONS AND MANAGEMENT

Cluster Performance Reports

Cluster Performance Reports allows licensed users to produce cluster-level reports on historical usage of infrastructure and radio resources.

These reports present statistical data that is gathered over predefined time intervals for the purpose of monitoring and analyzing zones, sites, channels, talkgroups and Mobile Station (MS) users. Reports can be sent to the monitor screen, a printer, or saved as PDF, XML, HTML or Comma Separated Value (CSV) files. They can be created from data collected over the following time intervals:

- 15 minute intervals for the last 24 hours
- 60 minute intervals for the last 10 days
- 24 hour intervals for the last 2 months
- Monthly intervals for the last 12 months

Over 80 standard cluster-wide reports and over 300 zone-level standard reports are available.

In addition to the standard reports, custom reports may be created from available historical data. The Crystal Reports application can be used to modify the standard reports or to create a new report from scratch.

Zone Watch and Affiliation

Zone Watch is an application that lets you monitor radio call traffic for an individual zone in real time. This application uses different Watch Windows that allow you to display only the information you want to see.

Examples of trunking activity and radio call traffic displayed in the Watch Windows include the following:

- Radio IDs
- Talkgroup IDs
- Aliases
- Specific call information
- Channel and talkpath (TDMA) assignments

Affiliation Display is an application that displays the association of a radio with a talkgroup and a site, and information about conventional channels, console sites, and consoles. It enables you to monitor how radio users travel between different sites in a zone and how they communicate with other members of their assigned talkgroup and those outside of their talkgroup.

NETWORK OPERATIONS AND MANAGEMENT

System Health Application Suite

The System Health Application Suite is a new Web based application suite combining several performance management applications, from Call Monitoring to Affiliation Displays and ATIA logs.

It allows a system manager to analyse traffic patterns for load distribution and troubleshoot radios and RF Site issues. It can be used, for example, to determine how and when radio users access the system, and where members of a talkgroup are located.

The System Health Application Suite combines the legacy ZoneWatch, Affiliation Viewer, Dynamic Reports and ATIA Log Viewer applications into one web based client, however it is not a 1:1 replacement and some feature differences exists.

The System Health Application Suite is implemented on all D9.1 systems (New and Upgraded).

NOTE: There is no support for the legacy applications from D9.1 onwards

User Configuration Server API

The User Configuration Server (UCS) API feature provides an interface to the DIMETRA UCS for manipulation of data, including most subscriber data – Mobile Station (MS), Radio User and Talkgroups – plus limited infrastructure configuration data.

In a multi-cluster system, each UCS API only accesses the data in its cluster. In a multi cluster system access is required to each cluster's UCS API to undertake provisioning of MS and Radio Users according to the Home Zone maps for the system.

The API provides a method of integrating third party provisioning applications and infrastructure management systems with a DIMETRA system.

NETWORK OPERATIONS AND MANAGEMENT

Unified Event Manager North Bound API

The Unified Event Manager (UEM) North Bound API feature provides Simple Network Management Protocol (SNMP) fault forwarding to a 3rd party "Manager of Managers" for all Zones in a cluster.

The UEM is the primary fault management / troubleshooting tool used in Dimetra systems.

The UEM application is primarily a fault management application. As background functionalities, the application discovers devices, ensure communications path with them and periodically pools agents on the network to ensure correct functioning. On the primary front, UEM collects traps sent by agents located on network elements and generates events or alarms using the Simple Network Management Protocol.

Events contain information on the status of a device, while alarms indicate a condition which requires an action. Both can be assigned to a specific person to solve and related comments can be entered in the tool.

Each zone is equipped with a UEM server that collects alerts from objects within its zone.

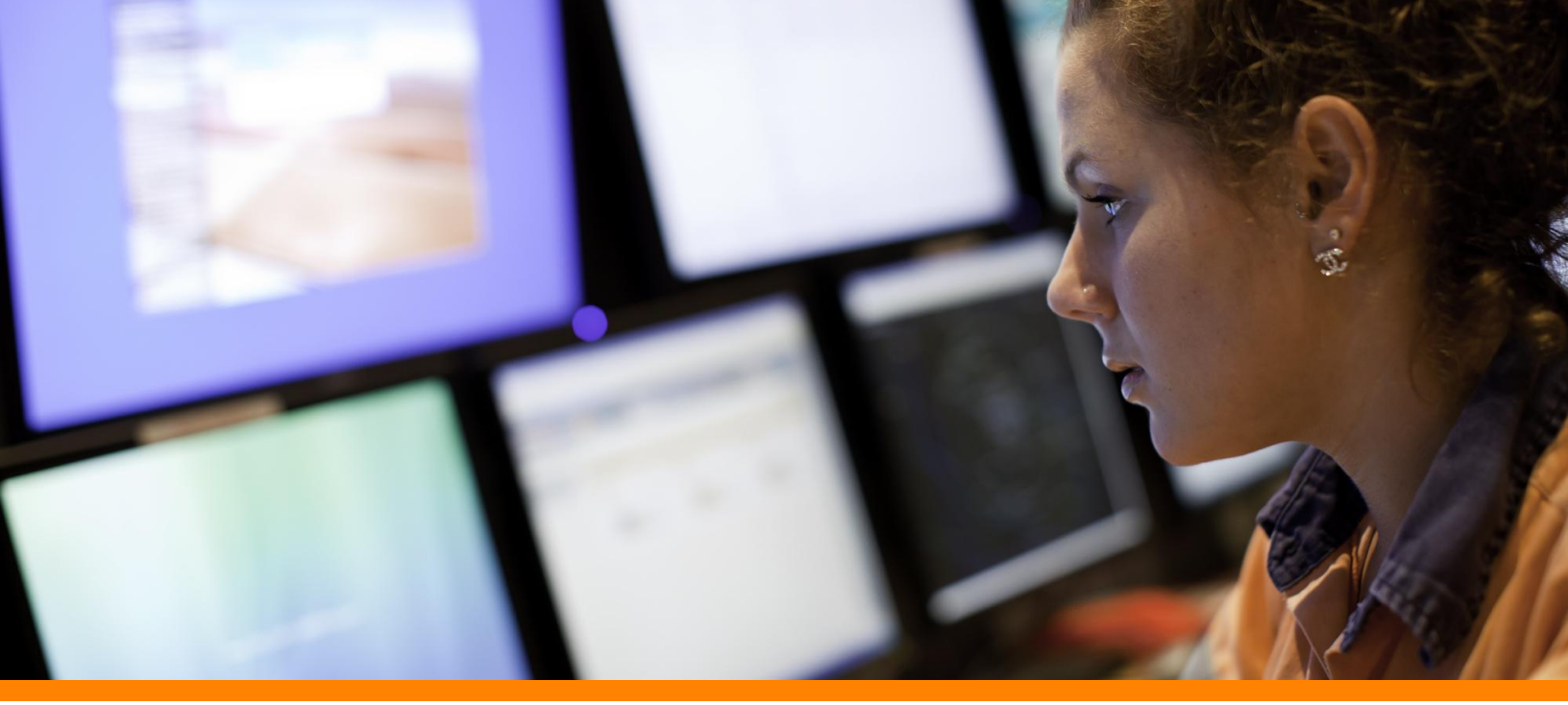
UEM provides the following features:

- Zone Map: This view provides graphical top-level display of the device status and service status
- Fault Management: This view provides a list of outstanding failures in the system. Both an event view and an active alarm view are available
- Inventory View (Network Database): This view provides a list of devices and logical elements discovered. This includes current status and properties
- Administration Tools: Different policies and job status can be accessed from this view

Fault Forwarding North Bound API

The DIMETRA Express Northbound Interface is an API for retrieving information regarding system status via alarms on managed objects. The API is a RESTful API with response in a JSON format and basic JSON Web Token (JWT) driven authentication.

The API will allow a client program to read selected types of data including fault events of all DIMETRA Express Radio Network devices such as MTS Base Stations.



NETWORK OPERATIONS AND MANAGEMENT

Air Traffic Information Access (ATIA) API

The Air Traffic Information Access (ATIA) API feature provides the customer with an access point for raw air traffic call information on the System. ATIA provides a continuous near real time stream of data of call information whenever something significant occurs on a call. Non-call activities such as subscriber rejects, affiliations and radio commands are issued in unique data formats.

The ATIA information can be used by customers to generate detailed billing or management reports from the data provided by the ATIA interface in conjunction with their third-party products and applications.

The ATIA stream also contains information about status messages and another example of an implemented application is to extract the status message to be used as evidence that an officer did a specific action at a specific time.

Computer Aided Dispatch Interface API (MCADI)

The Computer Aided Dispatch Interface (CADI) API feature is an application programming interface for use by third-party Computer Aided Dispatch (CAD) applications. CADI provides a high-level, function-based programming interface for performing dispatch actions within a radio system from a custom software application. The CADI API enables third party suppliers to write software application programs, called CADI clients, which monitor radio systems for dispatch purposes.

The API gives the CADI client application direct access to the commands and events used by the radio system and its network management applications.

NETWORK OPERATIONS AND MANAGEMENT

ECADI API

Enhanced CADI (ECADI) API is a new interface that provides similar functionality to the CADI API, but with modern REST/WebSocket based protocols and improved security. It can be deployed in parallel with MCADI. The ECADI API provides similar functionality as the CADI API, allowing the following actions to be performed:

- Submit radio commands (e.g. Regroup or Selective Inhibit)
- Submit queries to check status in the radio system. Radio Check and Zone Controller Status Query allow you to check the status of a radio (over-the-air) or Zone Controller, respectively.
- Monitor radio events. An event is an unsolicited message sent from a radio, or a response to a command that has already been sent.

In addition, the ECADI API also supports additional commands and events, such as Individual Status Update, which are not supported by MCADI.

NOTE:
- With DIMETRA X Core, ECADI can support up to 25 CADI clients at the same time. (The total of MCADI and ECADI connections is 25.)
- With DIMETRA Express, ECADI can support 1 client.

MCADI Server Automatic Switchover

This license is required to provide MultiCADI Server redundancy (MCADI).

The MCADI server application on the Primary Core Server allows multiple CADI clients to be supported. MCADI server resilience can be provided using the optional secondary MultiCADI server application hosted on the Secondary Core Server. The standby server can either use automatic switchover or manual switchover, as previously supported

Alias Server Automatic Switchover

This license is required to provide Alias Server (AS) redundancy.

The AS application on the Primary Core Server provides the means for a dispatcher to recognize a radio user by a unique identity and an associated alias that is independent of any particular radio equipment. An optional redundant AS application can be deployed. The standby server can either use automatic switchover or manual switchover, as previously supported

NETWORK OPERATIONS AND MANAGEMENT

MTS1 Standby Site Controller

The MTS1 is a complete Base Station with Site Controller, Base Radio and Radio Frequency Distribution System. Placing two MTS1's side by side in companion mode will create a two carrier Base Station, with two Base Radios, two power supplies and two Site Controllers.

The "MTS1 Standby Site Controller" license will enable the second site controller as redundant site controller, for full resilience.

100 Radio Users

This license allows the User capacity of the system to be expanded in units of 100 Radio Users.

NOTE:

- When ordered the other Radio User based licenses have to be ordered in the same quantity.
- With DIMETRA Express 50 Radio User licences are provided with each server.

eTETRA

This feature license enables a Dual Band Capable Base Station. The capacity is therefore expanded into the adjacent spectrum, for example 380-385 MHz (nT) plus 410-415 MHz (eT).

This feature provides backwards compatibility, leveraging existing wideband capable radios, benefitting all users. It addresses customer needs to expand channel capacity in certain geographical areas. This particularly suits customers who need to expand capacity but who are unable to use frequencies in the same band.

1 Base Station Site

This license allows additional Base Station sites to be added to the system. When ordered the license should reflect the number of additional sites required.

NOTE: The maximum number of sites per Zone is 100.

SOFTWARE FEATURE DEPENDENCIES

SECURITY

SOFTWARE LICENSE	DIMETRA EXPRESS	DIMETRA X CORE
Air Interface Authentication	L	L
Security Group Partitioning	X	L
Air Interface Encryption (AIE)	L	L
Temporary Disable	L	L
Permanent Disable	X	L
Group Cipher Key (GCK)	X	L
Over the Air Rekeying (OTAR)	L	L
Secondary Authentication Center	X	L
Network Authentication (User management and service enhanced access control)	X	L
Key Manager (KM)	L	X

DATA

SOFTWARE LICENSE	DIMETRA EXPRESS	DIMETRA X CORE
Short Data Messaging Service to Group Short Data Service	L	L
Enable Secondary Common Control Channel	L	L
3 x Enable Secondary Common Control Channel	X	L
Packet Data Service	L	L
Increased Short Data Capacity	X	L
Short Data Store-and-Forward	L	L
Secondary/Redundant Short Data Router	L*	L
TETRA Enhanced Data Service (TEDS)	X	L
Secondary/Redundant Packet Data Gateway	L*	L

* This feature is available with the purchase of a second DIMETRA Express Server and the Geographical or Local Redundancy Licence

Key

L	X
Licensed Feature	Feature Not Available

WORKFORCE MANAGEMENT

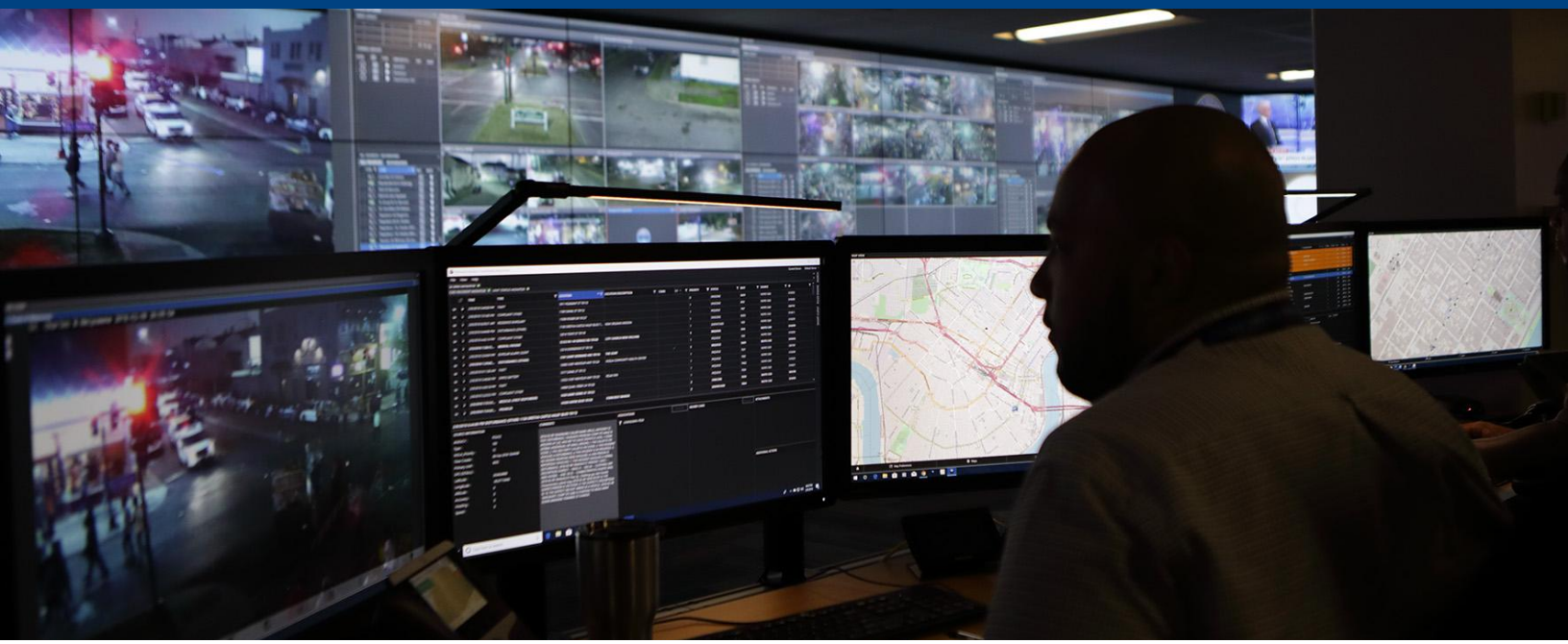
SOFTWARE LICENSE	DIMETRA EXPRESS	DIMETRA X CORE
Barring of Incoming Calls / Barring Outgoing Calls (BIC/BOC)	X	L
Call Forward	X	L
Call Wait	X	L
Control Room Individual Calls	X	L
Console Telephony	X	L
Dynamic Shared Service	X	L
10 Call Telephone Interconnect	L	L
Object Call	X	L
Extended range	X	L
Radio User Identity / Radio User Authentication	X	L
Agency Priority Matrix	X	L
Energy Economy Mode	X	L
Inter System Interface (ISI) Gateway	X	L

CONTROL ROOM

SOFTWARE LICENSE	DIMETRA EXPRESS	DIMETRA X CORE
Dispatch Communications Server Operator Position	L	L
5 Control Room Head Number	X	L
10+10 Voice Call Logging	X	L
Discreet Listening Individual Calls	X	L
Secure Dispatch Communications Server Operator Position	X	L

Key

L	X
Licensed Feature	Feature Not Available



NETWORK OPERATIONS AND MANAGEMENT

SOFTWARE LICENSE	DIMETRA EXPRESS	DIMETRA X CORE
Zone Performance Reports	X	L
WebRCM	L	L
Dynamic Regrouping with Radio Control Manager (RCM)	L	L
Cluster Performance Reports	X	L
Zone Watch and Affiliation	X	L
System Health Application Suite	X	L
User Configuration Server API	X	L
Unified Event Manager North Bound API	X	L
Fault Forwarding NBI API	L	X
Air Traffic Information Access (ATIA) API	L	L
Computer Aided Dispatch Interface API (MCADI)	X	L
ECADI API	L	L
MCADI Server Automatic Switchover	X	L
Alias Server Automatic Switchover	X	L
MTS1 Standby Site Controller	L	L
eTETRA	X	L
100 Radio Users	L	L
1 Base Station Site	L	L

Key

L	X
Licensed Feature	Feature Not Available

For more information, please visit
motorolasolutions.com/dimetra

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