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1. Introduction

1.1 Purpose of the Document

This document identifies the Application Programming Interfaces (APIs) supported on a DIMETRA™ IP system and provides application developers a general overview of the development tools under the DIMETRA™ Developer Program.

1.2 Intended Audience

This technical communication product is for software and hardware engineering professionals with an interest in developing end-to-end solutions for the DIMETRA™ product portfolio. Readers of this document are expected to be knowledgeable about serial communications, IP networking, two-way radio equipment and systems as well as to be familiar with the different operational modes of DIMETRA™.
2. Application Programming Interfaces (APIs)

2.1 Alarm Reporting API

It enables application partners to develop applications to report DIMETRA™ alarams to monitoring systems. It is a method of network management which allows users to receive events from network elements, process them and then correlate these events to alarms and present them to the operator. This is achieved via use of the Unified Event Manager (UEM) which supports an interface to send these events to North Bound Managers (like Network Management Systems).

- **North Bound Interface:** UEM also supports interface to access information in its data-store. This interface is termed as the North Bound Interface.

2.2 Computer Aided Dispatch Interface (CADI)

CADI API provides access to radio traffic information plus some control functions (related to the actual DIMETRA™ IP release). The CADI API feature is an application programming interface for use by third-party computer aided dispatch (CAD) applications. This feature provides a high-level, function-based programming interface for performing dispatcher actions within a radio system and with individual radios from a custom software application. CADI API enables you to write software application programs, called CADI clients that can monitor radio systems for dispatch purposes.

- **MultiCADI:** similar to the CADI but provides additional capabilities. The additional capabilities are mainly an interface to the Alias Integrated Solution (AIS) for aliasing information plus an ISSI filtering function i.e. MultiCADI clients only manage events and commands for ISSIs over which they have control. Also a forwarding feature is implemented for events/commands to MultiCADI clients in the home zone of the ISSI associated with the actual event/command.

- **User Configuration Subsystem API:** The UCS API offers customer care and provisioning systems to be integrated, providing a seamless integration between the operators/customers administrative systems and the DIMETRATM-IP system.
2.3 Short Data

It covers all aspects of controlling radio terminals via the PEI port or over the air using SDS remote control

- **AT Commands:** The purpose of AT Commands is to allow a Computer (Data Terminal Equipment or DTE) to control a Modem (Data Circuit termination Equipment or DCE) over a serial data communication link (RS232).

- **SDS Remote Control Programmers Guide:** enables user to control a TETRA Mobile Terminal (MT) over the air interface using SDS-TL bearer service. Remote control messages are sent by a controlling Terminal which can be a Controlling Mobile Terminal or Switching and Management Infrastructure (SwMI) Controlling Terminal. SDS Remote Control Functionality works in both TMO and DMO.

- **TNP1 Programmers Guide:** The TETRA Network Protocol type 1 (TNP1) specifies a protocol to be used over the TETRA Peripheral Equipment Interface (PEI) designed to allow the TE to have control over the TETRA services. This includes mobility management, call control, QoS, SDS and supplementary services. In addition there are commands to access the radio configuration and storage parameters.

- **Short Data Transport Service (SDTS):** The users of SDTS can access the service at two points: at the PEI in the Mobile Station (MS), and at the SwMI on the Local Area Network (LAN). In addition to this, there may be internal applications in the MS. Such applications are limited to applications developed by Motorola Solutions.

- **SDTS Billing System:** The SDTS Billing System allows charging of transmitted Short Data message in the DIMETRA™ system. This includes delivery on the air interface and the core network. So MS-to-MS, MS-to-Host, Host-to-MS and Host-to-Host transfers are billed. The Short Data Router (SDR) incorporates the billing functionality and is therefore regarded as a Billing Node of the Billing System.

2.4 Packet Data Service (PDS)

The Packet Data Service is designed to take care of all mobility aspects for the users of the service. This means that a host connected either to a Mobile Station (MS) or to the LAN access point does not need to worry about the whereabouts of the destination when sending a datagram. If e.g. an MS is assigned address x.y.z.x, then sending a datagram to this MS can be achieved from the fixed network by sending a datagram to that address, regardless of the current location of the MS.
2.5 MCC7500 APIs

The MCC7500 APIs allows creation of software applications which can access all of the functionality of the Motorola MCC7500 Dispatch system

- **MCC7500 Elite Console**: are only intended for local applications like e.g. a GUI. Applications using the Local MCC7500 APIs are not allowed to communicate with other applications via the network. If this is required then the Remote MCC7500 API should be used.

- **Remote MCC7500 API**: possible to get access to the same API calls/events as with the Local MCC7500 API. The customer applications using the Remote MCC7500 API will be placed on a customer PC and the applications will then access the MCC 7500 API via a SSL encrypted CORBA interface.

2.6 MCC7500 Voice Logging API

Very much like the Remote MCC7500 API, here the MCC7500 system is installed on an Archiving Interface Server (AIS) with one or more connections to the customer’s Voice Logger system.

2.7 MS GPS

It is a location interface that uses the LRRP protocol or the ETSI LIP protocol for communication. It allows third parties develop GPS location decoder programs.

2.8 Bluetooth Programmers Interface Guide

The Bluetooth API enables that an external Bluetooth device can connect to the Motorola portable radio for access to the following services: (1) transmitting and receiving raw sensor data between the remote Bluetooth device and a short data services (SDS) host, (2) a remote Bluetooth device to control the Motorola Solutions’ portable radio via AT commands, and (3) a remote Bluetooth device to gain access to TETRA packet data services
2.9 iTM PICS Interfaces Programmers Guide

The iTM PICS interfaces provide access to pictures and digital fingerprints collected from camera-enabled Motorola TETRA radios via the iTM PICS system. It in addition allows pictures to be distributed to radios capable of displaying pictures – but not necessarily equipped with a camera.

- **iTM Interfaces Programmers Guide**: provides information on the integrated Terminal Management (iTM) standard APIs and is a prerequisite for understanding the PICS APIs; this document will be referenced as needed.