IMPRES™ Battery Fleet Management User Guide

MN007495A01-AE

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Read Me First

This manual contains information about IMPRES™ Battery Fleet Management and how to use the system with ASTRO Over-the-Air, MOTOTRBO Over-the-Air, and chargers with IMPRES Battery Fleet Management data capabilities.

Notations Used in This Manual

Throughout the text in this publication, you will notice the use of warning, caution, and notice notations. These notations are used to emphasize that safety hazards exist, and due care must be taken and observed.

WARNING: WARNING indicates a potentially hazardous situation, which, if not avoided, could result in death or injury.

CAUTION: CAUTION indicates a potentially hazardous situation, which, if not avoided, might result in equipment damage.

NOTE: NOTICE indicates an operational procedure, practice, or condition that is essential to emphasize.

Related Publications

The following list contains part numbers and titles of related publications.

- MN007473A01, *IMPRES™ Battery Fleet Management Installation Manual*
- MN007495A01, *IMPRES™ Battery Fleet Management User Guide*
- MN007501A01, *IMPRES™ Battery Fleet Management Troubleshooting Guide and External Software and Component Configuration Guide*
- MN008435A01, *IMPRES™ Battery Fleet Management WEB Interface User Guide for Release 4.0*
- 6880309T12, *MOTOTRBO System Planner*
- MN008144A01, *Intelligent Middleware Installation and Configuration Manual 5.2.4*
- MN005566A01, *Intelligent Middleware Installation and Configuration 5.2 and 5.2.2*
- MN008145A01, *Intelligent Middleware Feature Manual 5.2.4*
- MN005630A01, *MSI Charger Reprogrammer Installation Guide*

Contents

Chapter 1

Introduction to IMPRES Battery Fleet Management

This section provides information about the IMPRES Battery Fleet Management feature. The data application feature is used by customers to manage the battery health.

The Battery Fleet Management application provides battery data from IMPRES 2 chargers, Motorola ASTRO P25 systems with Intelligent Middleware (IMW), or MOTOTRBO systems with battery support. For more information on a complete list of the requirements of a system and charger, see *MN007473A01, IMPRES™ Battery Fleet Management Installation Manual*.

> **NOTE:** Due to the nature of LMR data, the battery current charge levels reported Over-the-Air (OTA) are not real time information. The reported data is the battery level at the time the radio sends the message to the Battery Fleet management system.

> **NOTE:**
> The Over-the-Air solution supports Motorola Solutions IMPRES batteries on APX portable radios and MOTOTRBO portable radios that are capable of and configured for the battery management feature. This solution does not work with third party batteries or non-Motorola Solutions radios. The OTA does not support Motorola Solutions NON-IMPRES (CORE) batteries.
>
> When using the OTA feature, the battery data presented are not real time information. System settings are tuned to be optimized for the LMR network. Charger data readings will be in near real time.

> **NOTE:** The connected charger feature supports both the Motorola Solutions IMPRES batteries and the Motorola Solutions NON-IMPRES (CORE) Batteries

1.1
Marketing Overview

The IMPRES Battery Fleet Management Application (IBFMA) supports collection of battery information each time an authorized Motorola Solutions battery is inserted into an IMPRES 2 charger.

IMPRES Battery Fleet Management supports automatic collection of battery information Over- the-Air while the radios are in use and collecting battery data from the chargers.

IMPRES Battery Fleet Management enables you to retrieve relevant information using the Web Browser Application. Data is stored in a database and can be exported to a .csv file.

IMPRES Battery Fleet Management software records and organizes a variety of data to enable you to do the following:

- Evaluate whether batteries are meeting their performance criteria
- Determine when batteries are nearing their end-of-life
- Eliminate unexpected downtime and work interruptions to change batteries
- Avoid the expense of throwing batteries away prematurely
- Identify batteries that are missing, lost, or inactive
- Identify radios that are not using IMPRES batteries
- Identify radios that may not be configured to support battery reporting

● Identify batteries that are connected to specific radios, past radios, or radios in chargers

> **NOTE:** Over- the-Air battery management focuses on managing the long term health of the batteries. It is not meant to provide the current real-time energy levels of all radios within the system.

1.2
Technical Overview of Interaction with ASTRO Radio System

This section provides the technical overview of interaction with ASTRO Radio System.

The following diagram shows high level components integral to the IMPRES Battery Fleet Management solution within the ASTRO system architecture.

Figure 1: Components Integral to the IMPRES Battery Fleet Management
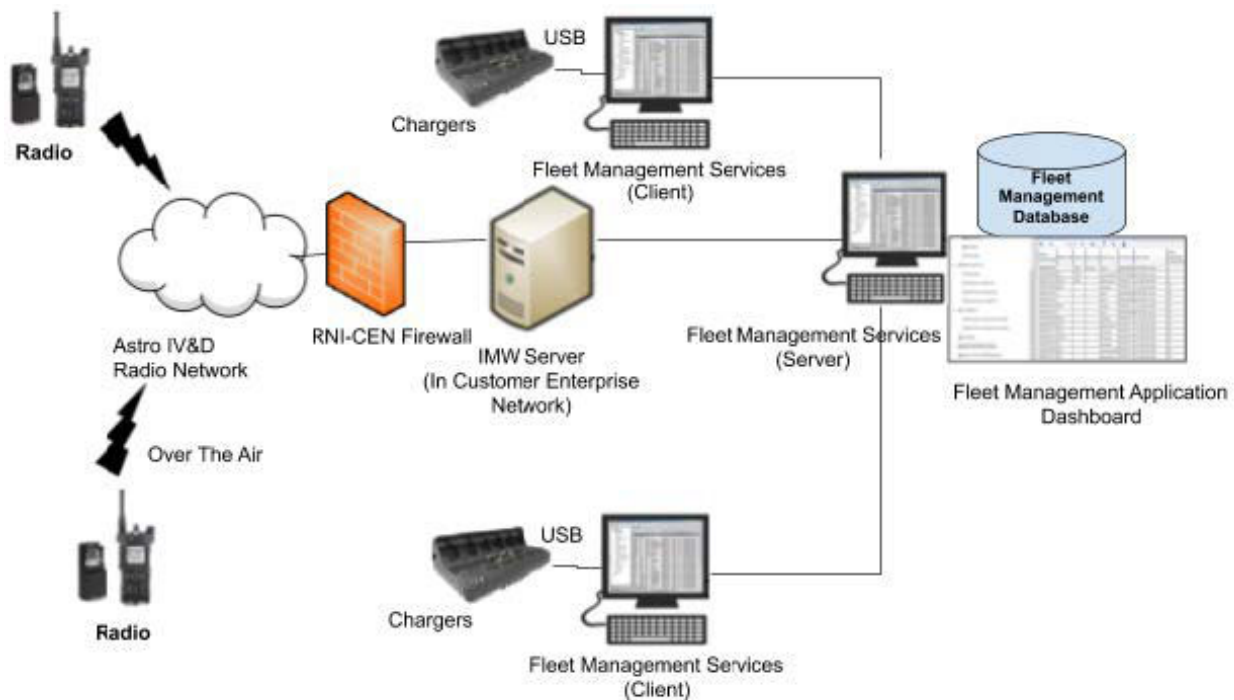
The solution requires an ASTRO Integrated Voice and Data (IV&D) system. The system uses the ASTRO Intelligent Middleware (IMW) server that collects and distributes data to and from the radios in the field. The IMW server enables efficient communication such as avoiding wasting valuable air-time by not sending messages to inactive radios on the system.

The IMPRES Battery Fleet Management system can be used as a standalone application or as a Server/ Client distributed system. The Battery Fleet Management application is installed on a server PC and connected over the network to the IMW. The application bundle uses a Windows service to communicate with the IMW. The Window service, which is running in the background, is able to gather the radio or battery data even though the application is not running. The client connection enables battery data gathered from other PC and/or Chargers to be stored in the server database. A client-server connection enables the monitoring of battery data for all connected devices from different locations.

1.2.1
ASTRO Radio System Operation Overview

Over-the-air operation of the IMPRES Battery Fleet Management application on ASTRO systems uses the Intelligent Middleware (IMW) and Identity Manager (IDM).

The IMW server sits in the ASTRO CEN (Customer Enterprise Network) and provides an API interface point for the IMPRES Battery Fleet Management application to communicate with ASTRO radios in the field. The IMW provides a REST interface that the Fleet Management application uses to communicate with the IMW database and ASTRO radios. The IMW provides radio services for presence, location, messaging, geofence, and sensor operation. IMPRES Battery Fleet Management application uses the IMW presence and sensor services only. The IDM is part of the IMW installation that is responsible for authorizing MSI and third-party applications to access IMW services. The IMPRES Battery Fleet Management application is authorized to connect to the IMW API through the IDM.

For IMW versions 5.2.2 and earlier, the IDM is part of the IMW installation that is responsible for authorizing MSI and third-party applications to access IMW services. The IMPRES Battery Fleet Management application is authorized to connect to the IMW API through the IDM.

When an APX radio is turned on, the radio first registers with the IMW so that the IMW knows that the radio is present on the system. The IMW is an intelligent middleware server that collects and distributes data to and from radios in the field. The IMW has a data connection to the battery management server and possibly to other types of servers. IMW is used as an intermediary that makes communication more efficient. For example, messages are not sent to radios that are not currently active on the system.

After a radio is turned on, the IMW sends a message to a non-permanently configured radio for the radio to report battery management activity. The radio reports the battery model and battery serial number and radio identity to the IMW. The IMW reports the presence of the radio and battery identity to the battery management server. The battery management server then evaluates to see if it has been more than 21 days (default) since the data for that battery has been updated in its database.

The Measurement Update Report message contains the battery health information, which happens only if the **Battery Data Refresh Overdue (Days)** timer has expired.

Manual requests for battery status updating can be initiated by a PC operator pressing the green icon to the left of the row containing a battery/radio record.

Table 1: IMW Reporting System

Situation	Actions
The radio and battery is present for more than 21 days (default).	- Battery management server signals the radio through the IMW to report battery health and status. - The radio responds and the updated information is written to the battery fleet management database.
The radio and battery is present for not more than 21 days (default).	The battery management server notes the new registration day and time and if the same battery is still attached to the same radio and writes this information to the battery fleet management database.

NOTE: The only opportunity for automated updates of battery health and level are provided when the radio powers up or changes modes to a conventional channel or different trunked system. An additional opportunity is provided when the IMW token timer expires, typically every 8 to 24 hours after power-up.

If the narrowband data channel is congested and an update is missed, the radio will likely be successfully contacted at the next opportunity. Manual updates requested by a battery fleet management client operator will be sent to the radio immediately, if the radio is currently present in the system.

1.3
Technical Overview of Interaction with PCR Radio System

This section provides the technical overview of interaction with PCR Radio System.

Figure 2: Setup for MOTOTRBO PCR Radio System and IMPRES Battery Fleet Management Application (IBFMA)
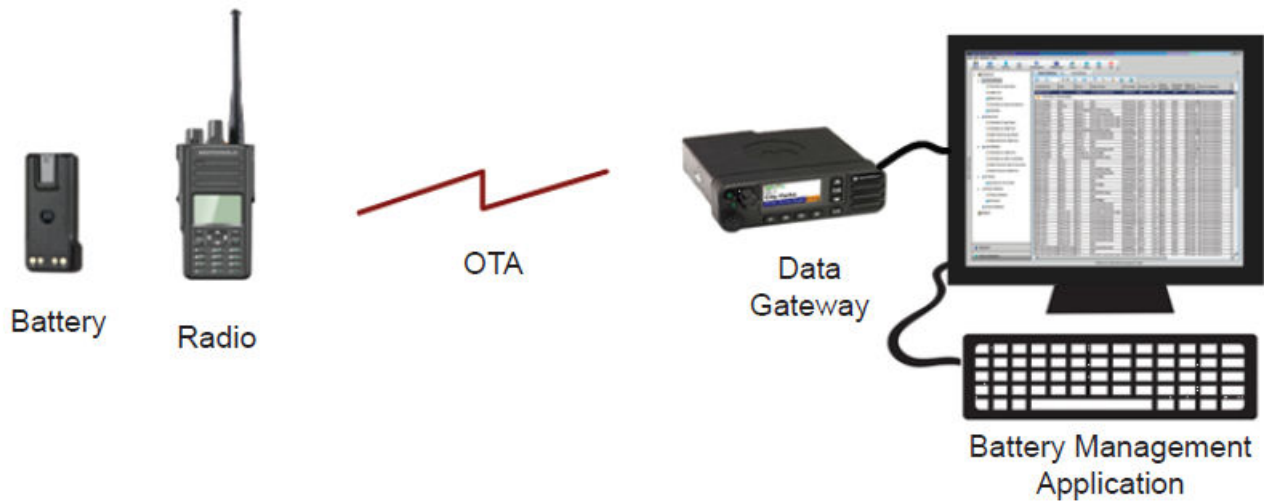
The solution manages the battery data over the radio RF link when the batteries are in use. The IBFMA requires a data gateway in order to communicate to the radios over-the-air. The system currently supports the following types of data gateways:

- Direct USB connection to a radio such as a control station which communicates to the system over-the-air
- One of the following IP connection to the system through the Motorola Network Interface Service (MNIS):

Table 2: IP Connections

IP Connections	Descriptions
MNIS Deployments	Single Site
	IP Site Connect
	Capacity Plus (Single Site / Multi Site)
	Linked Capacity Plus
	Capacity Max
Control Station Configurations	Direct Mode
	Single Site
	IP Site Connect
	Capacity Plus (Single Site/Multi Site)

IP Connections	Descriptions
	Linked Capacity Plus
	Capacity Max

In either case, the battery management application sends IP datagrams targeted towards the radios, and the data gateway routes them over-the-air.

The following is a list of high level system requirements for the MOTOTRBO over-the-air solution:

- Relevant battery data is read over the radio RF link when the batteries are in use.

- A user initiated immediate request to read a battery data is supported.

- Radios that are using NON-IMPRES batteries are logged.

  ○ Allows the dealers to understand the relationship between how many radios are using IMPRES batteries and how many are not. An important tool to generate sales.

- The radio authenticates the requesting battery management application is a Motorola Solutions application prior to transferring the battery data.

- The battery management application does not require the Presence Notifier.

  ○ Many systems do not use the automatic registration service or Presence Notifier.

  ○ Some system architectures do require the presence service to route messages.

- The over-the-air transfer of the battery data is optimized to minimize the impact on other services.

  ○ Only the battery data of interest is transferred from the radio to the battery management application.

  ○ The battery data that is static or never changes is only transferred once per battery.

  ○ The battery data that does change is transferred periodically no faster than the rate that data actually changes.

  ○ The battery data is transferred randomly to minimize the impact to other services.

- The configuration of the battery management application is minimal.

  ○ Battery serial numbers do not have to be manually populated into the application.

  ○ Radio IDs do not have to be manually populated into the application.

  ○ Battery read operations do not have to be scheduled by the user.

1.4
Technical Overview of Interaction with IMPRES Charger

This section provides an illustration of one possible IMPRES Battery Fleet Management installation that has multiple IMPRES Multi-Unit Chargers and Single-Unit Chargers that are attached to computers in different locations.

The computers are networked to communicate with a single logical IMPRES Battery Fleet Management server.
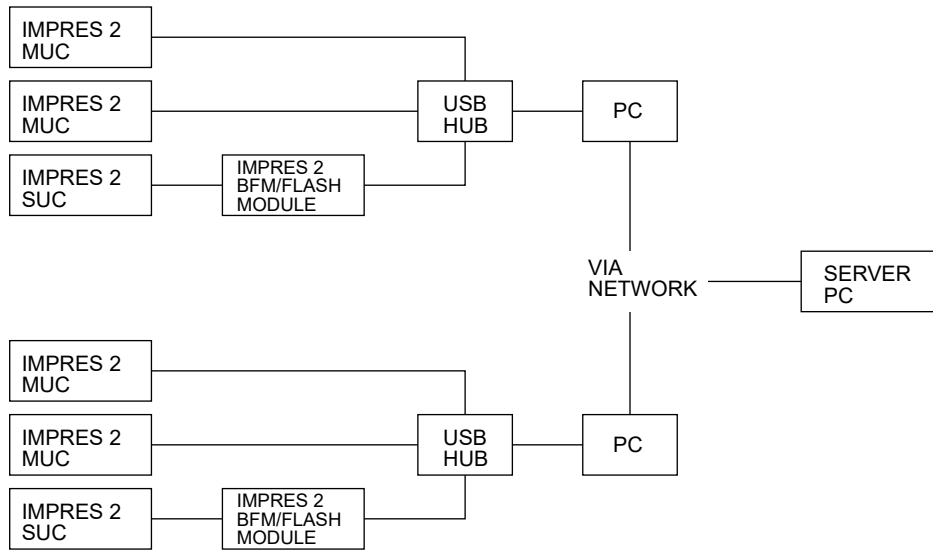
1.5
Technical Overview of Web Services

This section provides information on the basic operation of the web services.

The main IMPRES Battery Fleet Management application (IBFMA) server provides the storage and processing of the battery and radio data from the various Over-the-Air (OTA) and chargers using the client PCs or connected to the main server. A Fleet Management Web Server component communicates directly with the IBFMA database to extract or modify information. The extracted information is used to populate all of

the web client interfaces. Information sent from a web client is written to the IBFMA database for processing by the main server subsystem.

> **NOTE:**
> The web service only extracts information from the main server subsystem approximately every 30 seconds. Refreshing a web page before 30 seconds has passed may not indicate changes that have taken place. If a web page has sent in a modification or command request, and then a forced refresh of the web page is made, the page may still show the outdated data.

The battery data from chargers is refreshed every 5 minutes.
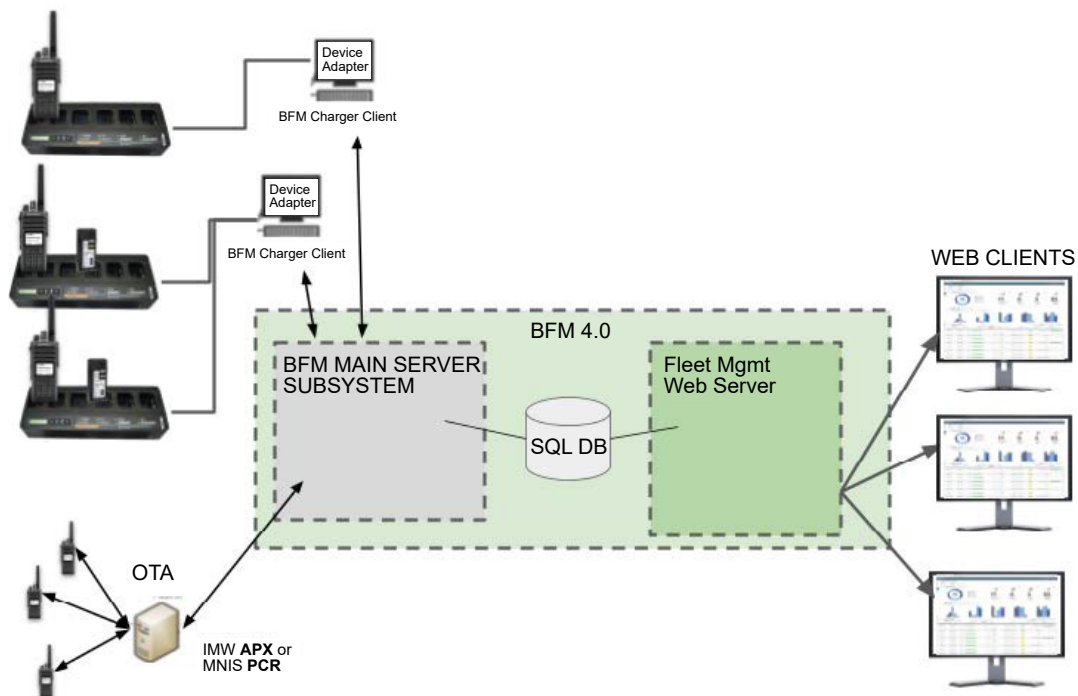
1.6
ASTRO OTA Performance and Capacity

The IMPRES Battery Fleet Management Application (IBFMA) is designed for systems that support other ASTRO 25 data applications such as location reporting, P25 radio provisioning, and Over-the-Air Rekeying (OTAR).

The IBFMA places a low demand on the use of data services for an individual radio, but a system may support a large number of radios with the battery management feature and additionally may support multiple applications on each of these radios.

It is important that enough data capable channel resources are available at each RF site to support the anticipated data loading of all the data applications that are used across all the radios that are present at each site. Voice has priority over data and channels are used for either voice or data operation. A site that is near its maximum capacity for voice calls provides very poor data performance.

Motorola Solutions field engineers have a data modeling tool available that can be used to examine your specific configuration of subscribers, mix of data applications, and per-site channel configurations. The specifics of how data is used for the battery management application are known to this modeling tool. Your field engineer can use this tool to understand if the system is correctly sized for the anticipated data loading of all data applications.

1.7
MOTOTRBO Performance and Capacity

The IMPRES Battery Fleet Management Application (IBFMA) is designed for various MOTOTRBO systems usages.

The IBFMA places a low demand on the use of the resources on these systems, however a large number of radios can add to the data traffic.

It is important that enough data capable channel resources are available at each RF site to support the anticipated data loading of all the data applications that are used across all the radios that are present at each site. Voice has priority over data and channels are used for either voice or data operation. A site that is near its maximum capacity for voice calls provides very poor data performance.

Motorola Solutions field engineers have a data modeling tool available that can be used to examine your specific configuration of subscribers, mix of data applications, and per-site channel configurations. The specifics of how data is used for the battery management application are known to this modeling tool. Your field engineer can use this tool to understand if the system is correctly sized for the anticipated data loading of all data applications.

1.8
IMPRES Charger IBFMA Client Performance and Capacity

IMPRES Battery Fleet Management application (IBFMA) supports up to 25 chargers connected to a PC.

A client PC currently requires the ability to poll and pass data between itself and the server. While there is not a significant amount of processing between the client and the server, at times the polling and data passing can put a load on the client. This load increases with the number of chargers connected to the client.

Chapter 2

Getting Started

This section provides information on Battery Fleet Management Application.

Refer to the manual *IMPRES™ Battery Fleet Management Installation Manual, MN007473A01-AA*, for complete installation instruction.

Download the manual from LXP (Learning eXperience Portal): https://learning.motorolasolutions.com/.

2.1

Supported Configuration

The section provides information on the supported configuration for ASTRO 25 Trunked Integrated Voice and Data system and MOTOTRBO voice and data systems such as MNIS.

Table 3: Supported Configuration

Configuration	Descriptions
Infrastructure Configuration	Intelligent Middleware (IMW) version: 5.2.1.011 or later.
	Motorola Network Interface Service (MNIS).
Radio Subscriber Configuration	APX Portable Radios: ● Includes features with SR7.18.5 and later APX portable radio software. No model option or flash code changes are required to enable this feature. ● P25 Data Enabled. ● Sensor Enabled.
	MOTOTRBO PCR Radios: ● Tick Data Call Confirmed and select Follow Data Call Confirmed in Location Data Delivery Mode. ● Select Advantage for Text Message Type.
Charger Configuration	All IMPRES 2 MUCs with USB connectors.
	All IMPRES 2 SUCS with UART port and UART to USB adapter.
	LEGACY support for IMPRES chargers with CIU adapters and Battery Data Readers. NOTE: While outdated chargers with CIUs may continue to function, there will not be continuation of updates to their drivers or guarantee of functionally or feature enhancements in the future.
Fleet Management Configuration	IMPRES Battery Fleet Management Application (IBFMA) allows retrieval of battery information from USB connection with chargers and handling of ASTRO and PCR Over-the-Air (OTA) battery information query.
MOTOTRBO Configuration	IMPRES Battery Fleet Management Application communicates with the MOTOTRBO PCR radio system through an IP data gateway. IMPRES

Configuration	Descriptions
	Battery Fleet Management Application obtains the PCR radio and battery information from one of the following ways: ● Motorola Network Interface Service (MNIS) - which communicates through IP address to the MOTOTRBO PCR system. ● MOTOTRBO PCR radio configured as a control station. The control station needs to be connected to the PC through Customer Programming Software (CPS) cable. To receive MOTOTRBO PCR radios and battery data from MNIS Data Gateway or control station, the Motorola Solutions IMPRES Fleet Management Radio Network Service status in **Services** must be `Running`.
ASTRO Configuration	The IMPRES Battery Fleet Management Application obtains ASTRO APX radio battery data from the Intelligent Middleware (IMW) server. The Battery Fleet Management application connection to the IMW server requires a password to the Identity Manager (IDM) server. The IDM server is part of the IMW. The Battery Fleet Management application must be configured with the IDM address (hostname or IP address), the IMW address, domain of the IMW, and presentity which is a subscription to an individual or a group of devices in the IMW server that you want to monitor. The status of the Motorola Solutions IMPRES Fleet Management Unified Network Service in **Services** should show `Running` in order to receive ASTRO APX radios and battery data.

2.2
Overview

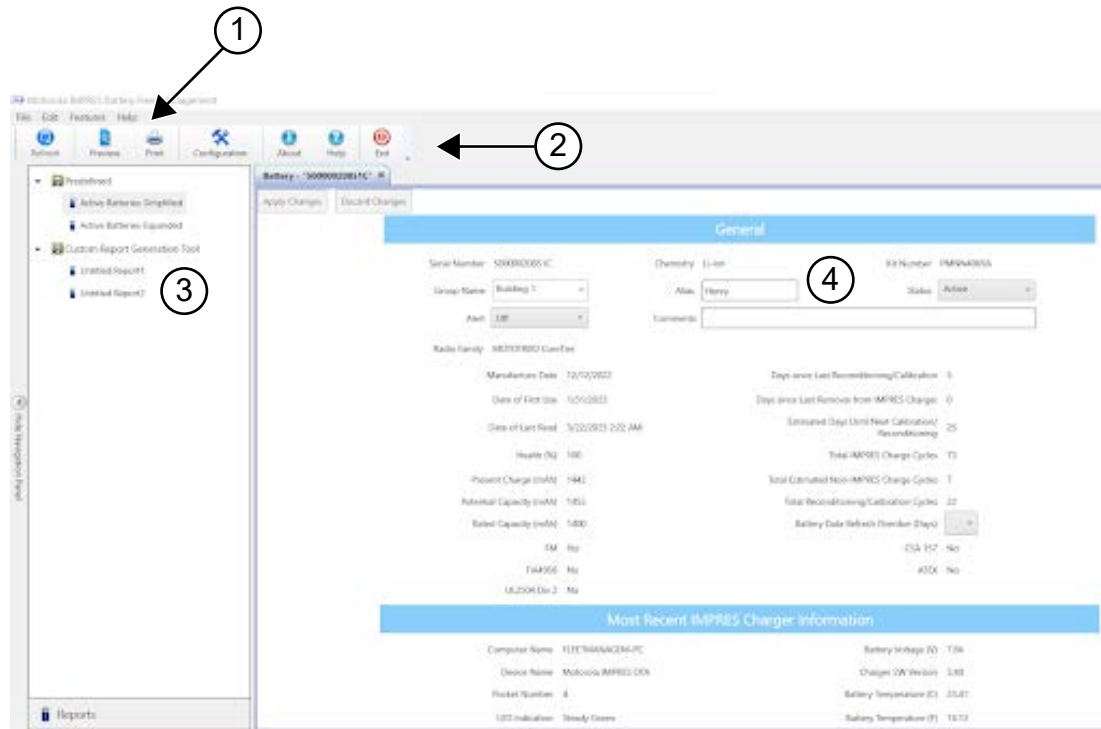**IMPRES Battery Fleet Management Application User Interface**

Table 4: User Interface

Items	Description
1	**Menu Bar** An area that groups all the menus
2	**Toolbar** An area that groups icons for basic tasks
3	**Navigation panel** Lists two basic reports and the deprecated custom report tool.
4	**Result Panel** Displays the contents based on the selection on the **Reports**

2.3
Report Interface

The Report Interface displays two basic reports.

The Predefined and the Custom Report are deprecated and can be removed in future releases.

Figure 3: Report Interface

2.4
Charger Firmware Reprogramming

To reprogram charger firmware, refer to MN005630A01, *MSI Charger Reprogrammer Installation Guide*.

Chapter 3

Over-the-Air IMPRES Battery Fleet Management Operations

This section describes the IMPRES Battery Fleet Management operations.

3.1
Service usage for Radios

Subscriber radios collects data from the IMPRES batteries.

There are two forms of data the subscriber radios collect from a battery.

● Static - provides the specifics of the physical battery

● Dynamic - capturing the health of the battery

Static Data Set

The following are the static data that are set at the time of battery manufacture.

Table 5: Static Data Set

Parameter	Description
Chemistry	Chemistry
KitNumber	Kit Number
RatedCapacity	Rated Capacity
SoftwareVersion	Charger SW Version
Manufacture Date	Manufacture Date
DayOfInitialUse	Day Of Initial Use
ChargerHighTemperature	Charger High Temperature
ChargerLowTemperature	Charger Low Temperature

Dynamic Data Set

The following are the Dynamic data.

Table 6: Dynamic Data Set

Parameter	Description
SNSR	Sense Resistor
ICA	Integrated Current Accumulator
CTS	Current Tank Size
FDDp	First day self discharge percent
DISp	Self discharge percent per day

Parameter	Description
DCHG	Day of Last IMPRES Charge
LHR	Last Known Hour
LMIN	Last Known Minute
RecondWeights	Reconditioning Weighting Block
TRIG	Reconditioning Trigger
NonIMPRESCycles	Total Estimated Non-IMPRES Charge Cycles
CalibrationCycles	Total Reconditioning/Calibration Cycles
ChargerLEDStatus	LED Indicators
ChargeStatus	Battery State
Voltage	Battery Voltage
Temperature	Battery Temperature
AddedHistogram	Charge Added Histogram Data
RemainingHistogram	Charge Remaining Histogram Data
DayOfLastReconditioning	Day Of Last Reconditioning
ETM	Elapsed Time Meter
LastKnownDay	Last Known Day

3.2
IMPRES Battery Fleet Management Application with Over-The-Air for ASTRO Radios

The IMPRES Battery Fleet Management application (IBFMA) communicates with the radio system through an IP data gateway, the Intelligent Middleware (IMW) server, which then communicates to the subscriber radios in the system.

IBFMA must be programmed to access the IMW and set the presentity (presence entity) to subscribe to the individual or the group of devices in the IMW that the operator wants to monitor for battery management activity. The IBFMA can support battery data collection from subscriber radios through network connected IMPRES chargers and the ASTRO 25 IV&D data network.

When the IBFMA connects to the IMW server and subscribes its presentity in the system successfully, it queries the basic battery data from the radios registered in the presentity list. If the battery data is returned to the IBFMA, the IBFMA then checks if the battery record was previously registered with the IBFMA. If the battery is not registered with the IBFMA, the IBFMA creates a new record for the battery and reads its battery data over-the-air. If the battery is registered with the IBFMA, the IBFMA checks the last time the battery data was read. If it has not been recently read, the IBFMA reads the battery data over-the-air. If it has been recently read, no action is taken. The time the IBFMA updates battery health is determined by a configurable timer, which allows configuration of between 1–3 weeks.

When a radio powers up, it registers its current battery over-the-air with the IBFMA. If the battery is not registered with the IBFMA, the IBFMA creates a new record for the battery and reads its battery data over-the-air. If the battery is registered with the IBFMA, the IBFMA checks the last time the battery data was read. If it has not been recently read, the IBFMA reads the battery data over-the-air. If it has been recently read, no action is taken.

3.3
IMPRES Battery Fleet Management Application with Over-the- Air for PCR radios

The IMPRES Battery Fleet Management application (IBFMA) communicates with the radio system through an IP data gateway.

The IP data gateway can be either the Motorola Network Interface Service (MNIS), which communicates through IP to the repeaters in the system, or a mobile radio configured as a control station.

3.3.1
Battery Management UDP Port

The User Datagram Protocol (UDP) is one of the core Internet protocol for sending short messages (datagram) between devices.

UDP enables communication between these devices via a unique port number. The Battery Management Service (BM) UDP Port specifies a dedicated port number for the target destination such as computer or radio to enable communication between the BM client and BM server. The configurable BM UDP Port is for the destination server receive port only.

Range:

Maximum	Minimum	Increment
65535	1	1

NOTE: The BM, Text Messaging Service (TMS) and, Telemetry port number must always be different to avoid conflict.

3.3.2
Battery Management Configuration

The Battery Management application must have an Motorola Network Interface Service (MNIS) data gateway on the same computer.

Battery management is enabled on the subscribers, and the radio ID of the MNIS Data Gateway is configured as the battery management radio ID. After power up, within a few hours, the subscribers register their batteries with the battery management application and their battery data is read. They are read again every few weeks. See for more details.

Battery Management on MNIS Data GW (assuming the data gateway is on the 172.21.20.0/26 network, UDP port):

public_IP:58041 maps to 172.21.20.24:58041

3.3.3
Over-The-Air Battery Management Configuration

The Battery Management application must have an MNIS Data Gateway on the same computer. Battery management is enabled on the subscribers, and the radio ID of the MNIS Data Gateway is configured as the battery management radio ID.

The Battery Fleet Management application (BMA) starts empty. Within a few hours after a radio powers up, it registers its current battery over-the-air with the BMA. If the battery has never been registered with the BMA before, the BMA creates a new record for the battery and reads its battery data over-the-air. If the battery

has been registered with the BMA before, the BMA checks the last time the battery data was read. If it has not been recently read, the BMA reads the battery data over-the-air. If it has been recently read, no action is taken. Radios register their battery about once a day, and a battery data is read once every few weeks.

> **NOTE:** Over-the-air battery management focuses on managing the long term health of the batteries. It is not meant to acquire the current real-time energy levels of all radios within the system.

3.4
Last Known Radio Feature

The Battery Fleet Management (BFM) application tracks the last radio a battery has been associated with. The last known radio information is included in the BFM reports and tables.

If a radio uses two or more batteries, you can trace the batteries associated with the radio. The batteries that are not the current battery will show as last known batteries in the reports and tables.

For example, if radio A uses battery A and changes to battery B after some time, then Radio A is the current radio. If radio A is connected to battery B, then radio A will be shown to be the last known radio used with battery A.

3.5
Battery Data Collection Frequency

When the IMPRES Battery Fleet Management application (IBFMA) is running, the application listens to all the registered radios in the individual or group presently.

Battery data is collected based on one of the two timers configured in the IBFMA, such as Battery Data Refresh Overdue Timer and the Battery Data Refresh Timer. These timers may require adjustments for optimal performance. The default values should be acceptable for most scenarios.

> **IMPORTANT:** The IBFMA collects battery data when it receives a radio registration upon radio power up, or when the IBFMA is connected to the Intelligent Middleware (IMW) system and subscribed to the presently configured in the IBFMA. Battery data is also collected when a presence subscription expires (default of eight hours) and the IMW asks the radio to re-register.

3.5.1
Battery Data Refresh Timer

The Battery Data Refresh Timer controls how frequently the battery data is read for all batteries Over-the-Air.

The value ranges from 7 to 21 days. Its default value is 21 days (3 weeks). The Battery Data Refresh Timer can be found in the **Preferences** on the web application.

Figure 4: Battery Data Refresh Timer

3.6

Batteries Health updates in IMPRES Fleet Battery Management Application

The IBFMA examines battery health based on reported battery data and provides a recommendation based on the following conditions.

Table 7: IMPRES Fleet Battery Management Application Report Recommendation

Condition	Recommendation
The battery needs to be reconditioned or recalibrated	Reconditioning/ or calibrate battery
The battery temperature is too high for safe charging	Cool the battery before charging
The battery temperature is too low for safe charging	Warm the battery before charging
Battery reading error	Battery error

Condition	Recommendation
The battery service life health is below the system preference - Service Life Health (%)	Out of Service life - Health
The battery service life age is more dated than the system preference - Service Life Age (Days)	Out of Service life - Age
There are two or more radios with the same radio ID in the radio network	Duplicate Radio ID
The previous radio id information	Previous Radio ID
Battery data in database is more dated than the system preference - Battery Data Refresh Timer (Days)	Lost Battery
Radio registration period is longer than the system preference - Lost Radio (Days)	Lost Radio
None, no action needed	No recommendation

3.7
Interaction With IBFMA

The IMPRES Battery Fleet Management application (IBFMA) is supported in system configurations with the Radio Management application.

IMPRES Battery Fleet Management and Radio Management may be installed on the same computer.

The MSI Charger Reprogrammer tool turns off the IMPRES Battery Fleet Management Device window service, so that the tool can detect the charger connected using the USB port. The OTABM feature, if enabled, can still run in the background without any interruption from the MSI Charger Reprogrammer tool.

The IMPRES Battery Fleet Management application is supported in system configurations with third-party applications, but there may be some special considerations and configurations required. In general, it is recommended that the IMPRES Battery Fleet Management application is installed on a different computer than any other third-party application. There may be various conflicts present, example port number, which may cause issues. Interoperability testing with every third-party application in the market is not possible; therefore we only support installations on different computers. If installation on the same computer as a third-party application is a must, it is recommended you pretest all functionality before deployment.

Chapter 4

Limitation

This chapter discusses features and capabilities that is non-functional or have reduced functionality.

4.1
Subscriber Radio Limitation

The one-wire connection to the battery can only be used by one device at a time. When the radio is in the charger, the charger uses the one-wire connection and the radio cannot use it.

When the radio is not in the charger, the radio can communicate with the battery through the one-wire connection and can send battery data to the battery management application over the air.

4.2
Fleet Management Application Limitation

IMPRES Battery Fleet Management Application (IBFMA) only allows connection with one Over-The-Air (OTA) system at any one time.

The following are scenarios of allowing one OTA connection at any one time.

- A IBFMA cannot connect to two ASTRO IMW systems at any one time.

- A IBFMA cannot support both the ASTRO OTA with Intelligent Middleware (IMW) system and MOTOTRBO OTA with Motorola Solutions Network Interface Service (MNIS) system at any one time.

- A IBFMA can connect to one PCR MNIS system and one ASTRO OTA IMW system simultaneously.