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## 1. Introduction

### 1.1. Scope

This document describes requirements and procedures that customer must follow in order to be compliant with PFM service. It contains the step-by-step procedure to help the customer in the development an application as PFM Compliant.

### 1.2. Audience

This document is intended for customers who design products that integrate Telit modules and are interested in maintaining the module's firmware up-to-date with latest enhancements and features.

### 1.3. Contact Information, Support

For general contact, technical support, to report documentation errors and to order manuals, contact Telit's Technical Support Center (TTSC) at:

[TS-EMEA@telit.com](mailto:TS-EMEA@telit.com)  
[TS-NORTHAMERICA@telit.com](mailto:TS-NORTHAMERICA@telit.com)  
[TS-LATINAMERICA@telit.com](mailto:TS-LATINAMERICA@telit.com)  
[TS-APAC@telit.com](mailto:TS-APAC@telit.com)

Alternatively, use:

<http://www.telit.com/en/products/technical-support-center/contact.php>

For detailed information about where you can buy the Telit modules or for recommendations on accessories and components visit:

<http://www.telit.com>

To register for product news and announcements or for product questions contact Telit's Technical Support Center (TTSC).

Our aim is to make this guide as helpful as possible. Keep us informed of your comments and suggestions for improvements.

Telit appreciates feedback from the users of our information.







## 2. Premium FOTA Management

### 2.1. Overview

Premium FOTA Management (PFM) provides a cost-effective, fast, secure and reliable way for wirelessly update the firmware on mobile devices, ensuring that embedded software is up-to-date with the latest enhancements and features.

Telit is able to update its products, using Firmware Over The Air (FOTA) technology, by transmitting only a “delta file”, which represents the difference between one firmware version and another.

Starting from old and new version Telit creates a delta firmware file. This file is stored in PFM server, available for download.

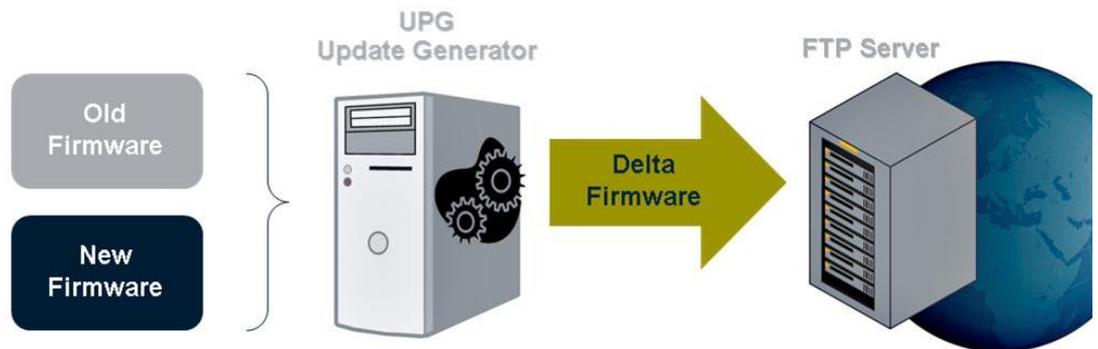


Fig.1 Delta file generation

On the opposite side, Telit Module performs the reverse operation:

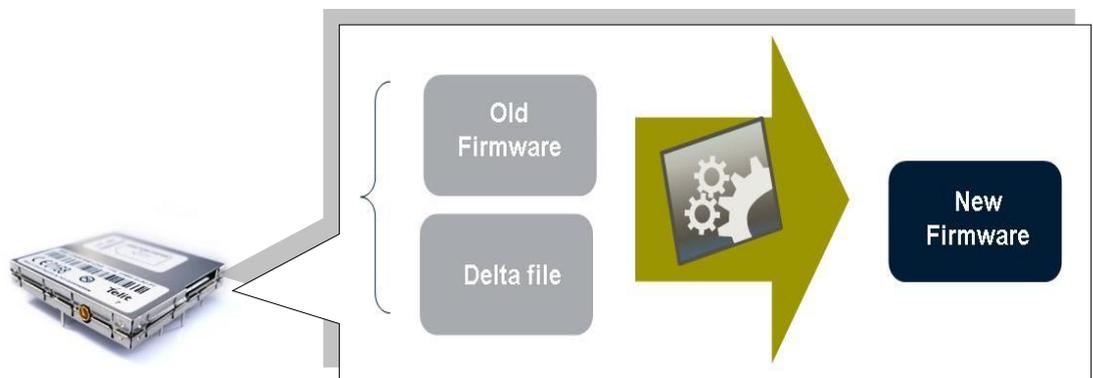


Fig.2 New Firmware generation

Customer can choose a specific target release, not necessary the latest.

PFM service is available whenever and wherever customer needs to update its own product.





### 3. General Requirements

All Telit modules currently in production support PFM. This does not signify that each Telit module inside each customer’s application can be updated.

There are some requirements to be respected either by modules and by the customer’s applications.

#### 3.1. Module Requirements

##### 3.1.1. Module Hardware Requirements

The modules listed in the applicability table only support the PFM Service.

##### 3.1.2. Module Firmware Requirements

Parameters	Release
Telit Firmware Release	7.03.xx0 or onward



***Firmware release older than 7.03.xx0 cannot be updated via PFM Service.***

#### 3.2. Customer Requirements

Customer has signed a specific agreement with Telit to access to Telit Over-The-Air update service.

##### 3.2.1. Customer Software Requirements

Customer software must be able to manage the specific PFM AT commands detailed in PFM Application Note (ref. §1.6).



***To perform the update procedure, the external application or the Python script has to confirm the update request.***

##### 3.2.2. Customer SIM Settings

In order to benefit of Telit’s PFM update service the following requirements must be fulfilled:

- The SIM needs to have enabled SMS service also in roaming;
- After the update, the PIN insertion must be managed by the external application or by the Python script;
- If the GPRS bearer is used to download the delta file, the SIM needs to have GPRS traffic enabled.
- The customer’s application must reside on the public IP network.









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In the figure below are displayed the steps each **not yet certified** customer should fulfill, in order to get the PFM compliance.

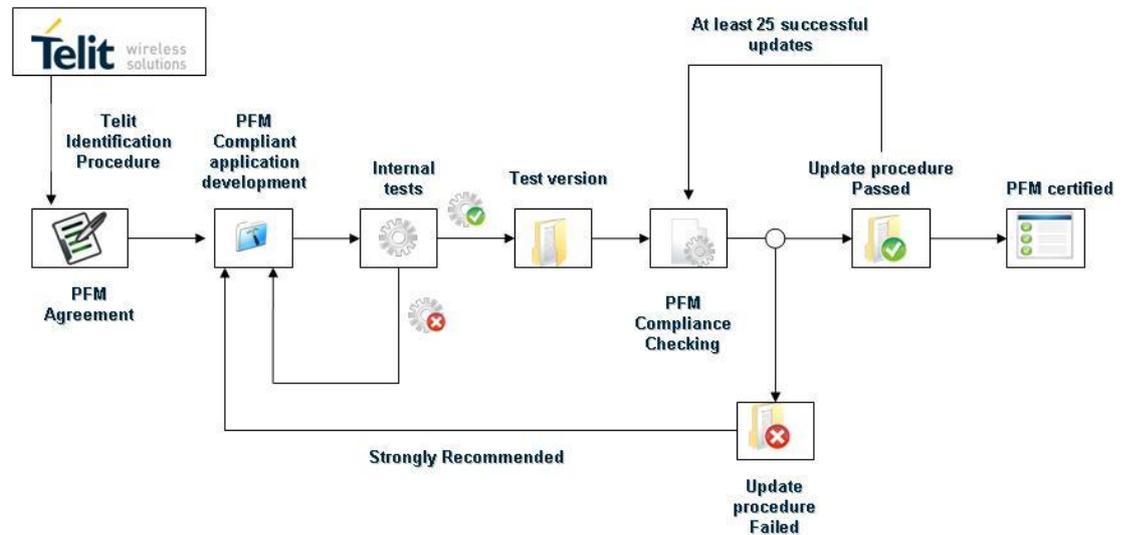


Fig.3 PFM Certification steps overview

In the figure below are displayed the steps each **certified** customer should fulfill each time his application is enhanced, in order to check if the PFM compliance is still valid.

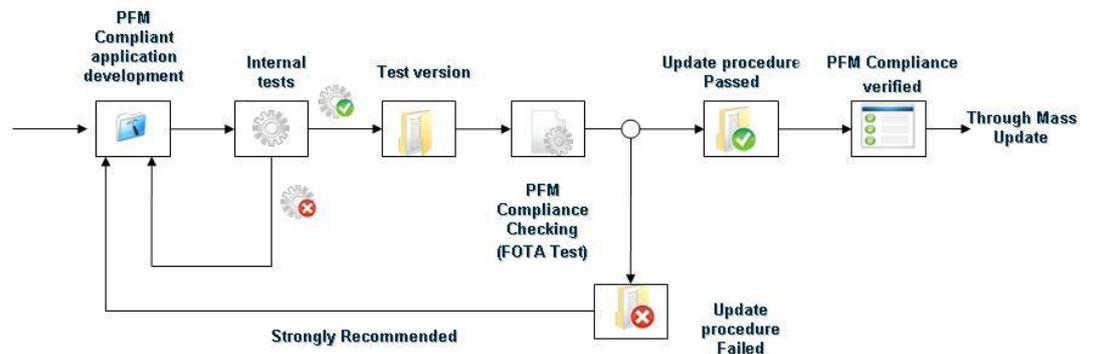


Fig.4 PFM test for certified customers



**Telit strongly recommends the certified customers using PFM certification tool each time they implement enhancements in their application.**



## 4.3. PFM Server Web interface

### 4.3.1. Overview

A web interface to the **PFM Server** has been designed, through which:

- The new user (**not PFM Certified yet**) can get the **PFM Certification**.
- The **PFM Certified** user can
  1. Request the **Special FOTA Updating** of its own modules (the **Special FOTA Updating** executes all the sms-based communication protocol and, as a result, it *doesn't really update* the firmware of the customer modules, the target software release is the same as the original one)
  2. Request the **real FOTA Updating** of its own modules (not available at the moment).
  3. Ask for reports on ... (TBD)

In the following paragraphs it will be shown how a user can get access to the **PFM Server** Web Interface, ask for information, get the **PFM Certification**, request the updating, and so on.

In what follows, we will use with the same meaning the words **IMEI** and **module**.

In what follows, we will use with the same meaning the words **user** and **customer**.

### 4.3.2. Step 1: Log In to Telit web server

From the Telit website, it is easy for a user to access the PFM web page:

<http://www.telit.com/en/products/technical-support-center.php>

and then move to the **PFM Certification Program**.

The authentication dialog of fig.5 appears:



Fig.5 PFM Web Server Interface



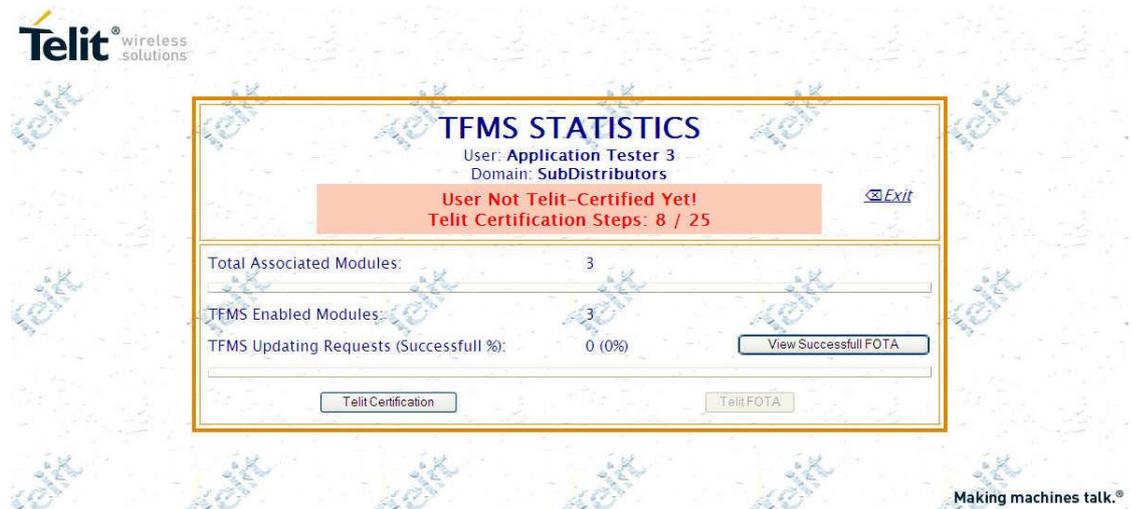
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The (new) user will select **Distributors** or **Sub-Distributor** as **User Domain**.  
Insert **User Name** and **Password** and, finally, push **Verify**.

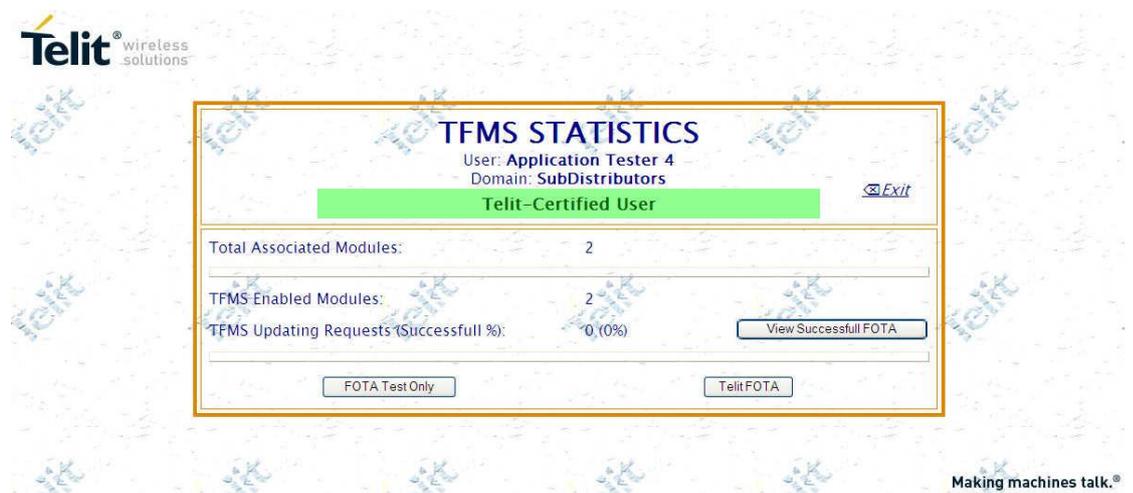
**4.3.3. Step 2: PFM Statistics**

If the authentication procedure is correct, it appears a page named “PFM Statistics”.

A highlighted information below the window title reports whether the user has already got the **PFM Certification** (→ “Telit Certified User”, see fig.7) or not (→ “User Not Telit-Certified Yet”, see fig.6).



**Fig.6 PFM Statistics dialog box in case of Not PFM Certified user (8 positive download).**



**Fig.7 PFM Statistics dialog box in case of PFM Certified customer**



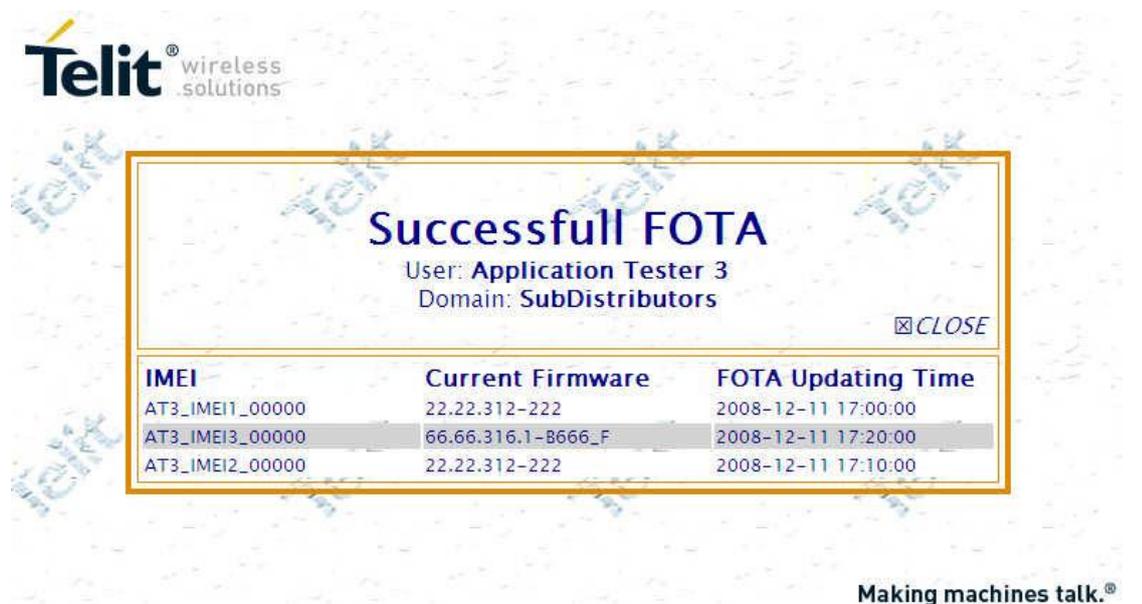
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Contents of the page:

- Total number of Telit modules associated to the user, as it appears from the **PFM** internal database;
- How many of these modules are PFM enabled;
- How many PFM Updating requests have been so far done by the user and, in percentage, how many of these have been completed successfully. Moreover, pushing the button [**View Successful FOTA**] the user can get some information about all its successfully completed FOTA Updating requests: this information will be reported in a separate web page, whose format appears in fig. 8.

The meaning of the push buttons on the bottom-side depends on whether the user has been already PFM Certified or not:

- If user has not been PFM Certified yet, only one push button ([**Telit Certification**]) is present and enabled, letting the user to proceed to get the **PFM Certification**.
- If user has already been PFM Certified, two push buttons are present and enabled, the first ([**FOTA Test Only**]) to request a **special FOTA Updating** session (this can be useful for the user when it is testing its own application), the second ([**Telit FOTA**]) to request a **normal FOTA Updating** session.



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**Successful FOTA**

User: **Application Tester 3**  
Domain: **SubDistributors**

**CLOSE**

IMEI	Current Firmware	FOTA Updating Time
AT3_IMEI1_00000	22.22.312-222	2008-12-11 17:00:00
AT3_IMEI3_00000	66.66.316.1-B666_F	2008-12-11 17:20:00
AT3_IMEI2_00000	22.22.312-222	2008-12-11 17:10:00

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**Fig.8 Module history table**



#### 4.3.4. Step 3: Filtering the IMEI List

The web page appearing when pushing either [Telit Certification], either [FOTA Test Only] or [Telit FOTA] is always the same: “Search Options”. This page permits customer to appropriately filter the information about its own modules.

From this web page on, a simple highlighted information below the main table title (if present...) is explaining implicitly what the page has been opened for:

- a) “Telit Certification Program”: special FOTA Updating session to get the PFM Certification (see fig. 9)
- b) “FOTA Test”: special FOTA Updating session (see fig. 10)
- c) Nothing: normal FOTA Updating session

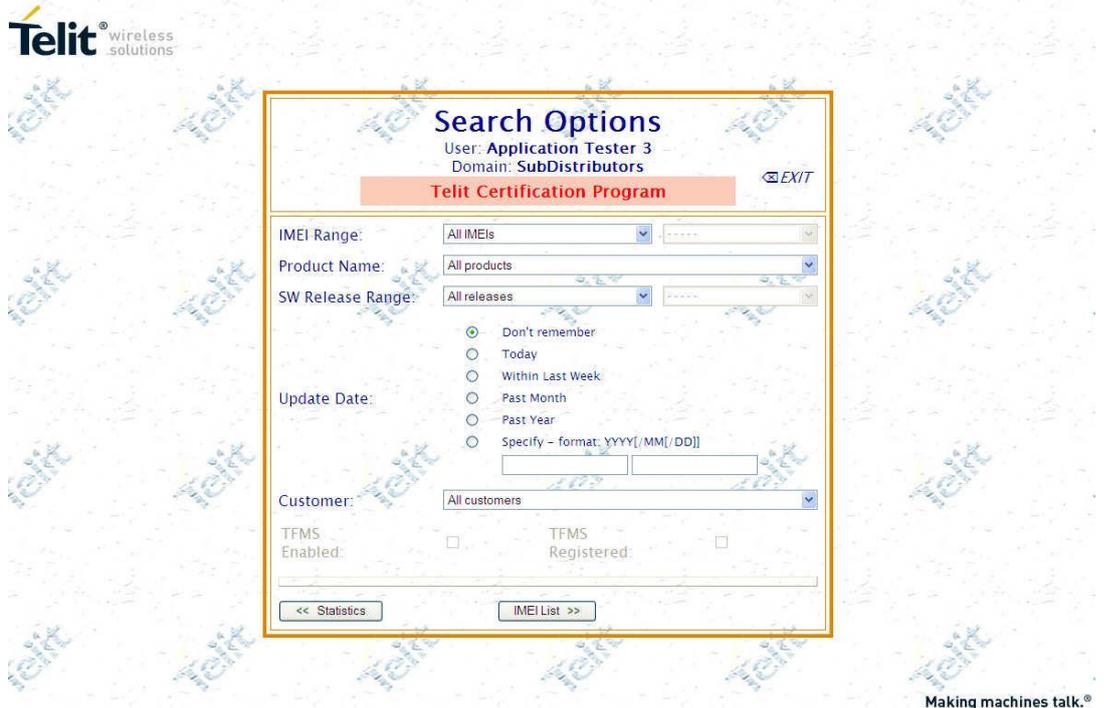


Fig.9 Search dialog box in case of not certified customers





Fig.10 Search dialog box in case of certified customers performing a FOTA Test

Available filters (each of the following filters can be applied either alone or in conjunction with other filters).

- **IMEI range:** customer can identify a subset of its own modules based on the definition of a sub-range of IMEIs.
- **Product Name:** customer can identify a subset of its own modules based on the specification either of a single product or of a class of products (e.g. “FOTA products”).
- **SW Release Range:** customer can identify a subset of its own modules based on the definition of a sub-range of software versions.
- **Updating Date:** customer can identify a subset of its own modules based on the definition of a time bound about the Last Successful FOTA Updating.
- **Customer:** (Distributors only): distributor can identify a subset of the modules owned by its sub-distributors, based on the selection of a single sub-distributor.

In the bottom side of the page you can find the [**IMEI List >>**] button, that permits customer to display the list of all its own modules/IMEIs, as requested and specified through “Search Options” page.









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**TFMS Updating Request**  
User: Application Tester 4  
Domain: SubDistributors

**FOTA Test** EXIT

*automatic refresh not enabled*

IMEI	Module Number	Product Name	Current SW Release	Target SW Release	Scheduled TFMS Updating	Elapsed Time	Performing	Progress	History
AT4_IMEI1_00000	AT4_MSISDN1	GC864-DUAL PY	11.11.311.44	11.11.311.44	----	21:35:49	----	<div style="width: 50%;"></div>	History
AT4_IMEI2_00000	AT4_MSISDN2	GC864-DUAL PY	66.66.316.1-8666_F	66.66.316.1-8666_F	----	21:16:04	----	<div style="width: 50%;"></div>	History

<< Filtered Data Submit 'TFMS Updating' Request

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Fig.14 To start and monitor the FOTA tests

To start a FOTA update test press **submit FOTA Updating Request** button, the displayed module(s) will be updated as shown in the figure below:

**TFMS Updating Request**  
User: Application Tester 3  
Domain: SubDistributors

**Telit Certification Program** EXIT

*automatic refresh every 20s.*

IMEI	Module Number	Product Name	Current SW Release	Target SW Release	Scheduled TFMS Updating	Elapsed Time	Performing	Progress	History
AT3_IMEI1_00000	AT3_MSISDN1	GC864-DUAL PY	22.22.312-222	22.22.312-222	----	0:00:01	Provisioning	<div style="width: 20%;"></div>	History
AT3_IMEI2_00000	AT3_MSISDN2	GC864-DUAL PY	22.22.312-222	22.22.312-222	----	0:00:01	Provisioning	<div style="width: 20%;"></div>	History
AT3_IMEI3_00000	AT3_MSISDN3	GC864-DUAL PY	66.66.316.1-8666_F	66.66.316.1-8666_F	----	0:00:01	Provisioning	<div style="width: 20%;"></div>	History

<< Filtered Data Submit 'TFMS Updating' Request

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Fig.15 Performing the dummy update, provisioning phase in progress

When the operation is in progress, it is possible to go back in the previous window and perform other operations.

When the required operation is completed, the **Performing** column will display two possible statuses:

- Updated;
- Not Updated.

A full report will be generated.



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This report is available clicking on **History** button.

If customer is certified and is performing a FOTA Test, the window is the following:

**TFMS Updating Request**  
User: Application Tester 4  
Domain: SubDistributors

**FOTA Test** EXIT

*automatic refresh every 20s.*

IMEI	Module Number	Product Name	Current SW Release	Target SW Release	Scheduled TFMS Updating	Elapsed Time	Performing	Progress	History
AT4_IMEI1_00000	AT4_MSISDN1	GC864-DUAL PY	11.11.311.44	11.11.311.44	----	0:00:01	Provisioning	<div style="width: 10%;"></div>	History
AT4_IMEI2_00000	AT4_MSISDN2	GC864-DUAL PY	66.66.316.1-B666_F	66.66.316.1-B666_F	----	0:00:01	Provisioning	<div style="width: 10%;"></div>	History

<< Filtered Data Submit 'TFMS Updating' Request

Fig.16 Performing the FOTA Test, provisioning phase in progress

### 4.3.7. Step 6: Operation Report

A complete report is displayed clicking on the button **History** in the column **History** for a specific module.

The following window appears:

**History Table**  
User: TTSC  
Domain: Distributors

IMEI: 357022000037450 CLOSE

2008-01-31 12:15:41	Remote Registration
2008-01-31 12:15:41	Remote Registration
2008-01-31 12:17:02	FOTA Request from 07.02.104-B002 to 07.02.104-A009
2008-01-31 12:17:15	Download started
2008-01-31 12:20:48	FOTA Request from 07.02.104-B002 to 07.02.104-A009
2008-01-31 12:20:54	Provisioning started
2008-01-31 12:22:08	FOTA Request from 07.02.104-B002 to 07.02.104-A009
2008-01-31 12:22:08	Provisioning started
2008-01-31 12:23:56	Provisioning completed
2008-01-31 12:23:58	Download started
2008-01-31 12:36:37	Download completed
2008-01-31 14:01:40	FOTA Request from 07.02.104-A009 to 07.02.104-B002
2008-01-31 14:01:51	Download started
2008-01-31 14:04:47	Download failed: client error
2008-01-31 14:24:23	FOTA Request from 07.02.104-A009 to 07.02.104-B002
2008-01-31 14:24:41	Download started
2008-01-31 14:27:35	Download failed: client error
2008-01-31 14:59:23	FOTA Request from 07.02.104-A009 to 07.02.104-B002
2008-01-31 14:59:42	Download started
2008-01-31 15:02:40	Download failed: client error
2008-01-31 17:20:25	FOTA Request from 07.02.104-A009 to 07.02.104-B002
2008-01-31 17:20:26	Provisioning started

Fig.17 Module history table



## 4.4. Getting PFM Compliant Certification

Only customers who have performed at least 25 successful special FOTA updates are able to request PFM over-the-air update.

It is not possible to skip this step; Telit does not accept an updating request involving not certified customers.



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**Customer is charged of the correct integration of Telit module in his application.**

**Telit is liable only for updating steps performed by Telit modules.**

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Contacts Telit's Technical Support Center (TTSC) for further information and assistance.



