

Feature Guide



**Flexible & Scheduled
Reporting**

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1. Introduction

1.1 Feature Overview

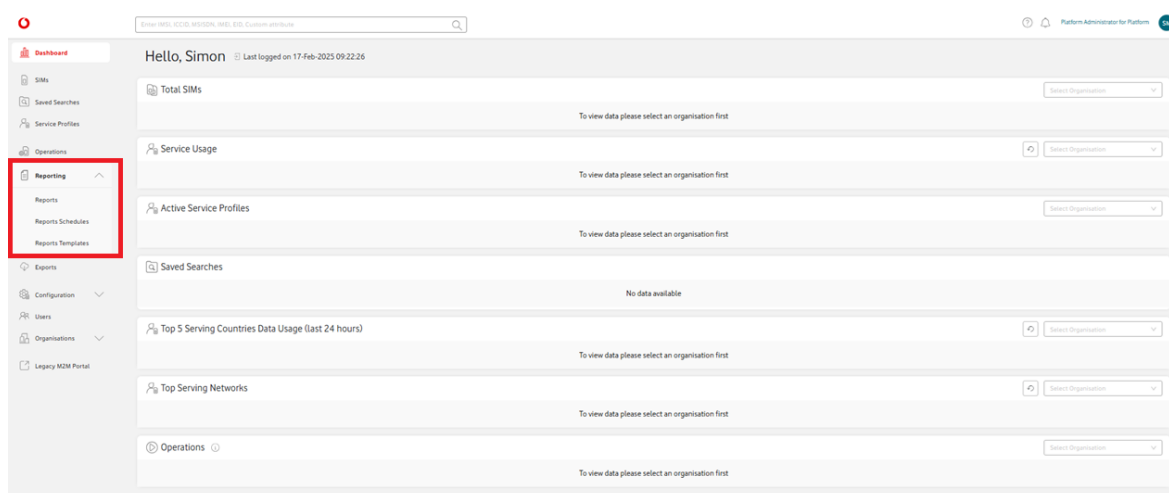
The Flexible Reporting Feature Guide describes how highly configurable reports can be defined, scheduled and consumed in the Vodafone Business Managed IoT Connectivity Platform.

The Flexible Reporting capability helps users create advanced reports, based on Report templates that can be run as on-off executions or scheduled to be run periodically.

Key advantages of the flexible and scheduled reporting are:

- Itemized and Summarised reports available
- Create immediate reports, schedule reports in advance once, schedule reports recurrently
- Create customized Report templates or use standard
- Apply filtering when creating reports
- Notifications by email to multiple users or by web services API when a report is ready for download
- Multiple file formats available for download: XLSX, PDF, CSV, XML

Flexible Reports are located in the left side main menu of the IoT Portal, under the section “Reporting”



2. Key Concepts

It is important to understand the concepts on which the flexible reporting feature is based on.

2.1 Report templates

Defines which data fields will be incorporated into the report as well as what filtering criteria and the decision on whether to have the report itemized or summarised. These fields are inherited from a Template source.

2.2 Reports Schedule

With regards to when (and how often) a report is going to be generated, there are three options:

1. Create a one-time report that is immediately generated
2. Create a one-time report that is generated on a date in the future
3. Create a recurring report that is generated multiple times into the future with a given periodicity.

The Schedule section of the Flexible Report feature contains those report instances that are yet to be generated. So, for one-time reports once their single report has been executed, they will disappear from the schedule section and the results will be available in the Reports section.

Recurring reports that have some more instances yet to be executed will still be shown up in the Schedule section.

While the report schedule is still shown in the Schedule section some settings can still be changed.

[illegible]

The resulting report will be available as a downloadable document in the reports list.

2.3 Report

This is the end result, i.e. a downloadable set of data in a particular document format, based on the Report template that was used to create it.

2.4 Template source

A Template source is a basic, coherent subset of data; it is a set of fields that can be used within a Report template and it also defines the fields used for summarisation and filtering.



2.5 Summarized Vs itemised

A very important property of a report is whether it is itemised or Summarised. This is also set as part of the Report template. This means that a Report template - and thus the resulting report - is either itemised or Summarised. This also depends on the Template source on which the Report template is based; some sources only can be itemised because due to the nature of the data set it would not make much sense to summarize it.

An itemised report will just list all the records or items. For example, an itemised data usage report will list all data sessions that fit the report criteria such as period and possible additional filtering.

A summarised or aggregated report will summarize the data, based on summarization settings (which depend on the template, as noted above).

2.6 Data Retention

There are a number of retention rules applied to the data that is used to generate reports, as below:

- Detailed usage data, for use in itemised reports is kept for a maximum of 6months
- The maximum time period over which an itemized report can be generated is a sliding window of 1 month, up to 6 months back in time. For example, at July 17, 2018, you can run an itemised report from Dec 18 – Jan 17 but you cannot run an itemised report from May 1 – June 30 (time period > 31 days) and you cannot run an itemised report from Dec 1 – Dec 30 (detailed data from Dec 1 – Dec 17 is not available anymore)
- There are currently no window specific limits for summarized reports as long as they're within the 12 months retention period. The smallest possible aggregation is "per sim and per day".

2.7 Reports Retention

Reports, once generated, will be available as a downloadable file for a maximum of 30 days

2.8 File names

The filename for the generated report consists of the report name appended with the time period and timestamp of generation: where spaces and any characters that are present in the report name as set by the user and that are not allowed* are replaced by underscores "_"

<report_name>_<Time period start>_Time period end>_<generated date>

Where:

<report_name> is the name of the report, where spaces and any characters that are present in the report name as set by the user and that are not allowed* are replaced by underscores "_"

<Time period start>_Time period end> are the report start and end date, related to the time zone settings used in the report creation - if applicable

<generated date> is the UTC timestamp when the report is generated in the format "YYYY-MM-DDTHHMMSSUTC". For example, 2016-12-14T16:02:44UTC.



2.9 File formats

The available file formats as well as properties and limitations are shown in the table below:

File format	Properties	Size limitations
CSV	Comma separated file. In fields descriptions, spaces are replaced by underscores “_”.	Max. 1000 MB.
Excel (XLSX)	Microsoft Excel file format	Max. 1000 MB.
PDF	Adobe PDF format. This format is not available for Report templates that specify more than 12 fields as columns.	Max. 5000 lines, Max. 12 columns, Max. 100 MB.
CSV, machine-readable	Comma separated file with date format fixed to UTC and unformatted numerical notation. In fields descriptions, spaces are replaced by underscores “_”.	Max. 1000 MB.
XML	eXtensible Markup Language file. In fields descriptions, spaces are replaced by underscores “_”.	Max. 1000 MB.
XML, machine-readable	eXtensible Markup Language file with date format fixed to UTC and unformatted numerical notation. In fields descriptions, spaces are replaced by underscores “_”.	Max. 1000 MB.

2.10 Data sessions length and how they affect reporting

Data (packet data) is stored in the Global IoT platform per device (SIM) as sessions. The length of such a data session is depending on how the customer device works; as some open a session and close it when they have nothing more to send and other may keep such a session open for a very long time. Another related concept that is of interest is the load timestamp. This is the time when the data for the session is loaded into the underlying database and that will be used as a selection criteria when generated summarized reports.

Usually and almost always this is right after the session is closed, i.e. the load timestamp is almost the same as the end timestamp of a session. There are however cases where missing session data is loaded into the database at a later stage.

These two factors are important to consider when generating and viewing Summarised data usage reports, as the summarization for the period aggregate is done based on the load timestamp.

2.11 Support and Incident Requests



In case of incidents or new requests being needed, please use the same channel as for the rest of IoT Portal features.



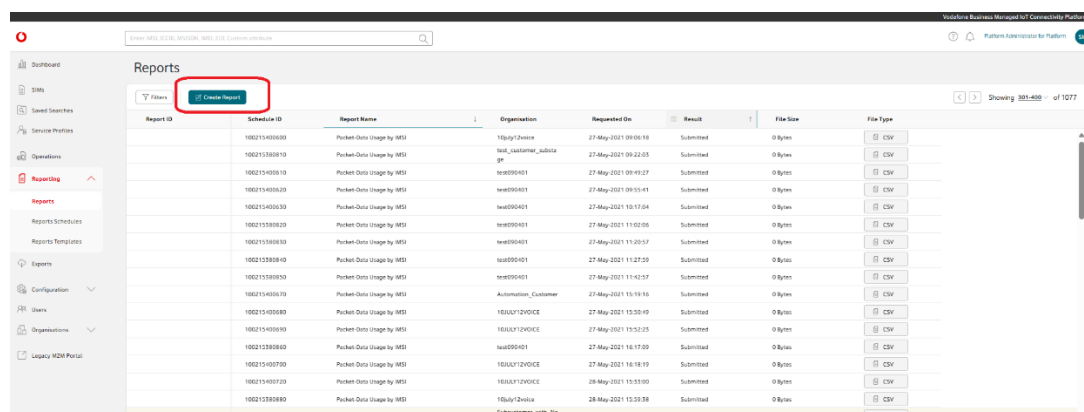
3. Report Creation and Scheduling

3.1 Introduction

This chapter explains how to create a report and provides some examples.

3.2 Create a report

Creating a report can be done within the menu 'Reports', using the 'Create report' action button.



Once this button is selected, a right lateral menu is displayed.

The first decisions to be taken are the Organisation that is going to be used for the report as well as the kind of Report Access Level that the report is going to have. These two decisions condition the rest of the report items.

- Reports and organisation hierarchy

If your organization has child organizations, then you must select first the target organisation for which the report will be created for. This can be the whole organisation (parent) or any (one or more) of your children.

The key differences to consider here are:

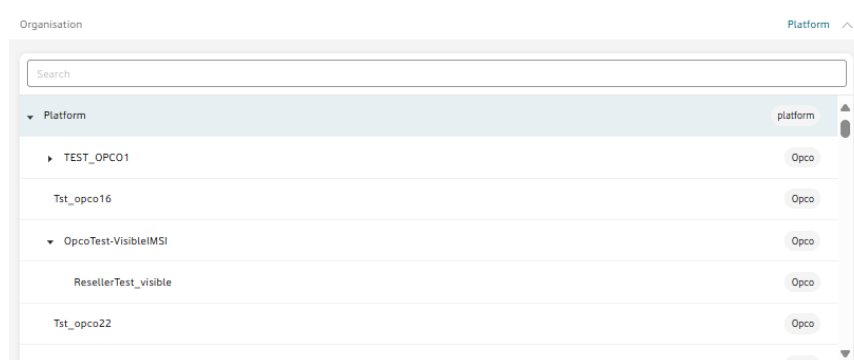


- Report templates available to your own organisation are different than the ones for your child organisations so the resulting reports are also different.
- The access level is also conditioned by the organisation selected.

If you generate a report for your own organisation, then none of the users that belong to a child organisation can access it.

If you generate a report for a child organisation, then users of that child organisation that have a user role that has access to the reporting feature will see it in the list of reports and can download it. In turn you will also have access to any reports in child organisations, whether they have been generated by you or another user in the child organisation (where the exception is reports based on Report templates of type personal).

Also note that when you select a child organisation as the target, you implicitly filter the data in the report on that child organisation, i.e. it can never contain any information from other children or your own organisation.

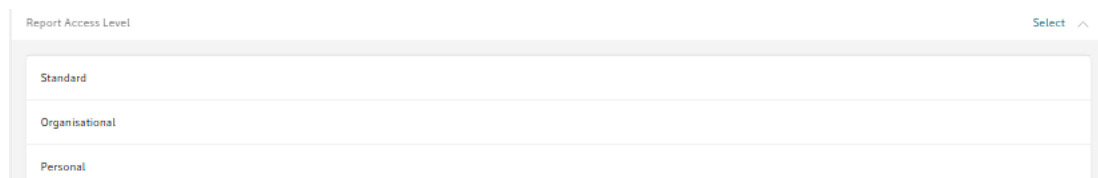


• Report Access Level

There are different types of Access Level:

- **Standard:** this is the most important one as these Report templates are predefined by the system for a particular organisation type. For example, a standard customer Report template can be used by all customers and sub-customers and a standard customer group Report template can be used by any customer group.
- **Organisational:** This is a Report template that can be used only by a particular organisation. It can be created by your contracting operator on request, for you as a customer. If you have access to the optional feature 'Report template creation', then any Report template you would create would also be of this type, i.e. it would only be available to your own organisation, not to anyone else. This is usually only required if the standard Report templates do not provide the exact report you need.
- **Personal:** This type of Report template can only be used by a particular person, the one who created it. This means they are only applicable to users that are allowed to create Report templates. It is mostly to be used to generate reports that may contain data that should not be accessible to other users in the same organisation



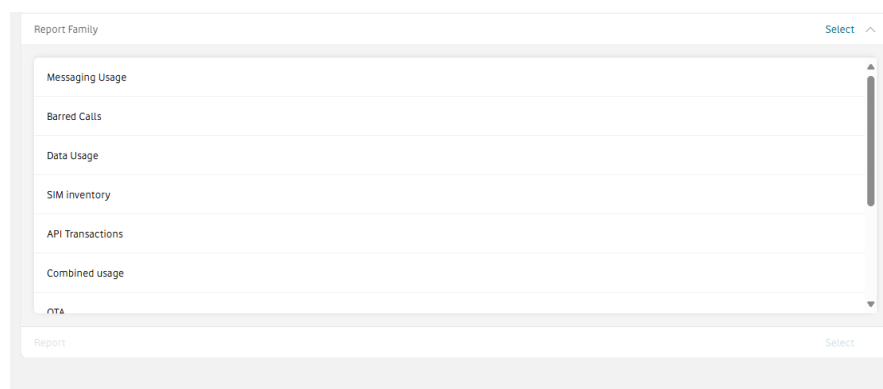


The image shows a selection interface for 'Report Access Level'. It features a list of three options: 'Standard', 'Organisational', and 'Personal'. A 'Select' button is located in the top right corner of the selection area.

- **Report Family and Report**

The Report Family and Report section determine which report template is going to be used as the foundation for this specific report being defined.

The Report Family is a way to organize templates in common themes, so once a family is selected the corresponding child report templates will be shown for the user to select.



The image shows a selection interface for 'Report Family'. It features a list of seven options: 'Messaging Usage', 'Barred Calls', 'Data Usage', 'SIM inventory', 'API Transactions', 'Combined usage', and 'OTA'. A 'Select' button is located in the top right corner. Below the list, there is a 'Report' section with a 'Select' button.

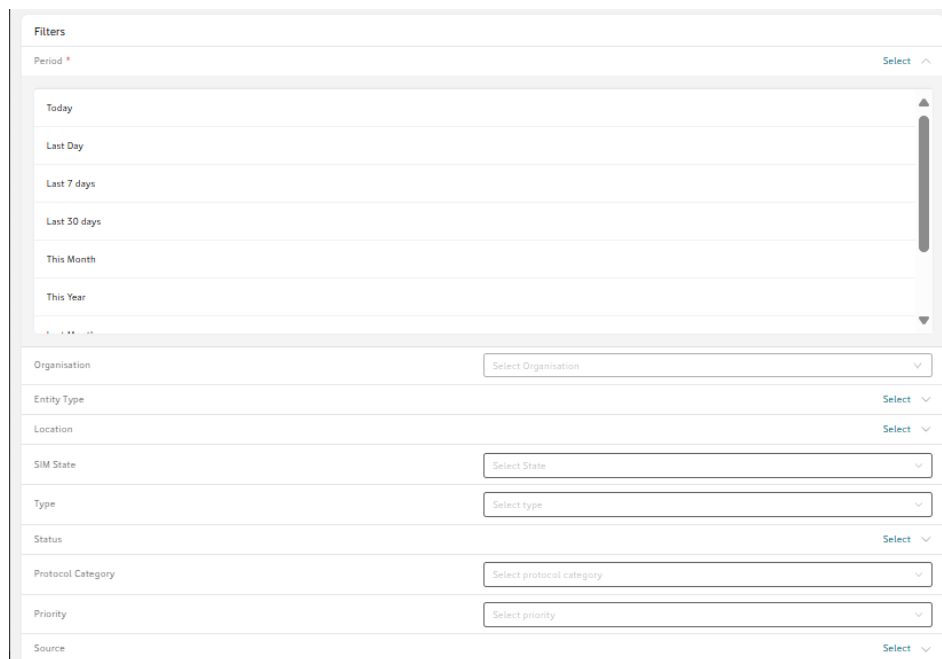
- **Filtering criteria**

When creating a report, it is possible to filter the data that is contained on it.

Filtering is applied on different dimensions, some of them common to all reports (e.g. the time period for which the data is going to be considered) and some other specific to the report template selected.

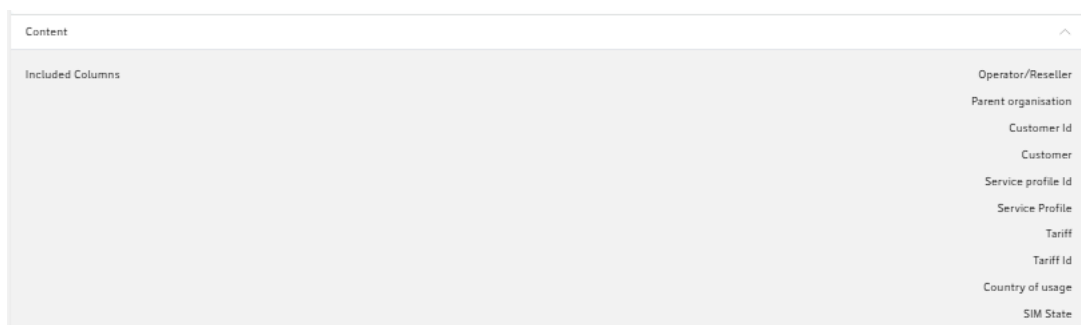
The different dimension being selected for filtering will be applied in an “AND” fashion, i.e. the system search data according to the criteria of one of the dimension and later on reduces this data applying the other filtering criteria incrementally.





- **Content**

This section lists the specific content (as per the report template selected) that will be included into the report. This list is non-editable at this stage, for changing contents the underlying report template would have to be modified.



- **Format**

This section shows options around file format (XLSX, CSV, etc) as well as certain aspects around timezone, number, date and hour notation.



- **Recurrence and Delivery:**

This is the section where users define if the report is going to be executed only once or multiple times as well as the delivery method which will be used for the report to be handed over to the user.



With regards to recurrency, if the user defines the report to be executed only once, there are 2 sub-options: executing it right away or deferring it to a later point in time. In case of multiple executions, a recurring pattern needs to be defined (e.g. daily, weekly, etc).

On the Delivery side, there are 3 options: None (which means the report completion will not be notified, although users can still come later to the IoT Portal and download the report), Attached to an email (please note there are size limitations as described in a section above) or Notify by Email (in this case the user receives an email with a link to the Report as available in the IoT Portal).

The screenshot displays the 'Recurrence & Delivery' configuration interface. It is divided into two main sections: 'Run Report' and 'Delivery Option'.

Run Report Section:

- Run Report ***: A dropdown menu currently set to 'Once'.
- Start Now**: A toggle switch that is currently turned on (blue).
- Target Start Time**: A field showing '11:07'.
- Start Date**: A field showing '18-Feb-2025'.

Delivery Option Section:

- Delivery Option ***: A dropdown menu currently set to 'None'.
- None**: The selected option, highlighted in light blue.
- Attached to an Email**: An unselected option.
- Notify by Email**: An unselected option.

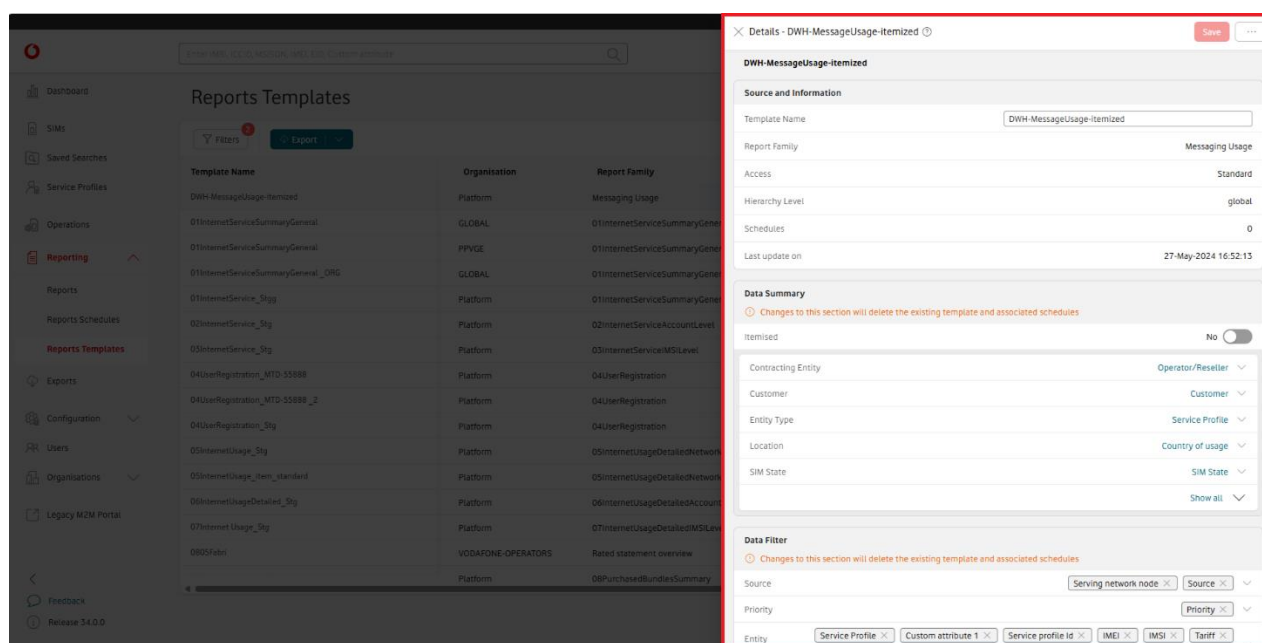


4. Template Creation and Edition

4.1 Template Edition

Existing report templates can be edited by IoT Portal users with the right access user access. The template edition menu can be accessed within the Report Templates section, after an individual template is selected.

A lateral menu will be displayed on the right, showing the current template contents



This lateral menu shows the main template sections: Source/Information, Data Summary, Data Filter, Content and Format.

The majority of those information elements can be modified. When such action takes place, the user can confirm the modification by clicking the “Save” button that will be enabled at the top or discard the change by clicking on the “Discard” button.

Certain changes to a template have as a side effect the removal of associated report schedules.

4.2 Template Creation

New Report Templates can be created IoT Portal users with the right access user access. These new templates can be used by that given user only, if the access level is set to Personal or to a wider user group if the access level is set to Organisational or Standard (if available).



Template creation menu can be accessed within the Report Templates section, by clicking on the action button “Create”. Once clicked, a new lateral menu will be displayed, as below:

The screenshot shows a 'Create' modal window with a 'Save' button in the top right corner. The modal is divided into several sections, each with a title bar and a content area below it. The 'Source and Information' section is expanded, showing fields for 'Template Name *', 'Access *' (with a 'Select' dropdown), 'Copy Settings' (with a toggle switch), and 'Report Family *' (with a 'Select' dropdown). Below this are sections for 'Data Summary', 'Data Filter', 'Content', and 'Format', which are currently collapsed.

Within this new menu, the following sections need to be populated by the user:

- **Source and Information:** Including the given Template Name, the Access Level and the parent Report Family which is going to be used as a starting point for the template.
- **Data Summary:** To indicate if the template is going to be itemised or not. In case not itemised, the available summarisation criteria will be shown to the user for selection.
- **Data Filter:** To indicate the filtering criteria that will be available in the corresponding report created out of this template.



- Content: With the list of actual fields of information that will be included into the report. Depending on previous selections, some fields will be made mandatory.
- Format: To pick the file format as well as some other user settings like Time Zone, hour format and numerical notation.

5. Default Customer Report templates

This Appendix provides a detailed overview of all standard Report templates that are available for customers and sub-customers.

5.1 Default Customer Report templates

Template Name	
Data Usage	
Description	Can be Itemized?
This is an itemised report listing data sessions of devices over the reporting period including usage and all details of the session.	Yes
Aggregation Criteria	
Contracting entity: Operator/Reseller Customer: Customer, BAN Entity type: Group, Tariff, APN, IMSI, ICCID, MSISDN, IMEI, Custom Attribute 1-5, IP Address Location: Serving Network, Country of usage, Home Country. Access type: Radio Access Type Start, Radio Access Start end, Radio access type start desc, Radio access type end desc SIM State: SIM State Cell: CellId Start, CellId End. Service: Service Profile	
Filtering Criteria	
Organisation: Organisation, Date Entity type: Group, Tariff, Tariff ID, APN, Custom attribute 1 to 5, IMSI, ICCID, MSISDN, IMEI, IP Address, IP Address Type. Location: Serving Network, Home Country, Country of usage. Access Type: RAT start, RAT end SIM State: SIM State UTC Hour Filter: UTC Hour Range. Service: Service Profile, Service Profile ID	
Report Contents	
Operator/Reseller, Parent organisation, Customer, Customer Id, BAN, Service Profile, Service profile Id, Group, Tariff, Tariff Id, Country of usage, Serving Network, APN, Home Country, IMSI, ICCID, MSISDN, IMEI, Custom Attribute 1, Custom Attribute 2, Custom Attribute 3, Custom Attribute 4, Custom Attribute 5, Radio access type start, Radio access type end, SIM State, Load Timestamp, Session start, Session end, Bytes upload, Bytes upload, Bytes download, Bytes download, Total Kbytes, Total Kbytes, Bytes upload Test, Bytes upload Test, Bytes download Test, Bytes download	



Test, Total KbytesTest, Total KbytesTest, Nr. of PS Sessions, Nr. of PS Sessions, IP Address, Nr. of Days used, Ip address type, SGSN IP Address, Session Id, Part. Session Id, Radio access type start desc, Radio access type end desc, CellId Start, CellId End

Template Name	
SIM Trust usage	
Description	Can be Itemized?
Provides overview or detailed SIM Trust usage	Yes
Aggregation Criteria	
Contracting entity: Operator/Reseller Customer: Customer, BAN Entity type: Service Profile, Group, Tariff, IMSI, ICCID, MSISDN, IMEI, Custom Attribute 1-5 SIM State: SIM State	
Filtering Criteria	
Organisation: Organisation, Date Entity type: Service Profile, Service Profile ID, Group, Tariff, Tariff ID, Custom attribute 1 to 5, IMSI, ICCID, MSISDN, IMEI SIM State: SIM State Type: Type Other: Status, Application	
Report Contents	
Operator/Reseller, Parent organisation, Customer, Customer Id, BAN, Service Profile, Service profile Id, Group, Tariff, Tariff Id, IMSI, ICCID, MSISDN, IMEI, Custom Attribute 1, Custom Attribute 2, Custom Attribute 3, Custom Attribute 4, Custom Attribute 5, SIM State, Load timestamp, Timestamp, Type, Status, Application, Nr. of Bootstrapping events, Nr. of Key Retrieval events, Total nr. of SIM Trust events.	

Template Name	
Combined usage	
Description	Can be Itemized?
This is a summarized report with data, CS and SMS usage per SIM state, aggregated on the period aggregate, within the specified reporting period. For example: it can be used to report monthly usage (the period aggregate) over a reporting period of a year	No
Aggregation Criteria	
Contracting entity: Operator/Reseller Customer: Customer, BAN Entity type: Service Profile, Group, Tariff Location: Serving Network, Home Country. SIM State: SIM State	
Filtering Criteria	
Organisation: Organisation, Date Entity type: Service Profile, Service Profile ID, Group, Tariff, Tariff ID Location: Serving Network, Home Country SIM State: SIM State	
Report Contents	
Operator/Reseller, Parent organisation, Customer, Customer Id, BAN, Service Profile,	



Service profile Id, Group, Tariff, Tariff Id, Serving Network, Home Country, SIM State, Bytes upload, Bytes upload, Bytes download, Bytes download, Total Kbytes, Total Kbytes, Nr. of Voice calls, Nr. of Voice calls, Nr. of SMS MO, Nr. of SMS MO, Nr. of SMS payload, Nr. of SMS payload, Nr. of SMS transactional, Nr. of SMS transactional, Nr. of Transactional SMS enh., Nr. of Transactional SMS enh., Nr. of SMS wakeup, Nr. of SMS wakeup, Nr. of SMS P2P MO, Nr. of SMS P2P MO, Nr. of SMS P2P MT, Nr. of SMS P2P MT, Total Nr. of SMS, Total Nr. of SMS, Nr. of PS sessions, Nr. of PS sessions, Total Duration, Total Duration, Nr. of SIMs, Nr. of SIMs

Template Name	
SMS usage	
Description	Can be Itemized?
This is a summarized report with SMS usage per type, per SIM State, aggregated on the period aggregate, within the specified reporting period. For example: it can be used to report monthly usage (the period aggregate) over a reporting period of a year	Yes
Aggregation Criteria	
Contracting entity: Operator/Reseller Customer: Customer, BAN Entity type: Service Profile, Group, Tariff, IMSI, ICCID, MSISDN, IMEI, Custom Attribute 1-5 Location: Serving Network, Home Country. SIM State: SIM State Type: Type Other: Status Bearer type: Bearer type	
Filtering Criteria	
Organisation: Organisation, Date Entity type: Service Profile, Service Profile ID, Group, Tariff, Tariff ID, Custom attribute 1 to 5, IMSI, ICCID, MSISDN, IMEI. Location: Home Country SIM State: SIM State Type: Type Other: status Bearer Type: Bearer Type	
Report Contents	
Operator/Reseller, Parent organisation, Customer, Customer Id, BAN, Service Profile, Service profile Id, Group, Tariff, Tariff Id, Serving Network, Home Country, IMSI, ICCID, MSISDN, IMEI, Custom Attribute 1, Custom Attribute 2, Custom Attribute 3, Custom Attribute 4, Custom Attribute 5, SIM State, Load Timestamp, Timestamp, Type, Status, Bearer Type, Status timestamp, Failure reason, Source, Destination, DCS, UDH, Encoding, Message body, TSMS Response DCS, TSMS Response UDH, TSMS Response Prot. Id, TSMS Response body, Match Id, Event ID, Transaction ID, Nr. of SMS payload, Nr. of SMS payload, Nr. of SMS wakeup, Nr. of SMS wakeup, Nr. of SMS MO, Nr. of SMS MO, Nr. of Transactional SMS, Nr. of Transactional SMS, Nr. of Transactional SMS enh., Nr. of Transactional SMS enh., Nr. of SMS P2P MO, Nr. of SMS P2P MO, Nr. of SMS P2P MT, Nr. of SMS P2P MT, Total Nr. of SMS, Total Nr. of SMS,	

Template Name
Voice usage



Description	Can be Itemized?
This is a summarized report with Voice and CSD usage per service (voice/CSD) and per type (MO/MT), aggregated on the period aggregate, within the specified reporting period. For example: it can be used to report monthly usage (the period aggregate) over a reporting period of a year.	Yes
Aggregation Criteria	
Contracting entity: Operator/Reseller Customer: Customer, BAN Entity type: Service Profile, Group, Tariff, IMSI, ICCID, MSISDN, IMEI, Custom Attribute 1-5 Location: Serving Network, Country of usage, Home Country. SIM State: SIM State Type: Type Service: Service, Bearer Type	
Filtering Criteria	
Organisation: Organisation, Date Entity type: Service Profile, Service Profile ID, Group, Tariff, Tariff ID, Custom attribute 1 to 5, IMSI, ICCID, MSISDN, IMEI Location: Serving Network, Home Country, Country of usage. SIM State: SIM State Type: Type Service: Service, Bearer Type	
Report Contents	
Operator/Reseller, Parent organisation, Customer, Customer Id, BAN, Service Profile, Service profile Id, Group, Tariff, Tariff Id, Country of usage, Serving Network, Home Country, IMSI, ICCID, MSISDN, IMEI, Custom Attribute 1, Custom Attribute 2, Custom Attribute 3, Custom Attribute 4, Custom Attribute 5, SIM State, Load Timestamp, Call start, Call end, Duration, Duration Test, Service, Bearer Type, Type, Call Category, Other party number, Nr. of Calls, Nr. of Calls, Total Duration, Total Duration, Transaction ID	

Template Name	
Messaging usage	
Description	Can be Itemized?
This is a summarised report listing NB-IoT Messaging usage per type (MO/MT), aggregated on the period aggregate, within the specified reporting period. For example: it can be used to report monthly usage (the period aggregate) over a reporting period of a year.	Yes
Aggregation Criteria	
Contracting entity: Operator/Reseller Customer: Customer, BAN Entity type: Service Profile, Group, Tariff, IMSI, ICCID, MSISDN, IMEI, Custom Attribute 1-5 Location: Serving Network, Country of usage SIM State: SIM State Type: Type Status: Status, Delivery Report Required Protocol Category: Protocol Category	



Priority: Priority
Source: Message source, Serving network code.
Filtering Criteria
Organisation: Organisation, Date Entity type: Service Profile, Service Profile ID, Group, Tariff, Tariff ID, Custom attribute 1 to 5, IMSI, ICCID, MSISDN, IMEI. Location: Serving Network, Country of usage. SIM State: SIM State Type: Type Status: Status, Delivery Report Required Protocol: Protocol Category Priority: Priority Source: Source, Serving Network Node
Report Contents
Operator/Reseller, Parent organisation, Customer, Customer Id, BAN, Service Profile, Service profile Id, Group, Tariff, Tariff Id, Country of usage, Serving Network, IMSI, ICCID, MSISDN, IMEI, Device Identifier, Custom Attribute 1, Custom Attribute 2, Custom Attribute 3, Custom Attribute 4, Custom Attribute 5, SIM State, Load Timestamp, Timestamp, Type, Payload size, Protocol Category, Status, Status timestamp, Delivery report required, Priority, Message source, Serving network node, Event Id, Match Id, Charging Group, Nr. of message MO, Nr. of message MO, Nr. of messages MT, Nr. of messages MT, Nr. of message Blocks, Nr. of message Blocks

Template Name	
Barred Calls	
Description	Can be Itemized?
This is an itemised report that contains voice or CSD call attempts that were barred due to blacklisted numbers.	Yes
Aggregation Criteria	
Contracting entity: Operator/Reseller Customer: Customer, BAN Entity type: Service Profile, Group, IMSI, ICCID, MSISDN, IMEI, Custom Attribute 1-5 Location: Serving Network, Country of usage, Home Country. SIM State: SIM State Type: Type Call Category: Call Category Service: Service, Bearer Type	
Filtering Criteria	
Organisation: Organisation, Date Entity type: Service Profile, Service Profile ID, Group, Custom attribute 1 to 5, IMSI, ICCID, MSISDN, IMEI. Location: Serving Network, Home Country, Country of usage. SIM State: SIM State Type: Type Service: Service, Bearer Type	
Report Contents	
Operator/Reseller, Parent organisation, Customer, Customer Id, BAN, Service Profile, Service profile Id, Group, Country of usage, Serving Network, Home Country, IMSI, ICCID, MSISDN, IMEI, Custom Attribute 1, Custom Attribute 2, Custom Attribute 3, Custom Attribute 4, Custom Attribute 5, SIM State, Timestamp, Load timestamp, Service, Bearer Type, Type, Call Category, Other party number, Nr. of Blocked Calls, Nr. of Blocked Calls	



Template Name	
SIM Inventory	
Description	Can be Itemized?
This is a summarized report providing a current snapshot of the number of SIMs per SIM state.	Yes
Aggregation Criteria	
Contracting entity: Operator/Reseller Customer: Customer, BAN Entity type: Service Profile, Group, Tariff, Custom Attribute 1-5 Location: Serving Network, Country of usage, Home Country. SIM State: SIM State eUICC ID: EID Fallback: Fallback SIM Type: SIM Type Other: Data session status, LAST APN eUICC Profile State: eUICC Profile State Policies: POL1, POL2 Cloud Bridge: Cloud Bridge Connectivity	
Filtering Criteria	
Organisation: Organisation SIM type: SIM Type Entity type: Service Profile, Service Profile ID, Group, Tariff, Tariff ID, IMSI, ICCID, MSISDN, IMEI, CSD MSISDN, Last det IMEI, Last IP Address, Last IP address type, Custom attribute 1 to 5, Order Reference SIM State: SIM State EID: EID eUICC Profile State: eUICC Profile State Policies: POL1, POL2. Fallback: Fallback Location: Serving Network, Home Country, Country of usage. Data session status: Data session status Last APN: Last APN Other: SIM Form Factor, SIM Profile code SIM Trust service: SIM Trust Service Cloud Bridge: Cloud Bridge Enabled.	
Report Contents	
Operator/Reseller, Parent organisation, Customer, Customer Id, BAN, Service Profile, Service profile Id, Group, Tariff, Tariff Id, IMSI, SIM Type, ICCID, MSISDN, CSD MSISDN, IMEI, Last det. IMEI, Last det. IMEI timestamp, SIM State, Last state change, Home Country, Custom Attribute 1, Custom Attribute 2, Custom Attribute 3, Custom Attribute 4, Custom Attribute 5, Created on, Has Been Active.Live, Data session status, First time Active.Live, First Used, Has Been Active.Test, Active.test started on, Nr. of SIMs, Nr. of SIMs, Last Country, Last Serving Network, Last APN, Last Cell Id, Last IP Address, Last IP address type, Static IPv4 address per APN, Framed IPv6 prefix per APN, Delegated IPv6 prefix per APN, eCall mode, Target eCall mode, VPN group, Order reference, Linked device, EID, eUICC Profile State, POL1, POL2, SMDP, Fallback, eUICC Profile Downloaded Date, SIM Form Factor, SIM Profile Code, SIM Trust service, Current eUICC Profile State, Target eUICC Profile State, Current POL1, Target POL1, Current POL2, Target POL2, Current PLMN list, Target PLMN list, OTA Pending, Last Session timestamp, Number of days offline, First det. IMEI, First det. IMEI timestamp, Cloud Bridge Connectivity,	



Template Name	
OTA	
Description	Can be Itemized?
Operator report for OTA operations	Yes
Aggregation Criteria	
Contracting entity: Operator/Reseller Customer: Customer Entity Type: Service Profile, SIM Profile Type: Type Other: Batch ID	
Filtering Criteria	
Organisation: Organisation, Date Entity type: Service Profile, Service Profile ID, IMSI, ICCID, MSISDN, SIM Profile Type: Type Refresh: Refresh Needed User: Username Status: Status, Status Reason Time Period: Submitted Date Submission: Type: Submission Type ID: Operation ID, Batch ID	
Report Contents	
Operator/Reseller, Parent organisation, Customer, CustomerId, Service Profile, Service profile id, IMSI, ICCID, MSISDN, SIM Profile, Type, Submission type, Operation ID, Batch ID, Refresh needed, Username, Status, Status reason, Submitted date, Scheduled date, Triggered date, Completed date, Request count, Total nr. of operations, Total nr. of operations, First submitted date, First scheduled date, First triggered date, Last completed date, Refresh status, Nr. of successful operations, Nr. of successful operations, Nr. of failed operations, Nr. of failed operations, Nr. of cancelled operations, Nr. of cancelled operations	

Template Name	
Rated Statement Overview	
Description	Can be Itemized?
Operator report for Rated Statement Overview	Yes
Aggregation Criteria	
Contracting entity: Operator Contact: Agent, Account Manager Customer: Customer, CustomerID, BAN Entity Type: Proposition Package	
Filtering Criteria	
Organisation: Organisation, Date Contact: Agent, Account Manager Package: Proposition Package	
Report Contents	
Operator, Agent, Account manager, Parent organisation, Customer, CustomerId, BAN, Proposition package, Tariff, GDSP Tariff, GDSP Tariff ID, Nr. of SIM activations, Nr. of SIMs Active.live, Last rated statement date, Last rated statement value, Discount	

Template Name	
IMEI Failures for Service profile	
Description	Can be Itemized?



This is an itemised report listing all IMEI failures over the reporting period.	Yes
Aggregation Criteria	
Contracting entity: Operator/Reseller Customer: Customer, BAN Entity type: Service Profile, Group, IMSI, ICCID, MSISDN, Custom Attribute 1-5, IMEI	
Filtering Criteria	
Organisation: Organisation, Date Entity type: Service Profile, Service Profile ID, Group, IMSI, ICCID, MSISDN, IMEI, Last det. IMEI, TAC, Custom Attribute 1 to 5 IMEI Match Rule: IMEI Match Rule IMEI Device Action: IMEI Device Action	
Report Contents	
Operator/Reseller, Parent organisation, Customer, Customer Id, BAN, Service Profile, Service profile Id, Group, IMSI, ICCID, MSISDN, Custom Attribute 1, Custom Attribute 2, Custom Attribute 3, Custom Attribute 4, Custom Attribute 5, Timestamp, IMEI Match Rule, IMEI, TAC, Last det. IMEI, IMEI Device Action, Nr. of Failures, Nr. of Failures	

Template Name	
Report Usage	
Description	Can be Itemized?
This is an itemised report that provides usage statistics of (flexible) reports.	Yes
Aggregation Criteria	
Organisation: Organisation Template: Report Template name, Template Source Name, Access Channel: Delivery Option, Downloads Channel Other: Report Type, File Format	
Filtering Criteria	
Organisation: Organisation, Date Template: Report Template Name, Template Source Name, Access Channel: Download Channel, Delivery Option Other: File Format, Report Type	
Report Contents	
Organisation, Parent organisation, Organisation Id, Organisation Type, Report Name, Report Type, Report template name, Template source name, Access, Delivery Option, Request Timestamp, Execution Timestamp, Retrieval Timestamp, Generation Duration, Generation Duration, Download count, Download count, Downloads channel, User, File format, Report Size, Report Size	

Template Name	
EUICC Administrative Operations	
Description	Can be Itemized?
Provides eUICC administrative operations such as Customer and SMSR Id changes along with eUICC Profile changes of all eUICC Profiles that are associated with an eUICC.	Yes
Aggregation Criteria	
Contracting entity: Operator Customer: Customer Entity Type: EID	



Change Type: Change Type From Customer: From Customer From SMSR: From SMSR To SMSR: To SMSR From eUICC Profile State: From eUICC Profile State To eUICC Profile State
Filtering Criteria
Organisation: Organisation, Date Change Type: Change Type Entity type: EID, IMSI, ICCID, MSISDN From: From Customer, From SMSR, From eUICC Profile State To: To SMSR, To eUICC Profile State
Report Contents
Operator, Parent organisation, Customer, CustomerId, EID, Timestamp, Change type, From Customer, From SMSR, To SMSR, IMSI, ICCID, MSISDN, From eUICC Profile State, To eUICC Profile State, Nr. of Changes, Nr. of Changes

Template Name	
API Transactions	
Description	Can be Itemized?
Provides API usage statistics	Yes
Aggregation Criteria	
Organisation: Organisation Operation: Operation API Type: API Type Entity Type: Entity Type Result Code: Result Code User: API User, Transaction User	
Filtering Criteria	
Organisation: Organisation, Date Operation: Operation Entity Type: Entity Type Entity Key: Entity Key Result Code: Result Code User: API User	
Report Contents	
Organisation, Parent Organisation, Organisation Id, Organisation Type, Timestamp, Transaction Id, Operation, API Type, Entity Type, Entity Key, Entity Value, Result Code, API User, Transaction User, Ip Address, Details, Total Nr. Of Transactions, Total Nr. Of Transactions	

5.2 Most Relevant Report content items

This section contents a selection of the most relevant report content items

Field	Explanation
Operator	Contracting operator or reseller of the organisation owning the service profile



Parent organisation	The parent organisation of the organisation owning this service profile. If the organisation is a 'normal' customer, then this is the operator or reseller. If the organisation is a sub-customer, then this is the (parent) customer. If the organisation is a customer that belongs to a customer group, then this is the customer group.
Customer	Customer or sub-customer owning this service profile
CustomerId	Id of Customer or sub-customer owning this service profile
BAN	The BAN as configured for the Customer or sub-customer owning this service profile
Default SIM state	SIM state. Possible values: N = Not provisioned, X = Inactive, A = Active.Live, T = Active.Test, S = Active.Suspend (NB service disabled), R = Active.Ready, Z = Terminated, O = Migrated Out, I = Migrated In. U = Standby. C = Active_Sleep. D = Inactive_Stopped. V = Inactive_Transformed. W = Suspend_Regulatory
To Last transformation notification	Values: A=Transformation_From_Submitted), B=Transformation_From_Completed), C=Transformation_From_Failed, D=Transformation_To_Submitted, E=Transformation_To_Completed, F=Transformation_To_Failed, G=Transformation_preparation_submit, H=Transformation_preparation_complete, I=Transformation_preparation_fail
Event metric	This is the type of Event trigger: D = Packet Data Volume In and Out, PI = Packet Data Volume In, PO = Packet Data Volume Out, VD = Voice Duration, VC = Voice Connections, PC = Packet Data Connections, SO = SMS MO Count, SW = SMS=MT Wakeup Count, SP = SMS=MT Payload Count, SN = SMS Delivery Success Ratio, AC = API Calls, AP = API Success Ratio, TS = SIM=State Duration, RC = Radius Password Failure Notification, SU = SMS=MT Transactional Count, SV = SMS=MT Transactional with Response Count, KP = KPI Code, IP = IP Address Pool, SS = Sim State Transition, RN = Radius Username Failure Notification, TU = Period since First Use in Active=Live state, TL = Period since First transition into Active.Live state, CO = Move SIM Out of CSP, CI = Move SIM Into CSP
Entity type	The entity type (set of devices) on which the trigger is applied. C = Service Profile, D = Device Group, A = APN, B = Business Service (API), S = System , U = customer



Monitoring level	E = applies to whole entity type, D = applies to individual devices within the entity type. C = combination threshold
Monitoring period	D = Daily, W = Weekly, M = Monthly, 6 = 6 hourly, 1 = hourly, H = hourly range
Type	T = SMS-MT, N = Message Notification, M = SMS-MT with Payload, O = SMS-MO, U = SMS-MT-Transaction, V = SMS-MT_Transactional with Payload, P = P2P SMS MO, Q = P2P SMS MT
Status	S=Submitted, D=Delivered, F=Failed
Encoding	T - text, U - Unicode, B - binary. This information is only available when the optional feature 'SMS Inbox' is enabled and will only be kept for one week on the system.
Event metric	This is the type of Event trigger: D = Packet Data Volume In and Out, PI = Packet Data Volume In, PO = Packet Data Volume Out, VD = Voice Duration, VC = Voice Connections, PC = Packet Data Connections, SO = SMS MO Count, SW = SMS=MT Wakeup Count, SP = SMS=MT Payload Count, SN = SMS Delivery Success Ratio, AC = API Calls, AP = API Success Ratio, TS = SIM=State Duration, RC = Radius Password Failure Notification, SU = SMS=MT Transactional Count, SV = SMS=MT Transactional with Response Count, KP = KPI Code, IP = IP Address Pool, SS = Sim State Transition, RN = Radius Username Failure Notification, TU = Period since First Use in Active=Live state, TL = Period since First transition into Active.Live state, CO = Move SIM Out of CSP, CI = Move SIM Into CSP
Entity type	The entity type (set of devices) on which the trigger is applied. C = Service Profile, D = Device Group, A = APN, B = Business Service (API), S = System, U = customer
IMEI match rule	The type of match that is applied. N - No IMEI Checking, T - Match TAC, F - Match Full IMEI
IMEI device action	The action on the device that was triggered as a result of the event. N - No action, T - tear down device, L - tear down and IMEI lock device.



Protocol Category	The protocol category used to communicate to the device from the DMS. S=Simple (i.e UDP, UDP+COAP), M=Medium (No example yet),A=Advanced (OMA LW 1.0/1.1, TR069)
Status	[D] Delivered-DM, [U] Delivered-UE, [E] Expired, [A] Unsupported Action, [N] Not Reachable
Message source	Identifies the system sending the message to the messaging system: WLP= M2M-Portal, API=external API (API-HUB), DEV=Device, DMP=Device Management Portal. Only for internal purposes. Not recommended to be used in customer report templates.
Call Category	The Call Category used for the call. Values: On-net Off-net Partner Favourite Virtual Barring maxNumMO-day, maxNumMT-day, maxNumMO-month, maxNumMT-month, maxDurationMO-day, maxDurationMT-day, maxDurationMO-month, maxDurationMT-month



Appendix A – Glossary of Terms

Term	Definition
IMEI	The IMEI (14 decimal digits plus a check digit) or IMEISV (16 digits) includes information on the origin, model, and serial number of the device. The structure of the IMEI/SV is specified in 3GPP TS 23.003. The model and origin comprise the initial 8-digit portion of the IMEI/SV, known as the Type Allocation Code (TAC). The remainder of the IMEI is manufacturer-defined, with a Luhn check digit at the end (which is never transmitted).
IMSI	International Mobile Subscriber Identity
M2M	Machine-to-Machine
MSISDN	Mobile Station International Subscriber Directory Number
PS	Packet Switched – referring to TCP/IP packet data
SGSN	Serving GPRS Support Node
SIM	Subscriber Identity Module
SMS	Short Message Service
STCG	Standard Customer Group – abbreviation used in Report template names to indicate it is a standard customer group template
STCU	Standard Customer – abbreviation used in Report template names to indicate it is a standard customer / sub-customer template
STO	Standard Operator – abbreviation used in Report template names to indicate it is a standard operator template
STOG	Standard Operator Group – abbreviation used in Report template names to indicate it is a standard operator group template
TAC	Type Allocation Code. The model and origin comprise the initial 8-digit portion of the IMEI/SV. See IMEI above.





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