IMEI Allocation and Approval Process

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1 History of TAC Allocation

The IMEI number allocations were originally administered and funded by a number of national authorities as part of the type approval of mobile devices. In 1999, the type approval regime was abolished as a European regulatory obligation and this required industry to establish an alternative device certification program and a means to allocate identifiers to mobile devices. In April 2000 the GSMA was asked by industry stakeholders to assume responsibility for allocating IMEI number ranges, and Type Allocation Codes, to mobile device manufacturers

The GSMA was formally appointed by the industry as the Global Decimal Administrator (GDA) in 2004 with responsibility for:

- Appointing regional bodies to allocate TAC/IMEI ranges
- Maintaining lists of allocated TACs/IMEIs
- Distributing lists of allocated ranges via IMEI Database
- Provide expertise and advice on allocations

The GSMA is the only appointed allocation authority for 3GPP and 3GPP/3GPP2 compliant devices. The TIA can only allocate TAC for 3GPP/3GPP2 compliant devices.

2 Introduction

This document outlines the allocation principles applicable to the International Mobile Equipment Identity (IMEI) numbers. The following areas are covered:

- Allocation principles for IMEI
- Allocation principles for Reporting Bodies
- The role of the GSM Association
- Security requirements for the IMEI
- Software Version Numbers
- Single band , Multiband, Multimode and Multi RAT (Radio Access Technology) Mobile Equipment (ME)
- Test IMEI

The overriding principles for IMEI allocation are preservation of the available number range, the prevention of duplication and the maintenance of security.

This document also details the allocation process to be followed for obtaining TAC/IMEI numbers from the authority approved by GSMA.

3 Definition of Acronyms

Acronyms	Description
3G	3rd Generation Networks
3GPP	3rd Generation Partnership Project
3GPP2	3rd Generation Partnership Project 2

Acronyms	Description
CEIR	Central Equipment Identity Register
EIR	Equipment Identity Register
eUICC	A removable or non-removable UICC which enables the remote and/or local management of Profiles in a secure way (AS defined in SGP.21 & SGP.22)
GHA	Global Hexadecimal Administrator
NFC	Near Field Communication
IMEI	International Mobile Equipment Identity
LTE	Long-term Evolution, also known as 4G
M2M	Machine to Machine
ME	Mobile Equipment
MEID	Mobile Equipment Identifier
OS	Operating System
PC	Personal Computer
RAT	Radio Access Technology
SMS	Short Message Service
TAC	Type Allocation Code
TIA	Telecommunications Industry Association
UE	User Equipment
UICC	As defined in ETSI TR 102 216
UMTS	Universal Mobile Telecommunications System
(U)SIM	Universal Subscriber Identity Module
WLAN	Wireless Local Area Network

3.1 Definitions

Term	Definition
Brand Name	Is the trading name of a company who is the ME (Mobile Equipment) Owner.
Brand Owner - BO	Private Labels that neither design nor manufacture any products. These companies generally select and acquire existing products from ODMs (Original Design Manufacturer) who offer their off-the-shelf portfolio to their customers. Brand Owners / Private Labels sometimes also work through IDHs for their design requirements and EMS's (Electronic Manufacturing Services) for contract manufacturing. These companies market the procured products under their own brand names to the consumers.
Electronic Manufacturing Services - EMS	Companies that provide manufacturing services to other companies including OEMs (Original Equipment Manufacturer) and IDH's (Independent Design House). EMS do not sell or market any product under their own brand
Independent Design House - IDH	Companies that have independent in-house design expertise and produce custom / reference designs for other companies

Term	Definition
	including ODM's, OEM's, and EMS's but do not provide any manufacturing services to their customers neither do they sell or market any products under their own brand.
Marketing Name	This is the name used for the sale of the ME Model. Multiple Marketing Names may be applicable to a model
ME	The equipment being identified with the TAC/IMEI. The wording "Mobile Equipment" is used in 3GPP documents for a 3GPP/3GPP2 device

ME Model	SHALL be used to refer to GSM mobile equipment models and products that are differentiated in the market,
	
	is defined as an ME which is different from other MEs
	   a) By hardware design
	   b) By transceiver
	   c) By control software
	   d) By frequency bands or
	   e) As it is manufactured or assembled or commissioned by different ME Owners
	
	is owned by one Type Allocation holder or ME Owner.

ME Owner	The organisation responsible for commissioning (Brand Owner) or producing a ME Model (OEM) and placing it on the market. This organisation has the responsibility for applying for a TAC.
Mobile	A generic term used in that context for all devices connected to a 3GPP/3GPP2 network, it can take any form (for instance a M2M or fixed device)
Original Design Manufacturer - ODM	Companies that design and manufacture products that are sold by other companies under their own brand names. The ODM's do not sell or market their products directly to the consumers
Original Equipment Manufacturer - OEM	Companies that design, manufacture, sell, and market products under their own brand name. Some OEM's only design their products while the manufacturing is outsourced to contract manufacturers, generally referred to EMS / ECM (Electronic Manufacturing Services / Electronic Contract Manufacturing).
Model Name	The name given by the ME Owner to identify a ME of a specific specification.
Reporting Body	An organisation that is appointed by the GSM Association as having authority and competence to allocate TAC/IMEIs to ME Model. There may be more than one Reporting Body in a country.
Type Allocation	The process by which ME Models are allocated a unique TAC/IMEI. The TAC/IMEI MUST be obtained from a GSM Association, appointed Reporting Body

Term	Definition
Type Allocation Holder	ME Owner is responsible for applying for a TAC for an ME Model. The entity that has been allocated a TAC for an ME Model is thus either: • An Original Equipment Manufacturer - OEM • A Brand Owner – BO In cases where an Original Design Manufacturer – ODM or an Independent Design House – IDH, is involved on behalf of the BO, the ODM (or IDH, if applicable) must be identified.

The key words "must", "must not", "required", "shall", "shall not", "should", "should not", "recommended", "may", and "optional" in this document are to be interpreted as described in RFC2119

4   Reference Documents

Document Number	Title
3GPP2 SC.R4001-0	Global Wireless Equipment Numbering Administration Procedures document regarding Multi RAT (Radio Access Technology)
3GPP2 SC.R4002-0	GHA Global Hexadecimal Administrator Assignment Guidelines and Procedures
3GPP TS 02.07	Mobile Station (MS) Features
3GPP TS 02.09	Security aspects
3GPP TS 02.16	International Mobile Station Equipment Identities (IMEI)
3GPP TS 02.30	Man-machine Interface (MMI) of the Mobile Station (MS)
3GPP TS 03.03	Numbering, Addressing and Identification
3GPP TS 04.08	Mobile radio interface layer 3 specification
3GPP TS 22.016	International Mobile station Equipment Identities (IMEI)
3GPP TS 23.003	Numbering, addressing and identification
CTIA PTCRB NAPRD03	Overview of PTCRB Mobile/User Type Certification (includes IMEI control sections)
ISO/IEC 7812	Identification of issuers
RFC2119	http://www.ietf.org/rfc/rfc2119.txt
SGP.21	Remote SIM Provisioning Architecture
SGP.22	Remote SIM Provisioning Technical Specification
TS.30	TAC/IMEI Database application forms
TS.37	Requirements for Multi SIM Devices

5 International Mobile Equipment Identity (IMEI)

The International Mobile Equipment Identity number (IMEI) uniquely identifies an individual mobile device. The IMEI is unique to every ME and thereby provides a means for controlling access to GSM networks based on ME Model or individual units.

The "IMEI" consists of a number of fields totalling 15 digits. All digits have the range of 0 to 9 coded as binary coded decimal. Values outside this range are not permitted.

Some of the fields in the IMEI are under the control of the "Reporting Body". The remainder is under the control of the Type Allocation Holder.

For the IMEI format prior to 01/01/03 please refer to Annex D of this document. The IMEI format valid from 01/01/03 is as shown below:

TAC	Serial No	Check Digit
NNXXXXXX	ZZZZZZ	A

The meaning of the acronyms for the IMEI format is:

TAC	Type Allocation Code
NN	Reporting Body Identifier
XXXXXX	ME Model Identifier defined by the Reporting Body
ZZZZZZ	The range is allocated by the Reporting Body but assigned per ME by the Type Allocation Holder
A	Check digit, defined as a function of all other digits

5.1 IMEI Format

5.1.1 Type Allocation Code - 8 digits

The TAC identifies the type of the ME. It consists of two parts. The first part (NN) defines the Reporting Body allocating the TAC and the second part (XXXXXX) defines the ME Model.

The following allocation principles apply:

- Each ME Model SHALL have a unique TAC.
- More than one TAC MAY be allocated to an ME Model. This may be done for instance to permit the production of more than 1 million units.
- The TAC shall uniquely identify an ME Model.
- Where there is more than one Type Allocation Holder for an ME Model then the TAC shall be different.

5.1.2 Reporting Body Identifier (NN) – 2 digits

The first two digits of the TAC are the Reporting Body Identifier. These digits indicate which Reporting Body issued the IMEI. The GSMA shall coordinate the allocation of the first 2 digits to Reporting Bodies. See Annex A for IMEI Reporting Body Identifiers that have already been allocated. Only Reporting Body Identifiers listed in Annex A are valid

The following allocation principles apply:

- The GSMA shall coordinate the allocation of the Reporting Body Identifier.
- The Reporting Body Identifier shall uniquely identify the Reporting Body.

5.1.3 ME Model Identifier (XXXXXX) – 6 digits

The following 6 digits of the TAC are under the control of the Reporting Body. These 6 digits together with the Reporting Body 2 digit identifier uniquely identify each ME Model.

Valid Range: 000000 – 999999

The following allocation principles apply:

- Major changes to the ME Build Level shall require a new ME Model Identifier (TAC). Major changes to ME Build Level would normally include changes that modify the way the ME Model performs on the mobile network. The Reporting Body shall determine what constitutes a major change to the ME Build Level in line with the guidelines in section 5
- Terminals designed to comply with both 3GPP and 3GPP2 specifications are considered as multi RAT / multi-mode ME, these devices must have a decimal IMEI to register on the 3GPP network, the 3GPP2 networks will also accept the decimal IMEI. All TAC allocated by all Reporting Bodies will work in multi RAT / multi-mode ME for both 3GPP and 3GPP2 networks.
- Multi RAT / Multimode ME shall only have one TAC and therefore one IMEI

5.1.4 Serial Number (ZZZZZZ) - 6 digits

The Serial Number (SNR) is used to uniquely identify each individual ME of a particular ME Model. The number range is allocated by the Reporting Body but assigned to individual mobile stations by the manufacturer.

Valid Range: 000000 – 999999

The following allocation principles apply.

- Each ME of each ME Model must have a unique Serial Number for a given TAC code.
- In special circumstances (i.e. low volume product), the Reporting Body may allocate a partial range to be used for the SNR.

5.1.5 Check Digit – 1 digit

The Check Digit shall be calculated according to Luhn formula (ISO/IEC 7812, see GSM 02.16 / 3GPP 22.016). The Check Digit is a function of all other digits in the IMEI. The Software Version Number (SVN) of a mobile is not included in the calculation.

The purpose of the Check Digit is to help guard against the possibility of incorrect entries to the CEIR and EIR equipment or for detecting mistakes in reading or manual transcription of the IMEI.

The presentation of the Check Digit both electronically (see section 5) and in printed form on the label and packaging is very important. Logistics (using bar-code reader) and EIR/CEIR administration cannot use the Check Digit unless it is printed outside of the packaging, and on the ME IMEI/Type Accreditation label.

5.2 IMEI Software Version Numbers (SVN) (2 digits)

The network can also request the IMEISV from ME. The SVN is described in 3GPP TS 22.016 and in TS GSM 02.16. A recommendation to terminal manufacturers is detailed in Annex C.

6 Benefits to the Industry of having an IMEI

IMEIs are used by Network Operators for the following:

- Identify an individual mobile terminal to a GSM, UMTS or LTE network
- Enable remote loading of patches and adaptations to avoid device inter-working issues
- Support configuration management and remote updating of the customer equipment base
- Aid marketing and sales strategies by allowing operators to identify specific devices that can support value added services
- Participate to the customer management for every aspect linked to the used terminal, support of its contract, customer care, self-care, devices after sales.
- Facilitate market research of the mobile user base by identifying and cross referencing devices and usage patterns
- Determine which devices are responsible for technical faults on the network and allow for remedial action to be taken
- Detect fraud at an early stage by using the IMEI to identify returning fraudsters' and/or debtors' devices
- Prevent a stolen phone from accessing a network and being used

IMEIs can be used by device manufacturers for the following:

- Restricting network access to devices with officially allocated TAC/IMEIs
- Proving the authenticity of devices by customs agencies in some countries, e.g. Turkey, India, etc.
- Facilitating the identification of grey market handsets

- Taking remedial action against devices that are stolen from manufacturing sites, storage facilities or while in transit
- Allocating test IMEIs allows manufacturers to test prototype devices on live networks prior to market launch
- Allowing operators to identify devices that may require software updates to be performed in a targeted manner to fix identified device performance problems that could otherwise necessitate a product recall

IMEIs can be used by Regulators for the following:

- Allows exclusion of non-approved terminals, which is a license obligation in some markets
- Identifies handsets for lawful interception and criminal prosecution

7 IMEI Security and Integrity Guidelines

The management of ME identities is achieved via the use of black, white and grey lists on the Equipment Identity Register (EIR) and the Central Equipment Identity Register (CEIR). The integrity of the IMEI is the critical factor in the viability of CEIR and EIR equipment and associated processes.

There are a number of guidelines that must to be adhered to if the IMEI is to be successfully implemented allowing the use of EIR and CEIR equipment. Failure to do so will make it impossible to implement EIR and CEIR equipment effectively and remove the ability to identify equipment types and to take any appropriate action if required. It is in the interests of the whole GSM industry that the integrity of the IMEI is maintained.

The following principles are to be adhered to.

- The IMEI shall uniquely identify each individual unit of ME
- As per GSM 03.03 / 3GPP 23.003, GSM 02.03 / 3GPP TS 22.016, the IMEI shall not be changed after it is programmed into the device. It shall resist tampering, i.e. manipulation and change, by any means (e.g. physical, electrical and software).
- Where repairs necessitate the replacement of the components that contain the IMEI a new IMEI shall be used. No means should be provided to replicate the IMEI in new hardware or components. Therefore spare parts with IMEI hardware should be allocated a unique IMEI. When the IMEI have been replaced in this manner the recycling of the now disused IMEI is not permitted.
- Where a ME has variants that operate in other bands/modes then the ME should be constructed in such a way so that it is not possible to interchange components to permit the IMEI being swapped between the variants.

GSMA launched an initiative to fight mobile theft, and has worked on IMEI security best practice. GSMA members drafted and approved 2 documents:

<u>Technical Principles</u>: intended to strengthen the security of the International Mobile Equipment Identity (IMEI)

- GSM Doc Reference: Security Principles Related to Handset Theft

<u>Process in place</u>: GSMA and DIGITAL EUROPE have agreed on a process to report alleged breaches of IMEI integrity and on the introduction of counter-measures to correct and improve IMEI security.

- GSM Doc Reference: IMEI Weakness and Correction Process

8   TAC (IMEI) Usage Rules

The following requirements must be adhered to:

- Each ME Model must have its own TAC. One ME Model will have one or more TAC
- Modular Equipment may use an interchangeable transceiver module to achieve the ability to operate in alternative GSM bands. Such equipment is to treat each transceiver module as a separate ME. This will mean that each transceiver equipment module would be subject to Type Allocation and be allocated a separate IMEI/TAC. The IMEI shall not be duplicated in separate transceiver equipment.
- Requirements for a device containing multiple transceivers:

  - If a device contains two or more transceivers, each transceiver must be separately identified on networks.
  - If two or more transceivers within the same device are identical (e.g. same chipset, same frequency bands, same control software), then each transceiver can use the same TAC, but different IMEI.

- A single transceiver may be connected to one or several UICCs/eUICCs. If only one (U)SIM on one of the connected UICCs/eUICCs can be used to connect to the network at any time then only one IMEI is required. If more than one (U)SIM can be connected at the same time to a transceiver, for example in Stand-by Mode, the transceiver shall have multiple, unique IMEIs so that all (U)SIMs, that are connected at the same time, will use a separate, unique IMEI.

- For devices with:

  - Multiple SIMs which are all Active at the same time (have simultaneous connections to the network) each SIM must use a separate, unique IMEI.
  - Multiple SIMs where some SIM(s) are in Standby Mode (only listening on the network) each SIM must use a separate, unique IMEI
  - Multiple SIMs which are all Passive (only one can connect to the network at any time and the connection is switched between the SIM) only one IMEI is required to be allocated to the transceiver.

- If the transceivers are different (e.g. different chipset, different frequency bands, different control software), then the transceivers must have a different TAC, and the SIM(s) associated with that transceiver would have an IMEI from the same TAC. Each transceiver shall have enough unique IMEIs so that all (U)SIMs that are connected at the same time can use separate, unique IMEIs.
  For further requirements for devices with Multiple SIMs, see GSMA PRD TS.37.
- All TAC (IMEI) numbers allocated by the Reporting Bodies are stored in the GSMA IMEI database. The database is used to populate the Central Equipment Identity Register (CEIR) which is used by the GSM Network Operators. For confidentiality reasons, access to the IMEI database is restricted. A company registered in the IMEI database can request a list of those TAC (IMEI) numbers allocated to them. Network Operators can access the IMEI data for the purposes of monitoring IMEI numbers on their networks.
- Before applying for a TAC (IMEI) number, the applicant company must first be registered with a reporting body. Evidence must be provided with (or in addition to) the application to ensure the following:
- That the applicant (i.e. Brand Owner) is a legitimate organization and is selling a product that is to connect to the Telecoms Network,
- For Modem manufacturers, it should be the manufacturer who requests the TAC as these may go into many different devices. In all other cases it should be the Brand Owner who requests the TAC.
- The following Equipment Types are listed on the TAC application form:-

Mobile / Feature Phone:
- Description - A device supporting basic personal communication services, e.g. voice call and SMS. (Not strictly limited to basic services, but not entering in the definition of a Smartphone).

Smartphone:
- Description – A device with large display, predominantly with touch screen technology, fast processor and memory in the GB range. A fully-featured OS / platform that provides voice and data communications capabilities, enables personalisation of the device by the user and in addition supports installation and maintenance of mobile applications (e.g. downloadable from an Application store).

Tablet:
- Description - A device with a display minimum 5-inches, slate-type form factor, touch screen, providing data communications and/or voice capabilities,   fully-featured OS providing connection to an Application store through which the user can personalise the device's functionality and services

Dongle:
- Description - A device which can be inserted in a laptop or other computer to provide cellular network connectivity

Modem:
- Description - A device designed for embedding in other equipment to provide cellular connection functionality

Note: A Modem may support multiple SIMs, however not all of the SIMs supported by the Modem may be used on the final device, which the Modem is used in.

WLAN Router:
- Description - A device that performs advanced routing functionalities and uses the cellular network as Wide Area Network interface.

IoT Device:

- Description - A device, whose main function is to allow objects to be accessed, sensed and/or controlled remotely across existing mobile network infrastructures.

Wearable:

- Description - A body worn mobile device that connects to the 3GPP cellular network directly with its own eUICC or UICC.

  It addition it may have none, some or all of the following:
  1. A touch screen display
  2. Other forms of interaction such as hard or soft buttons
  3. Voice controls
  4. Sensors built in or connected to the device
  5. An OS, which provides voice and/or data communications capabilities on the 3GPP mobile network
  6. Other technologies like Wi-Fi, Bluetooth
  7. Enables personalization of the device by the user
  8. Supports installation and maintenance of applications, e.g. downloadable content from an application store.

  Examples of a "Wearable" devices:
  1. Smartwatch
  2. Heart Monitor
  3. Blood Pressure Monitor
  4. Blood Pulse monitor
  5. Animal Monitoring
  6. Body (Arm, Leg, Chest) Sports Monitor

Mobile Test Platform: (Used for Test TAC Only)
- Description - A device that provides cellular connectivity for hardware and software development testing.

- If the Equipment Type is listed on the TAC form as "Modem", "Dongle" or "WLAN Router" then the device operating system, will be automatically checked as "None".
- Each application is made on a per model basis. The Brand Name, Model Name & Marketing Name need to be provided to identify the model.
- The number of TAC numbers requested per application should be enough to cover a three month production run. One TAC number (1 million IMEI numbers) is normally more than sufficient in most applications.

- Any amendment to an existing TAC record must be made via the GSMA IMEI data base using the "Edit TAC" function.
- Some manufacturers produce special test mobile equipment. This type of equipment can harm network integrity if used in the wrong manner. Subsequently network operators need to be able to identify such equipment. The following requirements apply.
    - Where the equipment is based on an existing ME:
        - A separate TAC code should be assigned to the Test ME to distinguish it from the existing/original ME.
        - Alternatively a Test IMEI could be allocated to this type of ME if it is supplied to operators for test purposes only and not available commercially.
    - Each Test ME's IMEI shall conform to the IMEI Integrity and Security provisions in Section 7.
        - Where GSM equipment is capable of operating in multiple modes the following principles must be adhered to.
        - The Reporting Body shall inform the GSM Association of the Multimode capability for the ME and indicate the capable modes.
        - Where the standards permit the same IMEI shall be used for each mode of operation. Where the standards do not permit the use of IMEI then an IMEI shall be allocated specifically to the GSM part and any applicable identification to the non-GSM part/s.
        - Where physically detachable modular techniques are utilised to provide the transceiver capability then each transceiver module shall be treated as a separate ME. Therefore separate IMEI/TAC allocations are required if an IMEI is applicable to each module.
- Colour variants of the same model. If different models of the same device vary in the colour of the exterior body only, then the same TAC can be used for all models. No other cosmetic variants are allowed under this exception.

8.1   TAC Details Challenge Process

Any company using the data from the GSMA IMEI DB can challenge any of TAC entry details which they feel are incorrect.

1. The challenge would be sent to the IMEI helpdesk (imeihelpdesk@gsma.com)
2. The challenger must provide justification and supporting evidence of the TAC details that they think are incorrect.
3. The IMEI Helpdesk will contact the Type Allocation Holder with the details of the challenge they have received within one week of the challenge being submitted.

    a) The company can respond and update the TAC details as challenged.
    b) The company can respond and refuse to change the TAC details rejecting the challenge without any reason.

4. If no response is received from Type Allocation Holder within 4 calendar weeks, the GSMA has the option, at its sole discretion, to update the record or reject the challenge.

> a. If the TAC details are changed by the GSMA, they shall inform the Type Allocation Holder

5. The challenger will be notified of the outcome of their challenge within 6 calendar weeks of the original challenge being received.

9 Test IMEI

From time to time manufacturers may wish to test prototype ME on networks before applying the regulatory procedures for placing the equipment on the market. The Test IMEI principle has been developed to allow easy allocation of IMEI to Test ME in a controllable, secure and traceable manner.

The purpose of the Test IMEI is to allow manufacturers to test prototype mobiles on a live network without having placed mobiles on the market (i.e. the mobiles are fully under the control of the manufacturer or an operator). They may be single prototype units or a limited pre-production run (e.g. to demonstrate a mobile at an exhibition or do some field trials).

Test IMEIs are allocated as an 8 digit TAC code per manufacturer and uniquely identifies the manufacturer. The IMEI range implicated by the allocated Test-TAC is to be managed by the manufacturer. The manufacturer must control the use of Test-IMEIs prototypes that have the same form-factor and RAT capability. It is prohibited to have identical IMEI in use in more than one piece of equipment at any given time. Test-IMEIs must not be used for samples given to operators for final product acceptance.

The test IMEI allocation does not imply general permission to connect or imply approval for Test UEs. Operators are under no obligation to allow the use of test IMEI on their networks. One should normally need to seek permission from the network operator to use the Test IMEIs on their network. If a network operator queries the use of a Test IMEI issued by BABT, BABT will provide the operator with the details of the allocation, including the manufacturer's name and address. Only the Reporting Bodies listed in Annex B may allocate a Test IMEI.

The use of a Test ME is subject to any applicable national legislation and regulatory requirements. In general it is subject to the agreement of the network operator and, where applicable, of the Reporting Body. A Reporting Body or operator may allow the use of a limited number of Test ME and may impose regional restrictions.

Only OEMs can request Test TAC

The following requirements apply to test mobile IMEIs.

- Operators are under no obligation to allow the use of Test IMEI on their networks and may if they wish black list all or some Test IMEI.
- A Test IMEI is used for Mobile Equipment or software functionality that has not been through the (regulatory) procedures for placing commercial equipment on the market. ME with Test IMEI cannot be supplied to the market.
- Old test products must be destroyed.
- Test IMEI shall not be duplicated.
- The TAC component of the Test IMEI shall indicate the Allocating Body.

- If it accepts the mobile in its country/network, a Reporting Body or operator should accept the use of a range of Test IMEI numbers that have been allocated by another Allocating Body. The allocation of different Test IMEI ranges for the same type of ME should be avoided if at all possible.
- From 01/02/2005 a new format as described in table 6.2.1 will apply to test IMEIs for all countries except North America.

OEM's can request Test TAC by completing the form in Annex E and sending it to the IMEI Helpdesk who will forward it to the appropriate RB for processing.

Note: There is the potential for devices with Test TAC to be confiscated by customs or regulators in some countries. OEMs should investigate this before shipping devices with Test TAC in them around the world.

9.1   Format of the Test IMEI for all countries except North America

TAC			SN
8 digits			6 digits
00	44	MMMM	ZZZZZZ
To identify Test ME	To Identify BABT as allocating body	Manufacturer Code	Serial number
Notes :- MMMM - Identifies the manufacturer. Multiple codes may be allocated per manufacturer, at the discretion of the allocating body, but each code is unique to a single manufacturer. ZZZZZZ - Represents the serial number selected by the manufacturer.			

9.2   Format of the Test IMEI for North America

TAC			SN	
8 digits			6 digits	
001	WWW	XX	YYY	ZZZ
To identify Test ME		Reserved for future use, fixed to "00"	Test ME Model	Serial number
Notes:- WWW - Identifies the Allocating Body using the MNC. 000 is the GSM NA XX - Is reserved for future use and fixed to "00" YYY - Represents a number chosen by the Allocating Body for the test ME Model. ZZZ - Represents the serial number selected by the manufacturer.				

10 Reporting Body Identifier List

The GSMA maintains a list of all Reporting Bodies and their Reporting Body Identifier. This list is available as Annex A to this document.

11 Test IMEI Allocating Body List

The GSM Association maintains a list of contacts for the issuing of Test IMEI. This list is available as Annex B to this document.

12 List of Type allocated mobile equipment and IMEI allocations by Reporting Bodies

The Reporting Bodies use the [GSMA Web based IMEI database](#) for allocating the TAC which in turn provides the information to the mobile network operators to allow the connection of devices to their networks.

13 The IMEI Database / CEIR

The GSMA operate the IMEI database which is used to populate the Central Equipment Identity Register (CEIR) for use by its operator members. The CEIR contain White List Information of Mobile Equipment determined as suitable for worldwide use on mobile networks. It may also contain Black List information of the IMEI of MEs that are considered not suitable for use on mobile networks due to being stolen, duplicated, a threat to network integrity or other reasons. The GSMA shall determine valid reasons for blacklisting. The CEIR may also contain GREY list information about IMEIs of ME whose status is unclear.

The GSMA reserves the right to determine if the technical basis for Type Allocation is acceptable to permit IMEIs allocated by a Reporting Body to be included in the CEIR white list.

The GSMA reserves the right to determine if information supplied by a Reporting Body is acceptable for inclusion in the CEIR white list.

Individual members of the GSMA may choose what IMEI information to enter to their own EIR. This may include IMEI information excluded from entry to the CEIR in the White, Black or Grey lists.

The GSMA shall enter Test IMEI allocations to the CEIR. It is the responsibility of individual GSMA members to enter Test IMEI into their EIR.

14 GSMA Responsibilities

Within the context of this document the GSMA shall have the following responsibilities.

- Appointment of Reporting Bodies
- Coordinate the allocation of the Reporting Body Identifier.

- Maintain a list of Type Allocated GSM Mobile Equipment and IMEI allocations by Reporting Bodies containing details of TAC manufacturers, models and band/mode capability for all IMEIs allocated by Reporting Bodies.
- Ensure integrity of CEIR white, black and grey list information and update white list with new IMEI allocations according to the conditions of section 10.
- Ensure integrity of CEIR process.
- Maintain a list of contacts for issuing Test IMEI.
- Document and maintain the procedures to be followed by Reporting Bodies for notification of allocated IMEI.
- Provide expertise and advice on Allocation and IMEI issues where appropriate.

15 Reporting Body Responsibilities

Within the context of this document the Reporting Bodies shall have the following responsibilities with respect to IMEI and Type Allocation:

- Ensure that the requirements for Type Allocation as outlined in section 8.0 are satisfied.
- Allocate IMEI TAC codes for mobile equipment within their jurisdiction as required. Allocation of a specific Serial Number Range is optional.
- Coordinate with other Reporting Bodies where the equipment requiring Type Allocation is under the jurisdiction of more than one Reporting Body.
- Reporting Bodies must allocate the TAC from within the GSMA IMEI database, however if this is not possible then they must inform the GSMA of new Type Allocations and IMEI allocations providing the following information:

  - TAC & Serial number range (if allocated)
  - Brand Name, Marketing Name and Model Name
  - Manufacturer
  - Frequency Bands supported by the devices
  - Designation Type
  - Allocation Date
  - Radio Interface
  - Operating System
  - Support for NFC (Y/N)
  - Support for Bluetooth (Y/N)
  - Support for WLAN (Y/N)
  - Any additional information to the Type Allocation status.

-

If this information is not already in the GSMA IMEI database then it must be provided to the GSMA as soon as possible after granting TAC, to avoid delays in connecting the equipment to networks, using an Excel template supplied by the GSMA this can be obtained by contacting imeihelpdesk@gsma.com

16 Type Allocation Holder Responsibilities

Within the context of this document Type Allocation Holders have the following responsibilities.

- Comply with the relevant Type Allocation requirements.
- Complete all information requested in the GSMA IMEI database with regards to company registration and TAC requests.
- Ensure IMEI are secure and have integrity.
- Consider recommendations to increment SVN for new software in ME.
- Apply to relevant bodies for Test IMEI when required.
- Gain permission from operators to use test ME where required.

17 TAC Allocation Process

To obtain the TAC the following steps should be followed:-

- The Type Allocation Holder must be register in the GSMA IMEI Database, via the following link: http://imeidb.gsm.org/imei/login.jsp and then click on "Manufacturers Registration Form"
- Complete all the details & submit the registration form

Once submitted, the form is sent via the IMEI Database to the appropriate Reporting Body (RB) for processing. The RB may contact the manufacturer for more information. When the RB has completed their verification of the form, if positive, the application will be approved and the manufacturer will be sent a Manufacturer ID & Password via email. In the event of a negative review the RB will contact the Type Allocation Holder to explain the reasons for rejection of the application.

- When the Type Allocation Holder has a Manufacturer ID & Password they are able to enter the IMEI Database via this link:- http://imeidb.gsm.org/imei/login.jsp and click on "Application for TAC" and enter the Manufacturer ID & Password details
- The Type Allocation Holder must pay the Fees if required, in order to obtain the TAC Allowance. Once the payment is made the Type Allocation Holders will have a TAC Allowance available for Allocation to ME Models.
- The TAC Allowance does not expire and can be allocated at any time.
- In order to use the allowance and initiate the TAC Allocation complete the TAC application form as required in the IMEI Database. This form is then sent via the IMEI Database to the RB for confirmation of the ME Model Specification and the specific TAC allocated.
- When the TAC is allocated to a specific ME Model the Type Allocation Holder will be sent a notification email & a TAC certificate issued by the GSMA.
- The remaining TAC from the Allowance can be allocated to ME Models as required by repeating from step No 5 above.
- If more TAC than the TAC Allowance are required the Type Allocation Holder must repeat the process from step No 4 above.

Annex A   Reporting Body Identifier List

Note: Global Decimal Administrator (GDA) multi RAT 3GPP2/3GPP mobile assignments are allocated from within the individual IMEI Reporting Body Identifier allocation space. Global Hexadecimal Administrator (GHA) multi RAT 3GPP2/3GPP mobiles are allocated starting from the Reporting Body Identifier 99 allocation space.

Reporting Body Identifier	Reporting Body or allocated Use	Bands/Modes	Contact Details
00	Test ME (allocated by countries with a 1 or 2 digit international dialling prefix)	All	See Test IMEI Issuer List (Annex B)
01	CTIA		Ms. Karen Harshfield CTIA Certification LLC 1400 16th Street, NW Suite 600 Washington, DC 20036 www.ctia.org/certification Direct: +1 202 736 3223 Main: +1 202 785 0081 Fax: +1 202 466 3413 CTIA - IMEI IMEI@ctiacertification.org

Reporting Body Identifier	Reporting Body or allocated Use	Bands/Modes	Contact Details
35	TUV SUD BABT	All	Mr John Talbot Tel. +44 1932 251264 E-mail: John.Talbot@tuv-sud.co.uk E-mail: imei@babt.com
86	TAF (China) Telecommunication Terminal Testing & Approval Forum	All	Mr. Meng Xiangdong Tel: +86 10 82052809 E-mail:mengxiangdong@catr.cn Ms. Su Hui Tel: +86 10 82052809 E-mail: suhui@tenaa.com.cn
98	Reserved for Future Use Note: a few TAC codes had previously been assigned from this block 98000100 to 98007800		
99	Global Hexadecimal Administrator (GHA)	All	John Derr Telecommunications Industry Association (TIA) 1320 N. Courthouse Rd. Suite 200 Arlington, VA 22201 USA Tel: +1 703-907-7791 E-mail: meidadmin@tiaonline.org

Table 1: Bodies currently authorised to allocate IMEIs:

Reporting Body Identifier	Reporting Body or allocated Use	Bands/Modes	
10	DECT PP with GSM functionality	DECT	
30	Iridium	GSM Satellite	
33	DGPT / ART	900/1800	
44	BABT	900/1800	
45	NTA	900/1800	
49	BZT/BAPT/Reg TP	900/1800	
50	BZT ETS Certification GmbH.	900/1800	
51	Cetecom ICT Services GmbH	900/1800	
52	CETECOM GmbH	900/1800	
53	TUV Product Service GmbH (Munich)	900/1800	
54	PHOENIX TEST-LAB GmbH	900/1800	
91	Mobile Standards Alliance (MSAI) India	All	Effective 29 April 2019, the 91 TAC RB identifier will be suspended and not used for any new TAC allocations.

Table 2: Bodies that no Longer Allocate IMEIs:

Annex B   List of Test IMEI allocating bodies:

1st 6 digits of the Test IMEI	ALLOCATING BODY	Contact Person(s)	Telephone	Fax	E-mail
001 001- 001 017	GSM North America, CTIA	Ms. Karen Harshfield	+1 202 736 3223	+1 202 466 3413	CTIA - IMEI IMEI@ctiacertification.org
00 44 MMMM	TUV SUD BABT	Mr. John Talbot	+44 1932 251264 +	+44 1932 251201	John.Talbot@tuv-sud.co.uk Les.Rowland@tuv-sud.co.uk imei@babt.com
00 86 MMMM	TAF (China)	Mr. Meng Xiangdong Ms. Su Hui	+86 10 82052809 +86 10 82052809	+86 10 82053375 +86 10 82051448	mengxiangdong@catr.cn suhui@tenaa.com.cn

Annex C   Informative Annex - IMEISV

The Network can also request the IMEISV from Phase 2 (or later) ME. The IMEISV shall contain the first 14 digits of the IMEI plus a Software Version Number (SVN). The SVN shall be incremented when the ME software is modified. Allocation of the 2 digit SVN may be controlled by the Reporting Body, at the discretion of the Reporting Body. SVN of "99" is reserved for future use (See GSM 03.03).

C.1   GSM 02.16 - MS Software Version Number (SVN)

A Software Version Number (SVN) field shall be provided. This allows the ME manufacturer to identify different software versions of a given type approved mobile.

The SVN is a separate field from the IMEI, although it is associated with the IMEI, and when the network requests the IMEI from the MS, the SVN (if present) is also sent towards the network. It comprises 2 decimal digits.

The White list shall use the IMEI, while the Black and Grey Lists may also use the SVN.

C.2   3GPP TS 22.016 - MS Software Version Number (SVN)

A Software Version Number (SVN) field shall be provided. This allows the ME manufacturer to identify different software versions of a given mobile.

The SVN is a separate field from the IMEI, although it is associated with the IMEI, and when the network requests the IMEI from the MS, the SVN (if present) is also sent towards the network.

The White list shall use the IMEI, while the Black and Grey Lists may also use the SVN.

C.3   Structure of the IMEISV

The structure of the IMEISV is as follows:

TAC	Serial No	SVN
NNXXXXXX	ZZZZZZ	SS
Notes:-		
NN Reporting Body Identifier		
XXXXX ME Model Identifier defined by Reporting Body		
ZZZZZZ Allocated by Reporting Body but assigned per ME by the manufacturer		
SS Software Version Number 00 – 98. 99 is reserved for future use.		

C.4   Software Version Number Allocation Principles

The Reporting Body, at their discretion, may control allocation of the SVN. All ME designed to Phase 2 or later requirements shall increment the SVN for new versions of software. The initial version number shall be 00. The SVN of 99 shall be reserved.

- The allocation process for SVN shall be one of the following procedures:
- The Reporting Body allocates a new SVN number a new software release.
- The Reporting Body defines the allocating process to be applied by the Type Allocation Holder.

If there are more than 99 software versions released the Reporting Body may undertake one of the following options.

- Issue a new TAC code for the ME Model

C.5 Security Requirements

The SVN is not subject to the same security requirements as the IMEI as it is associated with the ME software. The SVN should be contained within the software and incremented every time new software is commercially released. The SVN should uniquely identify the software version.

Annex D Informative Annex – Historical Structure of the IMEI

D.1 Historical IMEI Structure

The IMEI structure valid until 31/12/02 is as follows

TAC	FAC	Serial No	Check Digit
NNXXXX	YY	ZZZZZZ	A

Discussions within the industry, including 3GPP2, agreed that the structure change to combine the TAC and FAC into a single eight-digit TAC code.

This format has been documented in the 3GPP requirements 02.16, 03.03, 22.016 and 23.003.

Effectively the FAC code should be considered as obsolete.

It was noted that there was a need for a transition period to allow:

- The Operators to modify their systems to use the eight digit TAC rather than a six digit one
- The Manufacturers to make any necessary changes to their production processes
- The Reporting Bodies to make any changes to their IMEI allocation systems
- The GSM Association to make any changes to their databases and systems
- The Contractor to make any changes to its systems

The transition period ran from 31/12/02 until 1/4/04.

To achieve this transition, all eight-digit TAC codes allocated between 31/12/02 and 31/3/04 were given unique combinations of the first six digits (NNXXXX) with the seventh and eighth digits (YY) being fixed to 00.

Any request by a Terminal Manufacturer for a FAC code after 31/12/02 resulted in that Manufacturer being supplied with a fresh 8 digit TAC. This was to allow the 3GPP industry to move to the 8-digit TAC code without the need to implement changes to their IMEI analysis and tracking systems before 1/4/04.

The meaning of the acronyms for the IMEI format valid until 31/12/02 is:

TAC	Type Allocation Code, formerly known as Type Approval Code
NN	Reporting Body Identifier
XXXX	ME Type Identifier defined by Reporting Body
FAC	Final Assembly Code
YY	Under control of the Reporting Body. May be used to indicate the manufacturing site. More than one FAC per site should be used to permit production of greater than 1000000 ME.

ZZZZZZ	Allocated by Reporting Body but assigned per ME by the manufacturer
A	Phase 1 = 0
	Phase 2 (or later) = Check digit, defined as a function of all other IMEI digits

D.1.1   Type Allocation Code - 6 digits. (Valid prior to 01/01/03)

The TAC identifies the Type Allocation Code, formerly known as the Type Approval Code, for the type of the ME. It consists of two parts; the first part defines the Reporting Body allocating the TAC and the second part defines the ME type.

The following allocation principles apply:

- Each ME Type shall have a unique TAC code or set of TAC codes.
- More than one TAC may be allocated to an ME Type at the discretion of the Reporting Body. This may be done to permit the production of more than 1 million units or to distinguish between market variations.
- The TAC code shall uniquely identify an ME Type.
- If the TAC was granted to a particular software version of one ME Type that is then used in another ME type the TAC code shall be different.
- TAC codes may vary between software versions for a phase 1 ME Type at the discretion of the Reporting Body.
- In Phase 2 (and later releases) the TAC shall remain the same and the SV number shall identify the software version. See IMEISV.
- Where there is more than one Type Allocation Holder for an ME Type then the TAC code shall be different.

D.1.2   Reporting Body Identifier (NN) – 2 digits (valid prior to 01/01/03)

The first two digits of the TAC are the Reporting Body Identifier. These digits indicate which Reporting Body issued the IMEI. The GSM Association shall coordinate the allocation of the first 2 digits to Reporting Bodies. See Annex A for IMEI Reporting Body Identifiers that have already been allocated.

Valid Range 00 – 99 in accordance with allocations in Annex A

The following allocation principles apply:

- The GSM Association shall coordinate the allocation of the Reporting Body Identifier.
- The Reporting Body Identifier shall uniquely identify the Reporting Body.
- If for some reason the same Reporting Body Identifier must be used then the first digit of the ME Type Identifier will also be used to define the Reporting Body. The GSM Association shall coordinate the allocation to the Reporting Body of the range of values of the first digit of the ME Type Identifier. This range shall be contiguous. This approach is to be avoided if at all possible.

D.1.3   ME Type Identifier (XXXX) – 4 digits (valid prior to 01/01/03)

The following 4 digits of the TAC are under the control of the Reporting Body. These 4 digits together with the Reporting Body 2 digit identifier uniquely identify each ME Type.

Valid Range 0000 – 9999

The following allocation principles apply:

- Every ME Type shall have a unique TAC or set of TACs. A TAC may not be associated with more than one ME Type. An ME Type may have more than one TAC.
- Major changes to the ME Build Level shall require a new ME Type Identifier. Major changes to ME Build Level would normally include the addition of new features or changes that modify the performance of the ME Type. Minor changes to the ME Build Level that do not change the performance of the ME require no new ME Type Identifier. The Reporting Body shall determine what constitutes a major or minor change to the ME Build Level.
- The ME Type Identifier should be allocated sequentially wherever possible. Gaps in the ME type range are to be avoided if possible.
- Multiband or multimode ME shall only have one TAC and therefore one IMEI. Where more than one Reporting Body is involved in the allocation of the IMEI coordination is required between the Reporting Bodies to ensure that all requirements have been met before the IMEI is allocated.

D.1.4   Final Assembly Code (FAC) - 2 digits (valid prior to 01/01/03)

These two digits (YY) are generally used to identify the specific factory or manufacturing site of the ME. The allocation of the FAC is under the control of the Reporting Body.

Valid Range 00 – 99

The following allocation principles apply:

- More than one FAC should be allocated where necessary to a Factory or site to allow for the situation where the factory produces more than 1 million units per ME Type.
- Further FACs should be requested and assigned for a ME type where the Serial Number Range is exhausted.
- A FAC shall not be used to distinguish between ME Types.

D.1.5   Serial Number (SNR) - 6 digits (valid prior to 01/01/03)

The 6 digit SNR (ZZZZZZ) in combination with the FAC is used to uniquely identify each ME of a particular ME Type.

Valid Range 000000 – 999999

The following allocation principles apply:

- Each ME of each ME Type must have a unique Serial Number in combination with the FAC for a given TAC code.
- SNR shall be allocated sequentially wherever possible.
- The Reporting Body may allocate a partial range to be used for the serial number.

D.1.6   Spare Digit / Check Digit – 1 digit (valid prior to 01/01/03)

D.1.6.1   Phase 1/1+ ME

For Phase 1 ME this is a spare digit and its use has not been defined. The spare digit shall always be transmitted to the network as "0".

D.1.6.2   Phase 2 (and later) ME

For Phase 2 (or later) mobiles it shall be a Check Digit calculated according to Luhn formula (ISO/IEC 7812). See GSM 02.16. The Check Digit shall not be transmitted to the network. The Check Digit is a function of all other digits in the IMEI. The Software Version Number (SVN) of a Phase 2 (or later) mobile is not included in the calculation.

The purpose of the Check Digit is to help guard against the possibility of incorrect entries to the CEIR and EIR equipment.

The presentation of Check Digit (CD) both electronically (see Section 5) and in printed form on the label and packaging is very important. Logistics (using bar-code reader) and EIR/CEIR administration cannot use the CD unless it is printed outside of the packaging, and on the ME IMEI/Type Accreditation label.

The check digit shall always be transmitted to the network as "0".

Annex E   Test TAC Application form.

If a Test IMEI/TAC is required as defined in GSMA PRD TS.06 section 9.0 then the details in the following form must to be completed and sent to the IMEI Helpdesk (imeihelpdesk@gsma.com) the Helpdesk will then pass on the Test TAC request form to the appropriate Reporting Body for processing.

Test TAC application form
Please complete the details of the test device that the Test TAC will be used for, below.

M / O	Requested Information	Example of Completed Information		Notes
M	Manufacturer I.D.			The OEM must be registered in the IMEI database before they can request a Test TAC Annex E Notes 1 and 2.
M	Applicant Name	*Mr Fred Flintstone*		
M	Applicant Email Address	*fflintstone@ABC.com*		
M	Brand Name	*ABC*		
M	Equipment Type (Dropdown list)	Mobile Phone/Feature phone		For details of these different equipment types see TS.06 section 8.0
		Smartphone		
		Tablet		
		Dongle		
		Modem		
		WLAN Router		
		IoT Device		
		Wearable		
		Mobile Test Platform		
		Undefined/Unknown		
O	Model Name (Text Box)	*Rock Mobile*		
	Modes			All of the applicable modes should be selected. At least one mode must be selected
O	**GSM**	Yes / No		
O	**WCDMA FDD**	Yes / No		
O	**WCDMA TDD**	Yes / No		
O	**TD-SCDMA**	Yes / No		
O	**E-UTRA (LTE) FDD**	Yes / No		
O	**E-UTRA (LTE) TDD**	Yes / No		
	Intra-band contiguous Carrier Aggregation (CA) operating bands and configurations			All of the applicable CA combination should be selected.
O	**1 X CA**	Yes / No		
O	**2 X CA**	Yes / No		
O	**3 X CA**	Yes / No		
O	**4 X CA**	Yes / No		

O	**5 X CA**	Yes / No	
	UICC Support		
O	**Does the devices support Remote Sim Provisioning (RSP)**	Yes / No	
O	**Does your device support:** Removable eUICC/UICC	Yes / No	
O	**Does your device support:** Non-Removable eUICC/UICC	Yes / No	

Note 1:   ONLY OEMs can request Test TAC.

Note 2:   Some, regulators and some countries customs, will not accept devices with test TAC. There is the possibility that devices with test TAC may be impounded, destroyed or returned.

What happens next?

The RB will verify the details that have been provided. If more information is needed the RB will contact the applicant.

When the form has been verified the applicant will be sent an email with the Test TAC details and the database will be updated.

The Test TAC should be allocated with 5 working days and the database will be updated with 10 working days.

Annex F   Document Management

F.1   Document History

Version	Date	Brief Description of Change	Approval Authority	Editor / Company
3.1.0	04/04/1998	Clarifications and terminology changes as approved at MoU#39		
3.1.1	18/06/1998	Update to Annex A and B		
3.1.2	04/08/1998	Update to Annex A and B		
3.1.3	August 1998	Document Classification Scheme		
3.1.4	March 1999	NS CR Fast Track Procedure		
3.1.8	April 2000	Update to Annex A and B		
3.1.9	May 2000	Update to Annex A		
3.1.10	October 2000	Update to take account of R&TTE Directive		
3.2.0	September 2002	Update to take account of JEM Meeting output and changes to the core specifications.		
3.3.0	December 2004	Update to take account of changes to Test IMEI allocation and updates for revised TAC format, and Update of Test IMEI procedure, IMEI security, IMEI SV		
3.3	6 January 2006	Updated format and version number to current methods, re-designated control number from TW.06 to DG.06 consistent with group name.		
3.4	1 March 2007	Note about UMA terminal added to Section 1 ME Type		
3.5	1 November 2007	TD-SCDMA allocation requirements added.		
3.6	7 February 2008	The Test IMEI format description was corrected in the table in Annex B		
3.7	8th December 2008	TD-SCDMA allocation details updated.		
4.0	October 2009	Re-writing of Document.	DG#22 EMC#	Les Roland / BABT

Version	Date	Brief Description of Change	Approval Authority	Editor / Company
5.0	15 Sept 2010	CR005 References' added to 3GPP2 & GHA. Corrections to the "Check Sum" reference	Approved at EMC#86	Paul Gosden / GSMA
5.1	02 Dec 2010	Document number changed from DG06 to TS06 Document owner changed from DG to TSG	TSG 01	Paul Gosden / GSMA
6.0	27th July 2011	CR0007 (TSG04_003r1)	TSG04 / DAG 83 / EMC 95	Paul Gosden / GSMA
7.0	31st October 2013	Updated in line with the new TAC application form and brought in line with current industry requirements	TSG / DAG / PSMC	Paul Gosden / GSMA
8.0	2nd June 2015	Requirements regarding the use of TAC changed to one TAC per ME Model.	TSG#20	Paul Gosden / GSMA
9.0	Nov 2015	Updated with changes in CR 1006 approved at TSG24	TSG	Paul Gosden / GSMA
10.0	June 2016	Updated with changes in CR 1007 approved at TSG25	TSG	Paul Gosden / GSMA
11.0	Jan 2017	Updated with changes in CR 1008	TSG	Paul Gosden / GSMA
12.0	Sept 2017	Updated with changes in CR 1012	TSG	Paul Gosden / GSMA
13.0	Dec 2017	Updated with changes in CR 1013 Note CR1013 includes the changes in CR1009 & CR1011	TSG#30	Paul Gosden / GSMA
14.0	March 2018	The requirements for the number of IMEIs for Multi-SIM devices has been clarified and aligned with TS.37	TSG#31	Paul Gosden / GSMA
15.0	May 2018	CR1015 implemented. Adding back the note about OS and updating the CTIA contact details.	TSG	Paul Gosden / GSMA
16.0	May 2019	MSAI removed as the RB for India	TSG	Tyler Smith / GSMA

Other Information

Type	Description
Document Owner	Terminal Steering Group (TSG)
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Feedback

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