IMEI Allocation and Approval Process
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1 History of TAC Allocation

The International Mobile Equipment Identity (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 GSM Association (GSMA) was asked by industry stakeholders to assume responsibility for allocating IMEI number ranges, and Type Allocation Codes (TACs), 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 the GSMA Device Database.
- Provide expertise and advice on allocations.

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

2 Introduction

This document outlines the allocation principles applicable to the 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
APD	Automatic Processing of Data
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.01 & SGP.02 or SGP.21 & SGP.22. In the context of this document, an eUICC contains at least one enabled Profile that provides functions of a (U)SIM.
GHA	Global Hexadecimal Administrator
NFC	Near Field Communication
IMEI	International Mobile Equipment Identity also known as Permanent Equipment Identifier for 5G devices.
LTE	Long-term Evolution, also known as 4G
M2M	Machine to Machine
ME	Mobile Equipment
MEID	Mobile Equipment Identifier
MNO	Mobile Network Operator
NTN	Non-Terrestrial Network
OS	Operating System
PC	Personal Computer
PoS	Point of Sale
RAT	Radio Access Technology
RB	Reporting Body
SMS	Short Message Service
SNR	Serial Number
SUPI	Subscription Permanent Identifier, defined in 3GPP TS 23.003.
SUPI-NsI	SUPI with SUPI Type set to Network-specific Identifier, see 3GPP TS 23.003.
SVN	Software Version Number
TAC	Type Allocation Code
TCU	Telematics Control Unit
TIA	Telecommunications Industry Association
TN	Terrestrial Network
UE	User Equipment
UICC	As defined in ETSI TR 102 216. A UICC contains functions of a (U)SIM.
UMTS	Universal Mobile Telecommunications System
(U)SIM	Universal Subscriber Identity Module
WLAN	Wireless Local Area Network

3.1 Definitions

Term	Definition
3GPP	An organisation that defines the technical specifications for TN & NTN
3GPP2	An organisation that defined the technical specifications for TN
Authorised TAC List	A Device Status List that holds TAC numbers officially allocated by GSMA for use by MEs on 3GPP/3GPP2 cellular networks.
Block List	A Device Status List that holds IMEI numbers of ME that may be blocked from use on 3GPP/3GPP2 cellular networks, including the reason for being added to or removed from the list.
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.
Device Status List	List in the Device Registry indicating the status of an ME: Block List, Authorised TAC List.
Electronic Manufacturing Services - EMS	Companies that provide manufacturing services to other companies including OEMs (Original Equipment Manufacturer) and IDHs (Independent Design House). EMS do not sell or market any product under their own brand.
Equipment Identity Register	3GPP/3GPP2 Cellular network function featuring a database holding common status of MEs, plus local status.
GSMA Device Database	GSMA database that maintains a list of authorised device type identifiers (TAC) with OEM reported manufacturer, brand, marketing and model names operating system and basic characteristics of the mobile device.
GSMA Device Registry	GSMA database that maintains Device Status List information used by network operators in their local EIR to block or allow devices to access their networks. Eligibility and technical information is defined in the GSMA Device Registry Specification and Access Policy (SG.18).
IMEI	International Mobile Station Equipment Identity; electronic serial number of an ME.
Independent Design House - IDH	Companies that have independent in-house design expertise and produce custom / reference designs for other companies including ODMs, OEMs, and EMSs 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.

Term	Definition
	The wording “Mobile Equipment” is used in 3GPP documents for a 3GPP/3GPP2 device.
ME Model	Used to refer to 3GPP/3GPP2 mobile equipment models and products that are differentiated in the market by at least one of the following: a) Hardware design, b) Transceiver, c) Control software, d) Supported frequency bands, e) Manufacturer, f) Assembler, or g) Commissioned.
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).
Networks-specific Identifier	A SUPI consisting of SUPI type set to network specific identifier, see 3GPP TS 23.003.
Original Design Manufacturer - ODM	Companies that design and manufacture products that are sold by other companies under their own brand names. The ODMs 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 OEMs 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.
Profile	“Combination of a file structure, data and applications to be provisioned onto, or present on, an eUICC and which allows, when enabled, the access to a specific mobile network infrastructure”. As defined in SGP.01
Reporting Body	An organisation that is appointed by the GSMA as having authority and competence to allocate TAC 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 which then enables creation of the IMEI. The TAC MUST be obtained from a GSMA 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 ODM or an 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 22.030	Man-machine Interface (MMI) of the User Equipment (ME)
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
GSMA PRD SG.18	GSMA Device Registry Specification and Access Policy
GSMA PRD SGP.01	Remote Provisioning Architecture for Embedded UICC
GSMA PRD SGP.02	Remote Provisioning Architecture for Embedded UICC Technical Specification
GSMA PRD SGP.21	Remote SIM Provisioning Architecture
GSMA PRD SGP.22	Remote SIM Provisioning Technical Specification
GSMA PRD TS.30	GSMA TAC Application Forms
GSMA PRD TS.37	Requirements for Multi SIM Devices

5 International Mobile Equipment Identity (IMEI)

The IMEI uniquely identifies an individual mobile device. The IMEI is unique to every ME and thereby provides a means for controlling access to 3GPP/3GPP2 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 (RB). 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 RB 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 RB Identifier. These digits indicate which RB issued the IMEI. See Annex A for the valid IMEI RB Identifiers.

The following RB Identifier allocation principles apply:

- The GSMA shall coordinate the allocation of the first 2 digits to RB Identifier.
- The RB Identifier shall uniquely identify the RB.

5.1.3 ME Model Identifier (XXXXXX) – 6 digits

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

Valid Range: 000000 – 999999

The following ME Model Identifier 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 RB 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 RB but assigned to individual mobile stations by the manufacturer.

Valid Range: 000000 – 999999

The following SNR 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 RB 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 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 EIR equipment or for detecting mistakes in reading or manual transcription of the IMEI.

The presentation of the Check Digit both electronically (see table in section 5) and in printed form on the label and packaging is very important. Logistics (using bar-code reader) and EIR 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. A recommendation to terminal manufacturers is detailed in Annex C.

6 Benefits to the Industry of having an IMEI

IMEIs are used by MNOs for the following:

- Identify an individual mobile terminal to the 3GPP/3GPP2 cellular 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 illegitimate 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 the Equipment Identity Register (EIR) and Device Status Lists accessible via the GSMA Device Database and GSMA Device Registry services. The integrity of the IMEI is the critical factor in the effectiveness of device management.

There are a number of guidelines that must be adhered to if the IMEI is to be securely implemented allowing the effective and efficient use for device management. Failure to do so will make it impossible to use EIRs effectively and inhibit the ability to identify equipment types and to take any appropriate action, if required, against individual ME. It is in the interests of the mobile industry and wider stakeholders that the integrity and security of the IMEI is maintained.

The following principles shall be adhered to.

- The IMEI shall uniquely identify each individual unit of ME.
- As per 3GPP 23.003, 3GPP TS 22.016, the IMEI shall not be changed after it is programmed into the device at the point of manufacture. 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 that contain an IMEI should be allocated a unique IMEI. When the component containing the IMEI has been replaced in this manner the reuse of the original 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 has developed a number of initiatives and enablers to fight device theft and, recognising the criticality of a dependable and securely implemented IMEI, has worked on a number of fronts to define and promote IMEI security best practice. In particular, GSMA has developed two complementary initiatives that have received the support of the world's leading device manufacturers and brand owners, and they are briefly described as follows:

1. IMEI Security Technical Design Principles provide guidance to mobile device manufacturers and provide operators with a set of criteria against which device security can be assessed. The design principles complement the 3GPP technical standards that require IMEIs to be non-reprogrammable but do not contain any details or guidance as to how the IMEI should be protected.
2. IMEI Weakness Reporting and Correction Process recognises that security is not absolute and facilitates the centralised reporting and correction of newly identified IMEI security weaknesses. The overall objective of this initiative is to improve device security levels during the manufacturing lifecycle of current and future products.

8 TAC (IMEI) Usage Rules

The following requirements shall be adhered to:

- Each TAC can only be used for a single ME Model
- One ME Model will have a single device type and will have one or more TAC.
- Modular Equipment may use an interchangeable transceiver module to achieve the ability to operate in alternative 3GPP/3GPP2 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 TAC and therefore separate IMEIs. 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 serve one or several UICCs/eUICCs/SUPI-NsI(s). If only one (U)SIM on one of the served UICCs/eUICCs or only one of the SUPI-NsI(s) can be used to connect to the network at any time, then only one IMEI is required. If more than one (U)SIM/SUPI-NsI can be served at the same time by a transceiver, for example in Stand-by Mode, the transceiver shall have multiple unique IMEIs so that all (U)SIMs/SUPI-NsI(s) that are served at the same time will use a separate unique IMEI.
  See TS.37 Requirements for Multi SIM Devices, for more information about the implementation of Multiple (U)SIM in devices.
- For devices with:
    - Multiple (U)SIMs/SUPI-NsI(s) which are all Active at the same time (have simultaneous connections to the network) each (U)SIM/SUPI-NsI must use a separate, unique IMEI.

  - Multiple (U)SIMs/SUPI-NsI(s) where some (U)SIM(s) /SUPI-NsI (s) are in Standby Mode (only listening on the network) each (U)SIM/SUPI-NsI(s) must use a separate, unique IMEI.
  - Multiple (U)SIMs/SUPI-NsI(s) which are all Passive (only one can connect to the network at any time and the connection is switched between the (U)SIM/SUPI-NsI) 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 transceiver serving the (U)SIM(s)/SUPI-NsI(s) would therefore have a different IMEI from the same TAC.
  Each transceiver shall have enough unique IMEIs so that all (U)SIMs/SUPI-NsI(s) that are served at the same time can use separate, unique IMEIs.
  For further requirements for devices with Multiple (U)SIMs, see GSMA PRD TS.37.
- All TAC numbers allocated by the Reporting Bodies are stored in the GSMA Device Database. For confidentiality reasons, access to the Device Database is restricted.
- Before applying for a TAC number, the applicant company must first register with a GSMA appointed RB. 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.
- TAC can be requested for NTN Devices. These may connect to NTN only or NTN and TN networks.
- NTN frequency bands can be selected with any Equipment Type listed below.
- All devices may connect to 3GPP TN and/or NTN

- 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 and touch screen. A fully featured OS / platform that provides data communications

capability, may offer voice communication capability natively or via application, enables personalisation of the device by the user and in addition supports installation and maintenance of applications (e.g., downloadable from an application store).

Dongle:

- Description - A device which can be inserted in a laptop or other computer to provide 3GPP/3GPP2 cellular network connectivity.

Modem:

- Description - A device, capable of converting digital data into radio signals and back and is designed to be embedded in a variety of terminals to provide cellular connection functionality.

  Notes:

  1. A Modem may support interfacing to multiple UICC form-factors described in ETSI TS 102 221 and ETSI TS 102 671, however not all of the UICC form-factors supported by the Modem may be used on the final device, which the Modem is used in. At the time the Modem is manufactured, it is unknown if the final device will support eUICC/UICC/SUPI-NsI(s). It is also unknown if the eUICC/UICC in the final device will be accessible via a SIM slot or will be fixed into the device.
     The maximum quantity of eUICC/UICC supported by the Modem must be provided on the TAC application form.
     The maximum quantity of IMEI used in the Modem must be provided on the TAC application form[1].
  2. Other organisations, (e.g., PTCRB) have their own requirements regarding device TAC allocation and ownership for modems. If you are dealing with such an organisation, please check their current requirements before applying for a TAC.

WLAN Router:

- Description - A device that performs advanced routing functionalities and uses the 3GPP/3GPP2 cellular network as Wide Area Network interface. Examples include Fixed Wireless Access (FWA) device types etc.

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.

Note: When an IoT Device is selected on the TAC Application form, support for Cat-NB1 and Cat-M1 will automatically be selected. If the IoT Device does not support Cat-NB1 and / or Cat-M1 then these will need to be deselected by the applicant.

Wearable:

- Description - A body worn mobile device that connects to the 3GPP/3GPP2 cellular network directly with its own eUICC or UICC.

[1] This is required by some regulatory authorities.

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

Device for the Automatic Processing of Data (APD):

- Description - Equipment primarily used to automatically process received input to generate output but may also support voice communication for unplanned events.

  Includes Point of Sale (PoS) device used in association with a payment identity token owned by a customer (e.g., credit / debit card, NFC-enabled phone, biometric asset, etc.) to authorise a payment transaction via a 3GPP/3GPP2 Mobile Network.

  Any kind of Asset Scanner device (e.g., handheld device used in a warehouse or shop to scan items) and is connected to a 3GPP/3GPP2 Mobile Network.

<u>UAV/UAS</u>

- An Uncrewed/Unmanned Aerial Vehicle (UAV) or Uncrewed/Unmanned Aerial System (UAS), device which needs to be identified by an MNO so that they can provide a differentiated service both in speed and reliability. These devices also need to be identified by regulators.

<u>Satellite</u>

- A device that connects to a Satellite to provide service (voice &/or data) to one or more users, using non-3GPP-NTN technologies as its primary means of connection.
  Examples would include, but not limited to a hand-held phone, a modem on a ship or airplane.

  Note 1: A Device that supports Satellite communication, but also supports 3GPP technologies (Terrestrial or NTN) as primary means of connection, does not fall into this category.

<u>Vehicle TCU</u>

- Description - A Telematics Control Unit (TCU) which is an embedded device within a vehicle (Car, Lorry etc.) that provides two-way information communication between the vehicle and an external network.

Example: A Telematics Control Unit (TCU) can be connected to an TN, NTN, road infrastructure or other vehicles control units through wireless communication, it may collect telematics data from the car, such as location, speed, engine data, connection quality, etc., by connecting with various subsystems in the vehicle via data and control buses. It may also offer in-vehicle consumer media services via Wi-Fi and Bluetooth, voice calling and emergency calling.

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 (which can be used to create up to one million IMEI numbers) is normally more than sufficient in most applications.
- Any amendment to an existing TAC record must be made to the GSMA Device Database 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 MNOs 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 3GPP/3GPP2 equipment is capable of operating in multiple modes the following principles must be adhered to.
    - 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 3GPP/3GPP2 part and any applicable identification to the non-3GPP/3GPP2 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 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 Data Challenge Process

8.1.1 Purpose

GSMA TAC Data Challenge has been created as a quick and easy way to report a TAC data error for all organizations who have access to the GSMA Device Database. It is well understood that these stakeholders come into regular contact with the data points associated with each unique TAC and thus can easily spot and report a TAC data error through this new process and thus help the GSMA keep the TAC data even more accurate. This policy has been created, and will be updated from time to time, by the GSMA Terminal Steering Group (TSG) to assist in the efficient processing and review of all GSMA's TAC Data Challenge correction submissions.

8.1.2 Policy

a) The GSMA TAC Data Challenge process is only open to Mobile Network Operators, Government, Regulators and Law Enforcement Agencies (LEAs) who are currently recipients of the GSMA Device Database service. To make a submission download the TAC Data Challenge form at the GSMA IMEI Database portal, here:

   https://imeidb.gsma.com/imei/tac-challenge

b) A TAC cannot be challenged if the allocation date is greater than 5 years from the submission date on the TAC Data Challenge form.

c) You may only identify one TAC on the TAC Data Challenge form, but you can include any number of data points found in the GSMA Device Database for correction. Each separate TAC to be challenged will need to be accompanied on a separate TAC Data Challenge form.

d) Include the appropriate evidence to accompany your TAC Data Challenge submission. This can include pictures, device documentation, network data reports; please include the TAC as a reference in all your supporting file names.

e) Corrections can only apply to a valid TAC.

f) All challenges, with accompanying documents must be submitted to the GSMA IMEI Helpdesk (IMEIHelpdesk@gsma.com), include the TAC you are challenging within the Email Subject title, so it reads: 'TAC [number] Data Challenge'. Only the challenges that comply with this section are approved and will be forwarded to the TAC holder by the GSMA IMEI Helpdesk.

g) An organisation cannot challenge the same TAC data point more than once. Second attempts will be automatically rejected by the IMEI Helpdesk and the challenger notified.

h) Brand owners or OEMs cannot challenge their own TAC, neither can they challenge the TAC of other brand owners or OEMs.

i) TAC Data Challenge submissions can be rejected by a brand owner/OEM and no subsequent discussions are required by the Brand owner/OEM.

j) An approved challenge will be sent to the TAC holder who will be given 4 weeks to accept or reject the challenge. If there is no response from the TAC holder within the 4-week time period, then the challenge request will be reviewed by the GSMA. A TAC Data Challenger will receive a final result notification within 6 weeks of submission. When a change has been accepted, the Helpdesk will implement the change and issue a new GSMA TAC certificate, with the existing allocation date still in place.

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 MNO to use the Test IMEIs on their network. If a MNO queries the use of a Test IMEI issued by TÜV SÜD, they 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 MNO and, where applicable, of the RB. A RB or operator may allow the use of a limited number of Test ME and may impose regional restrictions.

NOTE: Test ME is not mandated to be assigned with Test IMEI that begins with '00'. Instead, Test ME can use any TAC allocated to the TAC Holder if it is not assigned to MEs that are commercially available – see section 8.

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 block 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 RB 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 TÜV SÜD as reporting 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	MMM	XX	YYY	ZZZ
To identify Test ME	Manufacturer Code	Reserved for future use, fixed to "00"	Test ME Model	Serial number
Notes:- MMM - Manufacturer Code allocated by CTIA 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 GSMA maintains a list of contacts for the issuing of Test IMEI. This list is available as Annex B to this document.

12 VOID

13 Device Registry

See GSMA Device Registry Specification and Access Policy SG.18.

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 RB Identifier.
- Maintain a list of TAC by Reporting Bodies containing details of TAC manufacturers, models and band/mode capability.
- Ensure integrity of the GSMA Device Database and Authorised TAC List and update with new TAC allocations according to the conditions of section 10.
- 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 Type Allocation and IMEI issues where appropriate.

The GSMA shall enter the Test TAC allocations to the GSMA Device Database; MNOs are responsible for entering in their own local EIR.

15 Reporting Body Responsibilities

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

- Ensure that the requirements for Type Allocation as outlined in section 8 are satisfied.
- Allocate TAC 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 RB.
    - Reporting Bodies must authorise TAC from within the GSMA TAC allocation system,

If this information is not already in the GSMA Device 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 by GSMA 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 register via the following link: https://imeidb.gsma.com and then click on “Manufacturers Registration Form”
- Complete all the details & submit the registration form.

Once submitted, the form is sent via the System to the appropriate 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 access the System at https://imeidb.gsma.com 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.
- To use the allowance and initiate the TAC Allocation process, 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. RBs currently authorised to allocate IMEIs are listed in Table 1 while RBs that are no longer authorised to allocate IMEIs are listed in Table 2.

Table 1: Reporting Bodies currently authorised to allocate IMEIs

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 Castro 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
35	TÜV SÜD (BABT)	All	Mr John Talbot Tel. +44 1932 251264 E-mail: John.Talbot@tuv-sud.co.uk E-mail: imei@babt.com / imei@tuvsud.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		

Reporting Body Identifier	Reporting Body or allocated Use	Bands/ Modes	Contact Details
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 2: Reporting Bodies that no Longer 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.

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 Castro	+1 202 736 3223	+1 202 466 3413	CTIA - IMEI IMEI@ctiacertification.org
00 44 MMMM	TÜV SÜD	Mr. John Talbot	+44 1932 251264	+44 1932 251201	John.Talbot@tuv-sud.co.uk imei@tuvsud.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 (IMEI Software Version)

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.

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.

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
XXXXXX	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 latter) 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 Smartphone Tablet Dongle Modem WLAN Router IoT Device Wearable Mobile Test Platform UAV/UAS TCU Satellite Undefined/Unknown	For details of these different equipment types see TS.06 section 8.0
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	
O	**NTN GSO**	Yes / No	3GPP NTN
O	**NTN NGSO**	Yes / No	3GPP NTN

	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		

Version	Date	Brief Description of Change	Approval Authority	Editor / Company
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
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
17.0	June 2019	CR1018 clarifying the Modem description, has been implemented	TSG	Paul Gosden / GSMA

Version	Date	Brief Description of Change	Approval Authority	Editor / Company
18.0	April 2020	Implementing CR1019 and CR1020	TSG	Paul Gosden / GSMA
18.1	July 2020	Implementing CR1021 Correcting the links to the IMEI Database	TSG	Paul Gosden / GSMA
18.2	Jan 2021	Implementing CR1022 Adding note to “modem”	TSG	Paul Gosden / GSMA
19.0	May 2021	Implementing CR1023 Updating terminology	TSG#44 ISAG#11	Paul Gosden / GSMA
20.0	Sept 2021	Implementing CR1024 Adding new devices type “ADP”	TSG#45 ISAG#12	Paul Gosden / GSMA
21.0	Feb 2022	Implementing CR1025 Adding requirements for devices without SIM	TSG (email) ISAG#17	Paul Gosden / GSMA
22.0	Dec 2022	Implementing CR1026 Adding eUICC Profiles	TSG#50 ISAG#26	Paul Gosden / GSMA
23.0	July 2023	Implementing CR1027 Adding eUICC Profiles	TSG#53 ISAG#33	Paul Gosden / GSMA
24.0	Jan 2024	Implementing CR1028	TSG#54 ISAG#37	Paul Gosden / GSMA
25.0	May 2024	Implementing CR1029	TSG#55 ISAG#41	Paul Gosden / GSMA
26.0	July 2024	Implementing CR1031 v02	TSG#56 ISAG#43	Paul Gosden / GSMA
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