

TAC Allocation Process Rest of the World
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Table of Contents

1 History of TAC Allocation 3
2 Introduction 3
3 The Requirements and use of an IMEI. 3
3.1 Definition of Acronyms 4
4 What are TAC and IMEI? 4
4.1 International Mobile Equipment Identity (IMEI) 4
5 Reference Documents 5
6 TAC (IMEI) Usage Rules 5
7 GSMA Responsibilities 7
8 Reporting Body Responsibilities 8
9 Type Allocation Holder Responsibilities (Brand Owner / Manufacturer) 9
10 TAC / IMEI Allocation 9
10.1 Registration 9
10.1.1 Documents Required for Registration 9
10.2 Verification Process 10
10.3 Manufacturer/Brand Owner Approval 10
11 TAC Allocation process 10
12 Reporting Body 10
Annex A Document Management 11
A.1 Document History 11
A.2 Other Information 11

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 both 3GPP and 3GPP/3GPP2 compliant devices. In addition, the TIA can allocate TAC for 3GPP/3GPP2 compliant devices only.

2 Introduction

This document outlines the allocation process applicable to the International Mobile Equipment Identity (IMEI) numbers around the world with the exception of China and India. This document should be read in association with TS.06, IMEI Allocation and Approval Process.

For the allocation process for China see TS.17 and for India see TS.16

The following areas which differ from TS.06 are covered:

- Manufacturer registration requirements
- Allocation process for TAC/IMEI
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The purpose of this document is to define the process by which TACs are allocated to device manufacturers by a local Reporting Body that can validate the authenticity of requests for TACs and provide guidance and support to the manufacturers as needed.

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3 The Requirements and use of an IMEI.

The advantages of mobile technology have been utilised to provide benefits and convenience to the masses, however mobile technology is also inevitably being used by those engaged in criminal and terrorist activities. This has prompted the security agencies and government authorities, in some countries to proactively monitor the importation of handsets and to control the use of mobile devices by only permitting network access to devices that contain legitimately allocated International Mobile Equipment Identity (IMEI).

To underpin the efforts of security forces around the world, to control devices that can access publicly licensed mobile networks it is critical that mobile devices contain valid IMEIs that have been allocated the GSMA. The GSMA administer the TAC Allocation process through appointed Reporting Body (RB). The RB is an integral part of the industry established global TAC allocation ecosystem, providing expertise and advise direct to the manufacturers.

It is required that appropriate checks and verifications are carried out to ensure that TACs and IMEI number ranges are only allocated to legitimate manufacturers and brand owners entitled to apply for and receive these important numbering resources. A strong verification process, such as that defined in this document, must be implemented and followed to ensure TAC and IMEI ranges are allocated in a consistent manner that meets the needs of the global markets.

3.1 Definition of Acronyms

Acronyms	Description
3G	3rd Generation Networks
3GPP	3rd Generation Partnership Project
3GPP2	3rd Generation Partnership Project 2
CEIR	Central Equipment Identity Register
EIR	Equipment Identity Register
IMEI	International Mobile Equipment Identity
LTE	Long-term Evolution, also known as 4G
M2M	Machine to Machine
ME	Mobile Equipment
MEID	Mobile Equipment Identifier
NFC	Near Field Communication
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
UMTS	Universal Mobile Telecommunications System
(U)SIM	Universal Subscriber Identity Module
WLAN	Wireless Local Area Network

4 What are TAC and IMEI?

4.1 International Mobile Equipment Identity (IMEI)

The International Mobile Equipment Identity (IMEI) number 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 types or individual units.

The “IMEI” consists of a number of fields totaling 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 remainding serial number field is under the control of the Type Allocation Holder.

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- For the IMEI format prior to 01/01/03 please refer to TS.06 Annex D and for the IMEI format valid from 01/01/03 please refer to TS.06 section 5

5 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
TS.06	IMEI Allocation and Approval Process

6 TAC (IMEI) Usage Rules

Modular Equipment may use an interchangeable transceiver module to allow it to operate in alternative GSM bands. Such equipment is to treat each transceiver module as a separate ME. This means that each transceiver equipment module is subject to Type Allocation and is allocated a separate IMEI/TAC. The IMEI shall not be duplicated in separate transceiver equipment.

The GSMA has the following policy regarding devices containing multiple transceivers:

- If a device contains two or more transceivers, each transceiver needs to be separately identified on networks.

- If two or more transceivers within the device are identical (e.g. same chipset, same frequency bands), then each transceiver can use the same TAC, but different IMEI.
- If the transceivers are different (e.g. different chipset, different frequency bands), then the transceivers have different TACs.
- A single transceiver may have more than one (U)SIM. If only one (U)SIM can connect to the network at any time then only one IMEI is required.

All TAC (IMEI) numbers allocated by the Reporting Bodies are stored in the GSMA IMEI Database. The database is used to populate the White List which is used by network operators. For confidentiality reasons, access to the IMEI Database is restricted. A Type Allocation holder registered in the IMEI Database can request a list of the TAC (IMEI) numbers allocated to it. Network operators can access all of 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 the application to ensure that the applicant (i.e. Brand Owner) is a legitimate organization and is selling a product that is designed to connect to and function on a 3GPP compliant network,

- For modem manufacturers, the manufacturer must request the TAC as these modems 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 - A device supporting basic personal communication services, e.g. voice call and SMS. (Not strictly limited to basic services, but not a device that would fall within the definition of a Smartphone).
- Smartphone - A device with a 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 downloadable from an application store.
- Tablet -A device with a display of minimum 5 inches in size, 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.
- e-Book - Similar to a tablet, but prime function is digital book storage / reading; typically outdoor-capable display, less capable OS/applications than a tablet.
- Connected Computer - Laptop / Netbook / Desktop PC with integrated cellular network connectivity module.
- Dongle - A device which can be inserted in a laptop or other computer to provide cellular network connectivity.
- Modem - A device designed for embedding in other equipment to provide cellular connection functionality.
- WLAN Router - A device that performs advanced routing functionalities and uses the cellular network as a Wide Area Network interface.

If the Equipment Type is listed on the TAC form as “Dongle” or “WLAN Router” the device will not have a relevant operating system so it is acceptable to tick the box for “Operating System” as “Other” and then put “None” in the text box.

If the Equipment Type is listed on the TAC form as “Modem” then the device operating system may not be known so it is acceptable to tick the box for “Operating System” as “Other” and then put “Not known” in the text box.

Each application is made on a per model basis. The brand name, model name and 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 equates to 1 million IMEI numbers.

Any amendment to an existing TAC record must be made via the GSMA IMEI 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. Consequently, network operators need to be able to identify such equipment. The following guidelines apply.

- Where the equipment is based on an existing Mobile Equipment separate TAC code should be assigned to the Test ME to distinguish it from the Type Accredited mobile equipment.
- 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 3.
- Where GSM equipment is capable of operating in multiple modes the following guidelines apply.
- The Reporting Body shall inform the GSMA of the multimode capability of 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.

7 GSMA Responsibilities

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

- Appoint 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 TACs, manufacturers, models and band/mode capability for all IMEIs allocated by Reporting Bodies.
- Ensure integrity of IMEI Database white, black and grey list information and update white list with new IMEI allocations according to the conditions of section 10.
- Ensure integrity of IMEI Database processes.
- Maintain a list of contacts for issuing test IMEIs.
- 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.

8 Reporting Body Responsibilities

- Within the context of this document the Reporting Bodies shall have the following responsibilities with respect to IMEI and Type Allocation:
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- 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.
- 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 TAC allocations providing the following information:

- TAC
- 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 soon as possible after granting TAC to avoid delays in connecting the equipment to networks using an Excel template supplied by the GSMA by contacting imeihelpdesk@gsma.com

9 Type Allocation Holder Responsibilities (Brand Owner / Manufacturer)

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 IMEIs are securely implemented and their integrity can be relied on.
- Consider recommendations to increment SVN for new software in ME.
- Apply to relevant bodies for Test IMEIs when required.
- Gain permission from operators to use test ME where required.

10 TAC / IMEI Allocation

The process involves three stages for issuing TAC/IMEI numbers to the Type Allocation holder i.e. registration, verification and TAC allocation.

10.1 Registration

The Mobile Equipment (ME) brand owner / manufacturer will be required to complete the necessary details on the Manufacturer Registration Form (all fields mandatory). The registration form can be completed in the GSMA IMEI db (http://imeidb.gsm.org/imei/login.jsp) in English.

The Reporting Body will be automatically notified once the form has been completed in the Database.

10.1.1 Documents Required for Registration

The Brand Owner is required to send photocopies of the documents listed below to the Reporting Body.

- Certificate of Brand Ownership
- Certificate of Incorporation
- Images of the mobile product carrying the specified brand name
- Company Registration document (if applicable)
- ISO9001:2000 quality system Certification Number (Optional)
- Corporate Website details
- Evidence that the employ of the applicant company is employed and authorised by the company. This is usually in the form of a Letter of Authority.
- If the application is made by an agent acting on behalf of the company, then a letter of authority is required from the company.
- A scanned copy of the Terms and Conditions signed on behalf of the company.

10.2 Verification Process

The documentation sent to the Reporting Body will be checked, to ensure the authenticity of the TAC applicant company and its principals can be verified.

Once the verification process is complete, the submitted documents should be retained by the Reporting Body, and stored within the GSMA IMEI database.

It is estimated that the entire verification process should not take any more than 5 working days.

10.3 Manufacturer/Brand Owner Approval

After the documentation is verified, the manufacturer is supplied with a User Name and Password so it can request a TAC from the GSMA IMEI Database.

11 TAC Allocation process

The GSMA IMEI Database supports the English and Chinese languages to ensure that Chinese manufacturers have the option to apply for TACs in their preferred language. In all cases, requests to register and to apply for TACs and TAC applications are submitted via the IMEI Database.

All TAC applications from manufacturers will follow the automated process outlined below, which will ensure that all applications are input to the IMEI Database and the TACs allocated from there, thereby preserving a single global repository of TAC data. The process for the Type Allocation applicant is as follows:

- Log in to the GSMA IMEIDB, following the link below, using the Manufacturer ID and Password.
- Complete the application form in English, according to the choice of each manufacturer, and push the submit button
- The application form is sent to the Reporting Body for verification and TAC allocation. The manufacturer / Brand Owner is sent an email notifying it of the TAC it haa been allocated.
- The manufacturer should check the details on the notification email and contact the Reporting Body if any details need to be corrected / changed.
- Link to the GSMA IMEI db - http://imeidb.gsm.org/imei/login.jsp

12 Reporting Body

The GSMA global reporting body is BABT:

Phone Number:	+44 1932 251264
Fax Number:	+44 1932 251201
Contact Person:	Mr John Talbot
Email address:	imei@babt.com

Other Reporting Bodies details are contained in TS.06 Annex A

Annex A Document Management

A.1 Document History

Version	Date	Brief Description of Change	Approval Authority	Editor / Company
1.0	13th Jan 2016	First published version	PSMC/TSG	Paul Gosden GSMA

A.2 Other Information

Type	Description
Document Owner	TSG
Editor / Company	Paul Gosden, GSMA

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