

# TAC Allocation Process for China
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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 within China and should be read in association with TS.06 IMEI Allocation and Approval Process. The following areas which differ from TS.06 are covered:

- Manufacturer Registration requirements;
- Allocation process for TAC/IMEI.

# 3 The Requirement for a Local Reporting Body in China

The Chinese telecommunications industry is the fastest growing in the world. China is currently the largest telecom market in the world and the impressive growth seen to date, allied with the remaining potential for significant growth, has attracted a range of new Chinese manufacturers and suppliers into the mobile device market.

The advantages of mobile technology have been utilised to provide benefits and convenience to the masses. However, mobile technology is being used by those engaged in criminal and terrorist activities. These unlawful developments have prompted the security agencies and government authorities 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 allocated International Mobile Equipment Identity (IMEI).

To underpin the efforts of security forces around the world and to control devices that can access publicly licensed mobile networks, it is critical that mobile devices produced in and exported from China, contain valid IMEIs that have been allocated by a GSMA appointed Reporting Body that is an integral part of the industry established global TAC allocation ecosystem. In turn, 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 local Chinese and global markets.

GSMA recognises China as a nation that has a significant role to play in the production and export of mobile devices. The purpose of this document is to define the process by which TACs are allocated to Chinese 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.

### 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 |
| GHA | Global Hexadecimal Administrator |
| 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 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 remainder is under the control of the Type Allocation Holder.

- For the IMEI format prior to 01/01/03, please refer to TS.06 Annex D;
- 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 |
| TS.30 | TAC/IMEI Database application forms |

# 6 TAC (IMEI) Usage Rules

The following requirements must be adhered to:

a) Each ME Model must have its own TAC. One ME Model = one TAC, without exception.

b) 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.

c) 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.
- If the transceivers are different (e.g. different chipset, different frequency bands, different control software), then the transceivers must have a different TAC.
- 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.

d) 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.

e) 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 organisation 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.

f) 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 entering in 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 (e.g. downloadable from an application store).
- Tablet -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.
- 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 Wide Area Network interface.

g) 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.

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

i) Each application is made on a per model basis. The brand name, model name & marketing name need to be provided to identify the model.

j) 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.

k) Any amendment to an existing TAC record must be made via the GSMA IMEI Database using the “Edit TAC” function.

l) 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:

A 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 TS.06 Section 7.

m) Where GSM equipment is capable of operating in multiple modes the following principles must be adhered to.

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.

n) 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

# 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 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 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:

- 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 Type Allocations and IMEI 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 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.

# 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 (). 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 GSMA IMEI Database.

### 10.1.1 Documents Required for Registration

| Pvt. Ltd / Ltd Company / Partnerships |
|---|
| ☐ Enterprise business license (GD) |
| ☐ Company Registration Number (GD) |
| ☐ Registered capital (GD) |
| ☐ Scope of business (GD) |
| ☐ Results of the annual check-ups (GD) |
| ☐ ISO9001:2000 quality system Certification (GD) |
| ☐ ISO9001:2000 quality system Certification number (GD) |
| ☐ Brand Registration Certificate (GD) |
| ☐ Brand Registration Certificate Number (GD) |
| ☐ GSMA Manufacturers Terms and Conditions (signed and dated) |

The brand owner will also be required to send photocopies of the Government issued documents (marked as GD) listed above to the Reporting Body.

### 10.2 Verification Process

The documentation sent to the Reporting Body will be cross checked against various government owned websites and online resources, to ensure the authenticity of the TAC applicant company and principals can be verified, The State Administration for Industry & Commerce (SAIC) of the People's Republic of China, for example. Once the verification process is complete, the submitted documents should be retained in their original form by the Reporting Body, and stored within the GSMA IMEI Database.

It is estimated that the entire verification process takes approximately, 5 working days.

### 10.3 Manufacturer/Brand Owner Approval

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

## 11 TAC Allocation process

The GSMA 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 & to apply for TACs and TAC applications are submitted via the IMEI Database. All applications will be directed to the Reporting Body where the device manufacturer registers China, as the country of its headquarters.

All TAC applications from Chinese 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 is as follows:

- Log in to the GSMA IMEI Database, following the link below, using the Manufacturer ID & 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 & TAC allocation. The manufacturer / Brand Owner is sent an email notifying them of the TAC they have 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 Database, http://imeidb.gsm.org/imei/login.jsp.

## 12 Reporting Body in China

The GSMA reporting body in China is TAF:

| | |
|---|---|
| Postal Address | No 28 Xinijekouwaidajie Street,<br>Beijing,<br>China. |
| Phone Number: | +86 10 82052809 |
| Fax Number: | +86 10 82053375 |
| Contact Person: | Mr. Meng Xiangdong or Ms. Su Hui |
| Email address: | tafrb@taf.org.cn |

# Annex A Document Management

## A.1 Document History

| Version | Date | Brief Description of Change | Approval Authority | Editor / Company |
|---|---|---|---|---|
| 0.1 | 7th Sept 2010 | First draft submitted by TAF | GSMA TSG | Zhen Peng, TAF |
| 0.2 | 7th Oct 2010 | Second draft produced containing GSMA proposed changes | GSMA TSG | P. Gosden, GSMA |
| 0.3 | 2nd Dec 2010 | Third draft produced containing changes agreed between GSMA and TAF | GSMA TSG | J. Moran, GSMA |
| 1.0 | 14th Feb 2011 | Submitted to DAG and EMC | EMC | P. Gosden, GSMA |
| 2.0 | 11th March 2014 | Brought into line with new TAC request form & changes to TS.06 | TSG | P. Gosden, GSMA |
| 3.0 | 6 July 2015 | Brought into line with changes to TS.06 | TSG | P. Gosden, GSMA |

**Other Information**

| Type | Description |
|---|---|
| Document Owner | GSMA Terminal Steering Group |
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