Device Information Services

New Band Performance Attributes

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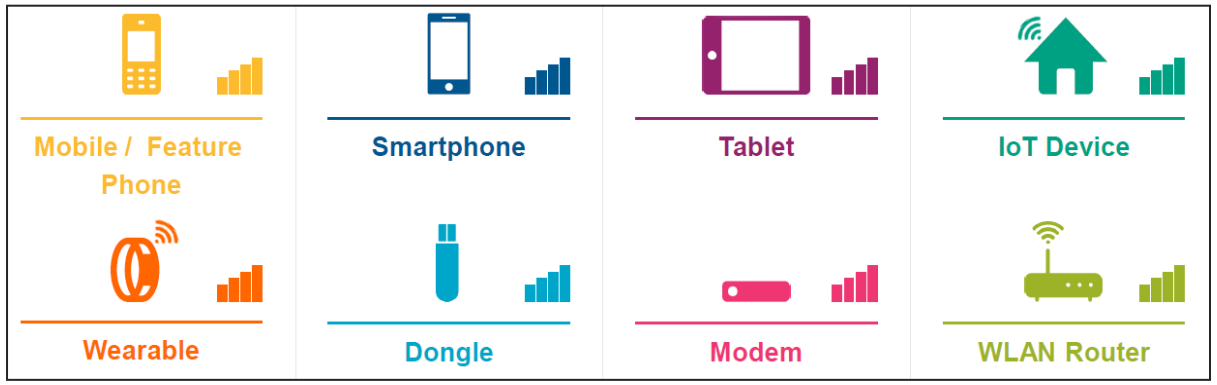
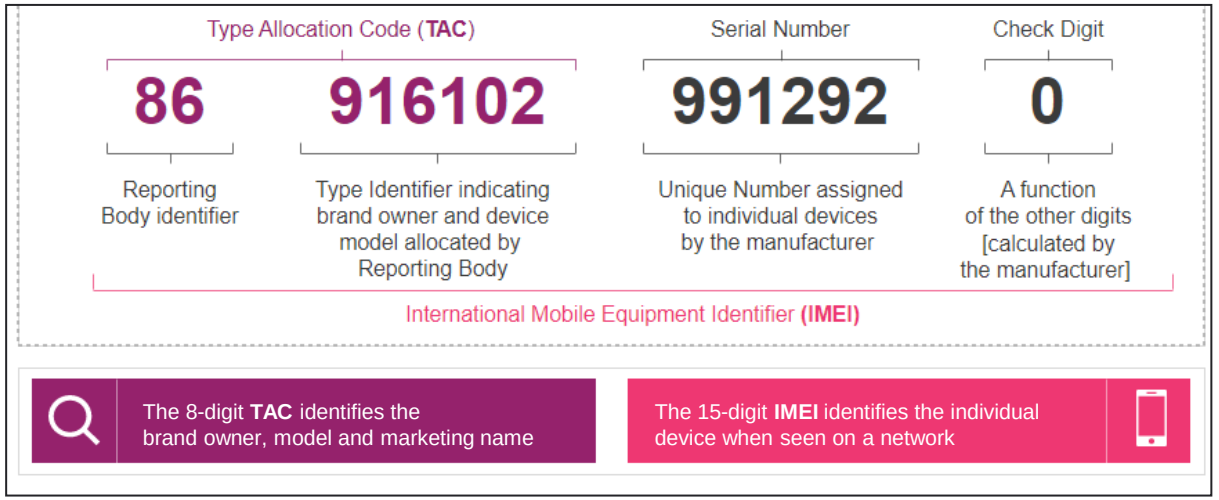
Introducing Device Information Services





Illustrative Device Data	
Device Category	Available device attributes / properties
Device Identification	Manufacturer, consumer recognized marketing name, model name, brand name, year released
Hardware Information	Device type (M2M device, Tablet, Smartphone, Watch, etc.), screen size, chipset, CPU, clock speed, RAM, VoLTE enabled, IoT endpoint, IoT enabler, IoT controller
Operating System	OS name and minimum OS version (e.g. Android 8, iOS 11, etc.)
Network Protocols	2G, 3G, 4G, 5G, LTE Category, VoLTE, VoWiFi
Browser	Name, version, rendering engine, etc.
HTML5	CSS, HTML5 properties
Multimedia	Streaming, Audio, Video codecs

We hold the records of over +206K Type Allocation Codes, with details of over 8 billion devices

Device Information Service Types

GSMA Device Database

- **Foundation TAC**
- **Database subscription**
- **Total number of attributes – 25+**

Ideal for

- End device verification or validity
- Trade in / Insurance companies
- Core device capabilities
- Network landscape, planning
- Basic marketing segmentation identify

GSMA Device Map Lite

- **GSMA Device Database +**
- **Curated data**
- **9 additional attributes**

Ideal for

- Device Database use cases **+**
- MNO customer support
- Customers who require exact TAC model / market names

GSMA Device Map

- **GSMA Device Database + Device Map Lite +**
- **Curated data**
- **150+ additional attributes**

Ideal for

- More effective MNO network planning projects
- Targeted marketing campaigns based on key market attributes
- Improving customer care planning & routing
- IoT roll out & monitoring projects
- Companies looking to gain greater business insights
- Non-technical end users

Recent enhancements and their 5G impact

- Since October 2020, GSMA began collecting detailed 4G and 5G band performance data from OEMs
- We have also collected relevant historical TAC too
- GSMA Device Map and GSMA Device Database have now been enhanced to provide end users with this valuable band performance data, ingestible via .json
- The following band information, for both 4G and 5G, is now available in addition to the other data rich attributes
  - Uplink/Downlink Speeds
  - MIMO Support
  - QAM
  - Carrier Aggregation

How are they useful?

Network Optimisation

Challenges which can be addressed:

2G/3G Sun Setting and 5G Rollout	Capacity Planning	Understand technologies/ services that end devices can or cannot support

Band Information

Use of the **Uplink/Downlink speeds** enables end users to know which devices can support super-fast speeds.	Ability to accurately identify devices that support multiple simultaneous connections via **MIMO performance data**.
Identify and correct devices that are slow on the network because the **QAM combination** is not correct.	Know what **Carrier Aggregation Bands** a device supports to determine level of bandwidth that can be supported.

New attribute examples

Example of 4G Performance Details

Band	Support Yes/No	MIMO supported in Downlink	MIMO supported in Uplink	Modulations supported in Downlink	Modulations supported in Uplink
LTE FDD BAND 1	Yes	2x2	None	16QAM 64QAM	16QAM

MIMO	
QAM	
Carrier Aggregation	

Example of 4G Aggregation Band and Performance Details

Band	Support Yes/No	Sub Band	Is the network performance same for all sub bands within this band	MIMO level supported in Downlink	MIMO level supported in Uplink	CA bands / CA Band Combinations modulation scheme Downlink	CA bands / CA Band Combinations modulation scheme Uplink	CA bandwidth class for one or more CA band / CA Band Combination in Downlink	CA bandwidth class for one or more CA band / CA Band Combination in Uplink	Maximum power class supported by the device for a CA band / CA Band Combination Uplink
CA_1A-1A	Yes	1A	Yes	2x2	1x1	64	16	A	A	4

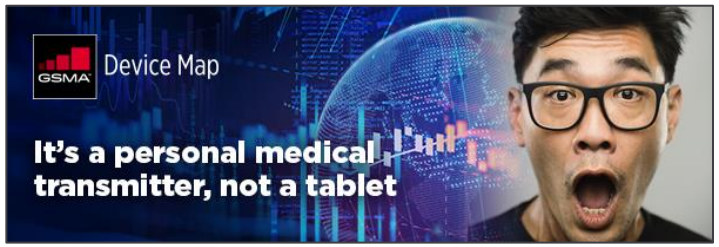
Example of 5G DC Carrier Aggregation Band and Performance

Band	Support Yes/No	Sub Band	Is the network performance same for all sub bands within this band	Maximum number of MIMO Layers in Downlink	Maximum number of MIMO Layers in Uplink	Supported Uplink Modulation Order	Supported Downlink Modulation Order
DC_(n)71AA	Yes	71A	Yes	Four Layers	One Layer	QAM16	QAM64

IoT Data Points

IoT Endpoint

Identifies devices with a sensor and/or actuator, with cellular connectivity. Device types include cameras, data collection terminals and geolocation trackers.



IoT Enabler

Identifies terminals that provide cellular connectivity to otherwise unconnected devices. This includes embedded network modules and modems.

IoT Controller

Identifies data receivers and aggregators, it will include devices such as digital home assistants that control remote and/or local IoT devices.