

# ***5G Certification***

## ***(Radio Equipment Conformity Certification)***

**【 MRA International Workshop 】**

**March 7, 2019**

TELECOM ENGINEERING CENTER



**TELEC**  
Empower the wave!

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# 1. Profile of TELEC

- Name: Telecom Engineering Center (TELEC)
- Establishment: June 20, 1978
- Office: Tokyo, Matsudo, Yokosuka, Nagano, Nagoya, Osaka
- Number of employees: Approx. 80
- Services:
  - ① Radio equipment conformity certification
  - ② Terminal equipment conformity certification
  - ③ Calibration of measuring instrument
  - ④ Test of radio equipment
  - ⑤ Research and development
  - ⑥ Open facilities supporting R&D activities



Headquarters: Shinagawa-ku, Tokyo



Matsudo Laboratory: Matsudo, Chiba

## 2. Radio Equipment Conformity Certification in TELEC

### Examination of Construction Type Certification

(1) Examination of Construction Type

(2) Collative Examination

(3) Characteristics Examination

To examine whether it is in compliance with the technical regulations by the test method notified by the Minister of MIC or a method that surpasses or is equal to the method.

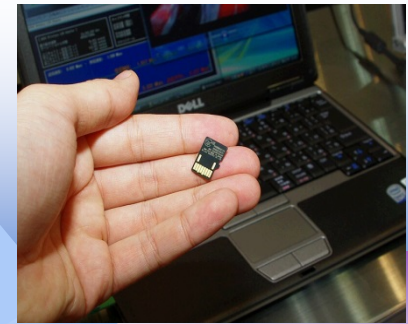
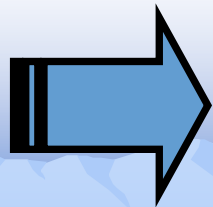
(4) Examination of Confirmation Method

Example of  
radio equipment

Base station

Mobile phone

Wireless LAN with  
microSD card



**TELEC accepts test data prepared by test laboratories subject to following conditions.**

- ◆ The test shall be conducted according to the test method notified by the Minister of MIC.
- ◆ The test shall be conducted using the measuring instruments calibrated within one year (two years for excellent measuring instruments specified by the order of MIC).
- ◆ Inspector who carries out the test shall fall under any of the following requirements:
  - ① An inspector who is registered to the Minister of MIC according to the Radio Law
  - ② A person who has the qualification specified in Attached Table No.1 of the Radio Law
  - ③ A person who is engaged in the test duties in a test organization accredited the certification of ISO17025
  - ④ A person who is engaged in the test duties in a manufacturer etc. accredited the certification of ISO9001

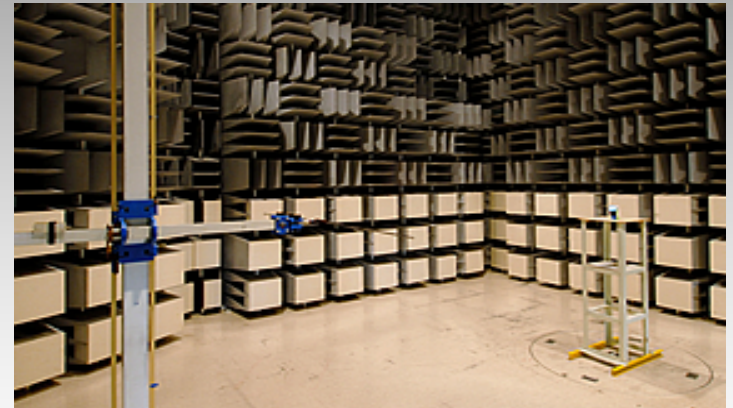
## Various test facilities of TELEC

### Anechoic Chamber

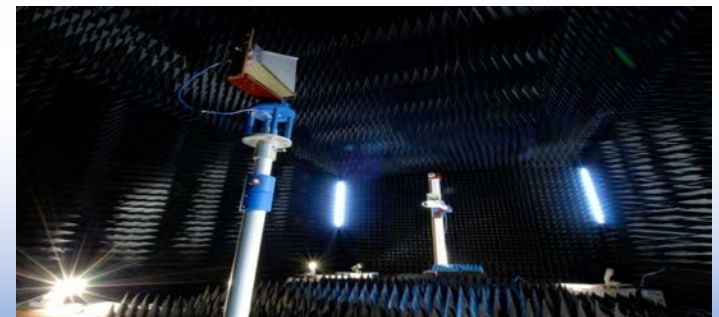
#### 10m Semi-Anechoic Chamber



#### 3m Semi-Anechoic Chamber



#### Full Anechoic Chamber for Microwaves and Millimeter Waves





Open Area Test Site



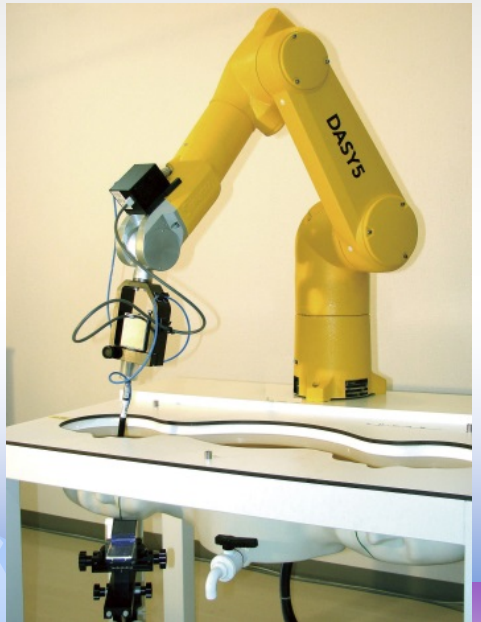
Test Equipment for WLAN



Test Equipment for LTE



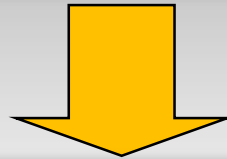
SAR Measuring System



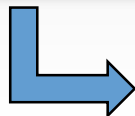
### 3. Development of Test Method Required for Certification

#### ① History of Development of Test Method

Until 2004, TELEC established all Test Methods required for Certification as the sole designated certification body.



Registration of certification bodies to the Minister of MIC was introduced in 2004.



The Minister of MIC establishes all test methods\*

\* In case of new radio equipments, TELEC notifies to the Minister of MIC **the Test Method developed by TELEC** as a temporary test method and makes public at TELEC website so as to provide certification service.



## ② Development of the Test Method for 5G within TELEC

### 【A Study Group of Test Method required for certification \*】

In Dec. 2018, set up a “**Working Group IMT2020**” under the Study Group.

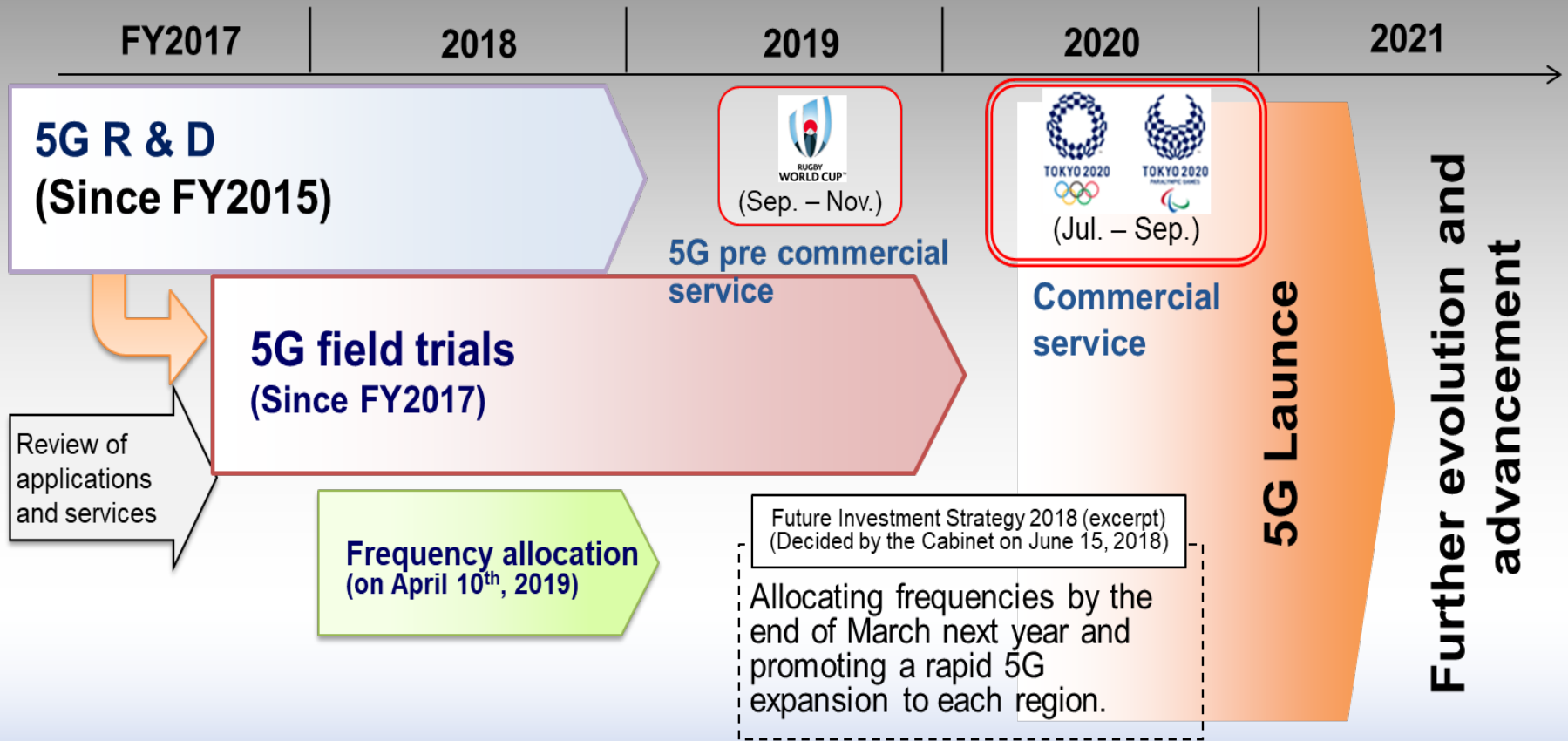
\* consisting of experts from various organizations such as University, Research Institute, Operater, Manufacturer, etc.

### 【Test Methods for 5G】

- 3.7GHz band and 4.5GHz band 5G base station
- 3.7GHz band and 4.5GHz band 5G mobile station
- 28GHz band 5G base station
- 28GHz band 5G mobile station

# 4. For 5G Conformity Certification

## Implementation of 5G in Japan



Source : MIC

## Preparations at TELEC

### 【Under the current situation】

TELEC is working for:

- Revision of Operational Rules and Procedures
- Establishment of Test Methods
- Preparation of test facilities

### 【Service】

**As soon as preparations have been completed.**

- Service for 28GHz band mobile station will be prepared after MIC adds the equipment for Conformity Certification-

**Thank you very much !**

**TELECOM**