

5th Gen. Terminal Certification

MRA International Workshop

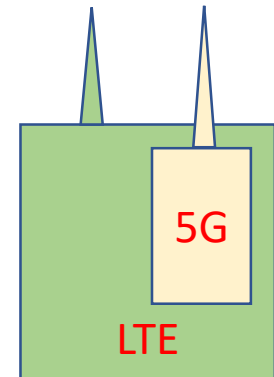
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Japan Approvals Institute for Telecommunications

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5th Gen. Terminal Certification

- Basically Extension of the technical standard of the LTE system
- Non Standalone Architecture
 - Confirm the operation of 5G system controlled by extended LTE messages of the transmission facility for 5G including the extended LTE system
- Non Standalone or Standalone Architecture
- NR77/79 or NR257
 - Individual test required
- VoLTE or Vo5G
 - Common test possible with LTE and 5G



transmission facility for 5G

Common protocols

Confirmation of

- “the signal requesting to originate a communication”
- “the signal confirming an answer when answering a communication”
- “the signal confirming an answer when answering a communication,”
when the applying equipment answers to SMS

Transmission Timing

- Confirm that transmission shall be started within symbol timing designated

| Subcarrier spacing | tolerance |
|--------------------|-----------------|
| 15 kHz | +/- 130 n sec |
| 30 kHz | +/- 130 n sec |
| 60 kHz | +/- 65 n sec |
| 120 kHz | +/- 16.25 n sec |

Random Access Control

- Timing
 - Confirm that the applying equipment stops transmission of “Random Access Preamble” after the applying equipment receives the transmission permission signal within 10 msec after 1 symbol
 - In accordance with the “UL Delay” information included in the transmission permission signal, confirm that the applying equipment starts transmitting the information

- Receiving transmission prohibition signal
 - Confirm that the applying equipment stops transmission of “Random Access Preamble”

- Number of retransmissions
 - Confirm that the applying equipment does not retransmit “Random Access Preamble” over the number of times designated

Time Alignment Control

- Changing the transmission timing
 - Confirm that the transmission signal from the applying equipment sends out in accordance with the transmission timing designated

Location Registration Control

- Location registration control
 - Confirm “signal requesting the registration of the location information” sent out when the location information from Transmission facility does not match the one stored, in the case where there is no instruction from Transmission facility
 - Confirm “Signal to confirm registration of location information” which updates and stores the location information stored when the applying equipment receives from the Transmission facility
- Non Standalone Architecture
 - Not applicable if the same housing as LTE terminal

Functions to comply with transmission stopping instruction

- Transmission Stopping
 - Confirm that transmission is stopped, when “signal requesting disconnection of the channel” is received
 - Check the status of 5G transmission, if Non Standalone Architecture

Functions for Receiving Level Reports

- Receiving level reports
 - Confirm “signal to report receiving level” sent out when the specified condition is satisfied
 - Check the status of 5G transmission, if Non Standalone Architecture

- Check the status of USIM
- Omit if the same housing as LTE terminal

Function to comply with Channel Switching

- Channel switching
 - Confirm that switching to the specified channel will be performed when “signal designating a channel” is received

Function to automatically suspend transmission when the receiving level becomes degraded

- Automatically suspend transmission when the receiving level becomes degraded
 - Confirm that transmission is automatically stopped when reception level or transmission quality becomes extremely degraded during communication

Function to automatically suspend transmission

- Automatically suspend transmission in case of fault
 - Confirm the function to automatically suspend transmission in case of fault
- Representative by confirmation of LTE terminal, if the same housing as LTE terminal

- Function to ensure important communication
 - Confirm “the signal requesting restriction of originating a call” which the applying equipment receives from Transmission facilities
 - In the case of the USIM of lower priority AC “Access Class”, confirm that the applying equipment can NOT originate a call
 - In the case of the USIM of higher priority AC “Access Class”, confirm that the applying equipment can originate a call

Test Items

| | LTE | 5G Non Standalone | | 5G Standalone | | VoLTE Vo5G |
|-------------------------------|-----|-------------------|-------------|---------------|-------------|---------------|
| | | NR77/79 | NR257 | NR77/79 | NR257 | |
| Basic function | ○ | ○ | ○ | ○ | ○ | ○ |
| Calling function | — | — | — | — | — | ○ |
| Transmission timing (nsec) | 130 | 65/130 | 16.25 - 130 | 65/130 | 16.25 - 130 | — |
| Random access | ○ | ○ | ○ | ○ | ○ | — |
| Time alignment | ○ | ○ | ○ | ○ | ○ | — |
| Location registration | ○ | — | — | ○ | ○ | — |
| Transmission stopping | ○ | ○ | ○ | ○ | ○ | — |
| Receiving level reports | ○ | ○ | ○ | ○ | ○ | — |
| Inherent information | ○ | ← | ← | ← | ← | — |
| Channel switching | ○ | ○ | ○ | ○ | ○ | — |
| Receiving level deterioration | ○ | ○ | ○ | ○ | ○ | — |
| Failure | ○ | ← | ← | ← | ← | — |
| Important communication | ○ | ○ | ○ | ○ | ○ | — |
| Traffic congestion reports | — | — | — | — | — | ○ |
| Emergency call | — | — | — | — | — | ○ |

5th Gen. Terminal Certification by JATE

- Submitting the test reports
 - Corresponding from March 2019
 - Please inquire about the application form
- Testing in JATE
 - Expecting to correspond from May 2019
 - Please contact us for your desired test schedule.