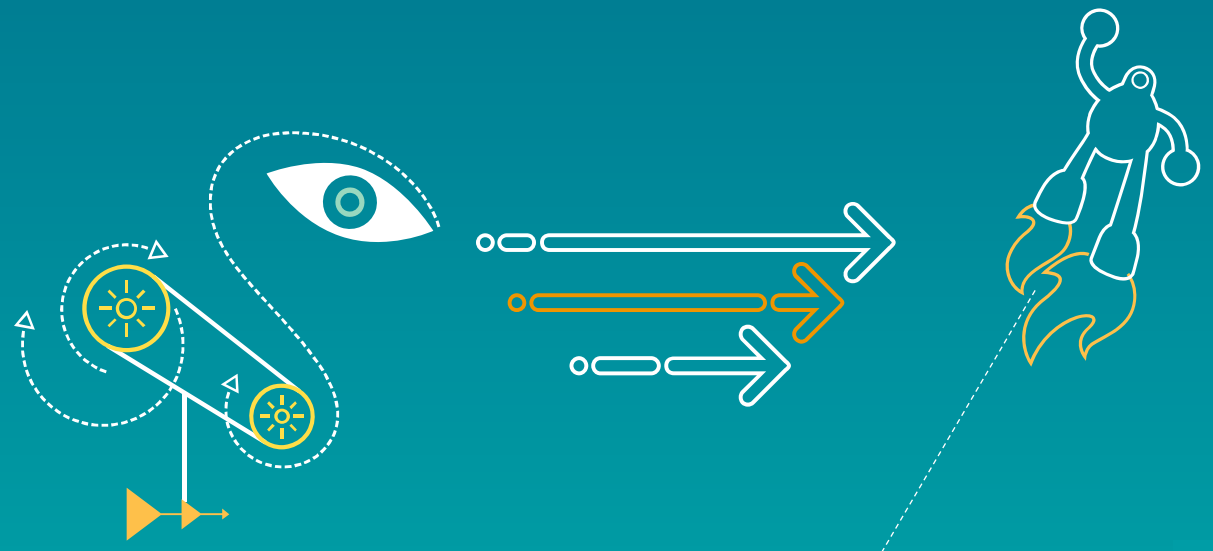
RP-151191

Cellular IOT

Some Frequently Asked Questions



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Background

- Since the Study Item related to Cellular IOT ("CIOT") was carried in TSG GERAN, there is occasionally some confusion on technical facts from the TSG RAN community
- Purpose of these slides is to answer some of those commonly asked questions

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CIOT FAQs

- What is “NB-CIOT”?
  - NB-CIOT is the leading “clean slate” solution emerging from the Cellular IOT Study Item
  - It is also the only “clean slate” solution that meets all of the Study Item requirements as indicated in the conclusion section of 3GPP TR 45.820 (see Annex)

- Is NB-CIOT related to GSM?
  - NO. NB-CIOT is not related and is not an evolution of the GSM/GPRS/EDGE radio interface
  - NB-CIOT transmit bandwidth is 180 kHz (same as 1 LTE PRB)

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CIOT FAQs

- Does NB-CIOT offer any specific performance advantages compared to other technologies?
  - The Cellular IOT study item set specific requirements (eg improved coverage or support of massive numbers of devices) which were more stringent than any other 3GPP technologies in previous releases
  - As showed in the Study Item conclusions (see Annex), “NB-CIOT” is the only clean slate proposal that fulfills all of those requirements, hence NB-CIOT does offer specific performance advantages compared to other technologies

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CIOT FAQs

- Does NB-CIoT require use of the “Gb architecture”?
  - No. The NB-CIOT Work Item proposes to use S1-based architecture
- Are there any system level simplifications associated with NB-CIOT?
  - Yes. NB-CIOT will include limited support for mobility and no interworking capabilities

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Annex: CIOT study item conclusions

Performance objectives for completed techniques

Performance Objective	Completed techniques	
	EC-GSM	NB-CIoT
Improved indoor coverage (see 4.1.1)	**Compliant**	**Compliant**
Support of massive number of low throughput devices (see 4.1.2)	**Compliant**	**Compliant**
Reduced device complexity (see 4.1.3)	**Compliant**	**Compliant**
Improved power efficiency (see 4.1.4)	**Compliant**	**Compliant**
Latency (see 4.1.5)	**Compliant**	**Compliant**

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Annex: CIOT study item conclusions

Performance objectives for partially described techniques

Performance Objective	Partially described techniques				
	NB-LTE	NB-M2M	NB-OFDMA	N-GSM	C-UNB
Improved indoor coverage (see 4.1.1)	**Expected to be fulfilled**	**Compliant**	**Compliant**	**Expected to be fulfilled**	**Not compliant**
Support of massive number of low throughput devices (see 4.1.2)	**Inconclusive/FFS**	**Compliant**	**Expected to be fulfilled**	**Inconclusive/FFS**	**Not compliant**
Reduced device complexity (see 4.1.3)	**Inconclusive/FFS**	**Expected to be fulfilled**	**Expected to be fulfilled**	**Expected to be fulfilled**	**Not compliant**
Improved power efficiency (see 4.1.4)	**Inconclusive/FFS**	**Compliant**	**Compliant**	**Inconclusive/FFS**	**Not compliant**
Latency (see 4.1.5)	**Expected to be fulfilled**	**Compliant**	**Compliant**	**Compliant**	**Not compliant**

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