3GPP TSG RAN Meeting #108 RP-250xxx

Prague, Czech Republic, June 9-13, 2025

## Status Report to TSG

Agenda item: 9.3.1.7

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| WI / SI Name | New Work Item: Solutions for Ambient IoT (Internet of Things) in NR | | | |
| included in this status report | Study Item:  No | Core part:  Yes | Performance part:  Yes | Testing part:  No |
| Acronym | Ambient\_IoT\_Solutions | | | |
| Unique ID | 1060084 | | | |
| TSG Tdoc of latest approved WI/SI description (if any) | RP-240796 | | | |
| Target Completion Date  (indicate if changed) | Study Item:  N/A | Core part:  09/2025 | Performance part:  03/2026 | Testing part:  N/A |
| Overall Completion level | Study Item: | Core part:  84% | Performance Part:  0% | Testing part:  N/A |

Note: Overall completion level percentage numbers should use one of the colors below:

* xx%: Normal progress, no RAN plenary action needed
* xx%: Progress behind schedule, may need RAN plenary intervention. If so, SR should clearly define requested action
* xx%: Progress critically behind, RAN plenary shall intervene. SR should define requested action

Source:

|  |  |  |
| --- | --- | --- |
| Leading WG | | RAN1 |
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## 1 Work plan related evaluation

|  |  |
| --- | --- |
| Do you want to modify the time budget for this WI/SI compared to what was endorsed at the last RAN meeting? | No |

*If you answered No: Then please remove the Excel file from the zip file of this status report.*

*If you answered Yes: Then please fill out the attached Excel template to request a modification of the time budgets for your WI /SI. The Excel table has to be filled out for all affected RAN WGs and up to the target date of the WI/SI. The basis are the endorsed time budgets of the last RAN meeting. Please highlight all changes of the values.  
 One time unit (TU) corresponds to ~ 2 hours in the meeting.  
 If this status report covers a WI with Core and Performance part, then please have one line for each in the attached Excel table.  
 Note: If no Excel table is attached, then this means no time budget change.*

Additional explanations/motivations for the time budget changes in the attached Excel table:

## 2. Detailed progress in RAN WGs since last TSG meeting (for all involved WGs)

NOTE: Agreements and Open issues impacted cross-TSG aspects shall be explicitly highlighted

## 2.1 RAN1

#### 2.1.1 Agreements

##### 2.1.1.1 Solutions for Ambient IoT (Internet of Things) in NR

RAN1#121

Agreement

The TP in section 3 of R1-2504920, for TS 38.300 Clause 16.x.3, is endorsed with the following revisions:

The R2D transmission is a DFT-s-OFDM-based OOK waveform

Modulation of OOK or BPSK, resulting in small frequency shift

Agreement

The draft LS to RAN2 with the Ambient IoT stage-2 TP for TS38.300 is endorsed in R1-2504923.

Final LS in R1-2504924.

Agreement

The draft LS to RAN2 with Ambient IoT higher-layer parameters is endorsed in R1-2504914 with the following action for RAN2:

ACTION: RAN1 respectfully asks RAN2 to take the above RAN1 agreements into account when designing the higher layer signalling, including defining R2D TBS information (excluding CRC length) to be included in higher layer signaling, at least for messages with variable size.

Final LS in R1-2504915.

##### 2.1.1.2 Physical channels design – modulation aspects

RAN1#120bis

Agreement

For R2D, for the OOK-4 modulation for M-chip per OFDM symbol transmission, the maximum M value is 24.

* RAN1 will further determine the set of M values up to the maximum M value.
* The maximum M value applicable to the PRDCH is 24
* The maximum M value applicable to the R-TAS is not larger than 24

Agreement

For R2D, at least for PRDCH, the set of M values is {2, 6, 12, 24}

* FFS: whether/how CAP use same M values set as PRDCH

Agreement

For further down-selection among CP handing which retains subcarrier orthogonality, at least for PRDCH, at least Method Type 1 is supported

* For supported M values <= 12
  + RAN1 will not further pursue additional CP handling design
* For supported M values > 12
  + RAN1 will further down-select one from the followings
    - Option 1: Candidate 3 of M2-1-1 (as per agreements from RAN1#120)
      * Insert padding chips only at the end OOK chips of OFDM symbol
    - Option 3: RAN1 will not further pursue additional CP handling design

Agreement

Proposal: For Ambient IoT, RAN1 clarify that the definition of PRB is same as NR in TS 38.211.

Agreement

For the below agreement, further update on the followings

Agreement

For further down-selection among CP handing which retains subcarrier orthogonality, at least for PRDCH, at least Method Type 1 is supported

* For supported M values <= 12
  + RAN1 will not further pursue additional CP handling design
* For supported M values > 12
  + RAN1 will further down-select one from the followings
    - Option 1: Candidate 3 of M2-1-1 (as per agreements from RAN1#120)
      * ~~Insert padding chips only at the end OOK chips of OFDM symbol~~
        + The last 2 out of M OOK chips at the end of an OFDM symbol are always ‘ON’
    - Option 3: RAN1 will not further pursue additional CP handling design

Agreement

When the generated number of chips for the R2D transmission does not fully occupy the last OFDM symbol, padding is used.

* Padding is to be down-selected among the following alternatives:
  + Alt 1a: The content of padding is up to reader implementation and transparent to device.
    - Note: the timeline determination of any timing relationship refers to the end of padding.
    - Note: it implies the device should be aware of the duration of padding or the last OFDM symbol boundary by implementation. FFS how accurately the device can be aware.
  + Alt 1b: The content of padding is up to reader implementation and transparent to device.
    - Note: the timeline determination of any timing relationship refers to the start of the padding.
  + Alt 2: Specify the detailed content of padding
    - Note: the timeline determination of any timing relationship refers to the end of padding.
  + Note: the end chip(s) of the padding content shall follow the CP handling solution determined in RAN1, and may be affected by other agreements.

Agreement

From reader perspective, for the needed certain specification of DFT-s-OFDM waveform generation for OOK-4 modulation:

* An example is provided below, which does not presume any specific reader implementation:
* Step 1: The time domain OOK signal is the M chips of one OFDM symbol
  + The specification only needs to reflect that one OFDM symbol contains M chips
* Step 2: A chip is represented (e.g. upsampled) by L samples
  + The specification only needs to reflect that one chip contains L samples as the input to N’-points DFT
* Step 3: An N’-points DFT is performed on the samples of one OFDM symbol to obtain the frequency domain signal.
  + The specification only needs to reflect that there is an N’-points DFT operation, where N’ = M\*L
* Step 4: Map the frequency domain signal obtained by N’-points DFT to the X subcarriers of Btx,R2D
  + The specification only needs to reflect that N’ >= X, where X is corresponding to the Btx,R2D
* Step 5: An N-points IDFT is performed to obtain the time domain signal.
  + The specification only needs to reflect that there is an N-points IDFT operation
* Note: other examples were provided in contributions to RAN1#120bis, e.g. in annex 2 of R1-2502160
* From the example above, some normative specification related to at least step 1 and step 5 are needed.
* Note: RAN1 to consider whether an information annex could describe other steps
* Note: some normative RAN1 specification text about waveform is assumed to be needed for RAN4 requirements definition
* Note: the specification also needs to reflect the timing of the CP insertion operation.

RAN1#121

Agreement

For R2D, the minimum Btx,R2D # of PRBs associated to each agreed M value (i.e. M = 2, 6, 12 and 24) is specified as per TR38.769.

Agreement

For M=24 on CP handling, update the below agreement as follows:

Agreement

For further down-selection among CP handing which retains subcarrier orthogonality, at least for PRDCH, at least Method Type 1 is supported

* For supported M values <= 12
  + RAN1 will not further pursue additional CP handling design
* For supported M values > 12
  + ~~RAN1 will further down-select one from the followings~~
    - ~~Option 1: Candidate 3 of M2-1-1 (as per agreements from RAN1#120)~~
      * ~~Insert padding chips only at the end OOK chips of OFDM symbol~~
        + The last 2 out of M OOK chips at the end of an OFDM symbol are always ‘ON’
        + For the OFDM symbol contains CAP

The last 2 out of M OOK chips at the end of the OFDM symbol are always ‘ON’

* + - ~~Option 3: RAN1 will not further pursue additional CP handling design~~

Agreement

For R2D chip duration, for CP handling that retains sub-carrier orthogonality, the length of a R2D chip duration (denoted as ‘C’) in one OFDM symbol is defined as:

* C = 1/(SCS\*M)
* Note: the total length of M OOK chips is equal to 1/SCS

Working assumption

When padding is used in R2D, padding is present right after postamble (if postamble is supported).

Agreement

The working assumption is confirmed as follows:

When padding is used in R2D, padding is present right after postamble ~~(if postamble is supported)~~.

Agreement

When the generated number of chips for the R2D transmission does not fully occupy the last OFDM symbol, padding is used as follows:

* Alt 1a: The content of padding is up to reader implementation and transparent to device.
  + The timeline determination of any timing relationship refers to the end of padding.
  + Note: it implies the device should be aware of the duration of padding or the last OFDM symbol boundary by implementation.
  + Note: the padding time could be used for extra time needed for calculating FEC/CRC for D2R (if applied)
* The end chip(s) of the padding content shall follow the CP handling solution determined in RAN1, and may be affected by other agreements.
* The chip(s) of the padding content shall avoid to result in SIP pattern.

Conclusion

The other steps (in addition to agreed Step 1 and Step 5) for R2D waveform generation will not be described in the RAN1 TS.

##### 2.1.1.3 Physical channels design – line coding, FEC, CRC, repetition aspects

RAN1#120bis

Agreement

For the initial values of the shift register of the CC encoder, the initial values of the shift register of the CC encoder are set to the values corresponding to the last (K-1) information bits defined in TS 36.212.

* Note: K is the constraint length.
* For discussion on timing relationships in 9.4.4, the entire processing time for encoding (including finishing CRC encoding) should be taken into account

Agreement

When CRC is attached to a PRDCH or PDRCH transmission, when the number of information bits is ≤ 24 bits, CRC-6 is used. Otherwise, when the number of information bits is > 24 bits, CRC-16 is used.

Agreement

There is no case in D2R or R2D where CRC is not attached.

Conclusion

RAN1 will not address the FFS in the agreement from RAN1#120:

Agreement

When CRC is attached to a PRDCH or PDRCH transmission,

* When the number of information bits is ≤ X bits, CRC-6 is used. Otherwise, when the number of information bits is > X bits, CRC-16 is used. Down-selection by RAN1#120bis from the following for X considering the balance of overhead and probability of undetected error:
  + Alt. 1: 24
  + Alt. 2: 56
* FFS impact of segmentation, if any
  + Note: impact may not be in RAN1

Agreement

The potential values of D2R chip duration *T*chip, bit duration *T*b, and SFS factor *R*, are shown in the following table:

* FFS further down-selections of *T*chip, *T*b, and *R* to be supported
* Note: Detailed indication signaling of D2R scheduling information is discussed in AI 9.4.4.

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  |  | *T*chip (*μs*) | | | | | | | | | | | | | |
|  | *T*b (*μs*) |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|  |  | 133.33 | 66.67 | 33.33 | 16.67 | 11.11 | 8.33 | 5.56 | 4.17 | 2.78 | 2.08 | 1.39 | 1.04 | 0.69 | 0.52 |
|  | 266.67 | *R*=1 | *R*=2 | *R*=4 | *R*=8 | *R*=12 | *R*=16 | *R*=24 | *R*=32 | *R*=48 | *R*=64 | *R*=96 | *R*=128 |  | *R*=256 |
|  | 133.33 |  | *R*=1 | *R*=2 | *R*=4 | *R*=6 | *R*=8 | *R*=12 | *R*=16 | *R*=24 | *R*=32 | *R*=48 | *R*=64 | *R*=96 | *R*=128 |
|  | 66.67 |  |  | *R*=1 | *R*=2 |  | *R*=4 | *R*=6 | *R*=8 | *R*=12 | *R*=16 | *R*=24 | *R*=32 | *R*=48 | *R*=64 |
|  | 33.33 |  |  |  | *R*=1 |  | *R*=2 |  | *R*=4 | *R*=6 | *R*=8 | *R*=12 | *R*=16 | *R*=24 | *R*=32 |
|  | 22.22 |  |  |  |  | *R*=1 |  | *R*=2 |  | *R*=4 |  | *R*=8 |  | *R*=16 |  |
|  | 16.67 |  |  |  |  |  | *R*=1 |  | *R*=2 |  | *R*=4 | *R*=6 | *R*=8 | *R*=12 | *R*=16 |
|  | 11.11 |  |  |  |  |  |  | *R*=1 |  | *R*=2 |  | *R*=4 |  | *R*=8 |  |
|  | 8.33 |  |  |  |  |  |  |  | *R*=1 |  | *R*=2 |  | *R*=4 | *R*=6 | *R*=8 |
|  | 5.56 |  |  |  |  |  |  |  |  | *R*=1 |  | *R*=2 |  | *R*=4 |  |
|  | 4.17 |  |  |  |  |  |  |  |  |  | *R*=1 |  | *R*=2 |  | *R*=4 |
|  | 2.78 |  |  |  |  |  |  |  |  |  |  | *R*=1 |  | *R*=2 |  |
|  | 2.08 |  |  |  |  |  |  |  |  |  |  |  | *R*=1 |  | *R*=2 |
|  | 1.39 |  |  |  |  |  |  |  |  |  |  |  |  | *R*=1 |  |
|  | 1.04 |  |  |  |  |  |  |  |  |  |  |  |  |  | *R*=1 |
| Note: For further down-selection regarding the bit duration,   * bit duration 266.67*μs*, 133.33*μs* and 66.67*μs* to be kept, which provides better multiplexing capability in the frequency domain. * Down-select to 1 between bit duration 1.39*μs* and 1.04*μs*, which achieves the competitive peak data rate larger than 640 kbps. * The remaining bit durations will be further discussed. | | | | | | | | | | | | | | | |

Agreement

For block-level repetition of a D2R transmission, the repeated blocks are transmitted in the single PDRCH of the D2R transmission.

RAN1#121

Agreement

For D2R transmission,

* The minimum *T*b is 1.39*μs.*
* Support at least the following values of *T*b, *T*chip, and *R* from the table agreed in RAN1#120bis.

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | Tchip (μs) | | | | | | | | | | | | | |
| Tb (μs) |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|  | 133.33 | 66.67 | 33.33 | 16.67 | ~~11.11~~ | 8.33 | ~~5.56~~ | 4.17 | ~~2.78~~ | 2.08 | ~~1.39~~ | 1.04 | 0.69 | ~~0.52~~ |
| 266.67 | R=1 | R=2 | R=4 | R=8 | ~~R=12~~ | R=16 | ~~R=24~~ | R=32 | ~~R=48~~ | R=64 | ~~R=96~~ | R=128 |  | ~~R=256~~ |
| 133.33 |  | R=1 | R=2 | R=4 | ~~R=6~~ | R=8 | ~~R=12~~ | R=16 | ~~R=24~~ | R=32 | ~~R=48~~ | R=64 | ~~R=96~~ | ~~R=128~~ |
| 66.67 |  |  | R=1 | R=2 |  | R=4 | ~~R=6~~ | R=8 | ~~R=12~~ | R=16 | ~~R=24~~ | R=32 | ~~R=48~~ | ~~R=64~~ |
| 33.33 |  |  |  | R=1 |  | R=2 |  | R=4 | ~~R=6~~ | R=8 | ~~R=12~~ | R=16 | ~~R=24~~ | ~~R=32~~ |
| ~~22.22~~ |  |  |  |  | ~~R=1~~ |  | ~~R=2~~ |  | ~~R=4~~ |  | ~~R=8~~ |  | ~~R=16~~ |  |
| 16.67 |  |  |  |  |  | R=1 |  | R=2 |  | R=4 | ~~R=6~~ | R=8 | ~~R=12~~ | ~~R=16~~ |
| ~~11.11~~ |  |  |  |  |  |  | ~~R=1~~ |  | ~~R=2~~ |  | ~~R=4~~ |  | ~~R=8~~ |  |
| 8.33 |  |  |  |  |  |  |  | R=1 |  | R=2 |  | R=4 | ~~R=6~~ | ~~R=8~~ |
| ~~5.56~~ |  |  |  |  |  |  |  |  | ~~R=1~~ |  | ~~R=2~~ |  | ~~R=4~~ |  |
| 4.17 |  |  |  |  |  |  |  |  |  | R=1 |  | R=2 |  | ~~R=4~~ |
| ~~2.78~~ |  |  |  |  |  |  |  |  |  |  | ~~R=1~~ |  | ~~R=2~~ |  |
| ~~2.08~~ |  |  |  |  |  |  |  |  |  |  |  | ~~R=1~~ |  | ~~R=2~~ |
| 1.39 |  |  |  |  |  |  |  |  |  |  |  |  | R=1 |  |
| ~~1.04~~ |  |  |  |  |  |  |  |  |  |  |  |  |  | ~~R=1~~ |

Note: This does not imply the device to pre-store the table.

Agreement

For bit collection after FEC, the output bits for each input bit are arranged sequentially in accordance with the input bits, e.g., for input bits , the output of the FEC is , with the code rate of 1/3.

Agreement

For attaching the CRC, the parity bits are appended to the end of the input bits, according to the order in TS38.212.

Agreement

For the number of block-level repetitions, {1, 2} are supported.

* Note: When the number of block-level repetition is 1, it indicates no repetition.

Agreement

For indication of frequency domain resources for Msg 1 transmissions when *Y*≥1, the reader indicates

* a single bit duration *T*b which is same for all frequency domain resources
* a set of *R* values, where the possible R values correspond to the agreed table of values of *T*b, *T*chip, and *R*
  + note: the set of R values could be signalled using a bitmap

The detailed signalling design is left to RAN2.

Agreement

For frequency domain resource for Msg 3 transmission determined based on explicit indication in the PRDCH for Msg 2 transmission for one or multiple devices, the reader indicates:

* a single bit duration, which is same for all frequency domain resources,
* a set of *R* values, where the possible R values correspond to the agreed table of values of *T*b, *T*chip, and *R*
  + note: the set of R values could be signalled using a bitmap

The mapping relationship between device and its Msg 3 frequency domain resource is left to RAN2.

* + Note: Device could determine its *R* value for Msg 3 transmission based on its order of random ID in Msg 2

The detailed signalling design is left to RAN2.

##### 2.1.1.4 Timing acquisition and synchronization

RAN1#120bis

Agreement

For D2R midamble, for determining the presence and location of midamble(s) at the device:

* Reader explicitly indicates the same interval between consecutive midambles, and between the preamble and the first midamble, via R2D control information
  + FFS: details of signalling
  + FFS: whether the reader can explicitly indicate with one bit whether a midamble is additionally present at the end
* Note: This does not preclude the support of having no midamble present in the D2R transmission

Agreement

For the pattern of SIP of R-TAS, only the following 2 alternatives are considered for further down-selection:

* Alt 1-2: ON-OFF with a ratio of 1:3 and with following total SIP duration to be further down-selected:
  + Option 1: 0.5 OFDM symbol duration
  + Option 2: 1 OFDM symbol duration
* Alt 2-4: ON-OFF-ON-OFF with a ratio of 1:1:1:3 and with following total SIP duration to be further down-selected:
  + Option 1: 0.5 OFDM symbol duration
  + Option 2: 1 OFDM symbol duration

Agreement

* For D2R preamble/midamble, base sequence is generated from m-sequence, where the length of the sequence is
  + Value(s) of n
    - Long preamble/midamble is generated based on n = 5
    - Working assumption: Short preamble/midamble is generated based on n=3
* Only 1-part preamble/midamble are supported for D2R
* Preamble immediately precedes the PDRCH without any gap
* Both long and short preamble and midamble are supported based on the working assumption on n
  + when midamble is present at least the following cases are supported and reader explicitly indicates one of the following cases for PDRCH:
    - Short preamble and short midamble
    - Long preamble and long midamble

Note: the case of short preamble and long midamble will not be supported

* + When midamble is not present the reader explicitly indicates short or long preamble for PDRCH

Agreement

For CAP of R-TAS, following is adopted:

* Option 1 for CAP of R-TAS from TR 38.769 is adopted where the CAP duration becomes proportionally shorter with increasing value of M, i.e. if for , duration is OFDM symbol long, then for , duration is OFDM symbol long
* Note: Duration without CP insertion is considered above, with CP insertion, the total duration may not be exactly proportional
* Only following two alternatives for CAP pattern are considered for further down-selection to one alternative:
  + Alt 1: ON-OFF-ON-OFF
  + Alt 2: ON-OFF-ON

Agreement

For indicating the interval between consecutive midambles, and between the preamble and the first midamble, via R2D control information, following is adopted:

* Unit of interval is number of bits after FEC (if FEC is applied) and repetition (if repetition is applied)
* FFS: the candidate values in terms of the unit of interval

Agreement

For R-TAS, SIP duration of 1 OFDM symbol is adopted with CAP pattern ON-OFF-ON-OFF for all values of M corresponding to PRDCH

* Note: device cannot assume the presence/absence of RF transmission prior to the SIP.

RAN1#121

Agreement

Confirm the working assumption in the following agreement from RAN1#120bis:

Agreement

* For D2R preamble/midamble, base sequence is generated from m-sequence, where the length of the sequence is
  + Value(s) of n
    - Long preamble/midamble is generated based on n = 5
    - Working assumption: Short preamble/midamble is generated based on n=3
* Only 1-part preamble/midamble are supported for D2R
* Preamble immediately precedes the PDRCH without any gap
* Both long and short preamble and midamble are supported based on the working assumption on n
  + when midamble is present at least the following cases are supported and reader explicitly indicates one of the following cases for PDRCH:
    - Short preamble and short midamble
    - Long preamble and long midamble

Note: the case of short preamble and long midamble will not be supported

* + When midamble is not present the reader explicitly indicates short or long preamble for PDRCH

Agreement

M = {2,6,12,24} are adopted for CAP and same M value is used for CAP and PRDCH in an R2D transmission.

Agreement

For D2R ambles,

* For n = 3, adopt m-sequence with following:
  + Polynomial: x³ + x² + 1
  + Initial State: Down-select between 010 or 100
  + Resulting Sequence: Down-select between 0 1 0 0 1 1 1 (for 010 initial state) or 1 0 0 1 1 1 0 (for 100 initial state)
* For n = 5, adopt m-sequence with following:
  + Polynomial: x⁵ + x³ + 1
  + Initial State: 01001
  + Resulting Sequence: 0 1 0 0 1 0 0 0 0 1 0 1 0 1 1 1 0 1 1 0 0 0 1 1 1 1 1 0 0 1 1

Agreement

* SIP of R-TAS is adopted with 2 OFDM symbol duration, i.e. ON-OFF-ON-OFF with a ratio of 2:2:1:3
  + Note: Detection method of SIP presence at the device is not specified
* Agreement from RAN1#120bis is updated as follows:

Agreement

For R-TAS, SIP duration of ~~1~~ 2 OFDM symbols is adopted with CAP pattern ON-OFF-ON-OFF for all values of M corresponding to PRDCH

* + Note: device cannot assume the presence/absence of RF transmission prior to the SIP.

OPPO expressed the concern that the agreement above has higher overhead and latency.

Agreement

* For D2R, for indicating the interval between consecutive midambles, and between the preamble and the first midamble, via R2D control information, following interval values are adopted*:*
  + For bit duration of 266.67*μs*
    - I = 48 bits, 96 bits, 168 bits, 240 bits
  + For other supported bit durations of 266.67*μs/Y*
    - I = Y \* {48, 96, 168, 240} bits
    - Values of Y: 2, 4, 8, 16, 32, 64, 192
* For signaling via R2D control information, following is adopted:
  + 1-bit length codepoint is used to indicate whether long or short preamble/midamble is applied at the device, where “0” indicates short preamble/midamble and “1” indicates long preamble/midamble
  + Midamble interval is indicated by a 2-bit length codepoint
    - Lowest to highest codepoint value indicates lowest to highest interval value
  + 1-bit length codepoint is used to indicate whether the midamble is present at the end or not, where “0” indicates no midamble present at the end and “1” indicates midamble present at the end
  + Note: if the indicated interval is longer than the number of bits after FEC (if FEC is applied) and repetition (if repetition is applied), and 1-bit length codepoint does not indicate midamble present at the end, then there is no midamble.

Agreement

For m-sequence with n =3 for D2R ambles, adopt initial State of 100 and resulting sequence of 1 0 0 1 1 1 0

Agreement

R2D postamble is specified with 4 ON chips corresponding to M value of the PRDCH

* R2D postamble is added immediately after the PRDCH
* R2D postamble has always 4 ON chips
  + Note: For M=24, 2 ON chips at the end of OFDM symbol for CP handling are in addition to R2D postamble, and are not part of the R2D postamble
* R2D padding duration is determined after R2D postamble insertion

TBS information for R2D is supported via higher layer R2D control signalling.

* Send LS to RAN2 asking to include R2D TBS information (excluding CRC length) in higher layer signaling, at least for messages with variable size.

Note: Exact method for determining the end of PRDCH at the device is not specified.

##### 2.1.1.5 Other aspects incl. multiplexing/multiple access, scheduling information, and timing relationships

RAN1#120bis

Agreement

For scheduling D2R transmission, any scheduling information related to resource allocation that needs to be signaled is indicated by higher-layer signaling via the corresponding PRDCH.

Agreement

For Msg 1 transmission determined by one R2D transmission triggering random access, support X=1 and X=2 time domain resource(s) for D2R transmission(s) for Msg1 only, where each D2R transmission for Msg1 occurs in one time domain resource of the X time domain resource(s) in Rel-19.

* + All devices support the above
  + Note: the impact of specification support (at least including signalling overhead) for X=2 to a reader supporting only X=1 should be minimized

Only support X=1 time domain resource for D2R transmission for Msg3 in response to a PRDCH for Msg2 transmission.

Agreement

A device is not required to monitor a corresponding R2D transmission earlier than TD2R\_min after the end of a D2R transmission from the device.

Conclusion

For any timing requirement that needs to be specified from device perspective by RAN1, the timing(s) do not include the impacts of SFO from the RAN1 perspective.

* + Whether 3GPP needs to specify some requirement on device’s SFO is up to RAN4 discussion.
  + Note: RAN1 will not specify TR2D\_min or TR2D\_max in Rel-19
  + Note: SFO may still be considered when discussing time-domain resources for Msg1 when X=2

Agreement

Use 1 bit to indicate the value of X (X=1 or X=2) time domain resource(s) for Msg1 transmission(s).

Agreement

For X=1 or X=2, from device perspective, the starting time for the first Msg1 time domain resource is Toffset1 after the end of the corresponding R2D transmission triggering random access.

* + FFS Toffset1 is predefined in the spec or indicated implicitly or explicitly by the R2D transmission triggering random access.
  + FFS detailed value(s) of Toffset1, considering at least the device processing time including FEC impact
  + FFS: how to define the end of the R2D transmission in 9.4.1

Working assumption

For X=2, from device perspective, for determination of the starting time for the second Msg1 time domain resource:

* + Derived based on the starting time of the first Msg1 time domain resource plus Toffset2
  + FFS Toffset2 is predefined in the spec or derived by a rule or indicated implicitly or explicitly by the R2D transmission triggering random access.

Agreement

At least for CBRA, for FDMA of multiple Msg1 transmissions in response to a R2D transmission triggering random access, support only the same data rate for the FDMed Msg1 transmissions.

Working assumption

For indicating the payload size (i.e. TBS-like) for PDRCH transmission with variable size:

* 7 bits for byte-level D2R payload size indication

RAN1#121

Agreement

For Toffset1, where Toffset1 is the time interval from the end of the R2D transmission triggering random access to the starting time of the first Msg1 time domain resource for X=1 or X=2,

* Toffset1 is not smaller than 30 us for CBRA.

Agreement

For Toffset1, where Toffset1 is the time interval from the end of the R2D transmission triggering random access to the starting time of the first Msg1 time domain resource for X=1 or X=2, from the device perspective:

* Toffset1 is from a set of predefined values.
  + FFS: the predefined values
    - E.g. values within the range [2666.8, 1333.4, 666.6, 333.4, 222.2, 166.6, 133.34, 111.2, 83.4, 55.6, 44.44, 41.6, 30] us
  + FFS: which values of Toffset1 correspond to which values of the following factors (to be selected with future agreement):
    - R2D chip length, D2R chip length, padding length, whether FEC is applied

Agreement

, where

* is the duration of the 1st Msg1 time domain resource
* =0.25 and =1.25

Agreement

Define Toffset3, which is the time interval from the end of a R2D transmission for Msg2 to the starting time of the corresponding Msg3 time domain resource, from the device perspective.

Agreement

Define Toffset4, which is the time interval from the end of a R2D transmission to the starting time of the corresponding D2R time domain resource except for Msg1 and Msg3 transmission, from the device perspective.

Agreement

Confirm the working assumption with following updates

Working assumption

* For indicating the payload size (i.e. TBS-like) for PDRCH transmission ~~with variable size~~ except for Msg1 and Msg3 transmission in CBRA and 1st D2R Message in CFRA:
  + 7 bits for byte-level D2R payload size indication
* Regarding the TBS of Msg3 in CBRA, and 1st D2R Message in CFRA
  + From RAN1 perspective, it is up to other WGs to decide the actual payload value set and how device knows the actual payload size

Agreement

It is up to RAN4 to define the value(s) for TD2R\_min.

* + Note: RAN1 expects that the value(s) for TD2R\_min will be defined in RAN4 specifications

Agreement

For CBRA, for FDMA of multiple Msg1 transmissions in response to a R2D transmission triggering random access, the bit duration Tb, the sequence length for D2R preamble, the block repetition number, the channel coding information, the sequence length and the interval bits for D2R midamble insertion, if applicable, provided in the paging message are the same for all the FDMed Msg1 transmissions.

Agreement

For CBRA, for TDMA of X=2 Msg1 transmissions in response to a R2D transmission triggering random access, the bit duration Tb, the sequence length for D2R preamble, the block repetition number, the channel coding information, the sequence length and the interval bits for D2R midamble insertion, if applicable, provided in the paging message are the same for all the TDMed Msg1 transmissions.

Working assumption

For Toffset1, for CBRA, regardless of the use of FEC,

* The reference D2R chip length is the largest D2R chip length among the scheduled FDMed Msg1 for Y>1 or the D2R chip length for Y=1.
  + If reference D2R chip length is 133.33 or 66,67us, Toffset1 = 20\* 66.67=1333.4us
  + If reference D2R chip length is 33.33, 16.67, or 8.33us, Toffset1 = 20\* 33.33=666.6us
  + If reference D2R chip length is 4.17us, Toffset1 = 4\* 33.33=133.32us
  + If reference D2R chip length is 2.08, 1.04, or 0.69us,
    - If the R2D chip length is 33.33us, Toffset1 = 4\* 33.33=133.32us
    - If the R2D chip length is 11.11, 5.56 or 2.78us, Toffset1 = 3\*11.11=33.33us
    - The R2D chip length refers to the corresponding R2D transmission triggering the D2R

Agreement

For Toffset3, for CBRA

The reference D2R chip length is the largest D2R chip length among the scheduled FDMed Msg3 for Y>1 or the D2R chip length for Y=1.

* when FEC is not used:
  + If reference D2R chip length is 133.33 or 66,67us, Toffset3 = 20\* 66.67=1333.4us
  + If reference D2R chip length is 33.33, 16.67, or 8.33us, Toffset3 = 20\* 33.33=666.6us
  + If reference D2R chip length is 4.17us, Toffset3 = 4\* 33.33=133.32us
  + If reference D2R chip length is 2.08, 1.04, or 0.69us,
    - If the R2D chip length is 33.33us, Toffset3 = 4\* 33.33=133.32us
    - If the R2D chip length is 11.11, 5.56 or 2.78us, Toffset3 = 3\*11.11=33.33us
    - The R2D chip length refers to the corresponding R2D transmission triggering the D2R
* when FEC is used: down-select from the options below:
  + Opt1: same as when FEC is not used
  + Opt2: same as when FEC is not used + TFEC, where TFEC = [66.67]us
  + Opt3:
    - If reference D2R chip length is 133.33 or 66,67us, Toffset3 = 20\* 66.67=1333.4us
    - If reference D2R chip length is 33.33, 16.67, or 8.33us, Toffset3 = 20\* 33.33=666.6us
    - If reference D2R chip length is 4.17us, Toffset3 = 133.32us [+ 66.67us]
    - If reference D2R chip length is 2.08, 1.04, or 0.69us,
      * If the R2D chip length is 33.33us, Toffset3 = 133.32us [+ 66.67us]
      * If the R2D chip length is 11.11, 5.56 or 2.78us, Toffset3 = 33.33+[66.67]us
      * The R2D chip length refers to the corresponding R2D transmission triggering the D2R

Agreement

For FDMA of Msg3 transmissions in response to a PRDCH for Msg2:

* The bit duration Tb, the sequence length for D2R preamble, the block repetition number, the channel coding information, the sequence length and the interval bits for D2R midamble insertion, if applicable, provided in the PRDCH for Msg2 are the same for all the FDMed Msg3 transmissions

Working assumption

For Toffset3, for CBRA, when FEC is used

* + If reference D2R chip length is 133.33 or 66,67us, Toffset3 = 20\* 66.67=1333.4us
  + If reference D2R chip length is 33.33, 16.67, or 8.33us, Toffset3 = 20\* 33.33=666.6us
  + If reference D2R chip length is 4.17us, Toffset3 = 133.32us + X
  + If reference D2R chip length is 2.08, 1.04, or 0.69us,
    - * If the R2D chip length is 33.33us, Toffset3 = 133.32us+ X
      * If the R2D chip length is 11.11, 5.56 or 2.78us, Toffset3 = 33.33+X
      * The R2D chip length refers to the corresponding R2D transmission triggering the D2R
* Where X= 133.3us

Note: X=133.3us assumes the maximum size of Msg3 is 128 bits.

Agreement

For Toffset4, which is the time interval from the end of a R2D transmission to the starting time of the corresponding D2R time domain resource except for Msg1 and Msg3 transmission.

When FEC is not used:

* If the D2R chip length is 133.33 or 66,67us, Toffset4 = 20\* 66.67=1333.4us
* If the D2R chip length is 33.33, 16.67, or 8.33us, Toffset4 = 20\* 33.33=666.6us
* If the D2R chip length is 4.17us, Toffset4 = 4\* 33.33=133.32us
* If the D2R chip length is 2.08, 1.04, or 0.69us,
  + - If the R2D chip length is 33.33us, Toffset4 = 4\* 33.33=133.32us
    - If the R2D chip length is 11.11, 5.56 or 2.78us, Toffset4 = 3\*11.11=33.33us
    - The R2D chip length refers to the corresponding R2D transmission triggering the D2R

Agreement

For Toffset4, which is the time interval from the end of a R2D transmission to the starting time of the corresponding D2R time domain resource except for Msg1 and Msg3 transmission.

When FEC is used

* Same as when FEC is not used + TFEC, where
  + - TFEC = 2X for TBS <=32bytes
    - TFEC = 4X for 32bytes<TBS <=64 bytes
    - TFEC = 8X for 64 bytes <TBS<= 125 bytes
    - Where X= 133.3us

Agreement

For the time interval from the end of a R2D transmission triggering CFRA to the starting time of the first D2R message time domain resource, from the device perspective, reuse Toffset3.

Note: this assumes the maximum size of the first D2R message for CFRA is 128 bits.

Agreement

For the D2R transmission

* 1 bit is used to indicate whether FEC is applied or not.
* 1 bit is used to indicate the number (1 or 2) of block-level repetitions.

#### 2.1.2 Remaining Open issues

No.

## 2.2 RAN2

#### 2.2.1 Agreements

##### 2.2.1.1 Organizational

RAN2#130

Agreement

1. RAN2 still assumes that reader will be aware of service type. No RAN2 impact
2. Use as baseline the following message names, field names and definitions are to be used in A-IoT MAC:

− Message name: A-IoT Paging message, Access Trigger message, Random ID message, Random ID Response message, R2D Upper Layer Data Transfer message, D2R Upper Layer Data Transfer message.

− Field name: R2D Message Type, RA Type, Indication of Paging ID Presence, Length of Paging ID, Paging ID, Transaction ID, Number of Access Occasions, D2R Scheduling Info, Random ID, Echoed Random ID, AS ID, Assigned AS ID, More Data Indication, SDU Length, MAC Padding, Received Data Size.

− Definitions:

o Access occasion: A time-frequency resource for device(s) to transmit Msg1 (i.e., the Random ID message) during a CBRA procedure.

o AS ID: The AS layer identifier to address the specific device for R2D reception and D2R scheduling

1. One bit indication is needed for each echoed random ID in Msg2 to indicate whether AS ID is present (i.e., assigned by reader) for this random ID.
2. NACK feedback is defined as an explicit message (i.e. new message type). AS ID(s) is/are included to indicate the failure for given device(s). Multiplexing of NACK feedback is supported in one message
3. Assume two transport channels are introduced between A-IoT MAC and PHY. One is for R2D, and the other is for D2R. Neither logical channel concept nor SAP is defined for the interface between A-IoT MAC and upper layers.

##### 2.2.1.2 A-IoT Paging

RAN2#129bis

Agreement

1. FFS which solution if any for device behavior if it gets a new service request while one procedure is still ongoing or leave it to implementation.
2. RAN2 aims to design Rel-19 AIoT R2D messages extensible to accommodate devices and features of future release.
3. Introduce an explicit 1 bit indication to indicate whether it is CFRA or CBRA per paging message.
4. A field indicating Paging ID length information is always included together with the paging ID field in the A-IoT paging message, except the case where no ID is included in the A-IoT paging message.
5. The number of bits required for paging ID length field should be as small as possible. This would require the number of different Paging ID lengths to be small.
6. Send an LS to SA2 to tak this into account for their design.

RAN2#130

Agreement

1. Rel-19 devices are not expected to receive parallel service request for overlapping reader scenario based on network implementation. Capture this in stage 2 specification.
2. The Rel-19 device always responds to the new service indicated by the received paging message applicable for that device. Capture this in stage 3 specification.
3. Send LS to RAN3 to notify them of agreements 1 and 2.
4. Parallel service request for overlapping reader scenario can be addressed in Rel-20.
5. For CFRA, as a baseline the fields related to the transaction ID, indication of paging ID present/absent and number of access occasions are absent. FFS on the need for the transaction ID for command case.
6. For CFRA, the device always responds to paging regardless of transaction ID (if we put a transaction ID) (i.e. as long as it is addressed to the corresponding device).
7. To ensure forward compatibility for paging with multiple identifiers, introduce at least one R field. FFS if more than one R bit is required.
8. Rel-19 devices would ignore the content of future release instead of ignoring the whole paging message.
9. Issue (1-4) For number of access occasions introduce exponential way, 4 bits, value range FFS.

##### 2.2.1.3 A-IoT Random Access

RAN2#129bis

Agreement

1. FFS which solution if any for device behavior if it gets a new service request while one procedure is still ongoing or leave it to implementation.
2. RAN2 aims to design Rel-19 AIoT R2D messages extensible to accommodate devices and features of future release.
3. Introduce an explicit 1 bit indication to indicate whether it is CFRA or CBRA per paging message.
4. A field indicating Paging ID length information is always included together with the paging ID field in the A-IoT paging message, except the case where no ID is included in the A-IoT paging message.
5. The number of bits required for paging ID length field should be as small as possible. This would require the number of different Paging ID lengths to be small.
6. Send an LS to SA2 to tak this into account for their design.

RAN2#130

Agreement

1. Rel-19 devices are not expected to receive parallel service request for overlapping reader scenario based on network implementation. Capture this in stage 2 specification.
2. The Rel-19 device always responds to the new service indicated by the received paging message applicable for that device. Capture this in stage 3 specification.
3. Send LS to RAN3 to notify them of agreements 1 and 2.
4. Parallel service request for overlapping reader scenario can be addressed in Rel-20.
5. For CFRA, as a baseline the fields related to the transaction ID, indication of paging ID present/absent and number of access occasions are absent. FFS on the need for the transaction ID for command case.
6. For CFRA, the device always responds to paging regardless of transaction ID (if we put a transaction ID) (i.e. as long as it is addressed to the corresponding device).
7. To ensure forward compatibility for paging with multiple identifiers, introduce at least one R field. FFS if more than one R bit is required.
8. Rel-19 devices would ignore the content of future release instead of ignoring the whole paging message.
9. Issue (1-4) For number of access occasions introduce exponential way, 4 bits, value range FFS.

##### 2.2.1.4 A-IoT Data Transmission and Other general aspects

RAN2#129bis

Agreement

1. AS ID is applied for Inventory + command case;
2. AS ID is not included in D2R message except Msg 1 (RN16 in Msg 1 has been agreed.
3. For both CFRA and CBRA, the AS ID size is same as RN 16, i.e. 16 bits.
4. Do not specify the reader behavior on how exactly the ASID is generated.
5. The device releases the AS ID upon power off (no stage 3 specification impact);
6. The device only keeps one AS ID at a time.
7. For CFRA, command message is used for AS ID assignment
8. For CBRA, Msg 2 is used for AS ID assignment
9. The device releases the AS ID at least:

- upon receiving Paging with new transaction id for that device, i.e. different session/service

- when it triggers new msg1 transmission as a result of receiving Paging message (i.e. it has to generate a random ID for CBRA)

- FFS other cases for release ASID to avoid keeping it indefinitely.

1. For the retransmission of the first segment/unsegmented D2R message, the reader sends the R2D message by including the upper layer command again. FFS whether offset zero is always included.
2. FFS whether the reader always includes the command for retransmission of segments.
3. 1-bit indication is sufficient to indicate whether more D2R data will be sent
4. For inventory response, RAN2 assumes that segmentation is not applied. RAN2 assumes that the reader can avoid segmentation by reader being aware of inventory response size. Notify SA2 about this assumption.
5. The MAC PDU should be byte-aligned, assuming the allocated TBS value is in the unit of byte. The actual TBS value depends on RAN1. FFS for R2D trigger message
6. RAN2 assumes that the upper layer data SDU is byte-aligned, and an LS can be sent to CT1.
7. The D2R MAC PDU size will correspond to the TBS size indicated in the R2D message
8. The MAC padding is supported at least for D2R from RAN2 perspective. The device includes padding bits if there is no more data and there is still space available in the TBS.
9. In case where MAC PDU includes both MAC SDU and padding, for D2R a field to indicate how many SDU bits are present is required. FFS how this is provided (i.e. SDU length field or padding length field). The size of length field is FFS.
10. FFS whether we introduce D2R message type. Discuss after looking at the overall MAC header design and space before deciding whether we introduce message type or reserved bits

RAN2#130

Agreement

1. R2D message scheduling non-first segment (re)transmission does not include upper layer command.
2. For the first segment and unsegmented packet (re)transmission, the “offset” indicator in R2D is not present.
3. This implies that the R2D message will either have command or offset (but not both). FFS whether we define two message types or one message type with optional fields.
4. The device is expected to send a MAC response to the reader in the D2R occasion. The MAC response contains the NAS message if available at the D2R occasion. If there is no NAS message available to transmit at the D2R occasion then the response contains MAC with 0 SDU and padding as needed.
5. Send LS to CT1 to inform the agreement 1 to CT1 and explain that we have an issue with delayed NAS write success response. RAN2 would prefer that this is handled by CT1 (and give the example of sending NAS response upon successful reception of write command). Ask if this can be handled by CT1
6. A mandatory length field directly indicates the length of D2R data MAC SDU to support varying lengths of D2R data. The size of length field is 7-bit in bytes.
7. The offset indication for transmission/retransmission of the segments after the first segment of a D2R message is 7-bit length in bytes. Segmented SDUs are also byte aligned.
8. FFS D2R message type. Current running CR will capture no message type, but we can revisit this next meeting and also consider if any other bits are needed for the MAC header
9. The length field inside MAC for SDU is not needed for R2D messages, assuming R2D MAC padding is not needed. FFS can come back if padding is needed depending on granularity of TBS (only if needed)
10. For CBRA, to avoid AS ID being occupied for unnecessary time and to keep alignment between reader and device on AS ID release, device can release AS ID upon receiving paging message with different transaction ID, no matter the paging message is for it or not. FFS for CFRA
11. FFS for need for release message

#### 2.2.2 Remaining Open issues

The following open issues need to be addressed in RAN2:

Within general scope:

* RAN2 scope:
  + Specify the necessary functions and procedures for an Ambient IoT compact protocol stack and lightweight signalling procedure to enable DO-DTT and DT data transmission:
    - A-IoT Paging, including subsequent paging for the same service. Support the options that a paging message contains one identifier, and that a paging message contains no identifier.

Note: RAN2 aims to design a paging message format such that multiple identifiers can be contained in one paging message, for forward compatibility purposes.

* + - A-IoT Random access, including re-access for failure handling. Contention-based and contention-free cases are supported. For the contention-based random access, only Solution 1 (3-step only) is included.
    - A-IoT data transmission, including data (re-)transmission for failure handling. Segmentation is supported at least in D2R.
    - Only MAC layer is included

## 2.3 RAN3

#### 2.3.1 Agreements

##### 2.3.1.1 RAN Architecture and Procedures

RAN3#127bis

General

* Turn the WA to agreement, i.e., Including AIOTF information containers in NGAP.
* Enhancing the existing NGAP interface management procedures.
* Introducing an AIoT indicator in the NGAP Setup Request message. The detail of this indicator can be further discussed.
* Turn previous “WA: Introduce a NGAP Class 1 Inventory Request procedure.” and “WA: Introduce a NGAP Class 1 Command Request procedure” to agreements.
* Define the Reader Index as INTEGER (1..65536, …).
* Introduce a new “A-IoT Area”. The AIOTF may indicate the Requested Service Area as a list of “A-IoT Areas” and/or a list of readers in the Inventory Request message.
* The AIOTF is aware of the area within which the gNB supports the provision of A-IoT services by means of OAM. This area may be represented as “A-IoT Areas” and/or the readers supported by the gNB.

About Inventory

* Introduce a “Correlation ID” in the respective NGAP inventory at least inside the transfer containers.
* WA: Include the Correlation Identifier IE outside of the Inventory related Transfer IEs in all the Inventory related messages.
* Include the AIOTF Identifier IE outside of the Inventory related Transfer IEs in all the Inventory related messages.
* The Inventory Request Transfer IE, also includes the following:
* Device Identification for Paging (to enable paging for single device, a group of devices, all devices)
* Requested Service Area Information (A-IoT Area list and/or Reader list)
* Inventory Assistance Information (Approximates Number of Target A-IoT Devices).

About Command after inventory

* Introduce a follow-on command indication in Inventory Request Transfer IE, in case of Command after inventory.
* For command related NGAP messages, the Correlation Identifier IE is the same one as in the related Inventory procedure.
* WA: NGAP: Command Request procedure is a per single device procedure, and no need to have a Command Report procedure.
* WA: Include the Correlation Identifier IE in both inside and outside of the Command related Transfer IEs in all the Command related messages.
* Include the AIOTF Identifier IE outside of the Command related Transfer IEs in all the command related messages.
* The *Command Request Transfer* IE, also includes the following:
  + An A-IoT NAS PDU
  + Command Assistance Information: (Estimate of Expected D2R Message Size)
* Introduce per-session per-device Device Association (“RAN NGAP Device ID” between gNB and AIOTF, in case of Command after inventory.
* In case of command after inventory, the gNB allocates and provides a “RAN NGAP Device ID” in the *Inventory Report Transfer* IE for each device.
* The Device Association is included in the *Command Request Transfer* IE and *Command Response Transfer* IE.

RAN3#128

* The new A-IoT Area is encoded as an A-IoT Area ID.
* A-IoT Area ID = PLMN ID +NID(optional) + A-IoT Area Code (OCTET STRING (SIZE(3)))
* One reader only belongs to one gNB.
* One reader can map to one or multiple A-IoT Area ID(s).
* One A-IoT Area may include readers belong to the same or different gNBs.
* One gNB may serve multiple readers which belong to the same or different A-IoT Areas.
* OAM configures in the AIOTF the mapping relationships among gNBs, readers and A-IoT areas, as needed.
* Non-UE associated signalling principle and requirements applies to A-IoT related signalling.
* Introduce new CN triggered Class 1 Session Release procedure, which includes A-IoT SESSION RELEASE REQUEST message and A-IoT SESSION RELEASE RESPONSE message.
* Turn WA to agreement “NGAP: Command Request procedure is a per single device procedure, and no need to have a Command Report procedure.”
* In case of indirect connectivity, allow parallel sessions between gNB and AMF.
* In case of indirect connectivity, allow parallel Command procedures for different devices between gNB and AMF within the same session.
* No need to have per device command complete, as the CN triggered class 1 session release procedure will clean up all the things.
* CN A-IoT Device NGAP ID is not needed.
* Define the Expected D2R Message Size IE in Inventory Request Transfer IE.
* Remove the FFSs on the presence of Cause IE in the INVENTORY FAILURE message and the COMMAND FAILURE message.
* Define the A-IoT Device Identification Requested IE as CHOICE type, with three branches:
  + single device inventory: OCTECT STRING refer to Device Identifier
  + group devices inventory: FFS on the encoding
  + all devices inventory: NULL
* Define the Estimate of Expected D2R Message Size IE in the Command Assistance Information IE as INTEGER (1..128, …) unit: byte. Add the semantic description that this IE refers to NAS PDU size.
* Details of the Reader Location is out the scope of RAN3.
* Reader Selection refers to SA2 TS 23.369 clause 5.3.3. Further check is needed.
* RAN A-IoT Information will not be provided over NGAP from NG-RAN node to AIoT CN.
* Turn WAs to agreement “Include the Correlation Identifier IE outside of the Inventory related Transfer IEs in all the Inventory related messages.” “Include the Correlation Identifier IE in both inside and outside of the Command related Transfer IEs in all the Command related messages.”
* Include RAN NGAP Device ID outside of the containers in the Command related messages.
* In the case of Inventory only scenario, introduce Inventory Complete indication to inform the AIoT CN about the complete of the triggered Inventory session.
* Introduce a class2 procedure to allow NG-RAN node to trigger Session Release procedure towards AIoT CN.
* WA: Define the A-IoT Support IE in the NG Setup Request as ENUMERATED (A-IoT only, A-IoT and NR Uu, …)

##### 2.3.1.2 Location Report

RAN3#127bis

* Reader indexes and the gNB ID are mandatory included in Inventory Report Transfer IE.

RAN3#128

* The “Reader index” is not needed to be included in Command Response.

#### 2.3.2 Remaining Open issues

The following open issues need to be addressed in RAN3:

* RAN3 scope:
  + Specify necessary architectural aspects, and signaling and procedures between A-IoT RAN and A-IoT CN to support the A-IoT functions, assuming an architecture of aggregated gNB, including:
    - Inventory and command operations

## 2.4 RAN4

#### 2.4.1 Agreements

RAN4#114bis: The agreements on A-IOT RF and RRM requirements are captured in the following way forwards.

* R4-2505096 WF on A-IoT device requirements CMCC
* R4-2505097 WF on A-IoT BS and CW requirements Huawei
* R4-2505230 WF on A-IoT device requirements CMCC

RAN4#115: The agreements on A-IOT RF and RRM requirements are captured in the following way forwards.

* R4-2508101 WF on A-IoT BS and CW requirements Huawei
* R4-2508116 WF on A-IoT\_device CMCC
* R4-2508275 WF on RRM requirements for Ambient\_IoT\_Solutions CMCC

#### 2.4.2 Remaining Open issues

The following open issues need to be addressed in RAN4:

* RAN4 scope:
  + Specify RF requirements for Ambient-IoT BS, device 1, and CW
    - RF requirements for Type 1-C Ambient-IoT BS
    - RF requirements for device 1
    - RF requirements for CW
  + Specify RRM core requirements for device 1, if necessary
  + Study and develop OTA test methodology for A-IoT device 1
    - Consider test methods specified in TR 38.870 as starting point. Take test system reuse, test system complexity and test time into account, when developing test methods suitable for Ambient IoT.
    - Develop the preliminary Measurement Uncertainty (MU) assessment for the test system

## 2.5 RAN5

#### 2.5.1 Agreements

#### 2.5.2 Remaining Open issues

#### 2.5.3 Remaining Open issues with cross-WG dependencies

## 2.6 RAN6

#### 2.6.1 Agreements

#### 2.6.2 Remaining Open issues

## 3. Detailed progress in SA/CT WGs since last TSG meeting (for all involved WGs)

NOTE: This section only needs to be filled in for WI/SIs where there is a corresponding relevant WI/SI in SA/CT.

## 3.1 SAx/CTs

#### 3.1.1 Agreements with cross-TSG impacts

#### 3.1.2 Remaining Open issues with cross-TSG impacts

NOTE: This section should also flag any critical dependencies that need TSG attention.

## 4. References

NOTE: This can be e.g. a list of all related Tdocs in the affected WGs since last TSG, references to LSs, produced TRs/TSs, the work/study item description or status reports of previous TSGs.

RAN1#120bis

1. R1-2501706 Discussion on modulation aspects for A-IoT physical channel FUTUREWEI
2. R1-2501707 Discussion on coding aspects for A-IoT physical channel FUTUREWEI
3. R1-2501708 Discussion on timing acquisition and synchronization aspects for A-IoT FUTUREWEI
4. R1-2501709 Discussion on multiple access, scheduling and timing aspects for A-IoT FUTUREWEI
5. R1-2501719 Modulation aspects for Ambient IoT Ericsson
6. R1-2501720 Coding aspects for Ambient IoT Ericsson
7. R1-2501721 Timing acquisition and synchronization for Ambient IoT Ericsson
8. R1-2501722 Other aspects for Ambient IoT Ericsson
9. R1-2501733 Discussion on general aspects of physical layer design for Ambient IoT TCL
10. R1-2501734 Discussion on other aspects for Ambient IoT physical design TCL
11. R1-2501735 Discussion on timing acquisition and synchronization functionalities for Ambient IoT TCL
12. R1-2501760 Discussion on Ambient IoT modulation ZTE Corporation, Sanechips
13. R1-2501761 Discussion on Ambient IoTcoding ZTE Corporation, Sanechips
14. R1-2501762 Discussion on Ambient IoT signals ZTE Corporation, Sanechips
15. R1-2501763 Discussion on Ambient IoT multiple access and timing ZTE Corporation, Sanechips
16. R1-2501776 AIoT Physical channels design - modulation aspects Nokia
17. R1-2501777 AIoT Physical channels design - line coding, FEC, CRC, repetition aspects Nokia
18. R1-2501778 AIoT Timing acquisition and synchronization Nokia
19. R1-2501779 AIoT Other aspects incl. multiplexing/multiple access, scheduling information, and timing relationships Nokia
20. R1-2501806 Discussion on Modulation Aspects of Physical Channels Design vivo
21. R1-2501807 Discussion on line coding, FEC, CRC and repetition for A-IoT vivo
22. R1-2501808 Discussion on Timing acquisition and synchronization for AIoT vivo
23. R1-2501809 Discussion on other aspects for Rel-19 Ambient IoT vivo
24. R1-2501868 Discussion on modulation aspects of physical channels design for Ambient IoT Spreadtrum, UNISOC
25. R1-2501869 Discussion on line coding, FEC, CRC, repetition aspects for Ambient IoT Spreadtrum, UNISOC
26. R1-2501870 Discussion on timing acquisition and synchronization for Ambient IoT Spreadtrum, UNISOC
27. R1-2501871 Discussion on other aspects for Ambient IoT Spreadtrum, UNISOC
28. R1-2501895 Discussion on timing acquisition and synchronization for Ambient IoT Lenovo
29. R1-2501896 Discussion on multiple access, scheduling and timing aspects of Ambient IoT Lenovo
30. R1-2501921 Discussion on timing acquisition and synchronization InterDigital, Inc.
31. R1-2501922 Discussion on multiplexing/multiple access, scheduling information, and timing relationships InterDigital, Inc.
32. R1-2501957 Discussion on timing acquisition and synchronisation for Ambient IoT Lekha Wireless Solutions
33. R1-2501992 Ambient IoT physical channel design and modulation CATT
34. R1-2501993 Ambient IoT channel coding and small frequency shift CATT
35. R1-2501994 Ambient IoT Timing and synchronization CATT
36. R1-2501995 Ambient IoT frame structure, system control and resource allocation CATT
37. R1-2502016 Discussion on modulation aspects for A-IoT physical channel Tejas Network Limited
38. R1-2502017 Discussion on multiple access, scheduling and timing aspects for A-IoT Tejas Network Limited
39. R1-2502022 Discussion on physical channels design about modulation aspects for Ambient IoT China Telecom
40. R1-2502023 Discussion on physical channels design about line coding, FEC, CRC, repetition aspects for Ambient IoT China Telecom
41. R1-2502024 Discussion on timing acquisition and synchronization for Ambient IoT China Telecom
42. R1-2502025 Discussion on other aspects for Ambient IoT China Telecom
43. R1-2502042 Views on Timing acquisition and synchronization Ofinno
44. R1-2502043 Views on other aspects for AIoT Ofinno
45. R1-2502068 Discussion on modulation aspects of ambient IoT NEC
46. R1-2502069 Physical layer design – line coding, FEC, CRC, repetition aspects NEC
47. R1-2502070 Discussion on control and other aspects of ambient IoT NEC
48. R1-2502123 Modulation for R2D and D2R Fujitsu
49. R1-2502124 Discussion on coding aspects Fujitsu
50. R1-2502125 Discussion on timing acquisition and synchronization Fujitsu
51. R1-2502126 Discussion on other aspects of Ambient IoT Fujitsu
52. R1-2502160 Discussion on modulation aspects of physical channel design CMCC
53. R1-2502161 Discussion on coding aspects of physical channel design CMCC
54. R1-2502162 Discussion on timing acquisition and synchronization CMCC
55. R1-2502163 Discussion on access, scheduling and timing relationships CMCC
56. R1-2502202 Discussion on timing acquisition and synchronization NEC
57. R1-2502204 Discussion on Physical Channel Designs for A-IoT Panasonic
58. R1-2502205 Discussion on other aspects of A-IoT Panasonic
59. R1-2502233 Physical channels design on modulation Huawei, HiSilicon
60. R1-2502234 Physical channel design on channel coding Huawei, HiSilicon
61. R1-2502235 Physical signals design Huawei, HiSilicon
62. R1-2502236 Multiplexing, scheduling, and other physical-layer procedures Huawei, HiSilicon
63. R1-2502273 Discussion on modulation aspects of A-IoT OPPO
64. R1-2502274 Discussion on physical channels design for A-IoT OPPO
65. R1-2502275 Discussion on timing acquisition and synchronization for A-IoT OPPO
66. R1-2502276 Discussions on other aspects of A-IoT communication OPPO
67. R1-2502318 Physical channel design aspects for Ambient IoT Sony
68. R1-2502319 Timing acquisition and synchronisation for Ambient IoT Sony
69. R1-2502320 Multiplexing, multiple access and timing relationships for Ambient IoT Sony
70. R1-2502368 Views on Physical channels design – modulation aspects Samsung
71. R1-2502369 Views on Physical channels design – line coding, FEC, CRC, repetition aspects Samsung
72. R1-2502370 Views on timing acquisition and synchronization Samsung
73. R1-2502371 Views on aspects including multiplexing/multiple access, scheduling information, and timing relationships Samsung
74. R1-2502441 Discussion on modulation aspects for Ambient IoT Xiaomi
75. R1-2502442 Discussion on line coding, FEC, CRC and repetition aspects for Ambient IoT Xiaomi
76. R1-2502443 Discussion on timing acquisition and synchronization for Ambient IoT Xiaomi
77. R1-2502444 Discussion on other aspects for Ambient IoT Xiaomi
78. R1-2502467 A-IoT Physical Channels Design on Modulation Aspects Panasonic
79. R1-2502468 A-IoT Timing Acquisition and Synchronization Panasonic
80. R1-2502471 Discussion on timing acquisition and synchronisation for Ambient IoT Lekha Wireless Solutions
81. R1-2502474 A-IoT PHY layer design - waveform and modulation aspects LG Electronics
82. R1-2502475 A-IoT PHY layer design - line coding, FEC, CRC and repetition aspects LG Electronics
83. R1-2502476 Timing acquisition and synchronization for A-IoT LG Electronics
84. R1-2502477 Other aspects for A-IoT LG Electronics
85. R1-2502498 FL summary #1 on other aspects for Rel-19 Ambient IoT Moderator (vivo)
86. R1-2502499 FL summary #2 on other aspects for Rel-19 Ambient IoT Moderator (vivo)
87. R1-2502500 FL summary #3 on other aspects for Rel-19 Ambient IoT Moderator (vivo)
88. R1-2502511 Discussion on timing acquisition and synchronization ETRI
89. R1-2502512 Discussion on other aspects for Ambient IoT ETRI
90. R1-2502583 Discussion on coding aspects of physical channel design for Ambient IoT InterDigital Finland Oy
91. R1-2502584 Discussion on modulation aspects of physical channel design for Ambient IoT InterDigital Finland Oy
92. R1-2502586 Discussion on Physical Channel Modulation Aspects for Ambient-IoT EURECOM
93. R1-2502605 On modulation aspects for Ambient IoT Apple
94. R1-2502606 On coding aspects for Ambient IoT Apple
95. R1-2502607 On timing acquisition & synchronization aspects for Ambient IoT Apple
96. R1-2502608 On multiple access, scheduling and control for Ambient IoT Apple
97. R1-2502609 FL Summary#1 on timing acquisition and synchronization for Ambient IoT Moderator (Apple)
98. R1-2502610 FL Summary#2 on timing acquisition and synchronization for Ambient IoT Moderator (Apple)
99. R1-2502611 FL Summary#3 on timing acquisition and synchronization for Ambient IoT Moderator (Apple)
100. R1-2502662 Skeleton for TS 38.291: “Ambient IoT Physical layer” v0.0.1 Huawei
101. R1-2502664 Discussion on timing and synchronization aspects Fraunhofer HHI, Fraunhofer IIS
102. R1-2502671 Discussion on modulation aspects Sharp
103. R1-2502672 Discussion on coding aspects Sharp
104. R1-2502673 Discussion on timing acquisition and synchronization Sharp
105. R1-2502674 Discussion on other aspects Sharp
106. R1-2502690 Discussion on Physical channels design for Ambient IoT-modulation aspects HONOR
107. R1-2502691 Discussion on Physical channels design for Ambient IoT-other aspects HONOR
108. R1-2502692 Discuss on L1 control information and L1 procedural aspects HONOR
109. R1-2502699 Discussion on multiple access, scheduling information and timing relationships for Ambient IoT TCL
110. R1-2502704 A-IoT - PHY modulation aspects MediaTek Inc.
111. R1-2502705 A-IoT - PHY line coding, FEC, CRC, repetition aspects MediaTek Inc.
112. R1-2502706 A-IoT - Timing acquisition and synchronization MediaTek Inc.
113. R1-2502707 A-IoT - Other aspects MediaTek Inc.
114. R1-2502729 Discussion on other aspects of Ambient IoT KT Corp.
115. R1-2502752 Discussion on A-IoT Physical channels design ASUSTeK
116. R1-2502753 Discussion on control information and procedural aspects ASUSTeK
117. R1-2502766 Discussion on modulation aspects of physical channel design for Ambient IoT NTT DOCOMO, INC.
118. R1-2502767 Discussion on coding and CRC aspects of physical channel design for Ambient IoT NTT DOCOMO, INC.
119. R1-2502768 Discussion on timing acquisition and synchronization for Ambient IoT NTT DOCOMO, INC.
120. R1-2502769 Discussion on other aspects for Ambient IoT NTT DOCOMO, INC.
121. R1-2502839 Physical channels design – modulation aspects Qualcomm Incorporated
122. R1-2502840 Physical channels design – line coding, FEC, CRC, repetition aspects Qualcomm Incorporated
123. R1-2502841 Timing acquisition and synchronization Qualcomm Incorporated
124. R1-2502842 Discussion on other aspects for Rel-19 Ambient IoT Qualcomm Incorporated
125. R1-2502890 Discussion on multiplexing, multiple access, scheduling information, and timing relationships Google
126. R1-2502896 Timing acquisition and synchronization aspects for Ambient-IOT Fraunhofer IIS, Fraunhofer HHI
127. R1-2502898 Discussion on modulation aspects for Ambient-IOT Fraunhofer IIS, Fraunhofer HHI
128. R1-2502905 Discussion on modulation aspects for Ambient IoT physical channels Lenovo
129. R1-2502906 Discussion on the Ambient IoT physical layer design aspects for Line coding, FEC, CRC, Repetition Lenovo
130. R1-2502915 Discussion on timing acquisition and synchronization aspects for Ambient IoT CEWiT
131. R1-2502916 Discussion on multiple access, scheduling and timing aspects for Ambient IoT CEWiT
132. R1-2502927 Discussion on modulation aspects of physical channels design for Ambient IoT WILUS Inc.
133. R1-2502928 Discussion on multiplexing/multiple access and timing relationships for Ambient IoT WILUS Inc.
134. R1-2502930 Coding aspects for Ambient IoT ITL
135. R1-2502938 Discussion on modulation related aspects of AIoT IIT Kanpur
136. R1-2502939 Discussion on other aspects of Phy design for AIoT IIT Kanpur
137. R1-2502940 Discussion on timing and synchronization aspects for AIoT IIT Kanpur
138. R1-2502941 Discussion on other aspects of AIoT IIT Kanpur
139. R1-2502992 FL summary #1 for Ambient IoT: “9.4.1 Physical channels design – modulation aspects” Moderator (Huawei)
140. R1-2502993 FL summary #2 for Ambient IoT: “9.4.1 Physical channels design – modulation aspects” Moderator (Huawei)
141. R1-2502994 FL summary #3 for Ambient IoT: “9.4.1 Physical channels design – modulation aspects” Moderator (Huawei)
142. R1-2503020 Summary #1 for coding aspects of physical channel design Moderator (CMCC)
143. R1-2503021 Summary #2 for coding aspects of physical channel design Moderator (CMCC)
144. R1-2503022 Summary #3 for coding aspects of physical channel design Moderator (CMCC)
145. R1-2503023 Summary #4 for coding aspects of physical channel design Moderator (CMCC)
146. R1-2503104 FL summary #4 on other aspects for Rel-19 Ambient IoT Moderator (vivo)
147. R1-2503106 Summary #5 for coding aspects of physical channel design Moderator (CMCC)
148. R1-2503107 Summary #6 for coding aspects of physical channel design Moderator (CMCC)
149. R1-2503109 FL summary #4 for Ambient IoT: “9.4.1 Physical channels design – modulation aspects” Moderator (Huawei)
150. R1-2503112 Session notes for 9.4 (Solutions for Ambient IoT in NR) Ad-Hoc Chair (Huawei)
151. R1-2503123 Final summary on timing acquisition and synchronization for Ambient IoT Moderator (Apple)
152. R1-2503183 Summary of email discussion [Post-120bis-Rel-19-38.291-Ambient\_IoT\_Solutions] Moderator (Huawei)

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1. R1-2503220 Modulation aspects for Ambient IoT Ericsson
2. R1-2503221 Coding aspects for Ambient IoT Ericsson
3. R1-2503222 Timing acquisition and synchronization for Ambient IoT Ericsson
4. R1-2503223 Other aspects for Ambient IoT Ericsson
5. R1-2503224 Discussion on modulation aspects for A-IoT physical channel FUTUREWEI
6. R1-2503225 Coding aspects for A-IoT physical channel FUTUREWEI
7. R1-2503226 Discussion on timing acquisition and synchronization aspects for A-IoT FUTUREWEI
8. R1-2503227 Multiple access, scheduling and timing aspects for A-IoT FUTUREWEI
9. R1-2503294 Physical channels design on modulation Huawei, HiSilicon
10. R1-2503295 Physical channel design on channel coding Huawei, HiSilicon
11. R1-2503296 Physical signals design Huawei, HiSilicon
12. R1-2503297 Multiplexing, scheduling, and other physical-layer procedures Huawei, HiSilicon
13. R1-2503299 AIoT Physical channels design - modulation aspects Nokia
14. R1-2503300 AIoT Physical channels design - line coding, FEC, CRC, repetition aspects Nokia
15. R1-2503301 AIoT Timing acquisition and synchronization Nokia
16. R1-2503302 AIoT Other aspects incl. multiplexing/multiple access, scheduling information, and timing relationships Nokia
17. R1-2503311 Discussion on Ambient IoT modulation ZTE Corporation, Sanechips
18. R1-2503312 Discussion on Ambient IoTcoding and SFS ZTE Corporation, Sanechips
19. R1-2503313 Discussion on Ambient IoT signals ZTE Corporation, Sanechips
20. R1-2503314 Discussion on Ambient IoT multiple access and timing ZTE Corporation, Sanechips
21. R1-2503358 Remaining issues on Modulation Aspects of Physical Channels Design vivo
22. R1-2503359 Remaining issues on line coding, FEC, CRC and repetition for A-IoT vivo
23. R1-2503360 Remaining issues on Timing acquisition and synchronization for AIoT vivo
24. R1-2503361 Remaining issues on other aspects for Rel-19 Ambient IoT vivo
25. R1-2503362 FL summary #1 on other aspects for Rel-19 Ambient IoT Moderator (vivo)
26. R1-2503363 FL summary #2 on other aspects for Rel-19 Ambient IoT Moderator (vivo)
27. R1-2503364 FL summary #3 on other aspects for Rel-19 Ambient IoT Moderator (vivo)
28. R1-2503420 Discussion on timing acquisition and synchronization NEC
29. R1-2503515 Discussion on modulation aspects of physical channels design for Ambient IoT Spreadtrum, UNISOC
30. R1-2503516 Discussion on line coding, FEC, CRC, repetition aspects for Ambient IoT Spreadtrum, UNISOC
31. R1-2503517 Discussion on timing acquisition and synchronization for Ambient IoT Spreadtrum, UNISOC
32. R1-2503518 Discussion on other aspects for Ambient IoT Spreadtrum, UNISOC
33. R1-2503536 Discussion on modulation aspects for Ambient IoT physical design TCL
34. R1-2503537 Discussion on other aspects for Ambient IoT physical design TCL
35. R1-2503538 Discussion on timing acquisition and synchronization functionalities for Ambient IoT TCL
36. R1-2503566 Views on Physical channels design – modulation aspects Samsung
37. R1-2503567 Views on Physical channels design – line coding, FEC, CRC, repetition aspects Samsung
38. R1-2503568 Views on timing acquisition and synchronization Samsung
39. R1-2503569 Views on aspects including multiplexing/multiple access, scheduling information, and timing relationships Samsung
40. R1-2503610 Discussion on timing acquisition and synchronization InterDigital, Inc.
41. R1-2503611 Discussion on multiplexing/multiple access, scheduling information, and timing relationships InterDigital, Inc.
42. R1-2503618 Discussion on Physical Channel Designs for A-IoT Panasonic
43. R1-2503619 Discussion on other aspects of A-IoT Panasonic
44. R1-2503660 Discussion on timing acquisition and synchronization for Ambient IoT Lenovo
45. R1-2503661 Discussion on multiple access, scheduling and timing aspects of Ambient IoT Lenovo
46. R1-2503703 Discussion on modulation aspects for A-IoT physical channel Tejas Network Limited
47. R1-2503704 Discussion on timing acquisition and synchronization of A-IoT Tejas Network Limited
48. R1-2503705 Discussion on multiple access, scheduling and timing aspects for A-IoT Tejas Network Limited
49. R1-2503715 Discussion on timing acquisition and synchronisation for Ambient IoT Lekha Wireless Solutions
50. R1-2503725 Discussion on Physical Channel Design and Modulation Aspects for Ambient-IoT EURECOM
51. R1-2503734 Views on Physical channels design – modulation aspects for AIoT Ofinno
52. R1-2503735 Views on Timing acquisition and synchronization Ofinno
53. R1-2503736 Views on other aspects for AIoT Ofinno
54. R1-2503793 Ambient IoT physical channel design and modulation CATT
55. R1-2503794 Ambient IoT channel coding and small frequency shift CATT
56. R1-2503795 Ambient IoT Timing and synchronization CATT
57. R1-2503796 Ambient IoT frame structure, system control and resource allocation CATT
58. R1-2503830 TP for A-IoT physical layer functions for TS 38.300 CMCC, Huawei, HiSilicon
59. R1-2503831 Discussion on modulation aspects of physical channel design CMCC
60. R1-2503832 Discussion on coding aspects of physical channel design CMCC
61. R1-2503833 Discussion on timing acquisition and synchronization CMCC
62. R1-2503834 Discussion on access, scheduling and timing relationships CMCC
63. R1-2503882 Discussion on modulation aspects for Ambient IoT Xiaomi
64. R1-2503883 Discussion on line coding, FEC, CRC and repetition aspects for Ambient IoT Xiaomi
65. R1-2503884 Discussion on timing acquisition and synchronization for Ambient IoT Xiaomi
66. R1-2503885 Discussion on other aspects for Ambient IoT Xiaomi
67. R1-2503924 Discussion on modulation aspects of ambient IoT NEC
68. R1-2503925 Physical layer design – line coding, FEC, CRC, repetition aspects NEC
69. R1-2503926 Discussion on control and other aspects of ambient IoT NEC
70. R1-2504007 A-IoT Physical Channels Design on Modulation Aspects Panasonic
71. R1-2504008 A-IoT Timing acquisition and synchronization Panasonic
72. R1-2504046 Discussion on physical channels design about modulation aspects for Ambient IoT China Telecom
73. R1-2504047 Discussion on physical channels design about line coding, FEC, CRC, repetition aspects for Ambient IoT China Telecom
74. R1-2504048 Discussion on timing acquisition and synchronization for Ambient IoT China Telecom
75. R1-2504049 Discussion on other aspects for Ambient IoT China Telecom
76. R1-2504064 Multiple access and timing relationships for Ambient IoT Sony
77. R1-2504088 Modulation for R2D Fujitsu
78. R1-2504089 Discussion on coding aspects Fujitsu
79. R1-2504090 Discussion on timing acquisition and synchronization Fujitsu
80. R1-2504091 Discussion on other aspects of Ambient IoT Fujitsu
81. R1-2504098 Discussion on Physical channels design for Ambient IoT-modulation aspects HONOR
82. R1-2504099 Discussion on Physical channels design for Ambient IoT-other aspects HONOR
83. R1-2504100 Discussion on L1 control information and L1 procedural aspects HONOR
84. R1-2504111 Discussion on timing acquisition and synchronization for Ambient-IOT Fraunhofer IIS, Fraunhofer HHI
85. R1-2504139 Discussion on timing acquisition and synchronization ETRI
86. R1-2504140 Discussion on other aspects for Ambient IoT ETRI
87. R1-2504205 Discussion on modulation aspects of A-IoT OPPO
88. R1-2504206 Discussion on physical channels design for A-IoT OPPO
89. R1-2504207 Discussion on timing acquisition and synchronization for A-IoT OPPO
90. R1-2504208 Discussions on other aspects of A-IoT communication OPPO
91. R1-2504243 A-IoT PHY layer design - waveform and modulation aspects LG Electronics
92. R1-2504244 A-IoT PHY layer design - line coding, FEC, CRC and repetition aspects LG Electronics
93. R1-2504245 Timing acquisition and synchronization for A-IoT LG Electronics
94. R1-2504246 Other aspects for A-IoT LG Electronics
95. R1-2504261 A-IoT - PHY line coding, FEC, CRC, repetition aspects MediaTek Inc.
96. R1-2504287 Remaining issues on modulation aspects for Ambient IoT InterDigital, Inc.
97. R1-2504288 Remaining issues on coding aspects for Ambient IoT InterDigital, Inc.
98. R1-2504299 Discussion on multiplexing, multiple access, scheduling information, and timing relationships Google
99. R1-2504318 On remaining modulation aspects for Ambient IoT Apple
100. R1-2504319 On remaining coding aspects for Ambient IoT Apple
101. R1-2504320 On remaining timing acquisition & synchronization aspects for Ambient IoT Apple
102. R1-2504321 On remaining multiple access, scheduling and control aspects for Ambient IoT Apple
103. R1-2504322 FL Summary#1 on timing acquisition and synchronization for Ambient IoT Moderator (Apple)
104. R1-2504323 FL Summary#2 on timing acquisition and synchronization for Ambient IoT Moderator (Apple)
105. R1-2504324 FL Summary#3 on timing acquisition and synchronization for Ambient IoT Moderator (Apple)
106. R1-2504394 Physical channels design – modulation aspects Qualcomm Incorporated
107. R1-2504395 Physical channels design – line coding, FEC, CRC, repetition aspects Qualcomm Incorporated
108. R1-2504396 Timing acquisition and synchronization Qualcomm Incorporated
109. R1-2504397 Discussion on other aspects for Rel-19 Ambient IoT Qualcomm Incorporated
110. R1-2504433 Discussion on modulation aspects Sharp
111. R1-2504434 Discussion on coding aspects Sharp
112. R1-2504435 Discussion on timing acquisition and synchronization Sharp
113. R1-2504436 Discussion on other aspects Sharp
114. R1-2504474 Discussion on A-IoT Physical channels design ASUSTeK
115. R1-2504475 Discussion on control information and procedural aspects ASUSTeK
116. R1-2504482 Discussion on Modulation Aspects for Ambient IoT Indian Institute of Tech (M)
117. R1-2504483 Discussion on Timing acquisition and synchronization for Ambient IoT Indian Institute of Tech (M)
118. R1-2504501 Discussion on modulation aspects of physical channel design for Ambient IoT NTT DOCOMO, INC.
119. R1-2504502 Discussion on coding and CRC aspects of physical channel design for Ambient IoT NTT DOCOMO, INC.
120. R1-2504503 Discussion on timing acquisition and synchronization for Ambient IoT NTT DOCOMO, INC.
121. R1-2504504 Discussion on other aspects for Ambient IoT NTT DOCOMO, INC.
122. R1-2504542 Discussion on other aspects of Ambient IoT KT Corp.
123. R1-2504585 Discussion on physical channels design for A-IoT China Unicom
124. R1-2504589 Discussion on multiple access, scheduling information and timing relationships for Ambient IoT TCL
125. R1-2504600 Discussion on timing acquisition and synchronization aspects for Ambient IoT CEWiT
126. R1-2504601 Discussion on multiple access, scheduling and timing aspects for Ambient IoT CEWiT
127. R1-2504617 Discussion on modulation aspects of physical channels design for Ambient IoT WILUS Inc.
128. R1-2504618 Discussion on multiplexing/multiple access and timing relationships for Ambient IoT WILUS Inc.
129. R1-2504633 Discussion on modulation related aspects of AIoT IIT Kanpur
130. R1-2504634 Discussion on other aspects of Phy design for AIoT IIT Kanpur
131. R1-2504635 Discussion on timing and synchronization aspects for AIoT IIT Kanpur
132. R1-2504710 FL summary #1 for Ambient IoT: “9.4.1 Physical channels design – modulation aspects” Moderator (Huawei)
133. R1-2504711 FL summary #2 for Ambient IoT: “9.4.1 Physical channels design – modulation aspects” Moderator (Huawei)
134. R1-2504712 FL summary #3 for Ambient IoT: “9.4.1 Physical channels design – modulation aspects” Moderator (Huawei)
135. R1-2504714 On remaining modulation aspects for Ambient IoT Apple
136. R1-2504716 Discussion on Ambient IoT signals ZTE Corporation, Sanechips
137. R1-2504749 Summary #1 for coding aspects of physical channel design Moderator (CMCC)
138. R1-2504750 Summary #2 for coding aspects of physical channel design Moderator (CMCC)
139. R1-2504751 Summary #3 for coding aspects of physical channel design Moderator (CMCC)
140. R1-2504752 Summary #4 for coding aspects of physical channel design Moderator (CMCC)
141. R1-2504821 FL summary #4 on other aspects for Rel-19 Ambient IoT Moderator (vivo)
142. R1-2504822 FL summary #5 on other aspects for Rel-19 Ambient IoT Moderator (vivo)
143. R1-2504863 FL Summary#4 on timing acquisition and synchronization for Ambient IoT Moderator (Apple)
144. R1-2504864 FL Summary#5 on timing acquisition and synchronization for Ambient IoT Moderator (Apple)
145. R1-2504894 Session notes for 9.4 (Solutions for Ambient IoT (Internet of Things) in NR) Ad-Hoc Chair (Huawei)
146. R1-2504914 Draft LS on Ambient IoT R2D control information CMCC
147. R1-2504915 LS on Ambient IoT R2D control information RAN1, CMCC
148. R1-2504920 Summary for TP for TS 38.300 PHY function Moderator (CMCC)
149. R1-2504923 Draft LS on Ambient IoT Stage-2 TP CMCC
150. R1-2504924 LS on Ambient IoT Stage-2 TP RAN1, CMCC

RAN2 #129bis

1. [R2-2502258](file:///C:\Users\panidx\OneDrive%20-%20InterDigital%20Communications,%20Inc\Documents\3GPP%20RAN\TSGR2_129b\Docs\R2-2502258.zip) Skeleton of A-IoT MAC specification (TS 38.391) Huawei, HiSilicon draft TS 38.391 0.0.1
2. [R2-2502259](file:///C:\Users\panidx\OneDrive%20-%20InterDigital%20Communications,%20Inc\Documents\3GPP%20RAN\TSGR2_129b\Docs\R2-2502259.zip) Initial Text Proposal for A-IoT MAC specification Huawei, HiSilicon pCR 38.391 0.0.1
3. [R2-2502704](file:///C:\Users\panidx\OneDrive%20-%20InterDigital%20Communications,%20Inc\Documents\3GPP%20RAN\TSGR2_129b\Docs\R2-2502704.zip) Introduction of Ambient IoT CMCC draftCR 38.300 18.5.0 B
4. [R2-2502262](file:///C:\Users\panidx\OneDrive%20-%20InterDigital%20Communications,%20Inc\Documents\3GPP%20RAN\TSGR2_129b\Docs\R2-2502262.zip) Illustrative figures for a deeper understanding of A-IoT MAC operations Huawei, HiSilicon, China Southern Power Grid
5. [R2-2502211](file:///C:\Users\panidx\OneDrive%20-%20InterDigital%20Communications,%20Inc\Documents\3GPP%20RAN\TSGR2_129b\Docs\R2-2502211.zip) Email discussion report: [POST129][035][AIoT] Paging Qualcomm Incorporated
6. [R2-2503155](file:///C:\Users\panidx\OneDrive%20-%20InterDigital%20Communications,%20Inc\Documents\3GPP%20RAN\TSGR2_129b\Docs\R2-2503155.zip) Offline discussion report: [AT129bis][010][AIoT] Paging Qualcomm Incorporated
7. [R2-2501962](file:///C:\Users\panidx\OneDrive%20-%20InterDigital%20Communications,%20Inc\Documents\3GPP%20RAN\TSGR2_129b\Docs\R2-2501962.zip) Discussion on A-IOT paging procedure Xiaomi
8. [R2-2502206](file:///C:\Users\panidx\OneDrive%20-%20InterDigital%20Communications,%20Inc\Documents\3GPP%20RAN\TSGR2_129b\Docs\R2-2502206.zip) Open issues for A-IoT paging ZTE Corporation, Sanechips discussion
9. [R2-2502554](file:///C:\Users\panidx\OneDrive%20-%20InterDigital%20Communications,%20Inc\Documents\3GPP%20RAN\TSGR2_129b\Docs\R2-2502554.zip) Paging Aspects for Ambient IOT InterDigital discussion
10. [R2-2502186](file:///C:\Users\panidx\OneDrive%20-%20InterDigital%20Communications,%20Inc\Documents\3GPP%20RAN\TSGR2_129b\Docs\R2-2502186.zip) Discussion on Ambient IoT Paging Apple
11. [R2-2501828](file:///C:\Users\panidx\OneDrive%20-%20InterDigital%20Communications,%20Inc\Documents\3GPP%20RAN\TSGR2_129b\Docs\R2-2501828.zip) Discussion on A-IoT paging HONOR
12. [R2-2502705](file:///C:\Users\panidx\OneDrive%20-%20InterDigital%20Communications,%20Inc\Documents\3GPP%20RAN\TSGR2_129b\Docs\R2-2502705.zip) Discussion on A-IoT paging CMCC
13. [R2-2502607](file:///C:\Users\panidx\OneDrive%20-%20InterDigital%20Communications,%20Inc\Documents\3GPP%20RAN\TSGR2_129b\Docs\R2-2502607.zip) Ambient IoT Paging Qualcomm Incorporated
14. [R2-2502765](file:///C:\Users\panidx\OneDrive%20-%20InterDigital%20Communications,%20Inc\Documents\3GPP%20RAN\TSGR2_129b\Docs\R2-2502765.zip) Discussion on DL messages for Ambient IoT UEs Ericsson
15. [R2-2502989](file:///C:\Users\panidx\OneDrive%20-%20InterDigital%20Communications,%20Inc\Documents\3GPP%20RAN\TSGR2_129b\Docs\R2-2502989.zip) Discussion on DL messages for Ambient IoT UEs Ericsson
16. [R2-2502873](file:///C:\Users\panidx\OneDrive%20-%20InterDigital%20Communications,%20Inc\Documents\3GPP%20RAN\TSGR2_129b\Docs\R2-2502873.zip) Paging aspects of AIoT Nokia
17. [R2-2502268](file:///C:\Users\panidx\OneDrive%20-%20InterDigital%20Communications,%20Inc\Documents\3GPP%20RAN\TSGR2_129b\Docs\R2-2502268.zip) A-IoT paging Huawei, HiSilicon
18. [R2-2502215](file:///C:\Users\panidx\OneDrive%20-%20InterDigital%20Communications,%20Inc\Documents\3GPP%20RAN\TSGR2_129b\Docs\R2-2502215.zip) Further discussions on A-IoT paging Futurewei
19. [R2-2502268](file:///C:\Users\panidx\OneDrive%20-%20InterDigital%20Communications,%20Inc\Documents\3GPP%20RAN\TSGR2_129b\Docs\R2-2502268.zip) A-IoT paging Huawei, HiSilicon
20. [R2-2502186](file:///C:\Users\panidx\OneDrive%20-%20InterDigital%20Communications,%20Inc\Documents\3GPP%20RAN\TSGR2_129b\Docs\R2-2502186.zip) Discussion on Ambient IoT Paging Apple
21. [R2-2501788](file:///C:\Users\panidx\OneDrive%20-%20InterDigital%20Communications,%20Inc\Documents\3GPP%20RAN\TSGR2_129b\Docs\R2-2501788.zip) Discussion on ambient IoT paging LG Electronics Inc.
22. [R2-2502819](file:///C:\Users\panidx\OneDrive%20-%20InterDigital%20Communications,%20Inc\Documents\3GPP%20RAN\TSGR2_129b\Docs\R2-2502819.zip) Discussion on Ambient IoT paging message design ASUSTeK
23. [R2-2501812](file:///C:\Users\panidx\OneDrive%20-%20InterDigital%20Communications,%20Inc\Documents\3GPP%20RAN\TSGR2_129b\Docs\R2-2501812.zip) Discussion on AIoT Paging vivo
24. [R2-2501788](file:///C:\Users\panidx\OneDrive%20-%20InterDigital%20Communications,%20Inc\Documents\3GPP%20RAN\TSGR2_129b\Docs\R2-2501788.zip) Discussion on ambient IoT paging LG Electronics Inc.
25. [R2-2501846](file:///C:\Users\panidx\OneDrive%20-%20InterDigital%20Communications,%20Inc\Documents\3GPP%20RAN\TSGR2_129b\Docs\R2-2501846.zip) Discussion on Paging for Ambient IoT CATT
26. [R2-2502022](file:///C:\Users\panidx\OneDrive%20-%20InterDigital%20Communications,%20Inc\Documents\3GPP%20RAN\TSGR2_129b\Docs\R2-2502022.zip) Discussion on A-IoT paging message format Tejas Network Limited
27. [R2-2502028](file:///C:\Users\panidx\OneDrive%20-%20InterDigital%20Communications,%20Inc\Documents\3GPP%20RAN\TSGR2_129b\Docs\R2-2502028.zip) Discussions on AIoT paging Fujitsu
28. [R2-2502040](file:///C:\Users\panidx\OneDrive%20-%20InterDigital%20Communications,%20Inc\Documents\3GPP%20RAN\TSGR2_129b\Docs\R2-2502040.zip) Discussion on paging procedure for Ambient IoT OPPO
29. [R2-2502220](file:///C:\Users\panidx\OneDrive%20-%20InterDigital%20Communications,%20Inc\Documents\3GPP%20RAN\TSGR2_129b\Docs\R2-2502220.zip) Discussion on A-IoT Paging ETRI
30. [R2-2502286](file:///C:\Users\panidx\OneDrive%20-%20InterDigital%20Communications,%20Inc\Documents\3GPP%20RAN\TSGR2_129b\Docs\R2-2502286.zip) Ambient-IoT Paging NEC
31. [R2-2502345](file:///C:\Users\panidx\OneDrive%20-%20InterDigital%20Communications,%20Inc\Documents\3GPP%20RAN\TSGR2_129b\Docs\R2-2502345.zip) Discussion on paging procedure for Ambient IoT Lenovo
32. [R2-2502375](file:///C:\Users\panidx\OneDrive%20-%20InterDigital%20Communications,%20Inc\Documents\3GPP%20RAN\TSGR2_129b\Docs\R2-2502375.zip) Discussion on A-IoT paging Panasonic
33. [R2-2502422](file:///C:\Users\panidx\OneDrive%20-%20InterDigital%20Communications,%20Inc\Documents\3GPP%20RAN\TSGR2_129b\Docs\R2-2502422.zip) Discussion on Paging for A-IoT Transsion Holdings
34. [R2-2502429](file:///C:\Users\panidx\OneDrive%20-%20InterDigital%20Communications,%20Inc\Documents\3GPP%20RAN\TSGR2_129b\Docs\R2-2502429.zip) Discussion on paging procedure of A-IoT Spreadtrum, UNISOC
35. [R2-2502484](file:///C:\Users\panidx\OneDrive%20-%20InterDigital%20Communications,%20Inc\Documents\3GPP%20RAN\TSGR2_129b\Docs\R2-2502484.zip) Considerations on paging for Ambient IoT Sony
36. [R2-2502499](file:///C:\Users\panidx\OneDrive%20-%20InterDigital%20Communications,%20Inc\Documents\3GPP%20RAN\TSGR2_129b\Docs\R2-2502499.zip) Multiple Paging involving reader(s) and service(s) Sony
37. [R2-2502745](file:///C:\Users\panidx\OneDrive%20-%20InterDigital%20Communications,%20Inc\Documents\3GPP%20RAN\TSGR2_129b\Docs\R2-2502745.zip) Further consideration of A-IoT paging for Ambient IoT Kyocera
38. [R2-2502753](file:///C:\Users\panidx\OneDrive%20-%20InterDigital%20Communications,%20Inc\Documents\3GPP%20RAN\TSGR2_129b\Docs\R2-2502753.zip) Discussion on A-IoT paging ITL
39. [R2-2502759](file:///C:\Users\panidx\OneDrive%20-%20InterDigital%20Communications,%20Inc\Documents\3GPP%20RAN\TSGR2_129b\Docs\R2-2502759.zip) Discussion on Ambient IoT Paging China Telecom
40. [R2-2502775](file:///C:\Users\panidx\OneDrive%20-%20InterDigital%20Communications,%20Inc\Documents\3GPP%20RAN\TSGR2_129b\Docs\R2-2502775.zip) Discussions on AIoT paging Samsung
41. [R2-2502874](file:///C:\Users\panidx\OneDrive%20-%20InterDigital%20Communications,%20Inc\Documents\3GPP%20RAN\TSGR2_129b\Docs\R2-2502874.zip) Discussion on Ambient IoT Paging CEWiT
42. [R2-2502938](file:///C:\Users\panidx\OneDrive%20-%20InterDigital%20Communications,%20Inc\Documents\3GPP%20RAN\TSGR2_129b\Docs\R2-2502938.zip) AIoT Paging: Handling a New Service Request Philips International B.V.
43. [R2-2502954](file:///C:\Users\panidx\OneDrive%20-%20InterDigital%20Communications,%20Inc\Documents\3GPP%20RAN\TSGR2_129b\Docs\R2-2502954.zip) Discussion on paging procedure for Ambient-IoT III
44. [R2-2502958](file:///C:\Users\panidx\OneDrive%20-%20InterDigital%20Communications,%20Inc\Documents\3GPP%20RAN\TSGR2_129b\Docs\R2-2502958.zip) Discussion on AIoT paging NTT DOCOMO, INC.

1. [R2-2502346](C:\\Users\\panidx\\OneDrive - InterDigital Communications, Inc\\Documents\\3GPP RAN\\TSGR2_129b\\Docs\\R2-2502346.zip) Discussion on random access for Ambient IoT Lenovo
2. [R2-2502207](file:///C:\\Users\\panidx\\OneDrive%20-%20InterDigital%20Communications,%20Inc\\Documents\\3GPP%20RAN\\TSGR2_129b\\Docs\\R2-2502207.zip) Open issues for A-IoT random access ZTE Corporation, Sanechips

1. [R2-2502043](C:\\Users\\panidx\\OneDrive - InterDigital Communications, Inc\\Documents\\3GPP RAN\\TSGR2_129b\\Docs\\R2-2502043.zip) Discussion on random access for A-IoT OPPO
2. [R2-2502207](file:///C:\\Users\\panidx\\OneDrive%20-%20InterDigital%20Communications,%20Inc\\Documents\\3GPP%20RAN\\TSGR2_129b\\Docs\\R2-2502207.zip) Open issues for A-IoT random access ZTE Corporation, Sanechips

1. [R2-2502555](C:\\Users\\panidx\\OneDrive - InterDigital Communications, Inc\\Documents\\3GPP RAN\\TSGR2_129b\\Docs\\R2-2502555.zip) Random Access Procedure for Ambient IOT InterDigital
2. [R2-2502585](file:///C:\Users\panidx\OneDrive%20-%20InterDigital%20Communications,%20Inc\Documents\3GPP%20RAN\TSGR2_129b\Docs\R2-2502585.zip) Views on Random Access Aspects of Ambient IoT Qualcomm Incorporated
3. [R2-2502964](file:///C:\Users\panidx\OneDrive%20-%20InterDigital%20Communications,%20Inc\Documents\3GPP%20RAN\TSGR2_129b\Docs\R2-2502964.zip) Discussion on A-IoT random access Samsung Electronics Czech
4. [R2-2502346](file:///C:\Users\panidx\OneDrive%20-%20InterDigital%20Communications,%20Inc\Documents\3GPP%20RAN\TSGR2_129b\Docs\R2-2502346.zip) Discussion on random access for Ambient IoT Lenovo

1. [R2-2501963](C:\\Users\\panidx\\OneDrive - InterDigital Communications, Inc\\Documents\\3GPP RAN\\TSGR2_129b\\Docs\\R2-2501963.zip) Discussion on access procedure for A-IOT Xiaomi
2. [R2-2502749](file:///C:\Users\panidx\OneDrive%20-%20InterDigital%20Communications,%20Inc\Documents\3GPP%20RAN\TSGR2_129b\Docs\R2-2502749.zip) Discussion on random access aspects for Ambient IoT LG Electronics Inc.
3. [R2-2502470](file:///C:\Users\panidx\OneDrive%20-%20InterDigital%20Communications,%20Inc\Documents\3GPP%20RAN\TSGR2_129b\Docs\R2-2502470.zip) A-IoT random access procedure Huawei, HiSilicon
4. [R2-2502466](file:///C:\Users\panidx\OneDrive%20-%20InterDigital%20Communications,%20Inc\Documents\3GPP%20RAN\TSGR2_129b\Docs\R2-2502466.zip) Discussion on UL multiple access Ericsson
5. [R2-2501980](file:///C:\Users\panidx\OneDrive%20-%20InterDigital%20Communications,%20Inc\Documents\3GPP%20RAN\TSGR2_129b\Docs\R2-2501980.zip) A-IoT: ACK/NACK for Msg3 and re-access MediaTek Inc.
6. [R2-2502470](file:///C:\Users\panidx\OneDrive%20-%20InterDigital%20Communications,%20Inc\Documents\3GPP%20RAN\TSGR2_129b\Docs\R2-2502470.zip) A-IoT random access procedure Huawei, HiSilicon

1. [R2-2502749](C:\\Users\\panidx\\OneDrive - InterDigital Communications, Inc\\Documents\\3GPP RAN\\TSGR2_129b\\Docs\\R2-2502749.zip) Discussion on random access aspects for Ambient IoT LG Electronics Inc.
2. [R2-2502717](file:///C:\\Users\\panidx\\OneDrive%20-%20InterDigital%20Communications,%20Inc\\Documents\\3GPP%20RAN\\TSGR2_129b\\Docs\\R2-2502717.zip) Further consideration on A-IoT random access CMCC
3. [R2-2501813](file:///C:\Users\panidx\OneDrive%20-%20InterDigital%20Communications,%20Inc\Documents\3GPP%20RAN\TSGR2_129b\Docs\R2-2501813.zip) Random Access Procedure for AIoT Device vivo
4. [R2-2501829](file:///C:\Users\panidx\OneDrive%20-%20InterDigital%20Communications,%20Inc\Documents\3GPP%20RAN\TSGR2_129b\Docs\R2-2501829.zip) Discussion on A-IoT random access HONOR
5. [R2-2501847](file:///C:\Users\panidx\OneDrive%20-%20InterDigital%20Communications,%20Inc\Documents\3GPP%20RAN\TSGR2_129b\Docs\R2-2501847.zip) Discussion on random access for A-IoT CATT
6. [R2-2501859](file:///C:\Users\panidx\OneDrive%20-%20InterDigital%20Communications,%20Inc\Documents\3GPP%20RAN\TSGR2_129b\Docs\R2-2501859.zip) Random Access for Ambient IoT device NEC
7. [R2-2501987](file:///C:\Users\panidx\OneDrive%20-%20InterDigital%20Communications,%20Inc\Documents\3GPP%20RAN\TSGR2_129b\Docs\R2-2501987.zip) Ambient-IoT Random Access Ofinno, LLC
8. [R2-2502023](file:///C:\Users\panidx\OneDrive%20-%20InterDigital%20Communications,%20Inc\Documents\3GPP%20RAN\TSGR2_129b\Docs\R2-2502023.zip) Discussion on A-IoT message format for CBRA and CFRA Tejas Network Limited
9. [R2-2502029](file:///C:\Users\panidx\OneDrive%20-%20InterDigital%20Communications,%20Inc\Documents\3GPP%20RAN\TSGR2_129b\Docs\R2-2502029.zip) Discussions on AIoT Random Access Fujitsu
10. [R2-2502151](file:///C:\Users\panidx\OneDrive%20-%20InterDigital%20Communications,%20Inc\Documents\3GPP%20RAN\TSGR2_129b\Docs\R2-2502151.zip) Aspects on RA for AIoT Nokia
11. [R2-2502187](file:///C:\Users\panidx\OneDrive%20-%20InterDigital%20Communications,%20Inc\Documents\3GPP%20RAN\TSGR2_129b\Docs\R2-2502187.zip) Discussion on Random Access for Ambient IoT Apple
12. [R2-2502216](file:///C:\Users\panidx\OneDrive%20-%20InterDigital%20Communications,%20Inc\Documents\3GPP%20RAN\TSGR2_129b\Docs\R2-2502216.zip) Further discussions on A-IoT random access Futurewei
13. [R2-2502221](file:///C:\Users\panidx\OneDrive%20-%20InterDigital%20Communications,%20Inc\Documents\3GPP%20RAN\TSGR2_129b\Docs\R2-2502221.zip) Considerations for re-access in Ambient IoT ETRI
14. [R2-2502243](file:///C:\Users\panidx\OneDrive%20-%20InterDigital%20Communications,%20Inc\Documents\3GPP%20RAN\TSGR2_129b\Docs\R2-2502243.zip) Random access procedure for ambient IoT China Telecom
15. [R2-2502430](file:///C:\Users\panidx\OneDrive%20-%20InterDigital%20Communications,%20Inc\Documents\3GPP%20RAN\TSGR2_129b\Docs\R2-2502430.zip) Discussion on A-IoT random access Spreadtrum, UNISOC
16. [R2-2502578](file:///C:\Users\panidx\OneDrive%20-%20InterDigital%20Communications,%20Inc\Documents\3GPP%20RAN\TSGR2_129b\Docs\R2-2502578.zip) Discussion on re-access mechanism for D2R failures Panasonic
17. [R2-2502623](file:///C:\Users\panidx\OneDrive%20-%20InterDigital%20Communications,%20Inc\Documents\3GPP%20RAN\TSGR2_129b\Docs\R2-2502623.zip) Discussion on re-access for A-IoT Continental Automotive
18. [R2-2502625](file:///C:\Users\panidx\OneDrive%20-%20InterDigital%20Communications,%20Inc\Documents\3GPP%20RAN\TSGR2_129b\Docs\R2-2502625.zip) Random access types supported by AIoT devices NTT DOCOMO, INC.
19. [R2-2502691](file:///C:\Users\panidx\OneDrive%20-%20InterDigital%20Communications,%20Inc\Documents\3GPP%20RAN\TSGR2_129b\Docs\R2-2502691.zip) Discussion on random access procedures Fraunhofer HHI, Fraunhofer IIS
20. [R2-2502746](file:///C:\Users\panidx\OneDrive%20-%20InterDigital%20Communications,%20Inc\Documents\3GPP%20RAN\TSGR2_129b\Docs\R2-2502746.zip) Further consideration of A-IoT random access for Ambient IoT Kyocera
21. [R2-2502820](file:///C:\Users\panidx\OneDrive%20-%20InterDigital%20Communications,%20Inc\Documents\3GPP%20RAN\TSGR2_129b\Docs\R2-2502820.zip) Discussion on Ambient IoT Msg2 design ASUSTeK
22. [R2-2502875](file:///C:\Users\panidx\OneDrive%20-%20InterDigital%20Communications,%20Inc\Documents\3GPP%20RAN\TSGR2_129b\Docs\R2-2502875.zip) Discussion on random access for Ambient IoT CEWiT
23. [R2-2502905](file:///C:\Users\panidx\OneDrive%20-%20InterDigital%20Communications,%20Inc\Documents\3GPP%20RAN\TSGR2_129b\Docs\R2-2502905.zip) Discussion on random access aspects of Ambient IoT KT Corp.
24. [R2-2501965](file:///C:\Users\panidx\OneDrive%20-%20InterDigital%20Communications,%20Inc\Documents\3GPP%20RAN\TSGR2_129b\Docs\R2-2501965.zip) [POST129][036][AIoT] AS ID (Xiaomi) Xiaomi discussion
25. [R2-2502244](file:///C:\Users\panidx\OneDrive%20-%20InterDigital%20Communications,%20Inc\Documents\3GPP%20RAN\TSGR2_129b\Docs\R2-2502244.zip) A-IoT data transmission and other general aspects China Telecom
26. [R2-2502556](file:///C:\Users\panidx\OneDrive%20-%20InterDigital%20Communications,%20Inc\Documents\3GPP%20RAN\TSGR2_129b\Docs\R2-2502556.zip) Remaining Aspects on AS ID and Segmentation InterDigital
27. [R2-2502776](file:///C:\Users\panidx\OneDrive%20-%20InterDigital%20Communications,%20Inc\Documents\3GPP%20RAN\TSGR2_129b\Docs\R2-2502776.zip) Discussion on A-IoT data transmission Samsung
28. [R2-2501848](file:///C:\Users\panidx\OneDrive%20-%20InterDigital%20Communications,%20Inc\Documents\3GPP%20RAN\TSGR2_129b\Docs\R2-2501848.zip) Discussion on data transmission for A-IoT CATT
29. [R2-2502269](file:///C:\Users\panidx\OneDrive%20-%20InterDigital%20Communications,%20Inc\Documents\3GPP%20RAN\TSGR2_129b\Docs\R2-2502269.zip) A-IoT data transmission Huawei, HiSilicon
30. [R2-2502776](file:///C:\Users\panidx\OneDrive%20-%20InterDigital%20Communications,%20Inc\Documents\3GPP%20RAN\TSGR2_129b\Docs\R2-2502776.zip) Discussion on A-IoT data transmission Samsung
31. [R2-2502030](file:///C:\Users\panidx\OneDrive%20-%20InterDigital%20Communications,%20Inc\Documents\3GPP%20RAN\TSGR2_129b\Docs\R2-2502030.zip) Discussions on Data Transmission and Other General Aspects Fujitsu
32. [R2-2502696](file:///C:\Users\panidx\OneDrive%20-%20InterDigital%20Communications,%20Inc\Documents\3GPP%20RAN\TSGR2_129b\Docs\R2-2502696.zip) Discussion on data transmission for A-IoT CMCC
33. [R2-2501964](file:///C:\Users\panidx\OneDrive%20-%20InterDigital%20Communications,%20Inc\Documents\3GPP%20RAN\TSGR2_129b\Docs\R2-2501964.zip) Protocol design principle and considerations on Data transmission Xiaomi
34. [R2-2502201](file:///C:\Users\panidx\OneDrive%20-%20InterDigital%20Communications,%20Inc\Documents\3GPP%20RAN\TSGR2_129b\Docs\R2-2502201.zip) Discussion on A-IoT data transmission and other general aspects Lenovo
35. [R2-2502042](file:///C:\Users\panidx\OneDrive%20-%20InterDigital%20Communications,%20Inc\Documents\3GPP%20RAN\TSGR2_129b\Docs\R2-2502042.zip) Discussion on AIoT data transmission related functionalities OPPO
36. [R2-2501814](file:///C:\Users\panidx\OneDrive%20-%20InterDigital%20Communications,%20Inc\Documents\3GPP%20RAN\TSGR2_129b\Docs\R2-2501814.zip) AIoT Data Transmission vivo FS\_
37. [R2-2502586](file:///C:\Users\panidx\OneDrive%20-%20InterDigital%20Communications,%20Inc\Documents\3GPP%20RAN\TSGR2_129b\Docs\R2-2502586.zip) Data Transmission and Other General Aspects of Ambient IoT Qualcomm Incorporated
38. [R2-2502244](file:///C:\Users\panidx\OneDrive%20-%20InterDigital%20Communications,%20Inc\Documents\3GPP%20RAN\TSGR2_129b\Docs\R2-2502244.zip) A-IoT data transmission and other general aspects China Telecom
39. [R2-2501981](file:///C:\Users\panidx\OneDrive%20-%20InterDigital%20Communications,%20Inc\Documents\3GPP%20RAN\TSGR2_129b\Docs\R2-2501981.zip) Ambient IoT MAC PDU formats MediaTek Inc.
40. [R2-2502269](file:///C:\Users\panidx\OneDrive%20-%20InterDigital%20Communications,%20Inc\Documents\3GPP%20RAN\TSGR2_129b\Docs\R2-2502269.zip) A-IoT data transmission Huawei, HiSilicon
41. [R2-2502586](file:///C:\Users\panidx\OneDrive%20-%20InterDigital%20Communications,%20Inc\Documents\3GPP%20RAN\TSGR2_129b\Docs\R2-2502586.zip) Data Transmission and Other General Aspects of Ambient IoT Qualcomm Incorporated
42. [R2-2502303](file:///C:\Users\panidx\OneDrive%20-%20InterDigital%20Communications,%20Inc\Documents\3GPP%20RAN\TSGR2_129b\Docs\R2-2502303.zip) Data Transmission Aspects for A-IoT Ericsson
43. [R2-2502208](file:///C:\Users\panidx\OneDrive%20-%20InterDigital%20Communications,%20Inc\Documents\3GPP%20RAN\TSGR2_129b\Docs\R2-2502208.zip) Open issues for data transmission and MAC PDU design ZTE Corporation, Sanechips
44. [R2-2501830](file:///C:\Users\panidx\OneDrive%20-%20InterDigital%20Communications,%20Inc\Documents\3GPP%20RAN\TSGR2_129b\Docs\R2-2501830.zip) Discussion on Data Transmission for Ambient IoT HONOR
45. [R2-2501890](file:///C:\Users\panidx\OneDrive%20-%20InterDigital%20Communications,%20Inc\Documents\3GPP%20RAN\TSGR2_129b\Docs\R2-2501890.zip) Ambient-IoT Data transmission NEC
46. [R2-2502152](file:///C:\Users\panidx\OneDrive%20-%20InterDigital%20Communications,%20Inc\Documents\3GPP%20RAN\TSGR2_129b\Docs\R2-2502152.zip) AIoT data transmission aspects Nokia Denmark
47. [R2-2502175](file:///C:\Users\panidx\OneDrive%20-%20InterDigital%20Communications,%20Inc\Documents\3GPP%20RAN\TSGR2_129b\Docs\R2-2502175.zip) A-IoT MAC design for data transmission Apple
48. [R2-2502217](file:///C:\Users\panidx\OneDrive%20-%20InterDigital%20Communications,%20Inc\Documents\3GPP%20RAN\TSGR2_129b\Docs\R2-2502217.zip) Further discussions on A-IoT data transmission and other aspects Futurewei
49. [R2-2502343](file:///C:\Users\panidx\OneDrive%20-%20InterDigital%20Communications,%20Inc\Documents\3GPP%20RAN\TSGR2_129b\Docs\R2-2502343.zip) Discussion on AS ID Panasonic
50. [R2-2502431](file:///C:\Users\panidx\OneDrive%20-%20InterDigital%20Communications,%20Inc\Documents\3GPP%20RAN\TSGR2_129b\Docs\R2-2502431.zip) Discussion on A-IoT data transmission Spreadtrum, UNISOC
51. [R2-2502485](file:///C:\Users\panidx\OneDrive%20-%20InterDigital%20Communications,%20Inc\Documents\3GPP%20RAN\TSGR2_129b\Docs\R2-2502485.zip) Considerations on segmentation Sony
52. [R2-2502671](file:///C:\Users\panidx\OneDrive%20-%20InterDigital%20Communications,%20Inc\Documents\3GPP%20RAN\TSGR2_129b\Docs\R2-2502671.zip) Discussion on A-IoT data transmission LG Electronics Inc.
53. [R2-2502686](file:///C:\Users\panidx\OneDrive%20-%20InterDigital%20Communications,%20Inc\Documents\3GPP%20RAN\TSGR2_129b\Docs\R2-2502686.zip) Discussion on AIoT data transfer NTT DOCOMO, INC.
54. [R2-2502747](file:///C:\Users\panidx\OneDrive%20-%20InterDigital%20Communications,%20Inc\Documents\3GPP%20RAN\TSGR2_129b\Docs\R2-2502747.zip) Further consideration of A-IoT data transmission for Ambient IoT Kyocera
55. [R2-2502821](file:///C:\Users\panidx\OneDrive%20-%20InterDigital%20Communications,%20Inc\Documents\3GPP%20RAN\TSGR2_129b\Docs\R2-2502821.zip) Discussion on the assistance information from device ASUSTeK
56. [R2-2502960](file:///C:\Users\panidx\OneDrive%20-%20InterDigital%20Communications,%20Inc\Documents\3GPP%20RAN\TSGR2_129b\Docs\R2-2502960.zip) Discussion on A-IoT data segmentation and transmission III

RAN2 #130

1. [R2-2503321](file:///C:\Users\panidx\OneDrive%20-%20InterDigital%20Communications,%20Inc\Documents\3GPP%20RAN\TSGR2_130\Docs\R2-2503321.zip) LS on Ambient IoT further progress of RAN3 (R3-252481; contact: Huawei) RAN3 LS in To:SA2, SA5 Cc:RAN2
2. [R2-2503337](file:///C:\Users\panidx\OneDrive%20-%20InterDigital%20Communications,%20Inc\Documents\3GPP%20RAN\TSGR2_130\Docs\R2-2503337.zip) LS on the removal of service type information (S2-2504294; contact: InterDigital) SA2 LS in AmbientIoT-ARC To:RAN2, RAN3 Cc:RAN1
3. [R2-2503338](file:///C:\Users\panidx\OneDrive%20-%20InterDigital%20Communications,%20Inc\Documents\3GPP%20RAN\TSGR2_130\Docs\R2-2503338.zip) LS on AIoT device identifier length (S2-2504296; contact: Huawei) SA2 LS in AmbientIoT-ARC To:CT4 Cc:CT1, RAN2, RAN3, SA3
4. [R2-2503997](file:///C:\Users\panidx\OneDrive%20-%20InterDigital%20Communications,%20Inc\Documents\3GPP%20RAN\TSGR2_130\Docs\R2-2503997.zip) A-IoT MAC running CR Huawei, HiSilicon draft TS 38.391 0.0.2
5. [R2-2504398](file:///C:\Users\panidx\OneDrive%20-%20InterDigital%20Communications,%20Inc\Documents\3GPP%20RAN\TSGR2_130\Docs\R2-2504398.zip) 38.300 running CR for Ambient IoT CMCC draftCR 38.300 18.5.0 B
6. [R2-2503998](file:///C:\Users\panidx\OneDrive%20-%20InterDigital%20Communications,%20Inc\Documents\3GPP%20RAN\TSGR2_130\Docs\R2-2503998.zip) Remaining A-IoT MAC open issues Huawei, HiSilicon report
7. [R2-2504112](file:///C:\Users\panidx\OneDrive%20-%20InterDigital%20Communications,%20Inc\Documents\3GPP%20RAN\TSGR2_130\Docs\R2-2504112.zip) Details of option A for overall A-IoT MAC procedure (Issue 1-1) ZTE Corporation, Sanechips, Continental Automotive, Tejas Networks, Nokia, Ofinno, Samsung, Fujitsu, Kyocera, Sony, ETRI, III, Ericsson, Nordic Semiconductor ASA
8. [R2-2503480](file:///C:\Users\panidx\OneDrive%20-%20InterDigital%20Communications,%20Inc\Documents\3GPP%20RAN\TSGR2_130\Docs\R2-2503480.zip) Device behavior for parallel service requests (Joint paper: Option B - no further standard effort, issue 1-1) Xiaomi, Huawei, CMCC, Spreadtrum, CATT, Apple, China Telecom, Transsion Holdings, vivo, InterDigital, Philips International B.V., Qualcomm Incorporated, NTT DOCOMO, INC.
9. [R2-2504899](file:///C:\Users\panidx\OneDrive%20-%20InterDigital%20Communications,%20Inc\Documents\3GPP%20RAN\TSGR2_130\Docs\R2-2504899.zip) [DRAFT] LS on parallel service request Xiaomi LS out To:RAN3
10. [R2-2503419](file:///C:\Users\panidx\OneDrive%20-%20InterDigital%20Communications,%20Inc\Documents\3GPP%20RAN\TSGR2_130\Docs\R2-2503419.zip) Discussion on Paging for Ambient IoT CATT
11. [R2-2503990](file:///C:\Users\panidx\OneDrive%20-%20InterDigital%20Communications,%20Inc\Documents\3GPP%20RAN\TSGR2_130\Docs\R2-2503990.zip) A-IoT paging Huawei, HiSilicon
12. [R2-2503370](file:///C:\Users\panidx\OneDrive%20-%20InterDigital%20Communications,%20Inc\Documents\3GPP%20RAN\TSGR2_130\Docs\R2-2503370.zip) Discussion on A-IoT Paging LG Electronics Inc.
13. [R2-2504215](file:///C:\Users\panidx\OneDrive%20-%20InterDigital%20Communications,%20Inc\Documents\3GPP%20RAN\TSGR2_130\Docs\R2-2504215.zip) Ambient IoT paging message format MediaTek Inc.
14. [R2-2503481](file:///C:\Users\panidx\OneDrive%20-%20InterDigital%20Communications,%20Inc\Documents\3GPP%20RAN\TSGR2_130\Docs\R2-2503481.zip) Remaining open issues on A-IOT paging procedure Xiaomi
15. [R2-2504396](file:///C:\Users\panidx\OneDrive%20-%20InterDigital%20Communications,%20Inc\Documents\3GPP%20RAN\TSGR2_130\Docs\R2-2504396.zip) Discussion on A-IoT paging CMCC
16. [R2-2504426](file:///C:\Users\panidx\OneDrive%20-%20InterDigital%20Communications,%20Inc\Documents\3GPP%20RAN\TSGR2_130\Docs\R2-2504426.zip) Discussion on DL messages for Ambient IoT UEs Ericsson
17. [R2-2504150](file:///C:\Users\panidx\OneDrive%20-%20InterDigital%20Communications,%20Inc\Documents\3GPP%20RAN\TSGR2_130\Docs\R2-2504150.zip) Paging Aspects for Ambient IOT InterDigital
18. [R2-2503720](file:///C:\Users\panidx\OneDrive%20-%20InterDigital%20Communications,%20Inc\Documents\3GPP%20RAN\TSGR2_130\Docs\R2-2503720.zip) Discussion on Ambient IoT Paging Apple
19. Proposal 7 4-6 bit “Transaction ID” is used for Paging message.
20. [R2-2503404](file:///C:\Users\panidx\OneDrive%20-%20InterDigital%20Communications,%20Inc\Documents\3GPP%20RAN\TSGR2_130\Docs\R2-2503404.zip) Discussion on AIoT Paging vivo
21. [R2-2504573](file:///C:\Users\panidx\OneDrive%20-%20InterDigital%20Communications,%20Inc\Documents\3GPP%20RAN\TSGR2_130\Docs\R2-2504573.zip) Discussion on paging procedure for Ambient IoT OPPO
22. [R2-2504638](file:///C:\Users\panidx\OneDrive%20-%20InterDigital%20Communications,%20Inc\Documents\3GPP%20RAN\TSGR2_130\Docs\R2-2504638.zip) Open issues for A-IoT paging ZTE Corporation, Sanechips
23. [R2-2503343](file:///C:\Users\panidx\OneDrive%20-%20InterDigital%20Communications,%20Inc\Documents\3GPP%20RAN\TSGR2_130\Docs\R2-2503343.zip) Open issues on A-IoT paging Futurewei
24. [R2-2503419](file:///C:\Users\panidx\OneDrive%20-%20InterDigital%20Communications,%20Inc\Documents\3GPP%20RAN\TSGR2_130\Docs\R2-2503419.zip) Discussion on Paging for Ambient IoT CATT
25. [R2-2503489](file:///C:\Users\panidx\OneDrive%20-%20InterDigital%20Communications,%20Inc\Documents\3GPP%20RAN\TSGR2_130\Docs\R2-2503489.zip) AIoT paging aspects Nokia
26. [R2-2503518](file:///C:\Users\panidx\OneDrive%20-%20InterDigital%20Communications,%20Inc\Documents\3GPP%20RAN\TSGR2_130\Docs\R2-2503518.zip) Discussion on issues 1-1 and 1-3 Ofinno
27. [R2-2503550](file:///C:\Users\panidx\OneDrive%20-%20InterDigital%20Communications,%20Inc\Documents\3GPP%20RAN\TSGR2_130\Docs\R2-2503550.zip) Discussions on AIoT paging Fujitsu
28. [R2-2503610](file:///C:\Users\panidx\OneDrive%20-%20InterDigital%20Communications,%20Inc\Documents\3GPP%20RAN\TSGR2_130\Docs\R2-2503610.zip) Ambient-IoT Paging NEC
29. [R2-2503641](file:///C:\Users\panidx\OneDrive%20-%20InterDigital%20Communications,%20Inc\Documents\3GPP%20RAN\TSGR2_130\Docs\R2-2503641.zip) On remaining issues on A-IoT Paging NTT DOCOMO, INC.
30. [R2-2503789](file:///C:\Users\panidx\OneDrive%20-%20InterDigital%20Communications,%20Inc\Documents\3GPP%20RAN\TSGR2_130\Docs\R2-2503789.zip) Discussion on Paging Procedure for Ambient IoT China Telecom
31. [R2-2503864](file:///C:\Users\panidx\OneDrive%20-%20InterDigital%20Communications,%20Inc\Documents\3GPP%20RAN\TSGR2_130\Docs\R2-2503864.zip) Discussion on A-IoT paging Panasonic
32. [R2-2503871](file:///C:\Users\panidx\OneDrive%20-%20InterDigital%20Communications,%20Inc\Documents\3GPP%20RAN\TSGR2_130\Docs\R2-2503871.zip) Discussion on A-IoT paging message format Tejas Network Limited
33. [R2-2503903](file:///C:\Users\panidx\OneDrive%20-%20InterDigital%20Communications,%20Inc\Documents\3GPP%20RAN\TSGR2_130\Docs\R2-2503903.zip) Discussion on paging procedure for Ambient IoT Lenovo
34. [R2-2503963](file:///C:\Users\panidx\OneDrive%20-%20InterDigital%20Communications,%20Inc\Documents\3GPP%20RAN\TSGR2_130\Docs\R2-2503963.zip) Discussion on A-IoT paging Spreadtrum, UNISOC
35. [R2-2504042](file:///C:\Users\panidx\OneDrive%20-%20InterDigital%20Communications,%20Inc\Documents\3GPP%20RAN\TSGR2_130\Docs\R2-2504042.zip) Discussion on Paging for A-IoT Transsion Holdings
36. [R2-2504052](file:///C:\Users\panidx\OneDrive%20-%20InterDigital%20Communications,%20Inc\Documents\3GPP%20RAN\TSGR2_130\Docs\R2-2504052.zip) Considerations on paging for Ambient IoT Sony
37. [R2-2504177](file:///C:\Users\panidx\OneDrive%20-%20InterDigital%20Communications,%20Inc\Documents\3GPP%20RAN\TSGR2_130\Docs\R2-2504177.zip) AIoT Paging: Handling a New Service Request Philips International B.V.
38. [R2-2504261](file:///C:\Users\panidx\OneDrive%20-%20InterDigital%20Communications,%20Inc\Documents\3GPP%20RAN\TSGR2_130\Docs\R2-2504261.zip) Remaining aspects of Ambient IoT Paging Qualcomm Incorporated
39. [R2-2504348](file:///C:\Users\panidx\OneDrive%20-%20InterDigital%20Communications,%20Inc\Documents\3GPP%20RAN\TSGR2_130\Docs\R2-2504348.zip) Discussion on A-IoT paging Fraunhofer HHI, Fraunhofer IIS
40. [R2-2504407](file:///C:\Users\panidx\OneDrive%20-%20InterDigital%20Communications,%20Inc\Documents\3GPP%20RAN\TSGR2_130\Docs\R2-2504407.zip) Discussion on A-IoT paging KT Corp.
41. [R2-2504465](file:///C:\Users\panidx\OneDrive%20-%20InterDigital%20Communications,%20Inc\Documents\3GPP%20RAN\TSGR2_130\Docs\R2-2504465.zip) Discussion on A-IoT paging HONOR
42. [R2-2504489](file:///C:\Users\panidx\OneDrive%20-%20InterDigital%20Communications,%20Inc\Documents\3GPP%20RAN\TSGR2_130\Docs\R2-2504489.zip) Discussion on Ambient IoT paging message design ASUSTeK
43. [R2-2504532](file:///C:\Users\panidx\OneDrive%20-%20InterDigital%20Communications,%20Inc\Documents\3GPP%20RAN\TSGR2_130\Docs\R2-2504532.zip) Discussion on A-IoT paging ITL
44. [R2-2504543](file:///C:\Users\panidx\OneDrive%20-%20InterDigital%20Communications,%20Inc\Documents\3GPP%20RAN\TSGR2_130\Docs\R2-2504543.zip) Discussions on AIoT paging Samsung
45. [R2-2504572](file:///C:\Users\panidx\OneDrive%20-%20InterDigital%20Communications,%20Inc\Documents\3GPP%20RAN\TSGR2_130\Docs\R2-2504572.zip) Discussion on paging procedure for Ambient-IoT III
46. [R2-2504580](file:///C:\Users\panidx\OneDrive%20-%20InterDigital%20Communications,%20Inc\Documents\3GPP%20RAN\TSGR2_130\Docs\R2-2504580.zip) A-IoT Paging CEWiT
47. [R2-2503952](file:///C:\Users\panidx\OneDrive%20-%20InterDigital%20Communications,%20Inc\Documents\3GPP%20RAN\TSGR2_130\Docs\R2-2503952.zip) A-IoT random access procedure Huawei, HiSilicon
48. [R2-2503551](file:///C:\Users\panidx\OneDrive%20-%20InterDigital%20Communications,%20Inc\Documents\3GPP%20RAN\TSGR2_130\Docs\R2-2503551.zip) Discussions on AIoT Random Access Fujitsu
49. [R2-2503482](file:///C:\Users\panidx\OneDrive%20-%20InterDigital%20Communications,%20Inc\Documents\3GPP%20RAN\TSGR2_130\Docs\R2-2503482.zip) Remaining open issues on access procedure for A-IOT Xiaomi
50. [R2-2504372](file:///C:\Users\panidx\OneDrive%20-%20InterDigital%20Communications,%20Inc\Documents\3GPP%20RAN\TSGR2_130\Docs\R2-2504372.zip) Further consideration on A-IoT random access CMCC
51. [R2-2503969](file:///C:\Users\panidx\OneDrive%20-%20InterDigital%20Communications,%20Inc\Documents\3GPP%20RAN\TSGR2_130\Docs\R2-2503969.zip) Open issues for A-IoT random access ZTE Corporation, Sanechips
52. [R2-2503344](file:///C:\Users\panidx\OneDrive%20-%20InterDigital%20Communications,%20Inc\Documents\3GPP%20RAN\TSGR2_130\Docs\R2-2503344.zip) Open issues on A-IoT random access Futurewei
53. [R2-2504536](file:///C:\Users\panidx\OneDrive%20-%20InterDigital%20Communications,%20Inc\Documents\3GPP%20RAN\TSGR2_130\Docs\R2-2504536.zip) Discussion on A-IoT random access Samsung
54. [R2-2503420](file:///C:\Users\panidx\OneDrive%20-%20InterDigital%20Communications,%20Inc\Documents\3GPP%20RAN\TSGR2_130\Docs\R2-2503420.zip) Discussion on the Random Access for A-IoT CATT
55. [R2-2503642](file:///C:\Users\panidx\OneDrive%20-%20InterDigital%20Communications,%20Inc\Documents\3GPP%20RAN\TSGR2_130\Docs\R2-2503642.zip) On remaining issues on A-IoT Random Access NTT DOCOMO, INC. discussion
56. [R2-2504151](file:///C:\Users\panidx\OneDrive%20-%20InterDigital%20Communications,%20Inc\Documents\3GPP%20RAN\TSGR2_130\Docs\R2-2504151.zip) Random Access Procedure for Ambient IOT InterDigital
57. [R2-2503969](file:///C:\Users\panidx\OneDrive%20-%20InterDigital%20Communications,%20Inc\Documents\3GPP%20RAN\TSGR2_130\Docs\R2-2503969.zip) Open issues for A-IoT random access ZTE Corporation, Sanechips
58. [R2-2504895](file:///C:\Users\panidx\OneDrive%20-%20InterDigital%20Communications,%20Inc\Documents\3GPP%20RAN\TSGR2_130\Docs\R2-2504895.zip) Summary of Offline 030 – RA (InterDigital) InterDigital
59. [R2-2503420](file:///C:\Users\panidx\OneDrive%20-%20InterDigital%20Communications,%20Inc\Documents\3GPP%20RAN\TSGR2_130\Docs\R2-2503420.zip) Discussion on the Random Access for A-IoT CATT
60. [R2-2504159](file:///C:\Users\panidx\OneDrive%20-%20InterDigital%20Communications,%20Inc\Documents\3GPP%20RAN\TSGR2_130\Docs\R2-2504159.zip) Discussion on UL multiple access Ericsson
61. [R2-2503952](file:///C:\Users\panidx\OneDrive%20-%20InterDigital%20Communications,%20Inc\Documents\3GPP%20RAN\TSGR2_130\Docs\R2-2503952.zip) A-IoT random access procedure Huawei, HiSilicon
62. [R2-2504159](file:///C:\Users\panidx\OneDrive%20-%20InterDigital%20Communications,%20Inc\Documents\3GPP%20RAN\TSGR2_130\Docs\R2-2504159.zip) Discussion on UL multiple access Ericsson
63. [R2-2504151](file:///C:\Users\panidx\OneDrive%20-%20InterDigital%20Communications,%20Inc\Documents\3GPP%20RAN\TSGR2_130\Docs\R2-2504151.zip) Random Access Procedure for Ambient IOT InterDigital
64. [R2-2504221](file:///C:\Users\panidx\OneDrive%20-%20InterDigital%20Communications,%20Inc\Documents\3GPP%20RAN\TSGR2_130\Docs\R2-2504221.zip) Views on Random Access Aspects of Ambient IoT Qualcomm Incorporated
65. [R2-2503721](file:///C:\Users\panidx\OneDrive%20-%20InterDigital%20Communications,%20Inc\Documents\3GPP%20RAN\TSGR2_130\Docs\R2-2503721.zip) Discussion on Random Access for Ambient IoT Apple
66. [R2-2503405](file:///C:\Users\panidx\OneDrive%20-%20InterDigital%20Communications,%20Inc\Documents\3GPP%20RAN\TSGR2_130\Docs\R2-2503405.zip) Random Access Procedure for AIoT Device vivo
67. [R2-2503519](file:///C:\Users\panidx\OneDrive%20-%20InterDigital%20Communications,%20Inc\Documents\3GPP%20RAN\TSGR2_130\Docs\R2-2503519.zip) Discussion of issues 2-4, 2-6, 2-11, 1-4 and a new issue Ofinno
68. [R2-2503527](file:///C:\Users\panidx\OneDrive%20-%20InterDigital%20Communications,%20Inc\Documents\3GPP%20RAN\TSGR2_130\Docs\R2-2503527.zip) Discussion on random access aspects of Ambient IoT KT Corp.
69. [R2-2503664](file:///C:\Users\panidx\OneDrive%20-%20InterDigital%20Communications,%20Inc\Documents\3GPP%20RAN\TSGR2_130\Docs\R2-2503664.zip) Further discussions on A-IoT random access China Telecom
70. [R2-2503751](file:///C:\Users\panidx\OneDrive%20-%20InterDigital%20Communications,%20Inc\Documents\3GPP%20RAN\TSGR2_130\Docs\R2-2503751.zip) Discussion on random access for A-IoT OPPO
71. [R2-2503825](file:///C:\Users\panidx\OneDrive%20-%20InterDigital%20Communications,%20Inc\Documents\3GPP%20RAN\TSGR2_130\Docs\R2-2503825.zip) Open issues on random access for Ambient IoT devices NEC Corporation
72. [R2-2503863](file:///C:\Users\panidx\OneDrive%20-%20InterDigital%20Communications,%20Inc\Documents\3GPP%20RAN\TSGR2_130\Docs\R2-2503863.zip) Open issues on random access for AIoT Nokia
73. [R2-2503868](file:///C:\Users\panidx\OneDrive%20-%20InterDigital%20Communications,%20Inc\Documents\3GPP%20RAN\TSGR2_130\Docs\R2-2503868.zip) Discussion on Msg1 transmission for random access ETRI
74. [R2-2503879](file:///C:\Users\panidx\OneDrive%20-%20InterDigital%20Communications,%20Inc\Documents\3GPP%20RAN\TSGR2_130\Docs\R2-2503879.zip) Discussion on A-IoT message format for CBRA and CFRA Tejas Network Limited
75. [R2-2503890](file:///C:\Users\panidx\OneDrive%20-%20InterDigital%20Communications,%20Inc\Documents\3GPP%20RAN\TSGR2_130\Docs\R2-2503890.zip) Discussion on A-IoT random access procedure Panasonic
76. [R2-2503904](file:///C:\Users\panidx\OneDrive%20-%20InterDigital%20Communications,%20Inc\Documents\3GPP%20RAN\TSGR2_130\Docs\R2-2503904.zip) Discussion on random access for Ambient IoT Lenovo
77. [R2-2503960](file:///C:\Users\panidx\OneDrive%20-%20InterDigital%20Communications,%20Inc\Documents\3GPP%20RAN\TSGR2_130\Docs\R2-2503960.zip) Discussion on A-IoT random access Spreadtrum, UNISOC
78. [R2-2504062](file:///C:\Users\panidx\OneDrive%20-%20InterDigital%20Communications,%20Inc\Documents\3GPP%20RAN\TSGR2_130\Docs\R2-2504062.zip) Considerations on RACH msg 2 configuration Sony
79. [R2-2504454](file:///C:\Users\panidx\OneDrive%20-%20InterDigital%20Communications,%20Inc\Documents\3GPP%20RAN\TSGR2_130\Docs\R2-2504454.zip) Discussion on random access aspects for Ambient IoT LG Electronics Inc.
80. [R2-2504466](file:///C:\Users\panidx\OneDrive%20-%20InterDigital%20Communications,%20Inc\Documents\3GPP%20RAN\TSGR2_130\Docs\R2-2504466.zip) Discussion on A-IoT random access HONOR
81. [R2-2504490](file:///C:\Users\panidx\OneDrive%20-%20InterDigital%20Communications,%20Inc\Documents\3GPP%20RAN\TSGR2_130\Docs\R2-2504490.zip) Discussion on Ambient IoT random access ASUSTeK
82. [R2-2504581](file:///C:\Users\panidx\OneDrive%20-%20InterDigital%20Communications,%20Inc\Documents\3GPP%20RAN\TSGR2_130\Docs\R2-2504581.zip) A-IoT Random Access CEWiT
83. [R2-2504222](file:///C:\Users\panidx\OneDrive%20-%20InterDigital%20Communications,%20Inc\Documents\3GPP%20RAN\TSGR2_130\Docs\R2-2504222.zip) Data Transmission and Other General Aspects of Ambient IoT Qualcomm Incorporated
84. [R2-2504439](file:///C:\Users\panidx\OneDrive%20-%20InterDigital%20Communications,%20Inc\Documents\3GPP%20RAN\TSGR2_130\Docs\R2-2504439.zip) Discussion on data transmission for A-IoT CMCC
85. [R2-2503601](file:///C:\Users\panidx\OneDrive%20-%20InterDigital%20Communications,%20Inc\Documents\3GPP%20RAN\TSGR2_130\Docs\R2-2503601.zip) A-IoT Data Transmission Ericsson
86. [R2-2503406](file:///C:\Users\panidx\OneDrive%20-%20InterDigital%20Communications,%20Inc\Documents\3GPP%20RAN\TSGR2_130\Docs\R2-2503406.zip) AIoT Data Transmission vivo
87. [R2-2503991](file:///C:\Users\panidx\OneDrive%20-%20InterDigital%20Communications,%20Inc\Documents\3GPP%20RAN\TSGR2_130\Docs\R2-2503991.zip) A-IoT data transmission Huawei, HiSilicon
88. [R2-2503421](file:///C:\Users\panidx\OneDrive%20-%20InterDigital%20Communications,%20Inc\Documents\3GPP%20RAN\TSGR2_130\Docs\R2-2503421.zip) Discussion on the A-IoT Data Transmission CATT
89. [R2-2504222](file:///C:\Users\panidx\OneDrive%20-%20InterDigital%20Communications,%20Inc\Documents\3GPP%20RAN\TSGR2_130\Docs\R2-2504222.zip) Data Transmission and Other General Aspects of Ambient IoT Qualcomm Incorporated
90. [R2-2504544](file:///C:\Users\panidx\OneDrive%20-%20InterDigital%20Communications,%20Inc\Documents\3GPP%20RAN\TSGR2_130\Docs\R2-2504544.zip) Discussion on A-IoT data transmission Samsung
91. [R2-2503601](file:///C:\Users\panidx\OneDrive%20-%20InterDigital%20Communications,%20Inc\Documents\3GPP%20RAN\TSGR2_130\Docs\R2-2503601.zip) A-IoT Data Transmission Ericsson
92. [R2-2504467](file:///C:\Users\panidx\OneDrive%20-%20InterDigital%20Communications,%20Inc\Documents\3GPP%20RAN\TSGR2_130\Docs\R2-2504467.zip) Discussion on Data Transmission for Ambient IoT HONOR
93. [R2-2503483](file:///C:\Users\panidx\OneDrive%20-%20InterDigital%20Communications,%20Inc\Documents\3GPP%20RAN\TSGR2_130\Docs\R2-2503483.zip) Remaining open issues on Data transmission Xiaomi
94. [R2-2503704](file:///C:\Users\panidx\OneDrive%20-%20InterDigital%20Communications,%20Inc\Documents\3GPP%20RAN\TSGR2_130\Docs\R2-2503704.zip) Remaining issues in data transmission Apple
95. [R2-2503991](file:///C:\Users\panidx\OneDrive%20-%20InterDigital%20Communications,%20Inc\Documents\3GPP%20RAN\TSGR2_130\Docs\R2-2503991.zip) A-IoT data transmission Huawei, HiSilicon
96. [R2-2503980](file:///C:\Users\panidx\OneDrive%20-%20InterDigital%20Communications,%20Inc\Documents\3GPP%20RAN\TSGR2_130\Docs\R2-2503980.zip) Discussion on A-IoT data transmission and other general aspects Lenovo
97. [R2-2503406](file:///C:\Users\panidx\OneDrive%20-%20InterDigital%20Communications,%20Inc\Documents\3GPP%20RAN\TSGR2_130\Docs\R2-2503406.zip) AIoT Data Transmission vivo
98. [R2-2503750](file:///C:\Users\panidx\OneDrive%20-%20InterDigital%20Communications,%20Inc\Documents\3GPP%20RAN\TSGR2_130\Docs\R2-2503750.zip) Discussion on AIoT data transmission related functionalities OPPO
99. [R2-2503345](file:///C:\Users\panidx\OneDrive%20-%20InterDigital%20Communications,%20Inc\Documents\3GPP%20RAN\TSGR2_130\Docs\R2-2503345.zip) Open issues on A-IoT data transmission and other aspects Futurewei
100. [R2-2503520](file:///C:\Users\panidx\OneDrive%20-%20InterDigital%20Communications,%20Inc\Documents\3GPP%20RAN\TSGR2_130\Docs\R2-2503520.zip) Discussion of new issue: success/failure of D2R message(s) Ofinno
101. [R2-2503552](file:///C:\Users\panidx\OneDrive%20-%20InterDigital%20Communications,%20Inc\Documents\3GPP%20RAN\TSGR2_130\Docs\R2-2503552.zip) Discussions on Data Transmission and Other General Aspects Fujitsu
102. [R2-2503643](file:///C:\Users\panidx\OneDrive%20-%20InterDigital%20Communications,%20Inc\Documents\3GPP%20RAN\TSGR2_130\Docs\R2-2503643.zip) On remaining issues on A-IoT Data Transmission NTT DOCOMO, INC.
103. [R2-2503665](file:///C:\Users\panidx\OneDrive%20-%20InterDigital%20Communications,%20Inc\Documents\3GPP%20RAN\TSGR2_130\Docs\R2-2503665.zip) A-IoT data transmission China Telecom
104. [R2-2503779](file:///C:\Users\panidx\OneDrive%20-%20InterDigital%20Communications,%20Inc\Documents\3GPP%20RAN\TSGR2_130\Docs\R2-2503779.zip) Ambient-IoT Data transmission NEC
105. [R2-2503870](file:///C:\Users\panidx\OneDrive%20-%20InterDigital%20Communications,%20Inc\Documents\3GPP%20RAN\TSGR2_130\Docs\R2-2503870.zip) Discussion on addressing issue for AS ID assignment and segment retransmission Panasonic
106. [R2-2503886](file:///C:\Users\panidx\OneDrive%20-%20InterDigital%20Communications,%20Inc\Documents\3GPP%20RAN\TSGR2_130\Docs\R2-2503886.zip) AIoT data transmission aspects Nokia
107. [R2-2503961](file:///C:\Users\panidx\OneDrive%20-%20InterDigital%20Communications,%20Inc\Documents\3GPP%20RAN\TSGR2_130\Docs\R2-2503961.zip) Discussion on A-IoT data transmission Spreadtrum, UNISOC
108. [R2-2503970](file:///C:\Users\panidx\OneDrive%20-%20InterDigital%20Communications,%20Inc\Documents\3GPP%20RAN\TSGR2_130\Docs\R2-2503970.zip) Open issues for data transmission and MAC formats ZTE Corporation, Sanechips
109. [R2-2504053](file:///C:\Users\panidx\OneDrive%20-%20InterDigital%20Communications,%20Inc\Documents\3GPP%20RAN\TSGR2_130\Docs\R2-2504053.zip) Considerations on segmentation Sony
110. [R2-2504152](file:///C:\Users\panidx\OneDrive%20-%20InterDigital%20Communications,%20Inc\Documents\3GPP%20RAN\TSGR2_130\Docs\R2-2504152.zip) Remaining Aspects on Data Transmission InterDigital
111. [R2-2504216](file:///C:\Users\panidx\OneDrive%20-%20InterDigital%20Communications,%20Inc\Documents\3GPP%20RAN\TSGR2_130\Docs\R2-2504216.zip) Ambient IoT MAC PDU formats Mediatek Inc.
112. [R2-2504491](file:///C:\Users\panidx\OneDrive%20-%20InterDigital%20Communications,%20Inc\Documents\3GPP%20RAN\TSGR2_130\Docs\R2-2504491.zip) Discussion on the assistance information from device ASUSTeK
113. [R2-2504503](file:///C:\Users\panidx\OneDrive%20-%20InterDigital%20Communications,%20Inc\Documents\3GPP%20RAN\TSGR2_130\Docs\R2-2504503.zip) Discussion on A-IoT data transmission LG Electronics Inc.
114. [R2-2504577](file:///C:\Users\panidx\OneDrive%20-%20InterDigital%20Communications,%20Inc\Documents\3GPP%20RAN\TSGR2_130\Docs\R2-2504577.zip) Discussion on A-IoT data segmentation and transmission III

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1. R3-251526 Reply to LS on A-IoT Conclusions in SA WG2 SA5(China Unicom)
2. R3-251563 (BL CR to 38.300) Introduction of Ambient IoT CMCC, Huawei
3. R3-251564 (BL CR to 38.410) Introduction of Ambient IoT ZTE Corporation, China Telecom, Huawei, Samsung, CMCC, Nokia, Xiaomi
4. R3-251565 Introduction of Ambient IoT Huawei
5. R3-251585 Architecture, Protocols and Signaling to support Topology 1 of A-IoT Qualcomm Incorporated
6. R3-251586 Inventory and Command procedures for Topology 1 of A-IoT Qualcomm Incorporated
7. R3-251587 Locating Ambient IoT devices Qualcomm Incorporated
8. R3-251603 (TPs to TS 38.300 38.413 BL CRs) Architecture aspects and interface management procedures Huawei
9. R3-251604 (TPs to TS 38.413 38.410 BL CRs) Support of Inventory Huawei
10. R3-251605 (TPs to TS 38.413 38.410 BL CRs) Support of Command Huawei
11. R3-251606 (TPs to TS 38.300 38.413 BL CRs) Support of Device Locating Huawei
12. R3-251660 Conclusion on Ambient IoT Architecture Nokia
13. R3-251661 [TP for BL CR AIoT for TS 38.413] Additions for AIoT protocol Nokia
14. R3-251662 Signalling Information Elements for Inventory Nokia
15. R3-251663 Signalling Information Elements for Command Nokia
16. R3-251687 Discussion on AIoT architecture aspects NEC
17. R3-251688 Discussion on AIoT procedures aspects NEC
18. R3-251689 Discussion on AIoT location reporting aspects NEC
19. R3-251715 (TP to BL CR for TS38.300) A-IoT protocol stack CATT
20. R3-251716 (TP to BL CR for TS38.413) A-IoT inventory and command procedures CATT
21. R3-251717 Discussion on A-IoT reader selection CATT
22. R3-251718 Discussion on locating of A-IoT device CATT
23. R3-251762 Discussion on support of AIoT Xiaomi
24. R3-251763 (TP for TS 38.413) Support of AIoT Xiaomi
25. R3-251765 Discussion on location of the device Xiaomi
26. R3-251791 (TP for TS 38.412) Support of Ambient IoT Xiaomi, Huawei, CMCC
27. R3-251813 Discussion on RAN architecture and procedures for AIoT Samsung
28. R3-251814 Discussion on Location report for AIoT Samsung
29. R3-251949 On A-IOT Inventory Procedure Lenovo
30. R3-251950 On A-IOT Command Procedure Lenovo
31. R3-252056 [TP for BL CR 38.401 and 38.300] Multiplexing several A-IoT service operations concerning multiple A-IoT devices on NG-C and other architectural topics Ericsson
32. R3-252057 [TP for BL CR 38.413] Applicability of NG Interface management procedures for A-IoT Ericsson
33. R3-252058 [TP for BL CR 38.300] AIoT service area indication Ericsson
34. R3-252059 [TP for BL CR 38.413 and 38.300 and 38.410] Introducing A-IoT protocol functions in NGAP Ericsson
35. R3-252116 Ambient IoT support Jio Platforms Ltd (JPL)
36. R3-252165 Signalling Procedure for Inventory and Command China Telecom
37. R3-252183 (TP to TS 38.300) Discussion on RAN Architecture for Ambient IoT CMCC
38. R3-252184 Discussion on Inventory Procedure and Signaling CMCC
39. R3-252185 Discussion on Command Procedure and Signalling CMCC
40. R3-252186 (TP to TS 38.300) Discussion on A-IoT device location reporting CMCC
41. R3-252241 (TP for BL CR to 38.300, 38.413, 38.410) Leftover issues on AIoT ZTE Corporation, China Telecom
42. R3-252242 (TP for BL CR 38.413) New AIoT procedures ZTE Corporation, China Telecom
43. R3-252243 (TP to BL CR 38.300, 38.410) New Ambient IoT procedures ZTE Corporation, China Telecom
44. R3-252244 TP to (BL CR to 38.300) Location AIoT device ZTE Corporation, China Telecom
45. R3-252248 Discussion on support of location report LG Electronics
46. R3-252292 (BL CR to 38.413) Introduction of Ambient IoT Huawei
47. R3-252293 (BL CR to 38.300) Introduction of Ambient IoT CMCC, Huawei
48. R3-252294 (BL CR to 38.410) Introduction of Ambient IoT ZTE Corporation, China Telecom, Huawei, Samsung, CMCC, Nokia, Xiaomi
49. R3-252297 CB:\_AIoT1\_Procedures Huawei
50. R3-252328 (TP to TS 38.300 BL CR) Architecture aspects CMCC, Huawei, Nokia, NEC
51. R3-252329 (TP to TS 38.300 BL CR) Update of Inventory and Command call flows Nokia
52. R3-252330 (TP to BL CR for TS38.300) A-IoT protocol stack CATT
53. R3-252331 (TP to TS 38.300 BL CR) Device Locating support ZTE Corporation, China Telecom, Nokia, Huawei, CATT
54. R3-252332 (TP to TS 38.401 BL CR) Device Association aspects Lenovo, Huawei
55. R3-252334 (TP to TS 38.412 BL CR) SCTP association Xiaomi, Huawei, CMCC
56. R3-252335 (TP to TS 38.413 BL CR) Updates of the Inventory and command Huawei, ZTE Corporation
57. R3-252336 (TP to TS 38.413 BL CR) Interface management Ericsson, Nokia, Huawei, CATT, ZTE Corporation
58. R3-252338 [Draft] LS on RAN3 Ambient IoT progress RAN3(Huawei)
59. R3-252459 (TP for BL CR AiOT for TS 38.300) Update of inventory and command Nokia, Huawei, CMCC, NEC
60. R3-252477 (TP to TS 38.300 BL CR) Device Locating support ZTE Corporation, China Telecom, Nokia, Huawei, CATT
61. R3-252478 (TP to TS 38.401 BL CR) Device Association aspects Lenovo, Huawei
62. R3-252479 (TP to TS 38.412 BL CR) SCTP association Xiaomi, Huawei, CMCC
63. R3-252480 (TP to TS 38.413 BL CR) Updates of the Inventory and command Huawei, ZTE Corporation
64. R3-252481 LS on Ambient IoT further progress of RAN3 RAN3(Huawei)
65. R3-252493 (BL CR to 38.300) Introduction of Ambient IoT CMCC, Huawei, Nokia
66. R3-252494 (BL CR to 38.401) Introduction of Ambient IoT Ericsson, Huawei, Nokia
67. R3-252495 (BL CR to 38.412) Introduction of Ambient IoT Xiaomi, Huawei, Nokia
68. R3-252496 (BL CR to 38.413) Introduction of Ambient IoT Huawei, Nokia

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1. R3-253015 LS Reply on Ambient IoT progress of RAN3 SA2(NEC)
2. R3-253016 LS on the removal of service type information SA2(Interdigital)
3. R3-253017 LS on AIoT device identifier length SA2(Huawei)
4. R3-253022 Reply LS on Ambient IoT progress of RAN3 SA5(Huawei)
5. R3-253029 LS on paging ID length RAN2(CATT)
6. R3-253030 LS on byte-alignment of upper layer data SDU RAN2(vivo)
7. R3-253031 LS on D2R message size for inventory response RAN2(Interdigital)
8. R3-253096 (BL CR to 38.300) Introduction of Ambient IoT CMCC, Huawei, Nokia
9. R3-253097 (BL CR to 38.401) Introduction of Ambient IoT Ericsson, Huawei, Nokia
10. R3-253098 (BL CR to 38.410) Introduction of Ambient IoT ZTE Corporation, China Telecom, Huawei, Samsung, CMCC, Nokia, Xiaomi
11. R3-253099 (BL CR to 38.412) Introduction of Ambient IoT Xiaomi, Huawei, Nokia
12. R3-253100 (BL CR to 38.413) Introduction of Ambient IoT Huawei, Nokia
13. R3-253139 Interface management procedures for A-IoT Qualcomm Incorporated
14. R3-253140 NG signaling to support Inventory and Command procedures for A-IoT Qualcomm Incorporated
15. R3-253141 Locating A-IoT devices and Proximity Determination Qualcomm Incorporated
16. R3-253177 Consideration on leftovers for Inventory and Command Huawei
17. R3-253178 (TPs for TS 38.300 38.401 38.413 BL CRs) Leftovers for Inventory and Command Huawei
18. R3-253179 (TPs for 38.300 38.410 38.413 38.412 BL CRs) Leftovers for Interface Management Huawei
19. R3-253180 (TPs for TS 38.300 38.410 38.413 BL CRs) The Release of A-IoT Session Huawei
20. R3-253181 [DRAFT] Reply LS on on Ambient IoT progress of RAN3 (Reply to S5-251771) Huawei [to be RAN3]
21. R3-253217 Discussion on the New A-IoT Area NEC
22. R3-253218 Draft LS A-IoT Supported Area NEC
23. R3-253219 Discussion on A-IoT Leftover Issues NEC
24. R3-253227 Resolution of open points and new signalling for Inventory Nokia
25. R3-253228 [TP for AIoT BL CR for TS 38.413] Resolution of open points and new signalling for Inventory Nokia
26. R3-253229 [TP for A-IoT BL CR 38.300] Identification of target A-IoT devices Nokia
27. R3-253230 [TP for AIoT BL CR for TS 38.413] Identification of target A-IoT devices Nokia
28. R3-253245 Discussion on Leftover issues on AIoT ZTE Corporation, China Telecom
29. R3-253246 (TP for BL CR to 38.412, 38.300, 38.410, 38.412, 38.401) Leftover issues on AIoT ZTE Corporation, China Telecom
30. R3-253247 ((TP for BL CR 38.413) New A-IoT procedures ZTE Corporation, China Telecom
31. R3-253248 (TP to BL CR 38.300, 38.410) New A-IoT procedures ZTE Corporation, China Telecom
32. R3-253274 [TP for BL CR 38.300, 38.401] on stage 2 related topics Ericsson
33. R3-253275 [TP for BL CR 38.412 and 38.413] Discussions on NG-C signalling transport for A-IoT Ericsson
34. R3-253276 [TP for BL CR 38.413] On NGAP NG-C interface management functions for A-IoT Ericsson
35. R3-253277 [TP for BL CR 38.413 and 38.410] A-IoT Session related topics Ericsson
36. R3-253286 (TP to BL CR for 38.413) Discussion on general issues for AIoT Samsung
37. R3-253287 (TP to BL CR for 38.300) Discussion on inventory and command related issues for AIoT Samsung
38. R3-253288 (TP to BL CR for 38.401) Discussion on device associations for AIoT Samsung
39. R3-253293 (TP to BL CR for TS38.413 and TS38.300) Consideration on A-IoT area CATT
40. R3-253294 (TP to BL CR for TS38.413 and TS38.300) A-IoT Inventory procedures CATT
41. R3-253295 (TP to BL CR for TS38.413 and TS38.300) A-IoT Command procedures CATT
42. R3-253296 Further Consideration on locating of A-IoT device CATT
43. R3-253327 Discussion on Open issues for A-IoT procedures Lenovo
44. R3-253374 (TP for 38.413) General aspects on support of AIoT Xiaomi
45. R3-253375 (Draft reply LS) Discussion on the liaisons from RAN2 SA2 Xiaomi
46. R3-253376 (TP for TS 38.300 and TS 38.413) Device context handling Xiaomi
47. R3-253377 (TPs for TS 38.300 and TS 38.413) location of the device Xiaomi
48. R3-253386 Discussion on architecture and interface management for Ambient IoT China Telecom
49. R3-253664 AIoT supportable NGAP Interface Management Tejas Network Limited
50. R3-253665 Enhancement of Inventory/Command procedure Tejas Network Limited
51. R3-253673 Discussion on Inventory Procedures China Unicom
52. R3-253674 Discussion on Command Procedure China Unicom
53. R3-253677 Discussion on remaining open issues in A-IoT LG Electronics
54. R3-253692 (TP to TS 38.300) Discussion on RAN Architecture for Ambient IoT CMCC
55. R3-253693 Discussion on Inventory Procedure and Signaling CMCC
56. R3-253694 Discussion on Command Procedure and Signalling CMCC
57. R3-253695 Discussion on A-IoT device location reporting CMCC
58. R3-253791 Summary of offline discussion of Ambient IoT Huawei (Moderator)
59. R3-253792 (TP to TS 38.300 BL CR) Architecture aspects CMCC, Huawei, Xiaomi
60. R3-253793 [TP to TS 38.300 A-IoT BL CR] Inventory and Command call flows Nokia, Huawei
61. R3-253794 (TP to TS 38.413 BL CR) Interface Management procedures Qualcomm Incorporated, Huawei
62. R3-253795 (TP to TS 38.413 BL CR) Inventory and Command Huawei, CATT
63. R3-253796 (TP to TS 38.413 BL CR) New Release procedures Ericsson, Huawei, Xiaomi
64. R3-253797 (TP to TS 38.410 BL CR) New Release procedures and other aspects ZTE Corporation, China Telecom, Huawei
65. R3-253798 (TP to TS 38.412 BL CR) SCTP and other aspects Samsung, Huawei
66. R3-253799 (TP to TS 38.401 BL CR) Leftover issues for Ambient IoT CATT
67. R3-253800 Reply LS on the removal of service type information RAN3(LGE)
68. R3-253801 Reply LS on D2R message size for inventory response RAN3(Xiaomi)
69. R3-253802 Reply LS on Ambient IoT progress of RAN3 on A-IoT Area RAN3(NEC)
70. R3-253803 Reply LS on Ambient IoT progress of RAN3 on OAM requirements RAN3(Huawei)
71. R3-253911 LS on the latest Ambient IoT progress of RAN3 RAN3(Huawei)
72. R3-253935 [TP to TS 38.300 A-IoT BL CR] Inventory and Command call flows Nokia, Huawei
73. R3-253936 (TP to TS 38.413 BL CR) Interface Management procedures Qualcomm Incorporated, Huawei, Nokia
74. R3-253937 (TP to TS 38.413 BL CR) New Release procedures Ericsson, Huawei, Xiaomi
75. R3-253938 (TP to TS 38.410 BL CR) New Release procedures and other aspects ZTE Corporation, China Telecom, Huawei
76. R3-253939 (TP to TS 38.401 BL CR) Leftover issues for Ambient IoT CATT
77. R3-253940 Reply LS on D2R message size for inventory response RAN3(Xiaomi)
78. R3-253941 LS on the latest Ambient IoT progress of RAN3 RAN3(Huawei)
79. R3-253968 (BL CR to 38.300) Introduction of Ambient IoT CMCC, Huawei, Nokia
80. R3-253969 (BL CR to 38.401) Introduction of Ambient IoT Ericsson, Huawei, Nokia
81. R3-253970 (BL CR to 38.410) Introduction of Ambient IoT ZTE Corporation, China Telecom, Huawei, Samsung, CMCC, Nokia, Xiaomi
82. R3-253971 (BL CR to 38.412) Introduction of Ambient IoT Xiaomi, Huawei, Nokia
83. R3-253972 (BL CR to 38.413) Introduction of Ambient IoT Huawei, Nokia

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1. R4-2503216 A-IoT general aspects Huawei, HiSilicon
2. R4-2503314 Discussion on AIoT system parameters Xiaomi
3. R4-2503392 Discussion on A-IoT general requirements CMCC
4. R4-2503472 Discussion on system parameters for A-IoT CATT
5. R4-2503673 Discussion on system parameters for ambient IoT Spreadtrum,UNISOC
6. R4-2503813 Discussion on the systeme parameter of AIoT vivo
7. R4-2503932 (new) TS 38.191 Ambient IoT device radio transmission and reception CMCC
8. R4-2504096 3GPP\_TS 38.194 skeleton Huawei, HiSilicon
9. R4-2504207 on system parameter OPPO
10. R4-2504352 Discussions on General aspect for A-IoT ZTE Corporation, Sanechips
11. R4-2504399 A-IoT general overview Ericsson
12. R4-2503217 RF requirements for A-IoT BS Huawei, HiSilicon
13. R4-2503315 Initial D2R LLS simulation result Xiaomi
14. R4-2503390 Discussion on A-IoT BS RF requirements CMCC
15. R4-2503470 Discussion on A-IoT BS requirements CATT
16. R4-2503560 Relevance of phase noise and LLS for SNR for REFSENS Qualcomm Incorporated
17. R4-2503814 Discussion on the RF requirement for AIoT BS vivo
18. R4-2504353 Discussions on RF requirements for A-IoT BS ZTE Corporation, Sanechips
19. R4-2504398 A-IoT BS RF impact overview Ericsson
20. R4-2503316 Discussion on AIoT device 1 RF requirement Xiaomi
21. R4-2503391 Discussion on A-IoT device RF requirements CMCC
22. R4-2503438 Discussion on Ambient IoT device 1 RF requirements CATT
23. R4-2503559 Ambient IoT device backscattering and SFO error Qualcomm Incorporated
24. R4-2503671 Discussion on RF requirements for ambient IoT device 1 Spreadtrum,UNISOC
25. R4-2503815 Discussion on the RF requirement for device 1 vivo
26. R4-2504063 RF requirements of ambient IoT device 1 Sony
27. R4-2504206 on RF requirements for device 1 OPPO
28. R4-2504354 Discussion on RF requirement of Ambient IoT device ZTE Corporation, Sanechips
29. R4-2504400 A-IoT device requirement overview Ericsson
30. R4-2504516 Discussion on RF requirement for A-IoT device 1 LG Electronics UK
31. R4-2504557 On the RF requirements for Ambient IoT Device Huawei, HiSilicon
32. R4-2503317 Discussion on AIoT CW requirements Xiaomi
33. R4-2503389 Discussion on A-IoT CW RF requirements CMCC
34. R4-2503471 Discussion on RF requirements for CW for D1T1 CATT
35. R4-2503672 Discussion on RF requirements for CW Spreadtrum,UNISOC
36. R4-2503816 Discussion on the RF requirement for CW vivo
37. R4-2504205 on RF requirements for CW OPPO
38. R4-2504303 RF requirements for CW Huawei, HiSilicon
39. R4-2504355 Discussion on RF requirement for CW node ZTE Corporation, Sanechips
40. R4-2504401 CW node RF impact overview Ericsson
41. R4-2504517 Discussion on RF requirement for CW LG Electronics UK
42. R4-2503292 Initial discussion on RRM impacts for R19 A-IoT device vivo
43. R4-2503422 Discussion on the impacts of A-IoT on RRM requirements CATT
44. R4-2503778 Discussion on RRM requirements for A-IoT CMCC
45. R4-2503788 Discussions on RRM requirements for A-IoT NTT DOCOMO, INC.
46. R4-2503791 Discussion on RRM requirements for Ambient-IoT ZTECorporation,Sanechips
47. R4-2503873 Discussion on RRM impacts for R19 A-IoT device Huawei, HiSilicon
48. R4-2503954 Discussion on RRM requirements for ambient IoT device 1 Spreadtrum,UNISOC
49. R4-2504108 Initial discussion on RRM requirements for Ambient-IoT Ericsson
50. R4-2503138 Discussion on OTA testing for A-IoT device 1 Ericsson-LG Co., LTD
51. R4-2503393 Discussion on A-IoT OTA requirements CMCC
52. R4-2503494 on OTA tests for ambient IoT devices Huawei, HiSilicon
53. R4-2503817 Discussion on the OTA test method for device vivo
54. R4-2504056 Views on Ambient IoT Testability Qualcomm Incorporated
55. R4-2504064 Consideration on the OTA test of ambient IoT device 1 Sony
56. R4-2504151 Discussion on OTA test method for A-IoT device CAICT
57. R4-2504204 on OTA test aspect OPPO
58. R4-2503624 Topic summary for [114bis][214] Ambient\_IoT\_Solutions Moderator (CMCC)
59. R4-2504687 Topic summary for [114bis][129] A-IoT\_device Moderator(CMCC)
60. R4-2504688 Topic summary for [114bis][130] A-IoT\_BSCW Moderator(Huawei)
61. R4-2505096 WF on A-IoT device requirements CMCC
62. R4-2505097 WF on A-IoT BS and CW requirements Huawei

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1. R4-2505569 Topic summary for [115][220] Ambient\_IoT\_Solutions Moderator (CMCC)
2. R4-2507573 Topic summary for [115][134] A-IoT\_device Moderator (CMCC)
3. R4-2507574 Topic summary for [115][135] A-IoT\_BSCW Moderator (Huawei)
4. R4-2507913 WF on A-IoT\_device CMCC
5. R4-2508101 WF on A-IoT BS and CW requirements Huawei
6. R4-2508116 WF on A-IoT\_device CMCC
7. R4-2508275 WF on RRM requirements for Ambient\_IoT\_Solutions CMCC
8. R4-2505541 A-IoT general aspects Huawei, HiSilicon
9. R4-2505619 Discussion on A-IoT System parameters CMCC
10. R4-2505753 Discussion on AIoT system parameters Xiaomi
11. R4-2506014 Discussion on system parameters for A-IoT CATT
12. R4-2506229 Discussion on system parameters for ambient IoT Spreadtrum,UNISOC
13. R4-2506840 Discussion on the systeme parameter of AIoT vivo
14. R4-2507182 on system parameter OPPO
15. R4-2507496 A-IoT general overview Ericsson
16. R4-2507505 Discussions on General aspect for A-IoT ZTE Corporation, Sanechips
17. R4-2505542 RF requirements for A-IoT BS Huawei, HiSilicon
18. R4-2505616 Discussion on A-IoT BS RF requirements CMCC
19. R4-2505754 Further D2R LLS simulation result Xiaomi
20. R4-2506012 Discussion on A-IoT BS requirements CATT
21. R4-2506015 DraftCR for TS 38.194 to introduce base station output power and transmit ON/OFF power CATT
22. R4-2506016 DraftCR for TS 38.194 to introduce transmitter intermodulation CATT
23. R4-2506841 Discussion on the RF requirement for AIoT BS vivo
24. R4-2507007 Discussions on A-IoT BS RF requirements NTT DOCOMO, INC.
25. R4-2507495 TP to TS38.914 : Inband blocking, OOB and Spurious Ericsson
26. R4-2507506 Further discussions on RF requirements for A-IoT BS ZTE Corporation, Sanechips
27. R4-2507642 Draft CR to TS38.194 on ambient IoT BS LG Electronics UK
28. R4-2505618 Discussion on A-IoT device RF requirements CMCC
29. R4-2505755 Discussion on AIoT device 1 RF requirements Xiaomi
30. R4-2506033 Discussion on Ambient IoT device 1 RF requirements CATT
31. R4-2506162 REFSENS procedure, SFO and timing aspects Qualcomm Incorporated
32. R4-2506230 Discussion on RF requirements for ambient IoT device 1 Spreadtrum,UNISOC
33. R4-2506842 Discussion on the RF requirement for device 1 vivo
34. R4-2507128 RF requirements of ambient IoT device 1 Sony
35. R4-2507181 on RF requirements for device 1 OPPO
36. R4-2507497 A-IoT device requirement overview Ericsson
37. R4-2507507 Discussion on RF requirement of Ambient IoT device ZTE Corporation, Sanechips
38. R4-2507632 Discussion on RF requirement for A-IoT device 1 LG Electronics UK
39. R4-2507722 On the RF requirements for Ambient IoT Device Huawei, HiSilicon
40. R4-2505617 Discussion on A-IoT CW RF requirements CMCC
41. R4-2505756 Discussion on AIoT CW requirements Xiaomi
42. R4-2506013 Discussion on RF requirements for CW for D1T1 CATT
43. R4-2506163 Phase noise specification for CW Qualcomm Incorporated
44. R4-2506231 Discussion on RF requirements for CW Spreadtrum,UNISOC
45. R4-2506843 Discussion on the RF requirement for CW vivo
46. R4-2506844 draft TP to TS 38.194 on CW frequency error and unwanted emssion vivo
47. R4-2507180 on RF requirements for CW OPPO
48. R4-2507498 CW node RF impact overview Ericsson
49. R4-2507508 Discussion on RF requirement for CW node ZTE Corporation, Sanechips
50. R4-2507685 Further discussion on RF requirements for CW Huawei, HiSilicon
51. R4-2505661 Discussion on RRM impacts for R19 A-IoT device vivo
52. R4-2505782 Discussion RRM requirements for Ambient IoT Xiaomi
53. R4-2506001 Discussion on the impacts of A-IoT on RRM requirements CATT
54. R4-2506348 Discussion on RRM requirements for Ambient-IoT Ericsson
55. R4-2506614 Discussion on RRM requirements for A-IoT CMCC
56. R4-2507120 Discussion on RRM impact on A-IoT Huawei, HiSilicon
57. R4-2507122 Discussions on RRM requirements for A-IoT NTT DOCOMO, INC.
58. R4-2507186 Discussion on RRM requirements for Ambient-IoT ZTECorporation,Sanechips
59. R4-2505395 on Ambient IoT device OTA tests Huawei, HiSilicon
60. R4-2505477 Discussion on OTA testing for A-IoT device 1 Ericsson Korea Partners Co Ltd
61. R4-2505620 Discussion on OTA test method for A-IoT device CMCC
62. R4-2505742 Discussion on Ambient IoT Testability Qualcomm Incorporated
63. R4-2506845 draft CR to 38.870 on test method of AIoT device vivo
64. R4-2506846 Discussion on the OTA test method for device vivo
65. R4-2507129 Consideration on the OTA test of ambient IoT device 1 Sony
66. R4-2507179 on OTA test aspect OPPO

10.01.2022 minor adaptations for RAN #95e,

04.10.2021 minor adaptations for RAN #94e

08.08.2021 minor adaptations for RAN #93e

17.05.2021 minor adaptations for RAN #92e

28.01.2021 minor adaptations for RAN #91e

09.11.2020 minor adaptations for RAN #90e

31.08.2020 minor adaptations for RAN #89e

20.04.2020 minor adaptations for RAN #88e

18.02.2020 minor adaptations for RAN #87e

14.11.2019 minor adaptations for RAN #86

18.08.2019 minor adaptations for RAN #85

12.05.2019 minor adaptations for RAN #84

27.02.2019 minor adaptations for RAN #83

21.11.2018 completion levels with colours added (for RAN #82)

v04.81 31.07.2018 simplification of template and addition of cross-TSG aspects (for RAN #81)

v04.80 21.05.2018 minor adaptations for RAN #80

v04.79 26.02.2018 minor adaptations for RAN #79

v04.78 18.11.2017 minor adaptations for RAN #78

v04.77 06.08.2017 minor adaptations for RAN #77

v04.76 15.05.2017 minor adaptations for RAN #76

v04.75 31.01.2017 minor adaptations for RAN #75

v04.74 28.10.2016 minor adaptations for RAN #74

v04.73 01.09.2016 adaptations for RAN #73 (time units in extra Excel table, RAN6 reporting included)

v04.72 26.05.2016 adaptations for RAN #72 (introduction of NR & GERAN TUs)

v04.71 10.02.2016 minor adaptations for RAN #71

v04.70 30.10.2015 minor adaptations for RAN #70

v04.69 12.08.2015 minor adaptations for RAN #69

v04.68 21.05.2015 minor adaptations for RAN #68

v04.67 01.02.2015 minor adaptations for RAN #67

v04.66 16.11.2014 minor adaptations for RAN #66

v04.65 16.08.2014 minor adaptations for RAN #65

v04.64 22.05.2014 minor adaptations for RAN #64

v04.63 24.01.2014 restructuring for RAN #63 to cover Core & Perf. in one doc file

v03.62 11.11.2013 section 1.2.3 adapted for RAN #62

v03 11.08.2013 section 1.2.3 added on time budget

v02 07.05.2010 history added, some spelling corrections

v01 13.11.2009 First version of the template