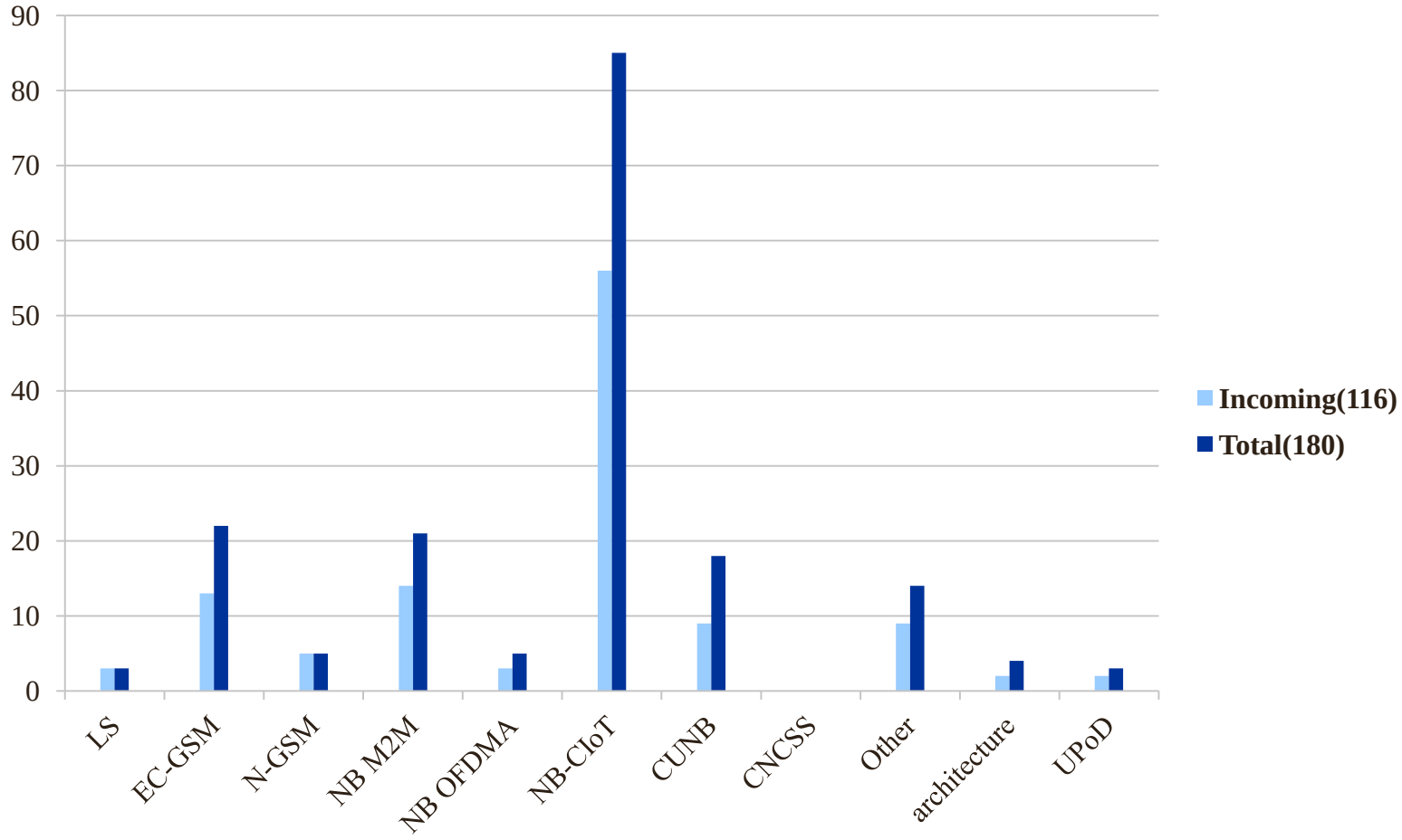
3GPP GERAN1-GERAN2 Cellular IoT

WG2 Chairman's Summary (GP-150841)

Chairman: Yang ZHAO (Huawei Technologies)

Secretary: Gert THOMASEN (MCC report in GPC150300)

Incoming contributions



Letters from other groups

- **LS on architecture for Clean Slate CIOT**
  - 0385 noted: RAN requests SA to ensure that SA 2 (and SA 3) have sufficient time to deliver significant progress by RAN #69
  - 0386 noted: SA asks SA2 to provide necessary time allocation (e.g. considering time allocation in SA2#110ah) to complete the above mentioned activities by SA#69 not risking approved exceptions.

Rapportuer work

- **0341 Telco#11 meeting report noted**
- **0340 TR update agreed**
- **work plan -> G1&G2 joint session**

EC-GSM(1/2)

- **0459 Enhanced AB based contention resolution, PCR in 0584 Conditionally agreed**
- **0477 Ready State DRX for Cellular IoT, PCR in 0478 noted**
  - No need is seen for this solution
- **0479 Paging Cancellation in case of Unsynchronized Cells in a Routing Area with eDRX noted**
  - Related LS is sent to SA2 at GERAN#66
- **0596 PCR on Battery Lifetime Estimation Conditionally agreed**
- **0565 PCR on Exception Report Latency performance evaluation Conditionally agreed**

EC-GSM (2/2)

- **Device complexity analysis**
  - 0480 EC-GSM Device Complexity Analysis noted
  - 0387 EC-GSM UE Complexity assessment noted
  - 0630 Device complexity noted, PCR in 0631 Conditionally agreed on Protocol stack related software update
  - More work needed to have consistent assumption on analysis for all candidate solutions
- **0496 Conclusion on EC-GSM candidate technique for SI "Cellular System Support for Ultra Low Complexity and Low Throughput Internet of Things" , PCR in 0497; 0528 New Work Item on Extended Coverage GSM (EC-GSM) -> joint session;**
  - Pending on the progress during the week

N-GSM

- **0507 Design and Performance for N-BCCH noted**
- **0508 Design and Performance for N-AGCH noted**
- **0509 Design and Performance for N-PCH noted**
- **0505 Design and Performance for N-RACH noted,** PCR in **0506** agreed

Narrowband M2M

- **0324 Discussions of Semi-Persistent Scheduling in CIoT, PCR in 0325 noted**
  - More investigation needed on capacity impact
- **0328 Discussions of Random Access Reject , PCR in 0591 agreed**
- **0330 Discussions on Coverage Class Supports, PCR in 0532 agreed**
- **0334 Discussions on Mobility Support, PCR in 0533 agreed**
- **0338 Discussions on downlink control channel based coverage class update, PCR in 0534 agreed**
- **0521 Discussions of Grant-Free Multiple Access in CIoT， PCR in 0522 noted**
  - More evaluations needed on gains
- **0594 Conclusion of NB M2M -> joint session**
- **0388 MS Complexity analysis Conditionally agreed on protocol stack software update**

Narrowband OFDMA

- **0326 PCR on Semi-Persistent Scheduling noted**
- **0535 PCR on load balancing among coverage classes agreed**
- **0536 PCR on Further considerations of mobility support noted**

NB-CIoT(1/3)

- 0389 NB-CIoT introduction, PCR in 0390 agreed
- 0422 Radio Protocol Structure and Channel Mapping, PCR in 0548 agreed
- 0391 Uplink Physical Layer Design, PCR in 0572 agreed
- 0407 Downlink physical layer design, PCR in 0582 Conditionally agreed
- 0418 Link Layer Overview, PCR in 0549 agreed
- 0420 MS Operating Modes, PCR in 0421 agreed
- 0378 MAC PDU Structure and Segmentation/Re-assembly, PCR in 0379 agreed
- 0492 Scheduling Mechanism, PCR in 0550 agreed
- 0380 Coverage Class of MAC Layer, PCR in 0551 agreed
- 0399 MAC control message design, PCR in 0552 agreed
- 0403 System information design, PCR in 0553 agreed
- 0405 Paging mechanism, PCR in 0586 agreed
- 0424 RACH procedures, PCR in 0555 agreed

NB-CIoT(2/3)

- **0426 Data Transfer Procedure – Overview, PCR in 0556 agreed**
- **0428 Data Transfer - Transmission and Retransmission Procedures, PCR in 0557 agreed**
- **0351 Idle mode mobility, PCR in 0352 noted**
  - See similarity with legacy mechanism and more discussion needed
- **0481 cell selection/reslection, PCR in 0558 Conditionally agreed**
- **0353 Access control, PCR in 0354 noted**
  - See similarity with legacy mechanism and more discussion needed
- **0355 Considerations on coverage class, PCR in 0356 noted**
- **0357 Paging procedure for CIoT, PCR in 0358 noted**
- **0527 Discussions on RACH design for CIoT, PCR in 0348 noted**
- **0345 Considerations on PDCCH structure of CIoT, PCR in 0346 noted**
- **0327 PCR on Semi-Persistent Scheduling noted**

NB-CIoT(3/3)

- 0593 PCR on load balancing among coverage classes agreed
- 0560 PCR on mobility support agreed
- 0514 PCR on Grant-Free Multiple Access for Uplink Transmission noted
- 0498 Energy Consumption Evaluation, PCR in 0608 Conditionally agreed
- 0397 MS Complexity Evaluation, PCR in 0398 Conditionally agreed on protocol stack software update
- 0609 Latency evaluation, PCR in 0610 Conditionally agreed
- 0417 Downlink System Level Simulation Results noted
- 0515 Additional information on GSM chip complexity noted

Cooperative Ultra Narrowband

- **0588 Cooperative Ultra Narrow Band for Cellular IoT - General description, PCR in 0592 noted**
  - More specific description needed
- **0544 C-UNB Link Layer Aspects, PCR in 0589 noted**
  - More specific description on procedures needed
- **0602 Radio Resource Management noted**
  - More investigation needed on differentiating coverage classes
- **0312 C-UNB Capacity evaluation noted**
  - Pending on agreement on link level evaluation
  - Inconsistent methodology is used for capacity evaluation
- **0313 C-UNB Battery Life Evaluation noted**
  - Unclear how to use different transmission power by devices
  - Pending on agreement on link level evaluation
- **0314 C-UNB Latency Evaluation noted**
  - Pending on agreement on link level evaluation
- **0547 PCR on concept evaluation noted**

Combined Narrowband and Chirp Spread Spectrum

- **No input**

Other technical input

- **0455 PCR on Clarification for MAR periodic traffic model agreed**
- **0473 PCR on Evaluation Methodology for Software Update and Reconfiguration agreed (same content in 0470, noted)**
- **0537 Resolution of open issues in Network Architecture section 8 agreed**
- **0583 Resolution of open issues in Annex F "Link Layer design" of TR 45.820 agreed**
- **0469 Resolution of open issues in objectives agreed**
- **0595 Operator requirements on network sharing, cell barring and access control for "clean slate CIoT" systems noted**
  - More investigation needed, consensus expected at GERAN#67

Architecture

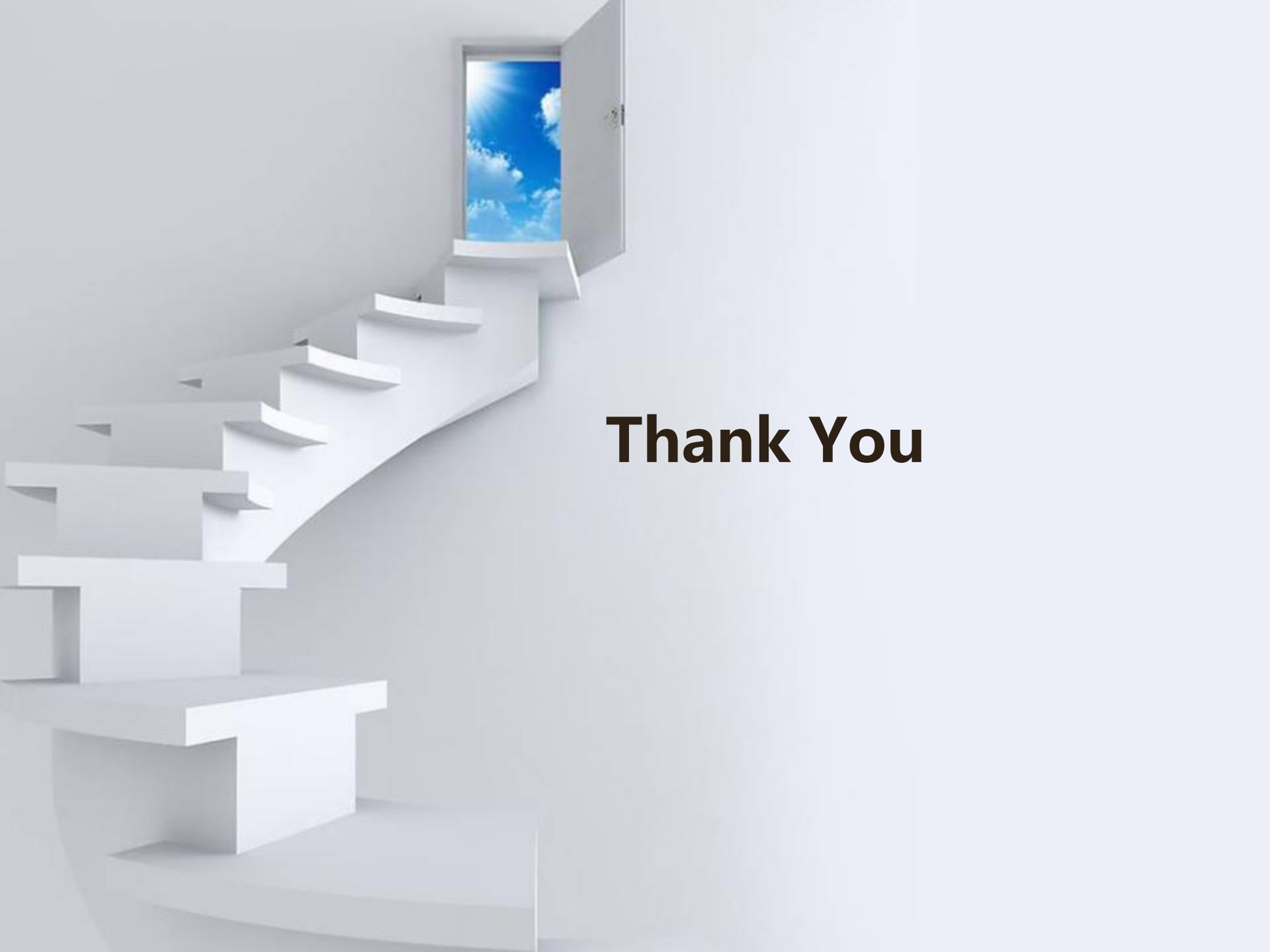
- **0465 Architecture evaluation criteria noted**
  - Agreed contents reflected in 0590 and 0537
- **0590 Migration from CIoT "launch" Core Network to "lightweight core network" agreed**

UPoD

- **0540 pCR for Event-triggered Neighbor Cell Measurement agreed**
- **0587 pCR on Resolution of Remaining FFS in the uPoD Study Item Conditionally agreed**
- **0464 Conclusion of the uPoD Study Item agreed**
- **0624 New Work Item on Extended DRX (eDRX) for GSM agreed**

Next Meetings

- GERAN2#67 10 – 13 August 2015, Yin Chuan, China
- GERAN2#68 16 – 19 November 2015, Anaheim, USA



Thank You