

RP-191230

DEUTSCHE TELEKOM | T-MOBILE USA. VIEW ON 3GPP RAN REL-17 FOCUS & CONTENT.

3GPP RAN#84 | June 4th, 2019 | Newport Beach (CA), USA



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#TAKEPART

#DABEI

#参与

[Can Yu]



3GPP REL-17: NEW RADIO / NG-RAN EVOLUTION



“5G” IS STILL TWO TECHNOLOGIES !

LTE

- Rel-17 might be the **last release with substantial evolution of LTE** based radio interface.
- Everything required for a smooth phase-out of LTE end of 2020 decade should find its way into this release – **incl. new LTE band combination** where needed.
- Huge **hardware impacting changes/additions should not be agreed**, as operators will focus new investments on NR rather than LTE.
- **No new verticals/market segments shall be addressed with LTE based technology any longer.**

NR

- Enhancements based on **learnings from initial commercial eMBB deployments** should be the baseline focus of Rel-17 – as an evolution, **incl. new NR bands / band combinations (e.g. for re-farming).**
- **Remaining use case (mMTC and URLLC) need further development** along with new verticals to meet the vision of 5G.
- **Operational, Management, Security and Environmental optimizations** should be addressed.



NEXT SIMPLIFICATION LEVEL OF OPERATION.

“AUTOMATION FOR FLEXIBLE MASSIVE NETWORK DEPLOYMENT, OPERATION AND OPTIMISATION”

Automation:

- Open Interfaces / APIs to retrieve all data for automation / optimization processes
- Machine Learning & Artificial Intelligence as tools for “touchless” operation and optimisation, using those interfaces
 - 3GPP will not define ML/AI algorithms

Deployment flexibility !

- Open interfaces & APIs, further decomposition
- Enable Service Based Architecture also for RAN functions and network components, at least on upper RAN layers.
- Enable new concepts for improved rural and indoor coverage enhancements.



NR EVOLUTION PROPOSALS.

Our observations

- eMBB and URLLC services (incl. Industrial-IoT) will remain the main drivers for NR evolution.
- Establish work for 52.6 – 114.25 GHz in licensed, semi-licensed and unlicensed spectrum based on optimized waveform – not necessarily the same as below 52.6
 - Industrial, Automotive, IAB & Fixed Wireless Access
- No new waveforms or non-backward compatible PHY changes for <52.6 GHz.
- No immediate need to develop an NR variant for “LPWA” (similar to NB-IoT/Cat-M) – the 3GPP based technologies fulfill the IMT2020 requirements.

We should start to study how to address mMTC use case(s).

Our priorities

- Extreme low latency <1 ms only required for some local applications (in the area of Industrial-IoT); more important is to increase the achievable efficiency and reliability (also wider area) for URLLC.
- Enhancements of network based positioning down to dm-level accuracies.
- NR V2X improvements to also allow further advanced services and other spectrum than 5.9 ITS.
- Support of open interfaces/APIs to enable a “touch-less” deployment and operation of NR on large scale.
- Framework for enabling new automation processes based on Machine Learning & Artificial Intelligence, including definition of related data retrieval processes.

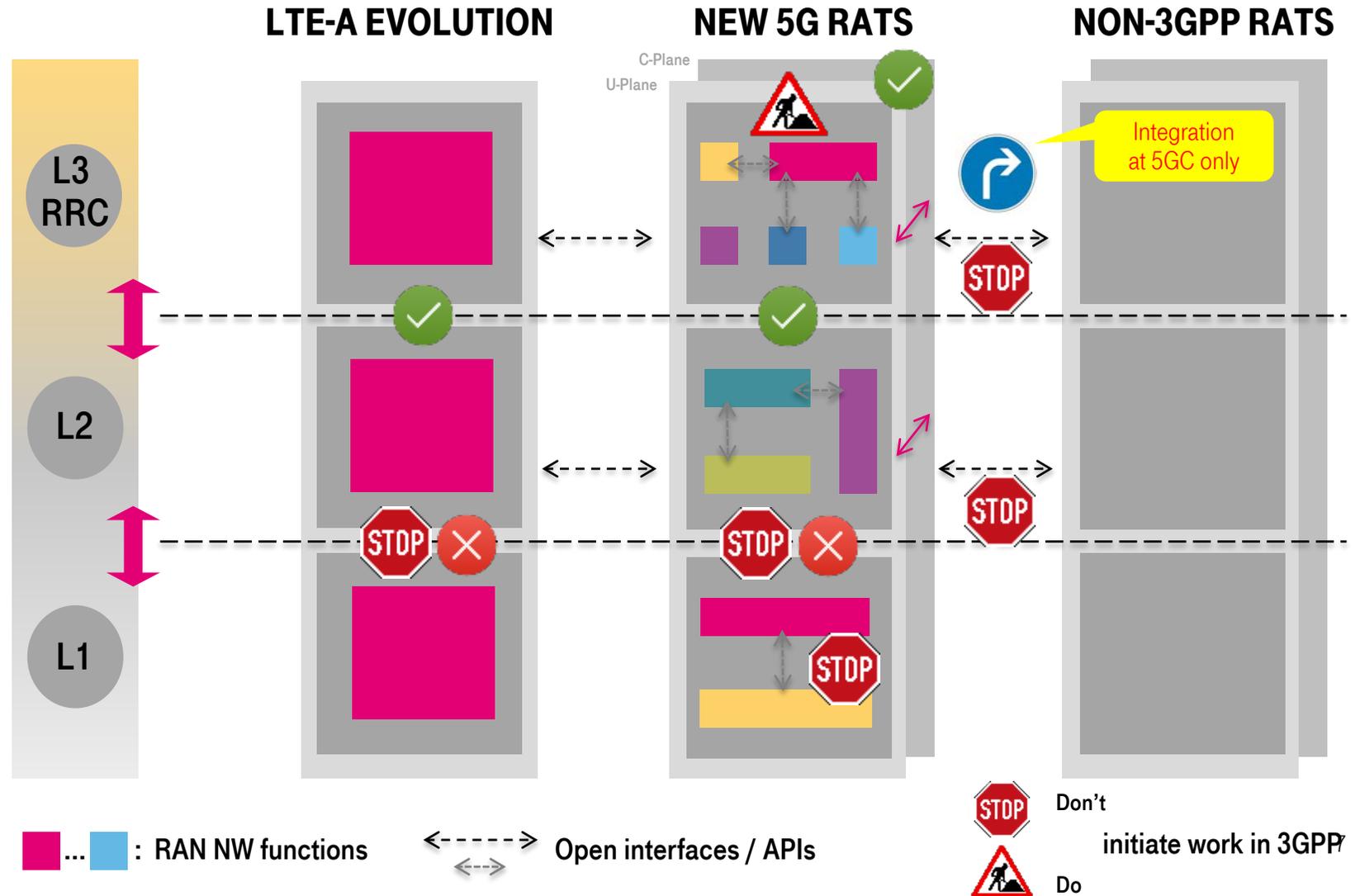


FLASHBACK: OUR 5G VISION FROM SEPT. 2015*:

Questions today:

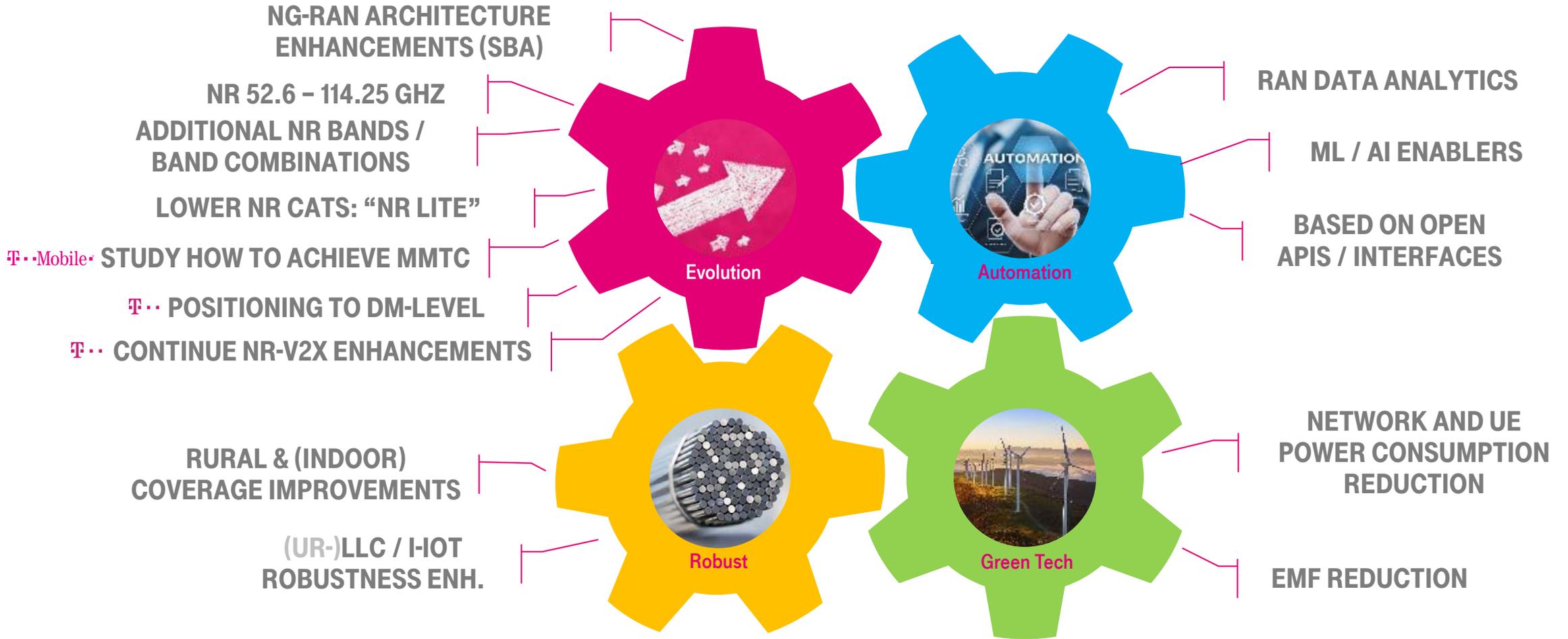
Where are we today ?

- CU CP-UP split done
- HLS defined by 3GPP
- LLS not defined by 3GPP, but in O-RAN
- NG-RAN is basically still a “classical radio network architecture”:
 - No Service Based Architecture
 - No substantial ML / AI support,
 - ...



OUR REL-17 FOCUS AREAS.

 Focus topic for Deutsche Telekom / Europe
 Focus topic for T-Mobile USA



FINAL REMARK.

AT 3GPP SA/RAN#83 REL-17 HAS BEEN DECIDED TO BE
A SHORT 15 MONTHS RELEASE !

-> LET'S HONESTLY IDENTIFY CONTENT FOR 12 MONTHS
AND DO A PROPER JOB WITHOUT OVERLOADING THE
“3GPP RAN BOAT” (AKA RAN WGS) AGAIN.



QUESTIONS ?
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