

3GPP 5G STANDARDIZATION

HARMONIZED OUTCOMES & GLOBAL APPEAL

Asbjörn Grövlén
Ericsson RAN Standardization





3rd Generation Partnership Project (3GPP)

- Driven by **market requirements**
- **Engagement** by all industry players
- Driven by **attending** companies
- Works through **consensus**
- Decisions taken on **technical merit**
- Ensures **interoperability and scale**

...3GPP creates a global ecosystem!

ITU-R

› WRC-19

- Standardization for spectrum for IMT-2020

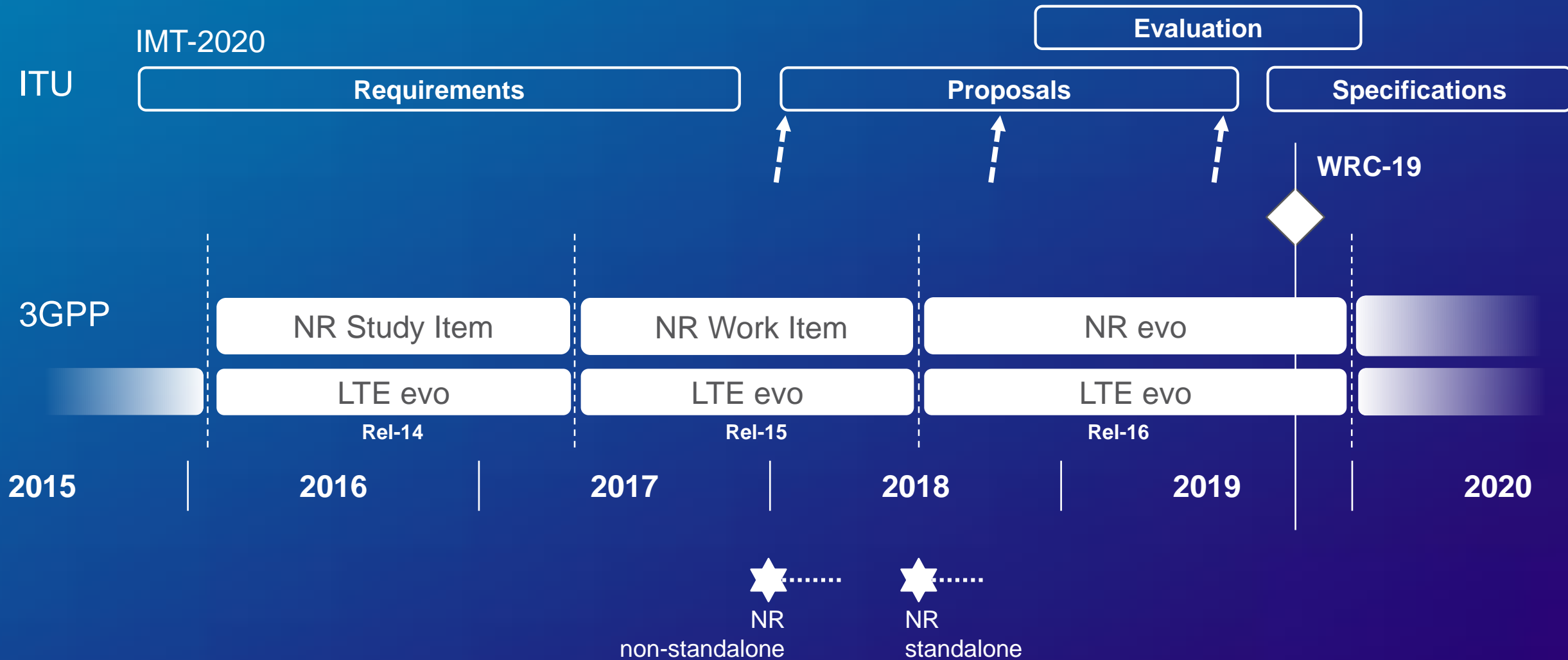
› IMT-2020 submission

- IMT-2020 has requirements on data rate, spectral efficiency, coverage, latency, connection density, etc.

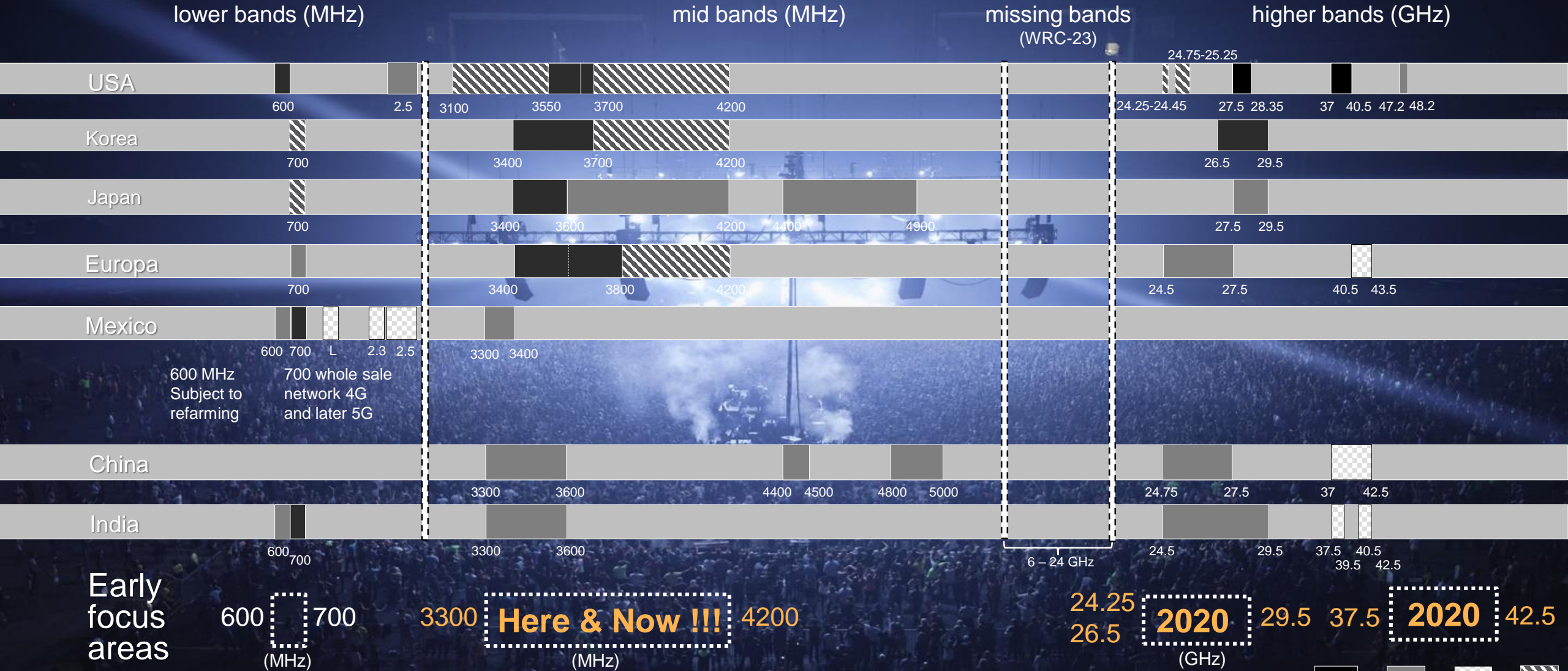
› 3GPP will submit NR and LTE

- All requirements will be met by Rel-15
- 3GPP self evaluation and evaluations by independent evaluation groups

3GPP 5G TIME-PLAN



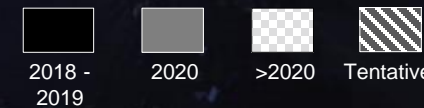
5G SPECTRUM/TIMING BY COUNTRY



600 MHz Subject to refarming
700 whole sale network 4G and later 5G

6 - 24 GHz

Activate now...



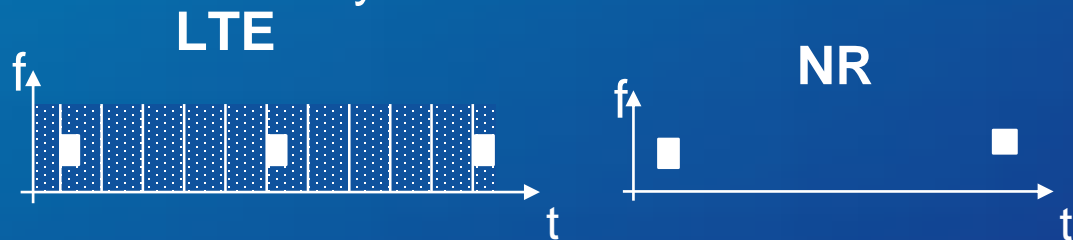
KEY NR FEATURES

ACTIVE ERICSSON CONTRIBUTIONS



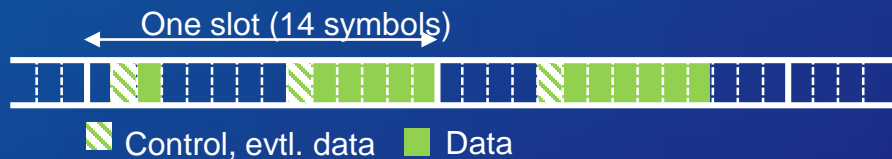
› Lean design

- Minimize network transmissions not directly related to user-data



› Flexible scheduling

- Allowing low latency, good coverage, multiplexing over services



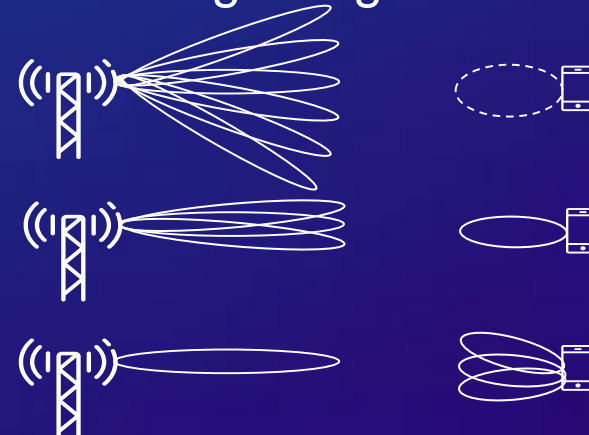
› Multiple numerologies

- Efficient spectrum usage for low and high carrier frequencies



› Native MIMO

- Beamforming design for both BS and UE





FUTURE NR OUTLOOK (REL-16)

- Ongoing Study Items
 - NR on unlicensed spectrum, relaying, direct Vehicle-2-Vehicle communication, NR for non-terrestrial, NOMA
- Also being discussed for inclusion
 - IoT, broadcast, enhanced MIMO, voice, positioning, flexible/full duplex, reduced UE power consumption

- ***Now is the time to crystallize Indian market requirements and engage in the discussion on scoping Rel-16 !***
- ***Active participation by Operators & OEMs with physical presence in 3GPP meetings is key !!!***



ERICSSON