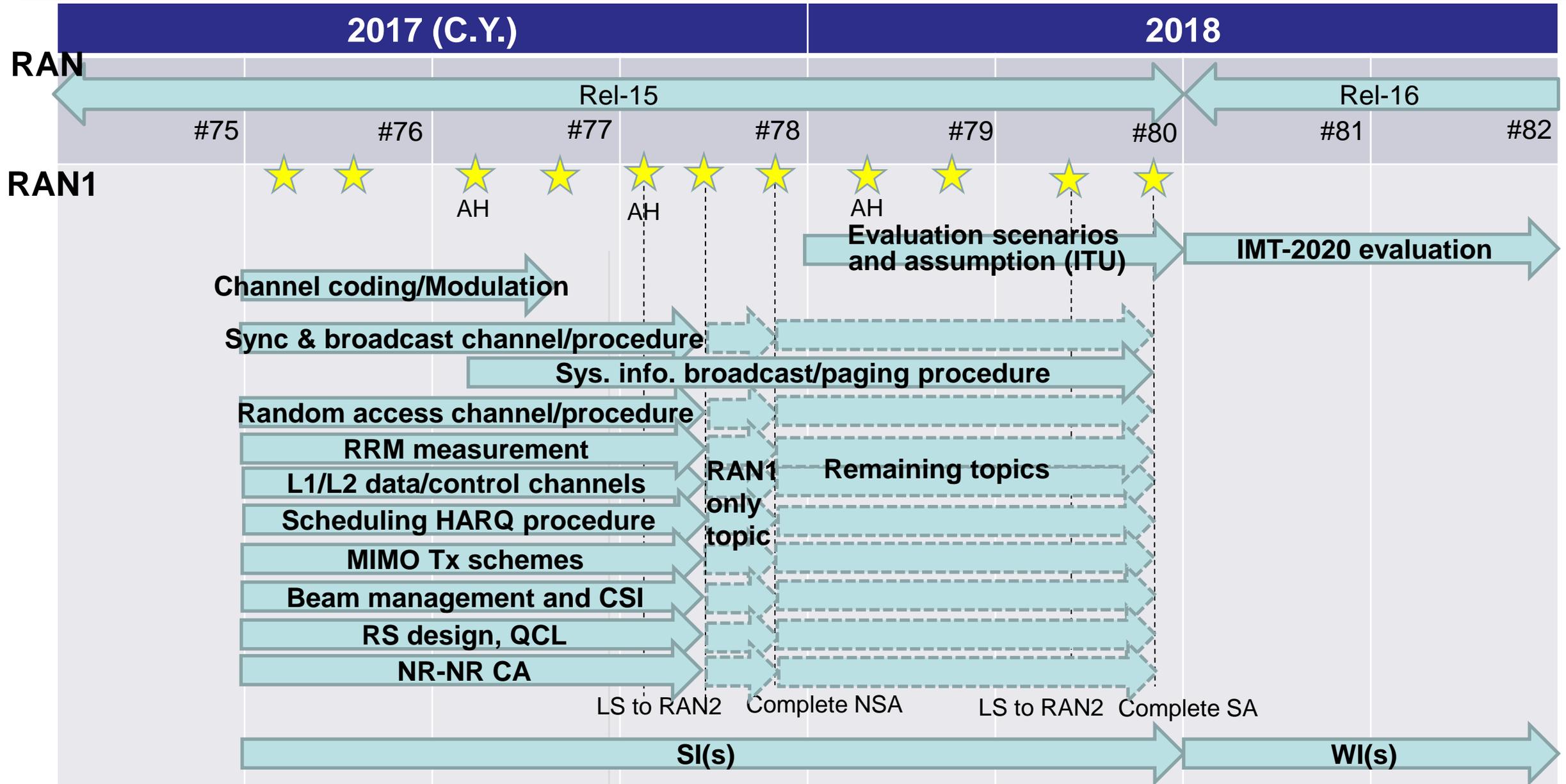


# **Work plan for Rel-15 New Radio access technology WI**

**NTT DOCOMO, INC.**

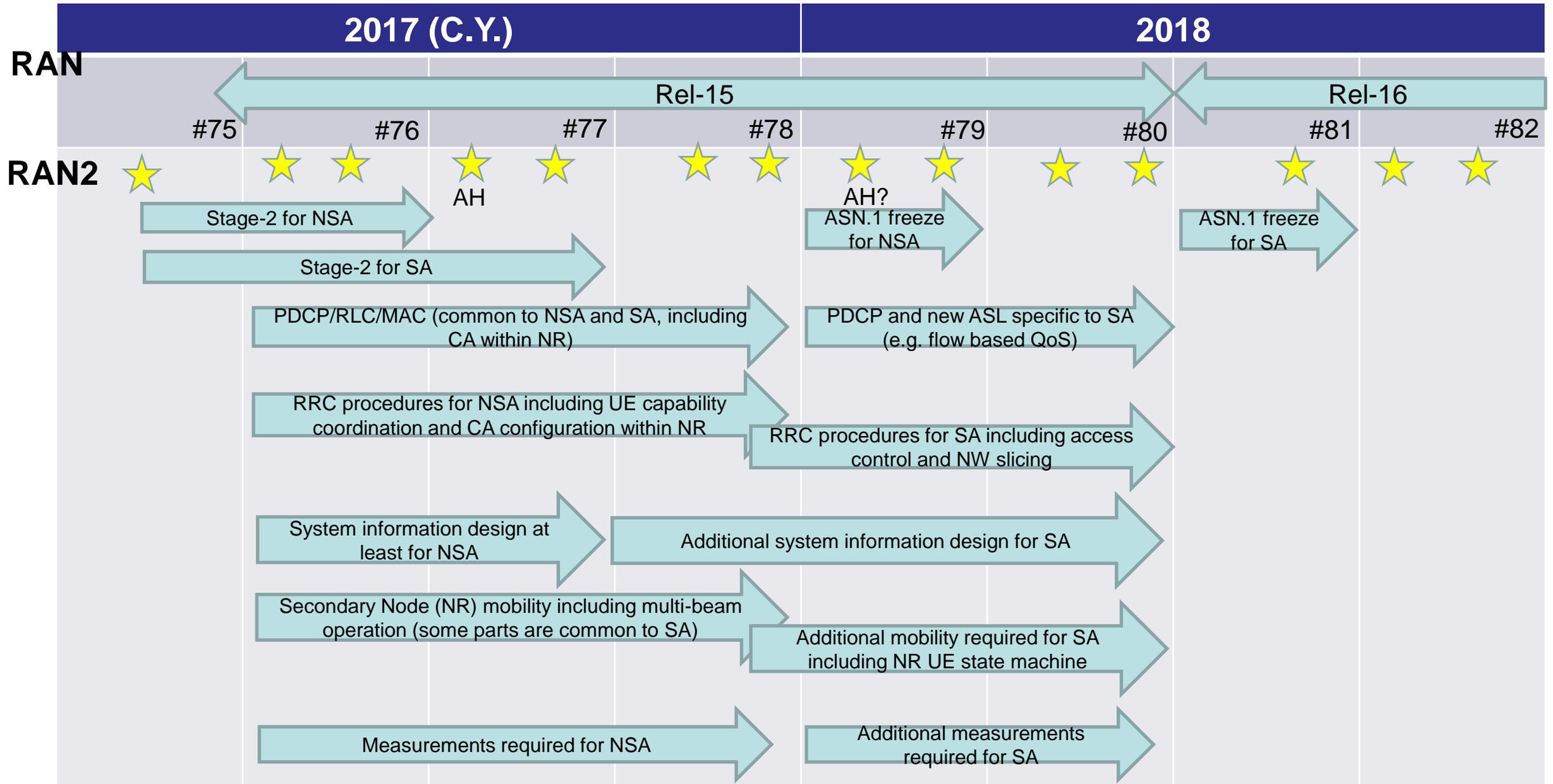
# RAN/RAN1 Time Plan



- **Initial access and mobility**
  - **Until Dec. 2017**
    - SS design
    - PRACH design
    - 4-step RACH procedure
    - RS design for L3 mobility
    - Intra- and inter-frequency RRM measurement procedure
    - PBCH design
  - **Until June 2018**
    - System information broadcasting procedure
    - Paging design and procedure
- **L1/L2 control channels and scheduling/HARQ**
  - **Until Dec. 2017**
    - DL/UL control channel designs for eMBB
    - DL/UL scheduling/HARQ procedures for eMBB
    - UL TPC for LTE-NR CA/DC
    - UL-DL alignment with TD-LTE
    - LTE-NR dual connectivity (covered by CA/DC)
    - Common frame structure for FDD and TDD
    - Mechanisms to enable dynamic/flexible DL/UL scheduling per slot basis
    - NR-NR CA
  - **Until June 2018**
    - Necessary enhancements of DL/UL control channels and data scheduling/HARQ procedures including:
      - Different numerologies

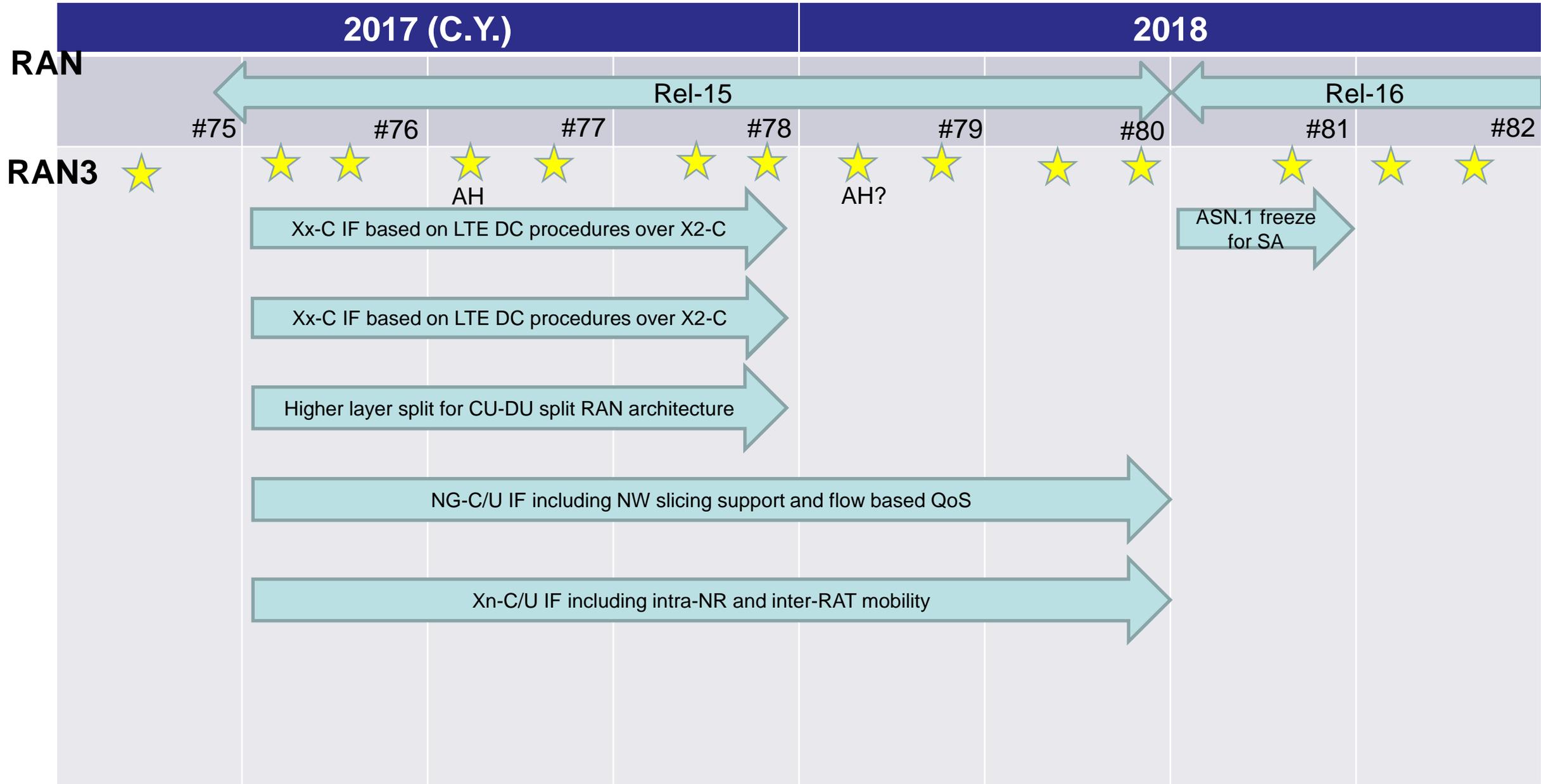
- **MIMO**
  - **Until Dec. 2017**
    - Beam management procedures
    - RS designs (DMRS, CSI-RS, SRS, PTRS)
    - QCL
    - Type I CSI
    - Diversity transmission schemes
    - UL TPC
  - **Until June 2018**
    - Type II CSI
    - UL MIMO

# RAN2 Time Plan



Features for Dec 2017 early drop	Features for Phase 1 (beyond Dec 2017)
<ul style="list-style-type: none"><li>▪ Layer 2 protocols<ul style="list-style-type: none"><li>- PDCP</li><li>- RLC</li><li>- MAC</li></ul></li><li>▪ Minimum System Information required for NSA</li><li>▪ Secondary Node (NR) mobility<ul style="list-style-type: none"><li>- beam level mobility is included</li></ul></li><li>▪ Measurements required for NSA, including<ul style="list-style-type: none"><li>- NR measurements for UE in LTE</li><li>- Measurements for Secondary Node mobility</li></ul></li><li>▪ RRC procedures for NSA<ul style="list-style-type: none"><li>- UE capability coordination is included</li></ul></li><li>▪ Carrier Aggregation with NR for Secondary Node (i.e. only PSCell and SCell)</li></ul>	<ul style="list-style-type: none"><li>▪ New AS layer for flow based QoS</li><li>▪ Additional System Information for SA</li><li>▪ Additional mobility required for SA, including<ul style="list-style-type: none"><li>- NR UE state machines and relevant mobility</li><li>- NR paging</li></ul></li><li>▪ Additional measurements for SA</li><li>▪ Additional RRC procedures for SA, including<ul style="list-style-type: none"><li>- access control</li><li>- security key management</li></ul></li><li>▪ Network slicing</li></ul>

# RAN3 Time Plan



Features for Dec 2017 early drop	Features for Phase 1 (beyond Dec 2017)
<ul style="list-style-type: none"><li>▪ Xx-C/U interface for EN-DC (option 3) operation, including;<ul style="list-style-type: none"><li>- SgNB addition</li><li>- SgNB modification (MeNB/SgNB initiated)</li><li>- Intra-MeNB HO involving SCG change</li><li>- SgNB release (MeNB/SgNB initiated)</li><li>- MeNB to eNB change and vice versa</li><li>- SCG change</li><li>- Inter-MeNB HO w/o SgNB change</li></ul></li><li>▪ Higher layer split for CU-DU split RAN architecture (for EN-DC operation)</li></ul>	<ul style="list-style-type: none"><li>▪ NG and Xn interface for;<ul style="list-style-type: none"><li>- Standalone NR operation</li><li>- Flow based Qos</li><li>- Intra-NR mobility for connected/inactive</li><li>- Inter-RAT mobility</li><li>- Network slicing</li></ul></li><li>▪ Higher layer split for CU-DU split RAN architecture (for Standalone NR operation, if there is delta from EN-DC)</li></ul>

# RAN/RAN4 Time Plan

