Smarter technology for all

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Views on SON/MDT Enhancements in Rel-19

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Motivations

- In Rel18, SON/MDT enhancements are specified for:
  - Inter-RAT SHR, SPR;
  - Inter-system handover for voice fallback, CPAC, and fast MCG recovery;
  - RA report;
  - NPN;
  - NR-U;
  - Signaling based logged MDT override protection.

- In Rel-19, we need to further enhance SON/MDT framework to improve network performance or deployment.

- In R19, SON/MDT enhancements should mainly focus on new features introduced in Rel-17 and Rel-18.

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Potential Use Cases for SON Related Enhancements (1)

- **MRO for LTM:**
  - Enable LTM failure type detection and mobility optimization.
  - Enable RA failure reporting and optimization for early TA acquisition.
  - Enable MRO for LTM based failure recovery.

- **MRO for CHO with candidate SCGs to enable the following cases:**
  - Case 1: failure cases for CHO with candidate SCGs:
    - ✓ 1a: both CHO and CPAC execution conditions are fulfilled;
    - ✓ 1b: CHO execution condition is fulfilled but CPAC execution condition is not fulfilled.
    - ✓ 1c: CHO execution condition is not fulfilled but CPAC execution condition is fulfilled.
    - ✓ 1d: both CHO execution condition and CPAC execution condition are not fulfilled.
  - Case 2: near failure successful case for CHO with candidate SCGs.
  - Case 3: CHO-only is performed in case that both CHO-only and CHO with candidate SCGs are configured.

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Potential Use Cases for SON Related Enhancements (2)

- **MRO for subsequent CPAC:**
  - Enable SPR for consecutive near failure events in subsequent CPC.
  - Enable failure type analysis between MN and SN(s).

- **MRO for NTN CHO:**
  - Enable MRO for timing and distance-based CHO;
  - SHR for timing and distance-based CHO.

- **MRO for inter-gNB path switching in U2N relay:**
  - Inter-gNB indirect-to-direct path switching (i.e., “remote UE <-> relay UE A <-> gNB X” to “remote UE <-> gNB Y”)
  - Inter-gNB direct-to-indirect path switching (i.e., “remote UE <-> gNB X” to “remote UE <-> relay UE A <-> gNB Y”)
  - Inter-gNB indirect-to-indirect path switching (i.e., “remote UE<-> relay UE A <-> gNB X” to “remote UE <-> relay UE B <-> gNB Y”)

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Potential Use Cases for SON Related Enhancements (3)

- **MDT enhancements for NR MBS in idle/inactive**
  - The problem of verifying the performance of DL transmissions w/o UL feedback was discussed in LTE in the context of eMBMS and as solution the collection of MBMS related measurements using MDT was agreed in Rel-12.
  - In view of the LTE solution for eMBMS, a similar solution can be adopted for MBS broadcast sessions by reusing the NR MDT functionality as much as possible. For example, the UE may be configured to log MBS related measurement information of broadcast sessions in RRC_IDLE and/or RRC_INACTIVE.

- **SON for multi-SIMs:**
  - RLF related handling during 'Leaving' event (T346g).

- **MDT for SDT**
  - Event reports for SDT resource selection.

- **Rel-18 Leftovers**
  - MRO for NR-U in MR-DC scenarios, MRO for (NG)EN-DC CPAC, and etc.

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Objectives

- The following use cases should be considered in Rel-19 SON/MDT enhancements WI with higher priority:
  - MRO for LTM;
  - MRO for subsequent CPAC;
  - MRO for CHO with candidate SCGs;
  - MRO for NTN CHO;
  - Rel-18 leftovers, e.g., MRO for NR-U in MR-DC scenarios, MRO for (NG)EN-DC CPAC.

- The following use cases can be considered in Rel-19 SON/MDT enhancements WI if time allowed:
  - MRO for inter-gNB path switching in U2N relay;
  - MDT enhancements for NR MBS in idle/inactive;
  - SON for multi-SIMs;
  - MDT for SDT.

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thanks.

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