3GPP TSG RAN Meeting #102
Edinburgh, GB, December 11 – 15, 2023
Agenda Item: 9.1.2.1

RP-233127

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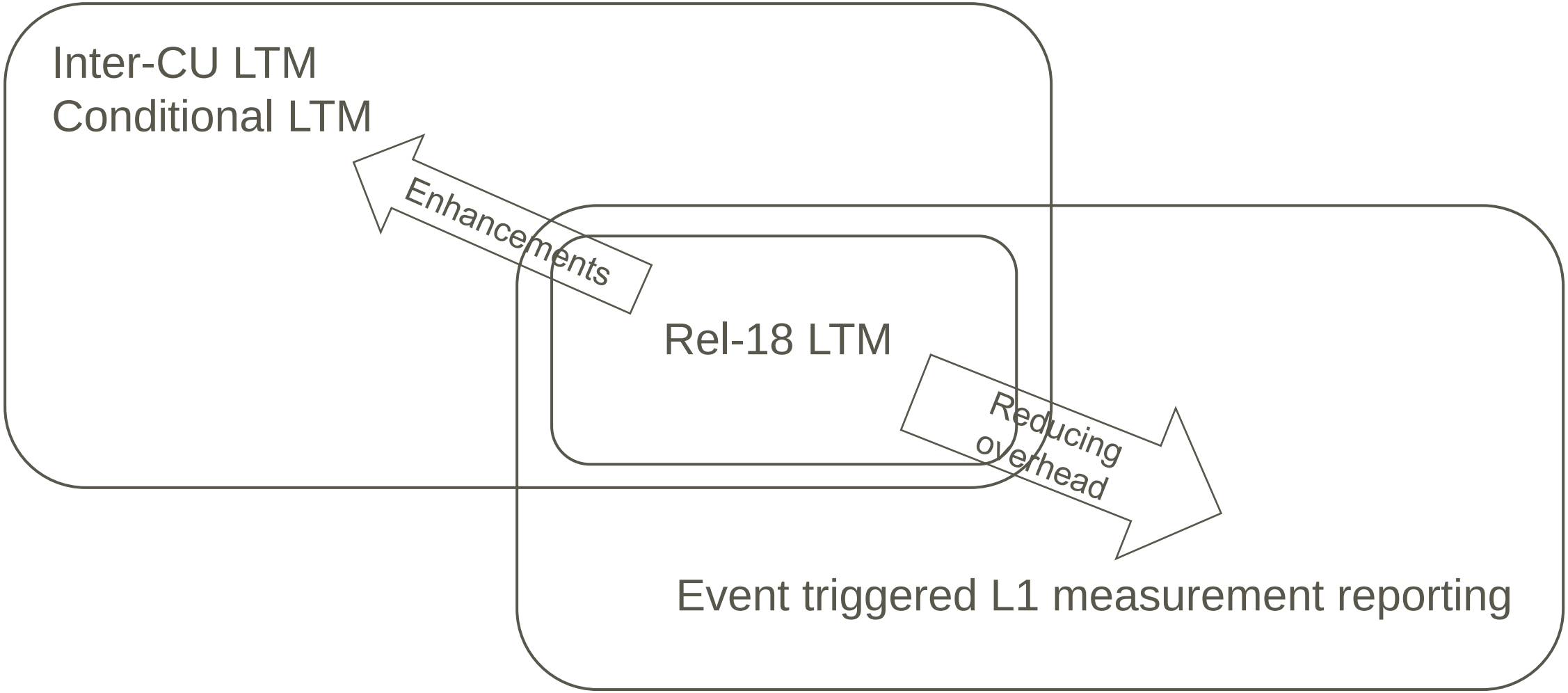
On Rel-19 Mobility Enhancements

Sharp

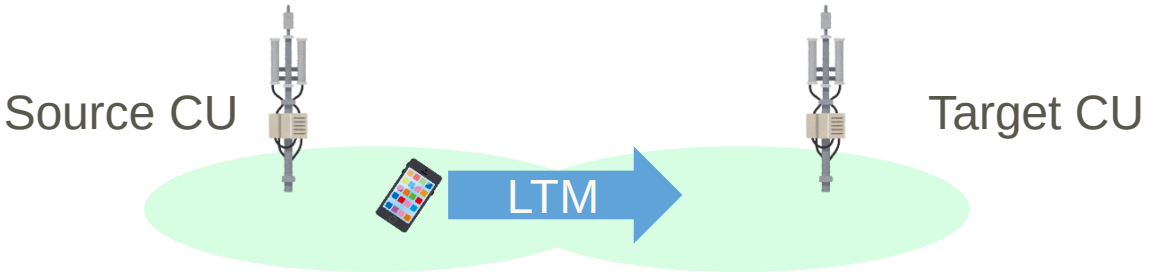
Sharp's Overview for Rel-19 Mobility Enhancements



Reference: RP-232618 Moderator's summary on Rel-19 Mobility Enhancements [08_R19_R2_mobility]

Inter-CU LTM

- **Background**
  - In Rel-18, LTM (L1/L2 Triggered Mobility) is specified to reduce the interruption time for mobility, but LTM is only supported for intra-CU case because inter-CU case has a significant impacts on the procedure.
- **Motivation**
  - The interruption time for mobility can be reduced not only for intra-gNB handover scenario but also for inter-gNB handover scenario
  - The next level question is whether to support the cases where the CU is MN and SN, but there are a lot of things need to be discussed, e.g., security updates, signalling procedure between source CU and candidate CUs.
- **Proposals**
  - Support Inter-CU LTM in Rel-19
  - Prioritize the case when CU is acting as MN
    - For Rel-19, deprioritize the case where CU is acting as SN and the case where DC is configured.



Measurements related enhancements for LTM

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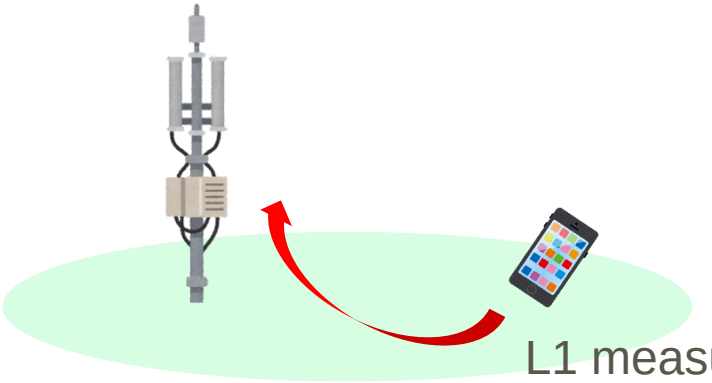
- **Background**
  - In Rel-18, RAN1 discussed event triggered L1 measurement report for LTM, however due to a lack of time no consensus could be found to introduce it.
- **Motivation**
  - Signalling overhead for measurement reporting and UE power consumption can be reduced
  - There is a similar objective in the MIMO WI as below. The MIMO objective could be leverage by LTM event triggered L1 measurement report to avoid overlap
    - MIMO WI Objective 1. Signalling/mechanism to facilitate UE-initiated beam management procedure including UE-initiated beam reporting/[switch]
- **Proposals**
  - Specify event triggered L1 measurement reporting for LTM in Mobility Enhancements WI which is not specific for beam management procedure.



L1 measurement report triggered by UE

Conditional mobility with short interruption time

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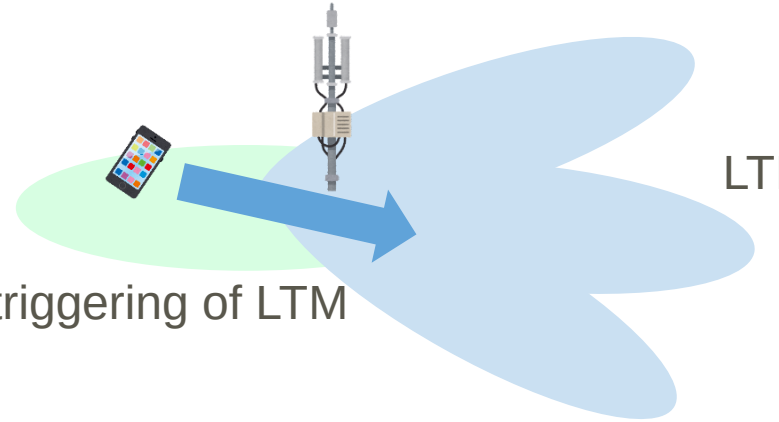
- **Background**
  - LTM is specified to achieve a short interruption time for mobility, and CHO (Conditional Handover) is specified for L3 handover to achieve a high robustness. However, it has not been discussed how to realize lower layer mobility with high robustness.
- **Motivation**
  - Cell switch can be achieved with both short interruption time and high robustness
  - Conditional LTM (conditional triggering of LTM) and LTM-based early TA/RACH-less procedure for L3 CHO are candidate approach to achieve this, but the latter has larger procedural impacts than the former, e.g., how to acquire TA of candidate cell without any L1/L2 involvements before CHO execution.
  - Conditional LTM for RACH-less scenario has same complexity as LTM-based early TA/RACH-less procedure for L3 CHO, so RACH-based scenario can be the baseline for supporting Conditional LTM.
- **Proposals**
  - Support Conditional LTM in Rel-19
    - Prioritize RACH-based scenario in Rel-19



Summary of proposals for Rel-19 Mobility Enhancements

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- Support Inter-CU LTM in Rel-19
  - Prioritize the case when CU is acting as MN
  - For Rel-19, deprioritize the case where CU is acting as SN and the case where DC is configured.
- Specify event triggered L1 measurement reporting for LTM in Mobility Enhancements WI which is not specific for beam management procedure.
- Support Conditional LTM in Rel-19
  - Prioritize RACH-based scenario in Rel-19

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