Closed Loop SLS Assurance

September, 2019
Outline

• Introduction to loops
• Example SLA Service Assurance Loop overview
• Example of SLS QoE goal fulfillment loop
• Potential connections to ONAP
• Scope of Control loop SLS assurance work in SA5
Introduction to loops

- Decide
- Analyze
- Execute
- Monitoring

Awareness Decision Implementation
• OAM monitors NetworkSlice and CommunicationService SLS objectives.
• OAM delegates to Core to monitor UE or App “QoE” and report to OAM SLS assurance.

• Management and Control Loops examples:
  • LL-1&2: E2E Mgmt Control loops involving any customer facing and resource facing aspects;
    • SLS goal assurance.
  • LL-3: Domain Mgmt Control loops including interaction with Resource Control loops (L4).
    • Optional depending on complexity.
    • E.g. 4G SON loops, RAN and Core QoS policy provisioning.
  • LL-4: Resource Control Loops with interface for OAM interaction:
    • E.g. Core QoS, UPF selection and re-selection, etc.
    • E.g. RAN QoS, cell selection, etc.
  • LL-5: RAN and Core internal loops with no direct interaction with OAM
    • E.g. RAN Link adaptation, Core Shaping, etc.
Example of SLS QoE goal fulfillment loop (shown for RAN)

SLS metrics fulfillment insights (Root cause: Radio link problem, Fronthaul problem etc…)

1) Service experience information (QoE) information per UE per networkslice
2) PM counters/events
   Threshold crossing events
   Fault supervision events

Decide

X% less bandwidth to App Y, lower priority in problematic area Z.

gNodeB ‘s in area Z get new RadioResourceManagement configuration.

Monitor

NOTE 1: SLS goal is on aggregate but monitoring and the triggering of the action is on session level
NOTE 2: The text around the loop are examples
Scope of the work item

➢ Key management control loops in SLS assurance, key entities in the loops (e.g. MDAS) and the relationship between the loops.

➢ Describe important data and enable efficient data collection [for SLS assurance] from NG-RAN and 5GC (includes NWDAF information) to consumers in OAM, e.g. performance management and configuration data

➢ Describe the data the management service can provide to the CN.

➢ Describe coordination and management of the management functions involved in SLS assurance loops, including configuration of analytic functions, e.g. setting thresholds for prediction accuracy.

➢ Placement and role of management analytics functions in the OAM framework.

➢ Definition of life cycle phases of ML models to allow lifecycle management of ML models

➢ Information exchange within the management system.
Thank you