CCL - an Enabler for Autonomous Networks

Source: SA5

Assurance Closed Control Loop – Rel17

- Enabling communication service assurance
- Specifications: 28.535, 28.536

📶 Supported Use cases

- Communication service quality assurance and optimization.
- Communication service SLS assurance control.
- Limiting the actions of an assurance closed loop.
- Trigger based Assurance Closed Control Loop (ACCL) state change.
- Assurance closed loop execution supervision.
- Targeted Assurance Closed Control Loop.
- ...

📶 Major Deliverables

- Assurance management NRM fragment.
- AssuranceClosedControlLoop representing an ACCL.
- Explicit association between ACCL and NeworkSlice and NetworkSliceSubnet
- aCCLDisallowedList to limit the CCL execution
- AssuranceGoal and AssuranceTarget referring to ServiceProfile and SliceProfile
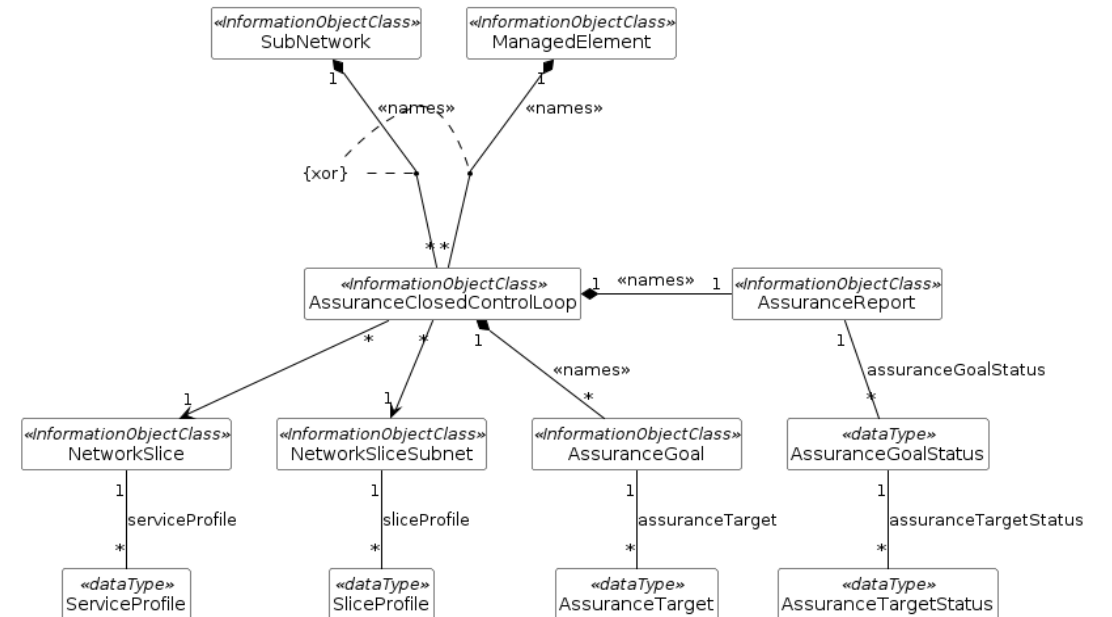
Closed Control Loop – Rel19

- Enabling network automation using CCL
- Specifications: 28.567

📶 Supported Use cases

- Dynamic control and composition of CCL
- CCL performance Monitoring
- Triggered CCL Capability
- CCL Conflict management
- CCL Coordination
- ….

📶 Major Deliverables

- CCL NRM
- CCL Composition and component information
- CCL Purpose (Fault Management, MDA Problem Recovery)
- Conflict Resolution (Scope, Action)
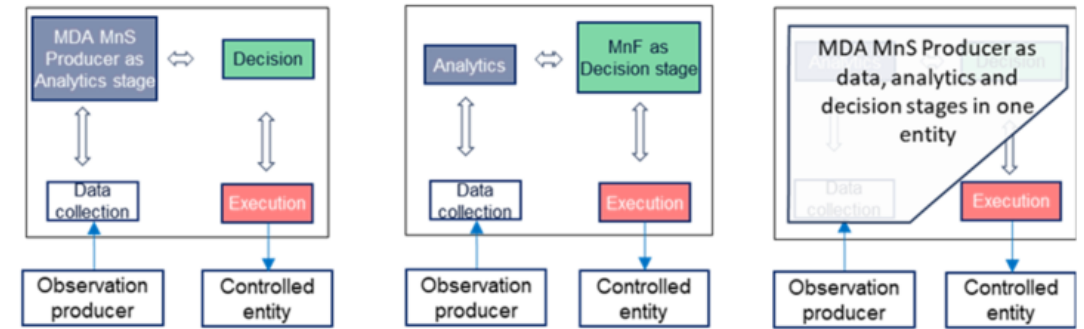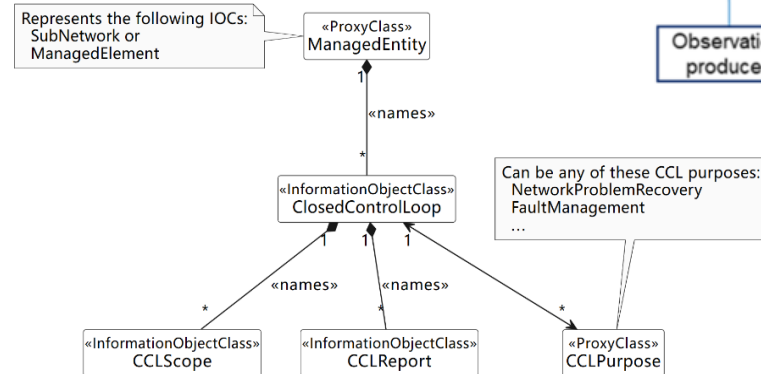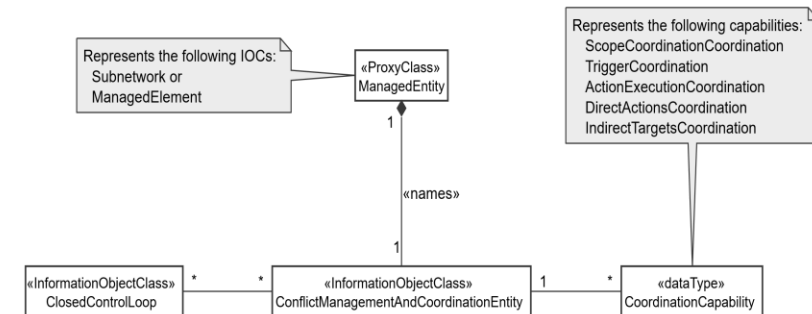- CCL Performance Metrics (occurrence of goal breach, successful conflict Resolution)

Figure 5.1.2.2-1: Management functions as steps of a closed control loop
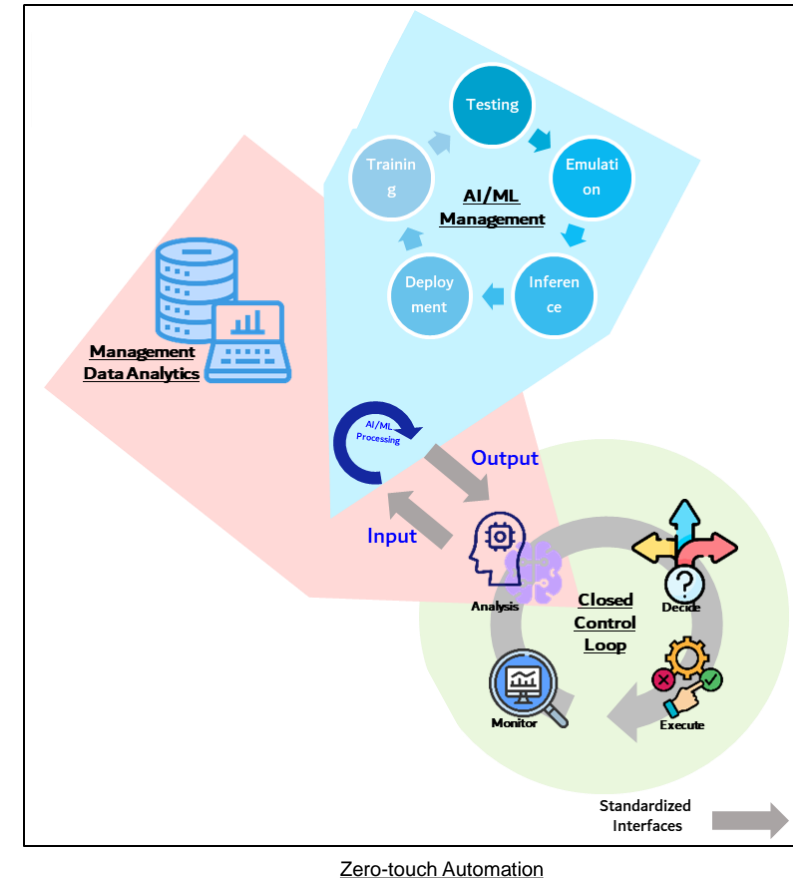
Closed Control Loop – Rel20 (6G)

▪ Multiple automation functionalities can be deployed enabling zero-touch automation
▪ CCL, MDAS and AI/ML complementing each other for full automation

📶 Motivations

▪ Need for fully autonomous networks management feature.

▪ Multiple standardize automation functionalities need to coexist to avoid fragmentation.

▪ Reduced market acceptance due to overlapping functionalities.

📶 Proposed Study

▪ Study new use cases for zero-touch network automation

▪ How to stich already standardized automation functionalities.

▪ Measures to avoid/handle potential conflicts between different management functions.

Zero-touch Automation

CCL: Closed Control Loop, MDAS: Management Data Analytics

Thank You !