# 5G Ride On!
## Business Continuity solution for Electric Vehicle (EV) charging infrastructure businesses
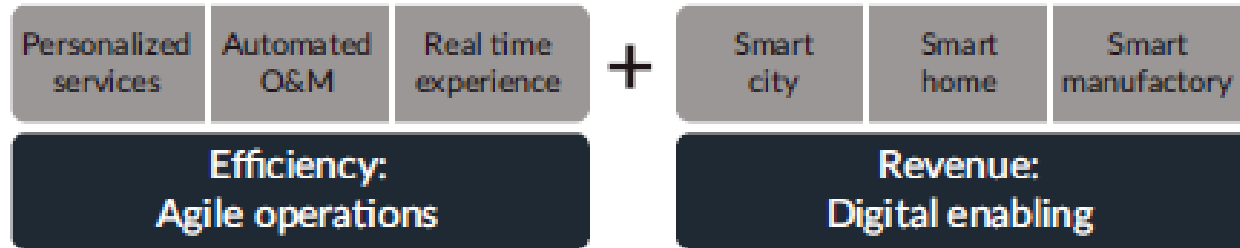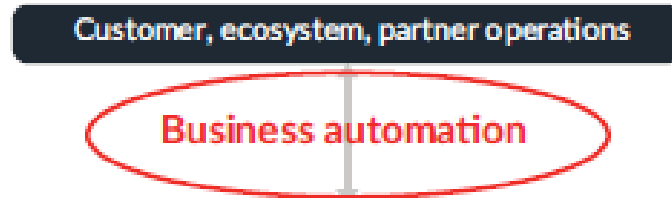
# TMF: Framework for Autonomous Networks
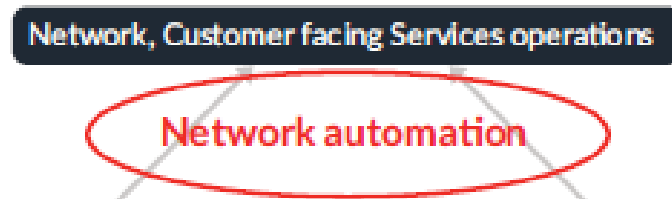
# Catalyst Objectives



### Orchestrate & monetise a **complex** eco-system
Demonstrate how a complex eco-system of partners, systems and business processes, as found in the EV charging market, can be orchestrated and monetised by a 5G CSP using an autonomous network framework.

### Offers new & enhanced **assured** service
CSP/DSP to offer an assured service with improved SLAs that self-heals from network outage and assures service performance. A common community and enterprise IIoT need, prime for operationalisation and monetisation.

### TMF **ODA and eTOM** aligned solution
Use of an ODA aligned architecture, covering fulfilment, assurance and billing eTOM processes that serves eco-system customers, suppliers and curators from order to production.

### Employ new **3GPP and ETSI** Features
Employment of new 3GPP & ETSI standards, including 5G network slicing, multi-access edge computing (MECs) and virtual network functions (VNFs) to achieve desired result.
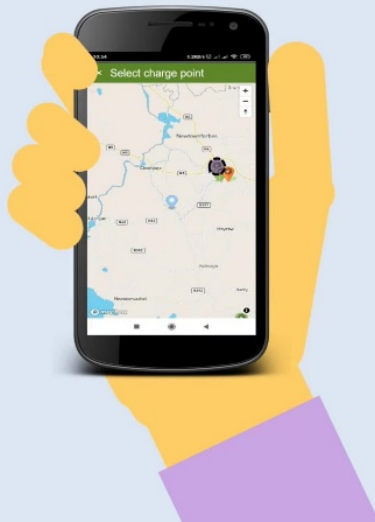
### Deploy closed loop **autonomous network**
Create a autonomous network orchestrated through a cognitive close-looped process using TOSCA templates and VNFs that route traffic to a fail-over MEC.
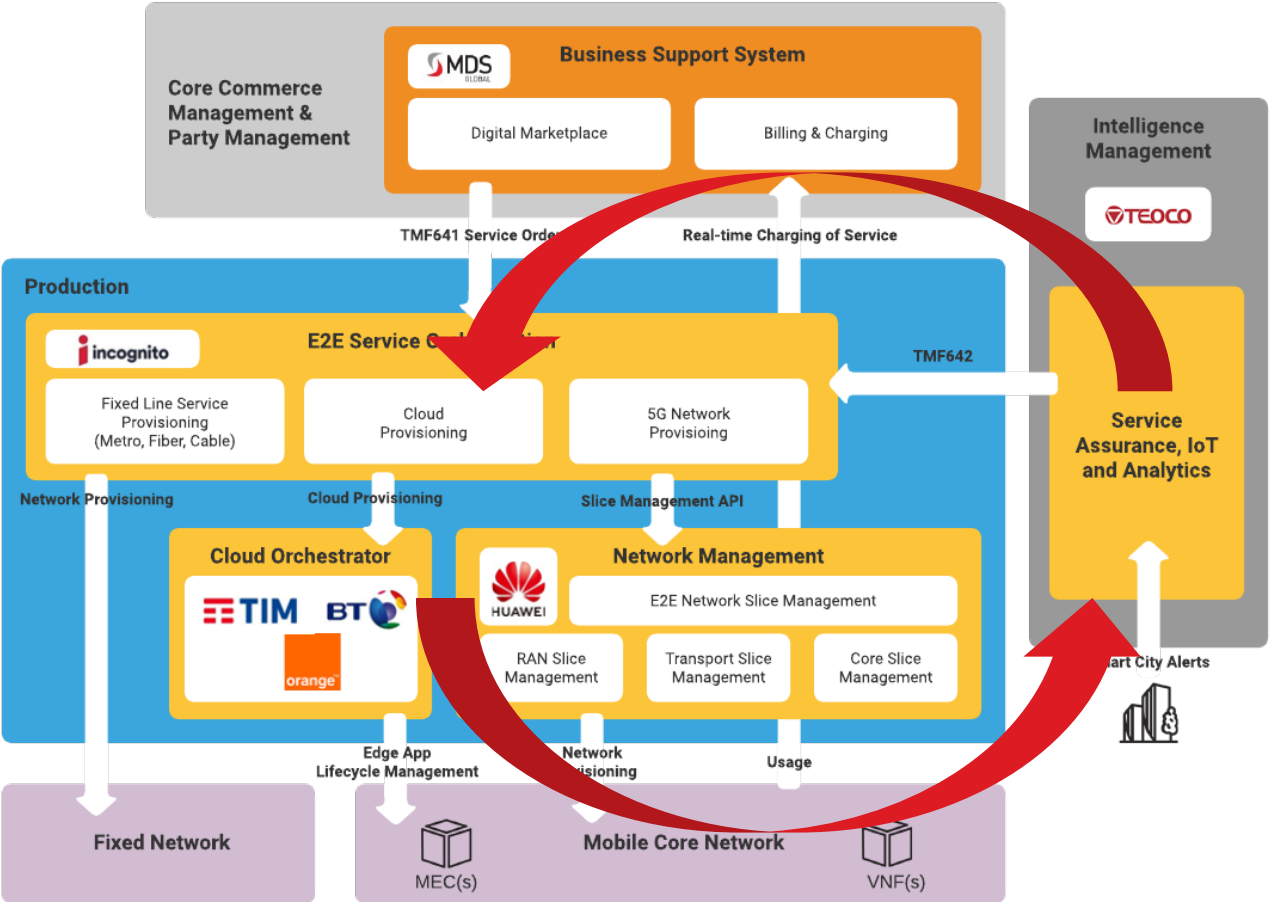
How an ODA aligned autonomous service architecture can support a complex eco-system as highlighted by the EV Charging Market

# Reliable Services for EV Charging – Solution Highlights

2. Research Alternatives 🔍

5. Authenticate pre-payment 🔒

MYCHARGEPOINT EXPRESS

Plug in!

tmforum Rocks!

- Predictive Analytics of potential communication loss
- Dynamic deployment of a MEC local app using TOSCA
- MEC Forwarding/Offloading
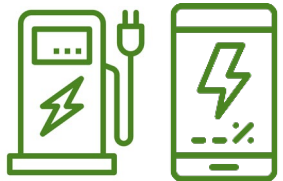- Using a dedicated network slice
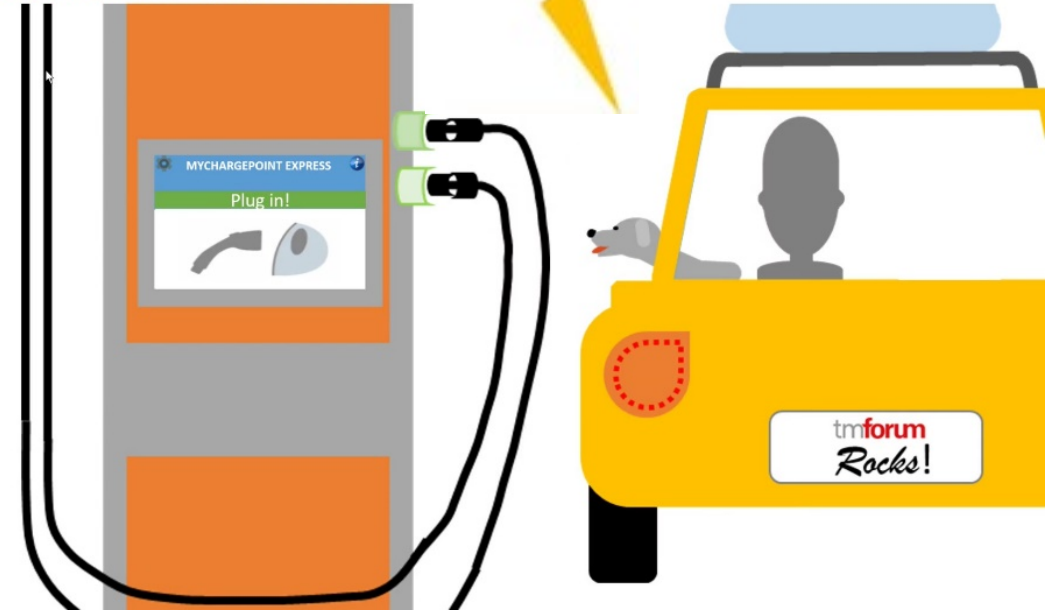
- 5G as a backup for fixed connectivity
- Dynamically creating a network slice for a backup communication between the charging stations and the charging station management system
- Adaptation to the evolution of the emergency event

# 5G Ride On! using AN Framework

Resilient EV Charging

Business Continuity

Reliable Connectivity
Availability and Resiliency
EV Charging infrastructure

**Solving for Business Continuity**

Business Curator

**Business Operations**

KPIs

Situational Awareness

New Business and Operational Models

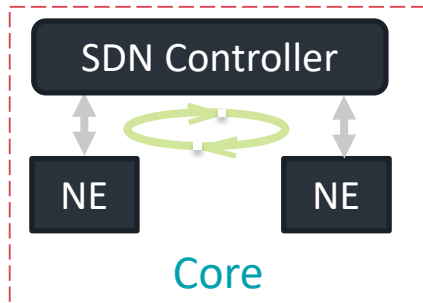5G Ride On! Solution Architecture

**Cross Domain Operations**

Context Awareness

Autonomy KPIs

Towards Autonomy & Automated Network Operations

Cognitive Loop

Resilient Connectivity Across multiple Autonomous Domains

| Access Controller | T Controller | SDN Controller | MEC / Edge |
|---|---|---|---|
| NE    NE | NE    NE | NE    NE | |
| Access | Transport | Core | MEC/Edge Cloud |
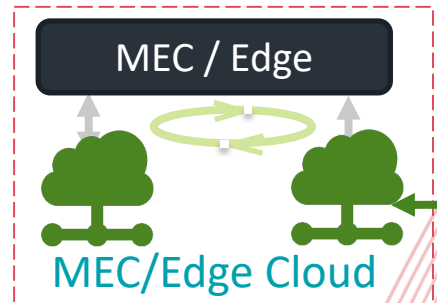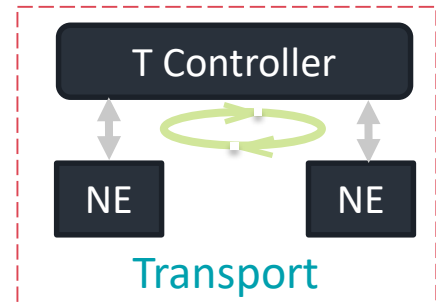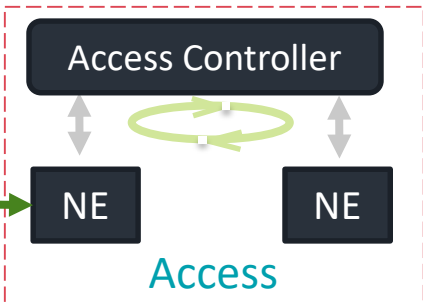
Location Based Data

# Automating the SLA definition process

**SLA Requirements**

**Enterprise Buyer** 👤

| Customer |

**Customer Intent**

**Product Manager** 🧍

| Business Operations |

**Business Intents**

**Business Automation Loop**

**Service Intents**

**Service Designer** 🧍

| Cross Domain Operations |

**Service Automation Loop**

**Resource Intents**

**Operations Manager** 🧍

| Network  Manager Operations |

**Network Control Loop**

**Intelligence**
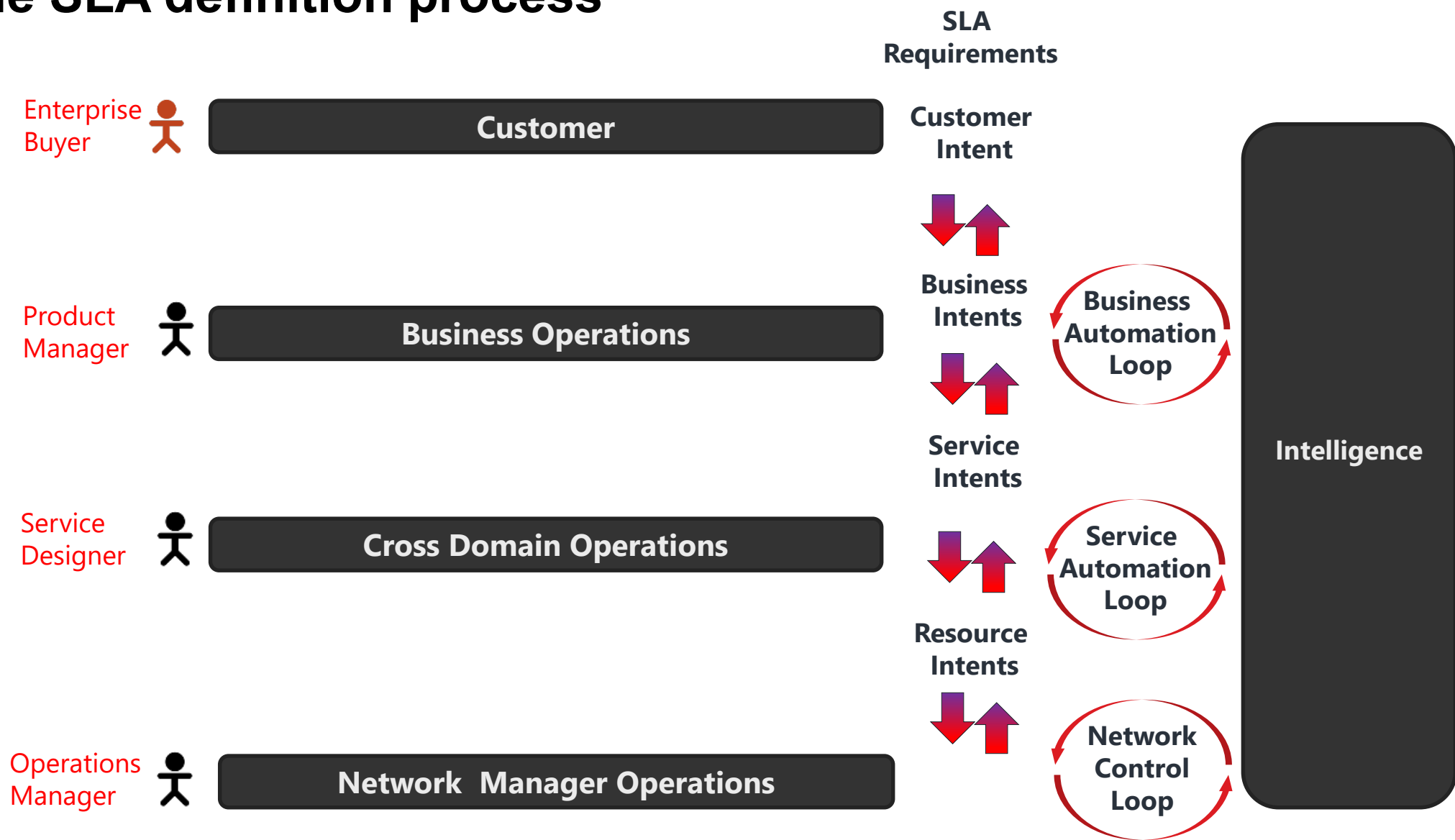
# HELIX SERVICE ASSURANCE SOLUTION
## Future Proofed for Intent based Autonomous Networks

**Enterprise Buyer**

**Customer**

Customer Input

**Product Manager**

**Business Operations**

Pass Service SLA

Order Management

Service SLO

**Service Designer**

**Cross Domain Operations**

Map service to Template — Tosca

Slice SLA Translation → Slice SLA Instantiation

Service Orchestrator

Slice SLO

Breakdown sub-services & Resources → Monitor Slice SLA

Helix Service Assurance

Slice SLO — Alarms

Apply Resource Thresholds

Domain Manager

**Operations Manager**

**Network Manager Operations**

SLA Requirements

Customer Intent

Business Intents

Service Intents

Resource Intents

Measurable Intent

System | Process | External API | Internal API

# Assurance for Reliable communication for EV charging



NSSI Accessibility & Retainablity KPIs: Sessions Establishment, Registration, etc.

Reliable Communication for EV Charging

Converts SLAs to actionable SLO "intents" to network KPIs

Aggregated KPIs Impact Calculation Smart Thresholds

NSI

Fixed Line

NSSI Core

N3

NSSI RAN

AMF

N3 GTP Throughput KPIs

gNB 1

gNB 2

Cell-11

Cell-12

Cell-21

Cell-22

CU/DU RAN Availability KPIs: RRC, NGSIS, Flows

CU

DU

CU

DU

CU

DU

CU

DU

Breakdown sub-services & Resources

Monitor Slice SLA

Helix Service Assurance

Slice SLO

Alarms
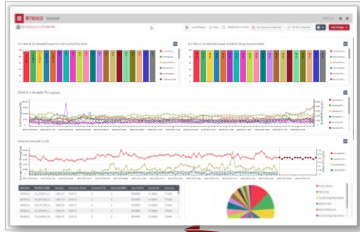
Apply Resource Thresholds

Domain Manager

# Assurance for Reliable Data for EV charging (Edge Based)

**Reliability calculations are based on at least two technical domains: Mobile & Cloud hosting!**
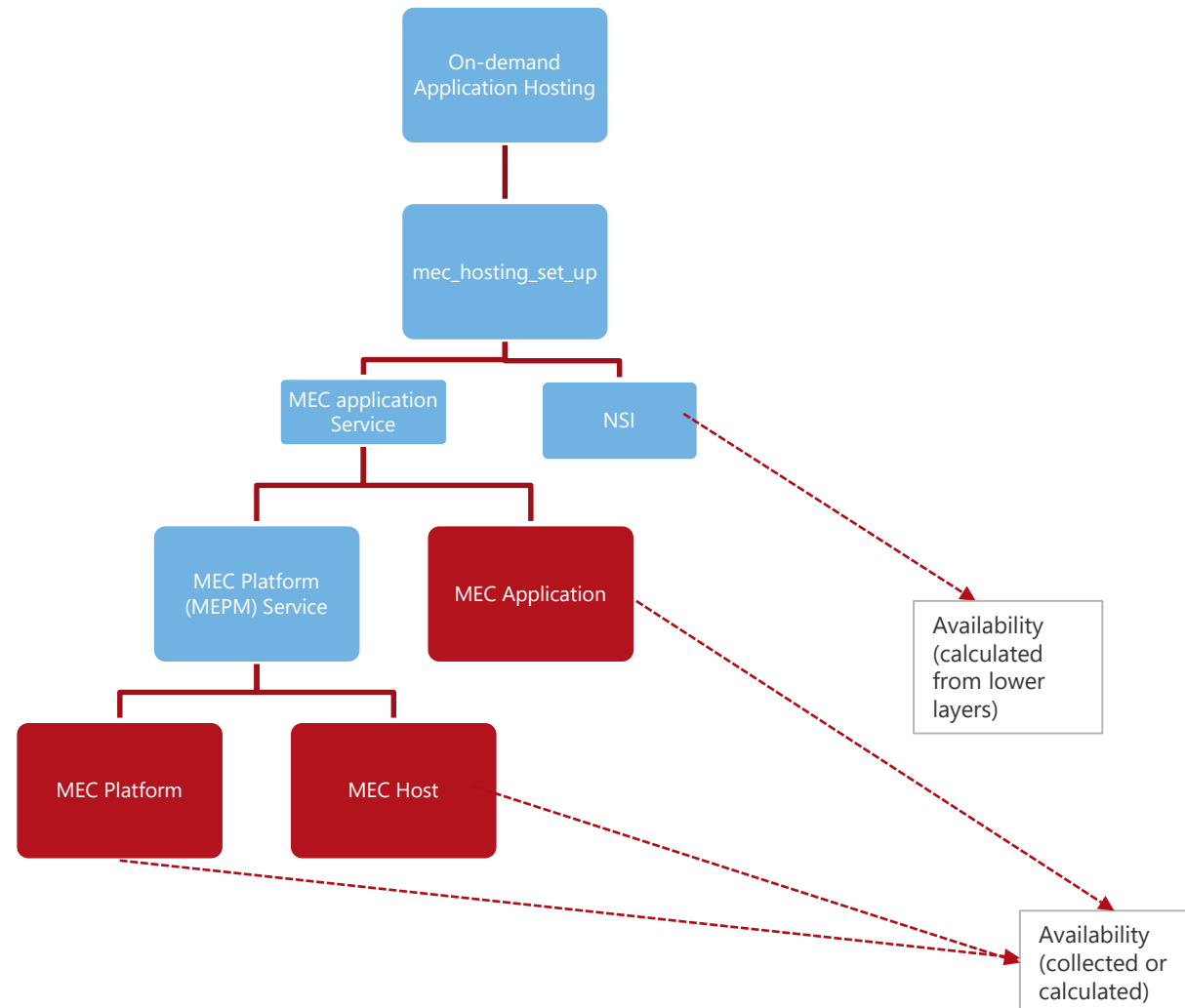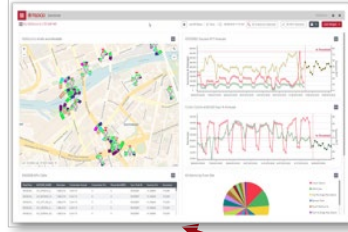
# HELIX SERVICE ASSURANCE
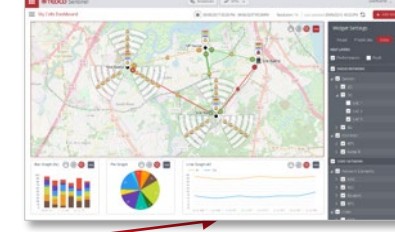## Integrated Service Assurance for Enterprise Assurance
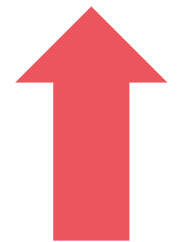
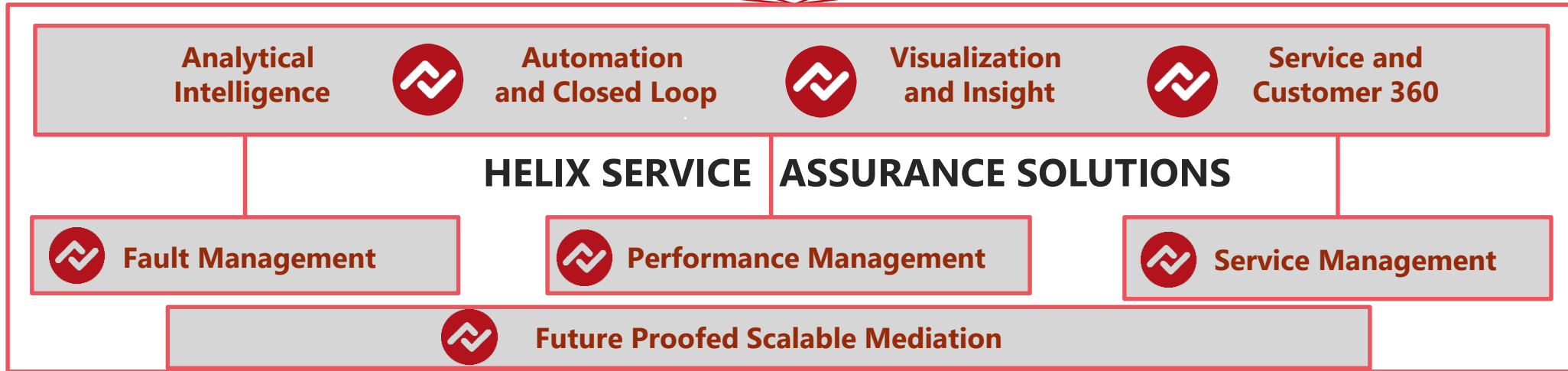Executive Management

NOC/SOC

Engineering

Business & Customer Care

Integrates Business Processes

**Analytical Intelligence**

**Automation and Closed Loop**

**Visualization and Insight**

**Service and Customer 360**

**HELIX SERVICE ASSURANCE SOLUTIONS**

**Fault Management**

**Performance Management**

**Service Management**

**Future Proofed Scalable Mediation**

Integrated Service Assurance

Multi-domain, Multi-vendor, Multi-tech Compliant

Complex Agile Network

| NFV / SDN /CNF | 5G | FWA | 2G, 3G, 4G | Enterprise | Consumer | IP | Wireline | IoT |

10

# THANK YOU

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