Case Study

A1 Telekom Austria Group and Amdocs showcase live end-to-end 5G network orchestration enabling new enterprise-driven use cases

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Amdocs E2E Service and Network Orchestration was used to manage:

- E2E lifecycle of 5G network slices and services across multiple domains
- Edge applications enabling new revenue generating use cases

About the customer

A1 Telekom Austria Group, listed on the Vienna Stock Exchange, is a leading provider of digital services and communications solutions in Central and Eastern Europe with around 26 million customers, currently operating in seven countries under the brand A1: Austria, Bulgaria, Croatia, Belarus, Slovenia, the Republic of North Macedonia and the Republic of Serbia.

Offering communications, payment and entertainment services as well as integrated business solutions, A1 Telekom Austria Group achieved revenues of 4.75 billion Euros by year end 2021. Around 18,000 employees and state of the art broadband infrastructure make digital business and lifestyle possible and enable people, companies and things to connect everywhere anytime. As European unit of América Móvil, one of the largest wireless services provider in the world, A1 Telekom Austria Group is headquartered in Vienna and gives access to global solutions.

Strategic objective

The customer sought to demonstrate the plausibility and advantages of creating a software-defined architecture that can be deployed with any radio or infrastructure and at any location, with the ability to create edge application services capable of solving business-critical use cases.

To achieve this objective, they approached Amdocs to build a proof of concept (PoC) that would demonstrate 5G slice operations and monetization based on Amdocs' end-to-end service and network orchestration and 5G monetization solutions, including:

- E2E lifecycle management of 5G network slices/ network services and edge applications
- Network slice and network service orchestration across RAN and core network domains
- Application management and orchestration on the edge
- Example of a customer portal for ordering 5G network slices and network services.

Challenges

The highly dynamic infrastructure-independent cloud-native 5G edge architecture posed many challenges for E2E lifecycle management of network slices and services within the network slice, requiring management of 5G network slices and services across the following architectural characteristics:

- Location-independence with logical data centers
- Local and geographic redundancy
- Highly scalable with overload protection
- Edge computing capabilities
- Standards evolution, i.e. 3GPP

The solution: end-to-end 5G service and network orchestration (including 5G network slicing)

The customer selected Amdocs to design a multi-vendor E2E service and network orchestration PoC to manage the E2E lifecycle of 5G network slices and edge applications. The goal was to dynamically deliver highly reliable and low latency services, while providing complete lifecycle management of services requiring enhanced mobile broadband (eMBB) and ultra-reliable low-latency communications (URLLC) network slicing service types.

Amdocs answered the challenge by designing an environment that demonstrated the deployment, management, and monetization of 5G services, as part of a mobile private network based on 5G Standalone. It was based on an infrastructure-independent cloud-native 5G edge architecture and included 5G SA core software, while partnering with an AR application vendor, a European cloud hosting solution vendor and Amazon Cloud.

Amdocs E2E Service and Network Orchestration solution played the key role in the network's slice lifecycle management, enabling the delivery of a plethora of diverse 5G services over a shared network infrastructure. To combat significant new complexity introduced by 5G network slicing in managing the service lifecycle (design, orchestration, operation), the PoC enabled the customer to deliver service manageability as an integral part of the BSS and OSS, including automating, orchestrating, productizing and commercializing slicing-based services from one place.

PoC benefits in a nutshell:

- Business-driven service design
- On-demand, adaptive, contextual orchestration
- Real-time dynamic Inventory
- Policy driven closed-loop assurance
- Policy driven closed-loop control

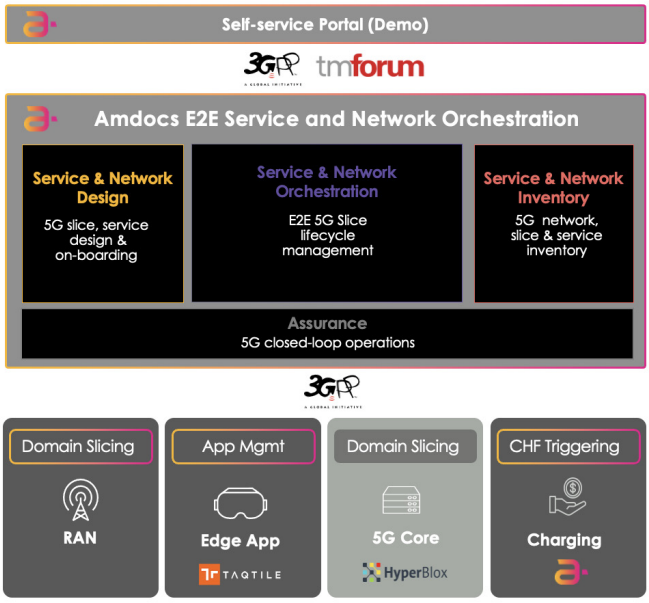

Figure 1. Scope of Proof of Concept

Edge application orchestration

Amdocs PoC solution managed the complete E2E fulfilment and activation process, including configuration and instantiation of the applications on the edge cloud. The PoC also orchestrated the creation of network slices in each domain and stitched the network slices together to deliver E2E connectivity across all domains to the applications on the edge cloud.

In summary, this included:

- On-boarding of the AR-based application
- Application instantiation on edge cloud
- Application termination on edge cloud

Monetization & trigger charging

Amdocs E2E Service and Network Orchestration also played a key role in the PoC's ability to generate new revenue and monetization possibilities. The solution serves as a charging-triggering function that passes information about a slice's activation, utilization, and performance to the charging function, thereby enabling enrichment of the customer's monetization and business model capabilities. The platform also generates comprehensive slice-level reports covering:

- Operational events such as slice/service instantiation, termination, activation, deactivation
- Usage events such as dynamic resource consumption by slice/service/network function
- Performance and analytics events based on collection of network slice performance metrics

Capabilities demonstrated

- End-to-end service lifecycle management of network, edge and cloud services
- Cross-domain, multi-vendor, hybrid network orchestrator
- Adaptive network slice management in real time as business and customer needs change
- Open, vendor-agnostic, based on industry-leading standards including 3GPP, ETSI, TMF and ONAP

Use Cases

PoC use cases demonstrated included:

- End-to-end 5G service and network orchestration (including 5G network slicing)
- Edge application orchestration
- Monetization & trigger charging

Key achievements

- **Time To Market & Effort:** The PoC demonstrated the ability of E2E SO environment to reduce the time it takes to deploy new Communication Services/Network Slice (from hours or days) to just minutes
- **Time To Design & Effort:** Designed Network Slices Templates are invoked from inventory when a new customer service request is received, and populated with the relevant parameter values, without any human interaction. This means the implementation of E2E SO, for Network Slicing Sales to Activation, will result in reduction of vFTE and cost savings, as well as higher customer satisfaction
- **eMBB & URLLC network slices:** Enabled successful design, creation, activation, modification, deactivation, and termination of network slices across 5G standalone core and multiple network domains
- **Network Slice Services:** Enabled successful design, creation, activation, modification, deactivation, and termination of services, deployed on the network slices

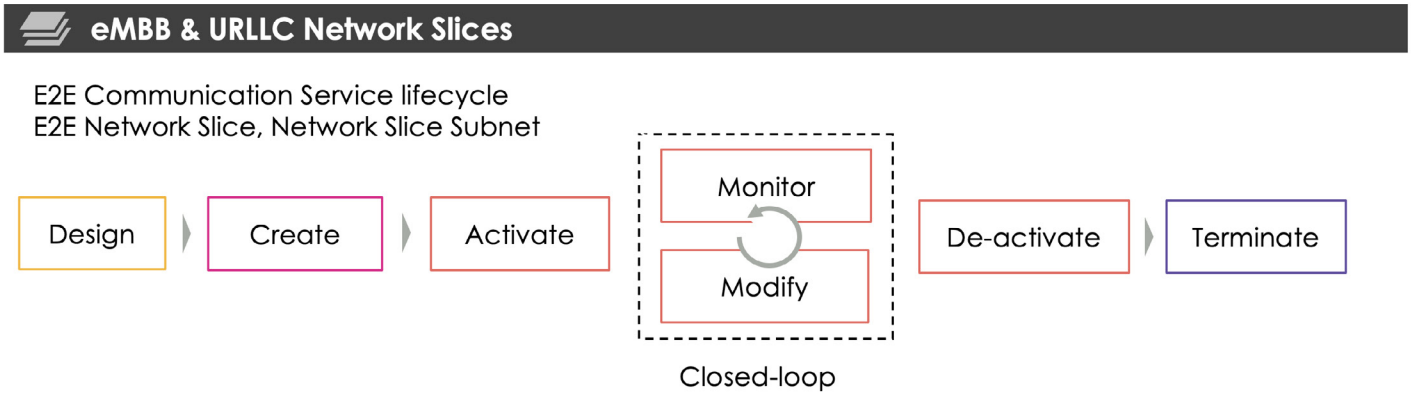

Figure 2. PoC Network Slicing life cycle management

- **Edge app orchestration:** Enabled on-boarding of AR-based application, application instantiation and application termination on edge cloud
- **Monetization & trigger charging:** Enabled triggering of charging from Amdocs E2E Service & Network Orchestration to customer's charging system

Amdocs helps those who build the future to make it amazing. With our market-leading portfolio of software products and services, we unlock our customers' innovative potential, empowering them to provide next-generation communication and media experiences for both the individual end user and large enterprise customers. Our 31,000 employees around the globe are here to accelerate service providers' migration to the cloud, enable them to differentiate in the 5G era, and digitalize and automate their operations.

Listed on the NASDAQ Global Select Market, Amdocs had revenue of $4.3 billion in fiscal 2021.

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