Key Challenges in RAN

- Ecosystem challenge
- Deployment cost & flexibility
- Cumbersome & costly RAN swap
- Low flexibility limits innovative power
What do we expect from RAN Disaggregation/O-RAN

1. O-RAN Open fronthaul adoption
2. SW/HW decoupling
3. Independent management framework (SMO)

- Enrich the vendor landscape, avoid vendor lock-in effect
- Less complex and shorter RAN modernization
- New use cases via intelligence and programmability
- Lower TCO vs. S-RAN (to be proven)
DT ambition: O-RAN as a deployable option by 2023

Early hands-on experience: O-RAN TOWN
Gain operational insights and drive feature readiness

Prepare operations
Define and implement required new operating model

Skill development
Build required skills and resources

Industry ecosystem
Ensure to have a healthy and sustainable supplier landscape

DT’s own SMO/Automation
Avoid any vendor lock-in and manage integration complexity

5 KEY COMPONENTS ON OUR WAY TO O-RAN
As expected, the O-RAN Town journey is not a straight path—but provides very valuable learnings

- Early HW versions
- Early SW drops
- Multiple “firsts” (e.g. live deployment with massive MIMO radio units)

Initial plan
Operating model: integration responsibility moves towards the operator

1 O-RAN Vendor/Supplier
- RU vendor A, B, C, ...
- vDU/vCU vendor A, B, C, ...
- O-Cloud vendor A, B, C, ...
- Server vendor A, B, C, ...
- SW xyz vendor A, B, C, ...

2 Integration and Testing according to DT requirements

3 NatCo specific deployment scenario/vendor combination

- DT RAN Disaggregation

ILLUSTRATIVE

Demand
Delivery

Integration by Vendor
Integration by DT
Piloting of SMO concept @ O-RAN Town

Platform for Service Management and Orchestration (SMO)
- Integration with O-RAN cloud native functions (CNF)
- Integration with O-RAN compliant RUs as physical network functions (PNF)

Functionalities for Lifecycle Management
- Service Design 4G and 5G
- Day 0 and Day 1 Configuration of network elements
- KPI calculation and Performance measurement
- Alarm list and dashboard for fault management
- Basic policies for Network optimization
- Security and access management

Functionalities
- Portal (user interface)
- APIs (northbound)
- Orchestrator
- Active Inventory
- Control loops
- Data Messaging and analytics
- Controllers (southbound)

Applications
- RU
- DU
- CU

Virtualization
- K8s
- Compute
- Storage
- Network

Infrastructure
- T-NAP
DT SMO platform based on open source (ONAP)
Development roadmap until 2023

Gaining Operational experiences

2021
Setup platform
... gain experience with CU/DU split

Run automation

2022
Increase automation capabilities
... extension of scope

Production readiness

2023
Operationalize NW functions
... improve automation by QoS aspects and process adoption

Ready for commercial operations
Thank you!