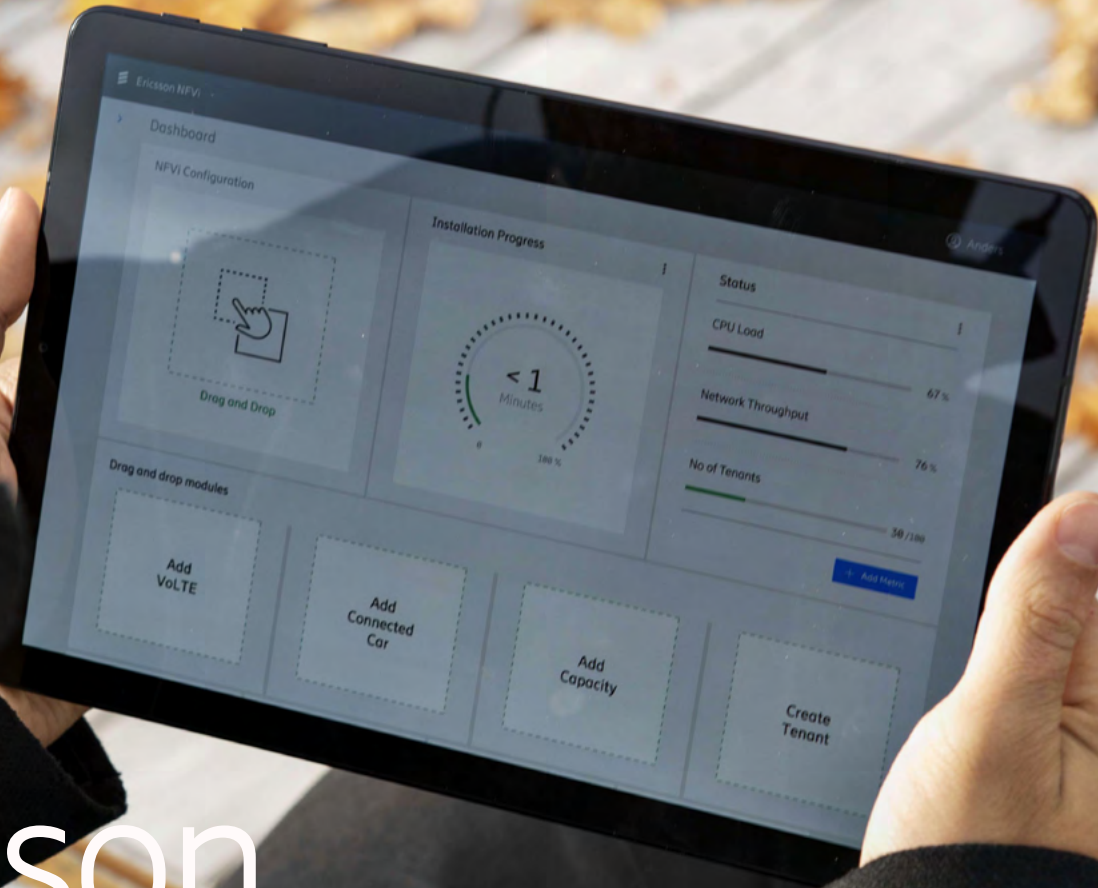




[ericsson.com/
ericsson-orchestrator](https://ericsson.com/ericsson-orchestrator)



Ericsson Orchestrator

Product brief

Solution overview

Take the next step in your orchestration journey and prepare your network for tomorrow's challenges. Ericsson Orchestrator masks the network's complexity and carries out cross-domain orchestration from a single operations portal – it is a modular product that can be seamlessly deployed in different variations.

For some time, operators have been using Ericsson Orchestrator to manage their cloud infrastructure and virtual network functions (VNFs). The industry is evolving towards more advanced network services and complex end-to-end services in 5G and IoT, creating a great need for automation. Ericsson Orchestrator is transforming into a cross-domain orchestrator that manages your radio, core and transport, as well as configuring and optimizing your network in real time to meet your Service Level Agreements (SLAs).

Ericsson Orchestrator is a model-driven, multi-vendor system that manages your hybrid network through open-standard interfaces and templates, and supports the transformation from physical network functions (PNFs) into VM-based cloud infrastructure with cloud native container applications.

The system will help operators to reduce opex and time to market (TTM) through automation, as well as bring down capex through optimized usage of network resources.

The industry needs an open, future-proof product that supports the shift from today's static network that is managed in silos to a flexible, hybrid, multi-domain network.

Key challenges

Multi-vendor capabilities

- Moving to fully end-to-end automation will require multi-vendor capabilities. Operators' networks will be able to manage the telco domain as well as the IT domain.

Efficiency and time to market

- To gain total cost of ownership (TCO) and TTM efficiency, operators must be able to manage the 5G and IoT services from one system. The evolution from where we are today into the future will require the capability to manage hybrid networks.

Real-time updates

- New 5G and IoT services will require the network to be updated or reconfigured in real time. Without this capability, operators risk losing business or violating SLAs.

Key benefits

End-to-end network slicing

- End-to-end network slicing enables operators to offer new, advanced 5G and IoT services and achieve new revenue streams from the use cases created.

Model-driven execution

- Model-driven execution simplifies the creation of advanced services through predefined templates executed through a standard workflow. This lowers the cost of ownership, enables repeatable service deployment and reduces TTM.

Advanced placement

- Advanced placement optimizes the placing of workloads and enables real-time updates for advanced 5G services.

Multi-vendor aligned with standard

- Multi-vendor alignment avoids lock-in and secures the flexibility that defines end-to-end services.

Ericsson Orchestrator components and functionality

Ericsson Orchestrator is made up of several components, together comprising a fully rounded solution.

Service orchestration

Service Orchestrator supports the model-driven definition and orchestration of end-to-end services across domains such as radio, core and transport. Models can be composed into hierarchies, allowing the reuse of more granular building blocks (e.g. a single packet core NF) within higher-level models (e.g. a group of packet core NFs), optimizing model reuse and simplifying service development and deployment. This model-driven approach is multi-vendor and cross-domain, allowing the creation of end-to-end service models for use cases such as 5G, network slicing and IoT.

Service Orchestrator provides a plug-in framework for integration with NFV Orchestrators (NFVOs) and Domain Managers, with native support for the Ericsson Orchestrator NFVO and other ETSI/MANO-compliant NFVOs, Ericsson Orchestrator WAN Orchestrator, and Ericsson Network Manager. The plug-in framework enables integration with other Domain Managers and IT systems.

NFV orchestration

The following features are possible with NFV Orchestrator:

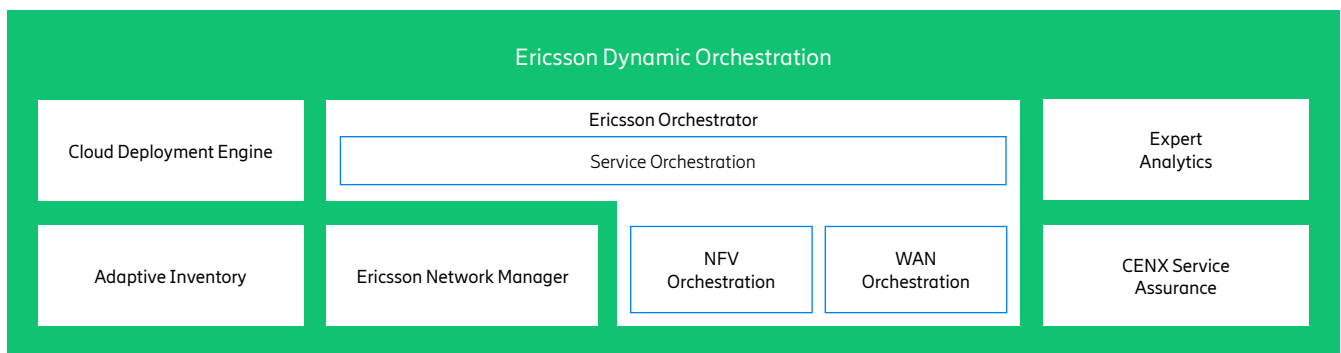
- Model-driven cloud NFV orchestration aligned with ETSI/MANO and TOSCA to allow multi-vendor integration of VNFs and VNF Managers
- Built-in support for NFVO, GVNFM and Service Configuration Management
- Enablement of orchestration resources and network services across different Virtualized Infrastructure Managers such as OpenStack, VMware and AWS
- Feature-rich with support for multi-tenancy, capacity management and advanced placement, as examples

WAN orchestration

WAN Orchestrator is the component of Ericsson Orchestrator in charge of orchestrating the transport network in a multi-domain, multi-vendor and multi-layer environment. It has two major functionalities: Transport Services management and Traffic Engineering.

From a Transport Services perspective, WAN Orchestrator has the capability to discover, reconcile and provision services like L3VPNs and L2VPNs in a model-driven fashion, using YANG models. It offers the possibility to directly configure the nodes via device models and to request the domain software-defined networking (SDN) controller to perform the configuration using network models describing the services.

On the other hand, from a Traffic Engineering point of view, WAN Orchestrator is able to act as hierarchical SDN controller in compliance with IETF-defined Abstraction and Control of Traffic Engineered Networks (ACTN) architecture and interfaces. Via its RESTCONF/YANG southbound interfaces, WAN Orchestrator can connect to multiple SDN controllers to discover the topology they manage, provide an end-to-end aggregated and abstracted view of the network, and compute and provision end-to-end connections (label-switched paths) with specific constraints (e.g. TE costs, metrics and delay).



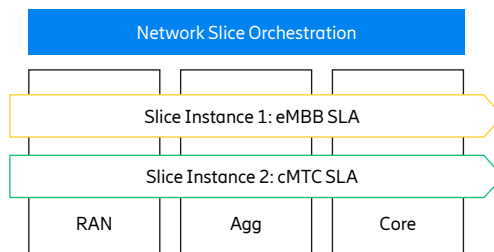
Use cases

Ericsson Orchestrator makes a number of use cases possible.

Network slicing automation, Swisscom

Together with Swisscom, Ericsson has deployed network slice life-cycle management. This makes it possible to provision and assure services in order to address new business.

Network slices for transportation and manufacturing use cases have successfully been deployed.

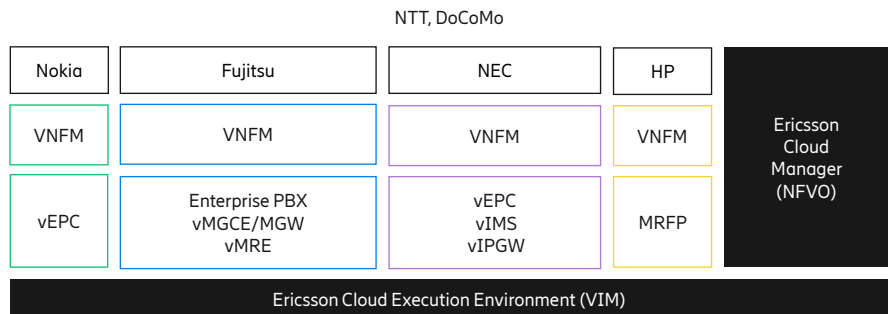


Multi-vendor orchestration, DoCoMo

Together with DoCoMo, one of the most complex multi-vendor VNF environments is being orchestrated by Ericsson's solution.

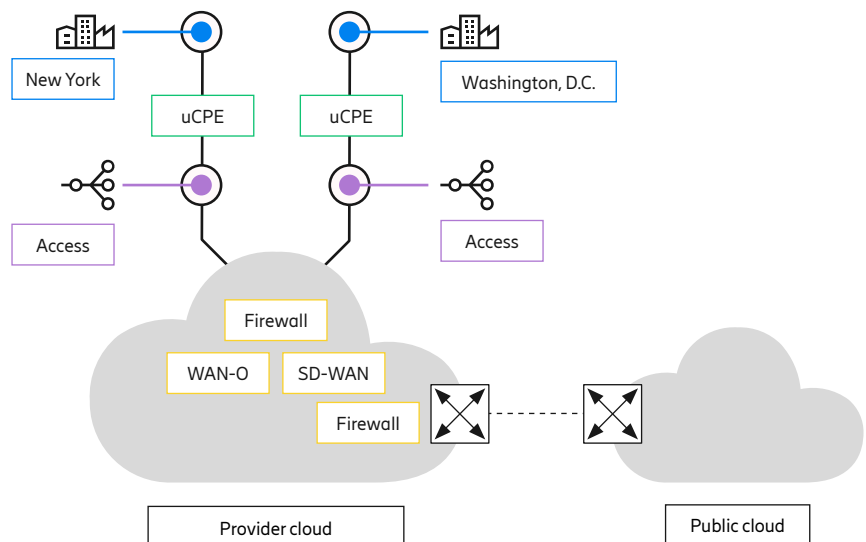
This environment includes:

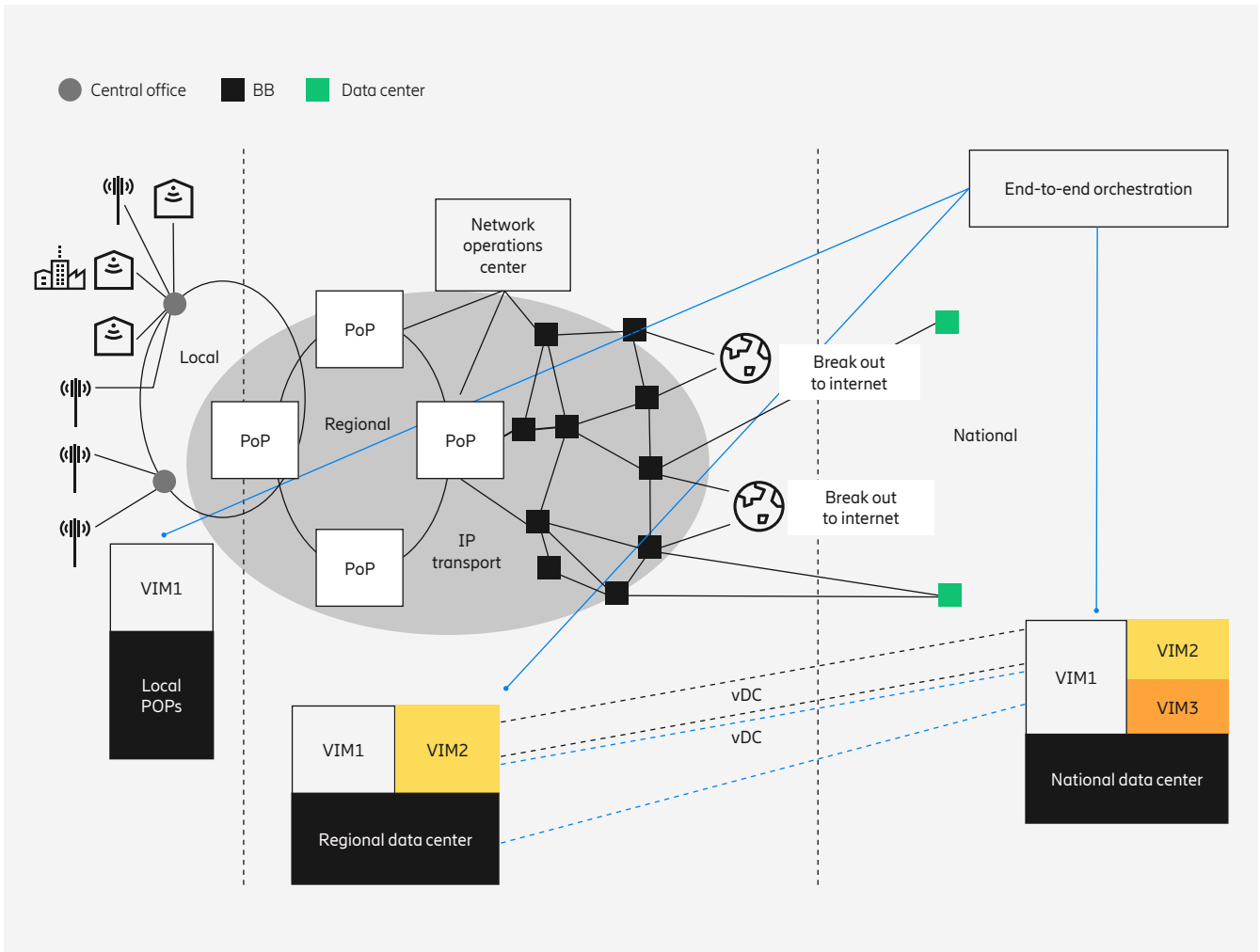
- 5,000 servers
- Non-Ericsson VNFs
- 30 million subscribers



Model-driven and multi-vendor, Verizon

This involves automating the service life cycle and closed-loop assurance, end-to-end dynamic orchestration, and VNF onboarding and testing. The scope of the service includes software-defined, wide-area networking (SD WAN). It enables Verizon to take advantage of self-service ordering and configuration, end-to-end automation and flexible payment models, resulting in more efficient service delivery.





Multi-domain and multi-vendor, Telefónica UNICA

With Telefónica UNICA, Ericsson has deployed a full-stack NFVI solution for core and IT. A single orchestrator in Telefónica UNICA, it covers 12 countries. It addresses a multi-vendor environment where core/IT/media applications are running on OpenStack and VMware.

Ericsson enables communications service providers to capture the full value of connectivity. The company’s portfolio spans Networks, Digital Services, Managed Services, and Emerging Business and is designed to help our customers go digital, increase efficiency and find new revenue streams. Ericsson’s investments in innovation have delivered the benefits of telephony and mobile broadband to billions of people around the world. The Ericsson stock is listed on Nasdaq Stockholm and on Nasdaq New York.