Ericsson Dynamic Orchestration

Solution brief
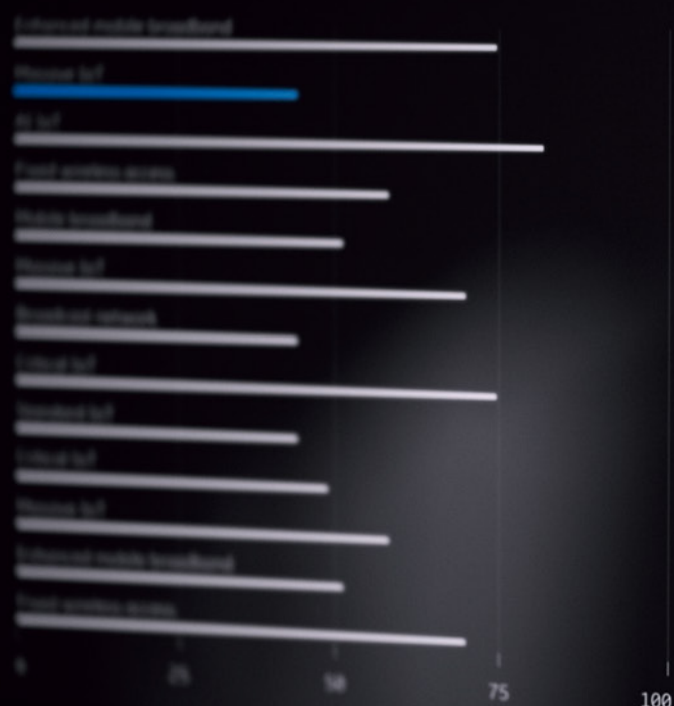
Close your automation gap

Take the next step in your automation journey and prepare your network for tomorrow's challenges. Dynamic Orchestration removes the complexity in your network — it is a modular solution that can be deployed and managed seamlessly.

For some time, operators have been trying to modernize their operations and infrastructure. They have been transforming operations, moving toward virtualizing their applications and building a mature Network Functions Virtualization infrastructure (NFVI).

In parallel, operators face a more complex network in hybrid environments, and need to both increase efficiencies and lower cost. For operators wanting to simplify procedures with automation, the creation, testing, provisioning and assurance for commercial services will be key.

It can enable them to reduce provisioning time of services as well as enforce and measure service-level agreements (SLAs). In turn, the SLAs are driven by specific and tailored requirements from new services in 5G and IoT (Internet of Things), or enhancements of existing LTE services.

The industry is asking for an open, future-proof solution that is suitable for industry shifts. Customers want something that can evolve while they leverage old infrastructure, and to not have to worry about multivendor environments.

We believe that the next level is an orchestration that has end-to-end capabilities with insight-driven, closed-loop properties. With Service Assurance, Ericsson can close the gap in your automation journey, and move you toward a zero-touch, automated operation. It will also give you the efficiencies needed to capitalize on 5G technology and new use cases.

> Gartner has named Ericsson as a leader in the Magic Quadrant for Operations Support Systems (OSS) for the sixth consecutive year.
>
> For more information, click here

Key challenges

Introducing virtualization
— Swapping out your legacy hardware and software to build a mature NFVI. It is a challenging journey toward virtualization, but a necessary one to capture the full benefits of automation.

Increased complexity with hybrid networks
— Service providers, in control of their virtual infrastructure, now face the challenge of managing a hybrid network. The complexity is further reinforced by the need to manage the hybrid networks that exist in multivendor and multidomain-dependent environments. This complexity can easily increase costs.

Improving efficiency
— Service providers continuously search for ways to optimize the total cost of ownership (TCO). One way to achieve this is to improve efficiency in their operation. For instance, service providers face many manual processes to resolve network faults. This is both costly and time-consuming, as they lack the proper automation capabilities.

Time to market (TTM) and SLAs
— Service providers face a long TTM, where they need to launch services faster to avoid missing out on business opportunities. As a network evolves, there are also stricter requirements on the SLAs that need to be fulfilled.

A versatile way to maximize efficiency

Dynamic Orchestration enables unparalleled automation in OSS to provision and assure the hybrid network. Fully integrated into Ericsson's next-generation network technology, it is ready to maximize the delivery of new services based on the extended capabilities of 5G networks.

With built-in provisioning and assurance of Ericsson's 5G VNFs, flexible product configuration, standards-based Application Programming Interfaces (APIs) and modular deployment architecture, Dynamic Orchestration enables operations to reach never-before-seen levels of automation.

With Dynamic Orchestration, customers can reach new efficiency levels while transforming to a Digital Service Provider (DSP).

Our solution is the first multivendor OSS stack to create a standards-based modular solution, designed to rapidly ensure extensibility that supports new services and network technologies. Using our fully vendor-agnostic Dynamic Orchestration means operators are ready to orchestrate telco-grade and IT services.

Encompassing the full set of OSS capabilities, hybrid networks can be planned, engineered, provisioned and assured from a pre-integrated stack.

While transforming to NFV-based networks and introducing new 5G services, operators must be agile, innovative and relentlessly focused on efficiency through automation. DSPs must stay competitive and attractive even when new disruptive players are entering the market.

With Dynamic Orchestration, service providers can evolve through an incremental and modular approach. It is future-proof, providing the flexibility to pick and choose components. Customer demands can evolve without having to worry about having a multivendor infrastructure.

With an expansion in Lifecycle Management (LCM), Dynamic

Orchestration reaches new levels of automation. It covers the span of orchestration in resource, VNF and service level, and will enable Lifecycle Service Orchestration for 5G services.

Ericsson Dynamic Orchestration is European Telecommunications Standards Institute (ETSI) compliant, Open Network Automation Platform (ONAP) compatible and built on cloud-native principles. You can gradually choose how you want your orchestration to evolve and be assured that it will meet industry requirements. In addition, you do not have to worry about your current infrastructure not being able to coexist with our orchestration solution.

Ericsson Dynamic Orchestration is built with our knowledge and understanding of the complex relationships between different technology domains and the many layers within public telecom networks.

Key benefits

Perform end-to-end network slicing and Service Assurance
— This enables revenue streams from new use cases.

A single orchestrator for multivendor, multidomain and hybrid networks
— In a complex network environment, Dynamic Orchestration can ensure orchestration across the Radio Access Network (RAN), core and transport domain. It also manages physical, virtual and containerized Network Functions (NFs) across 4G and 5G networks.

Model-driven, closed-loop assurance
— This covers creation, testing, delivery and assurance. It will guarantee SLAs and service quality for 5G use cases, at scale.

Rapidly deploy new network services
— With onboarding automation, a common information model and catalog-driven provisioning, Dynamic Orchestration makes it easy to offer new network services with decreased provision time.

Pre-integrated solution
— Covering all aspects of OSS, from planning to assurance, this solution drives down the cost of expensive system integration.

Closed-loop assurance
— With the advent of NFV, provisioning and assurance can be fully connected, allowing broader self-healing concepts, from infrastructure to service.

Hierarchical deployment
— Dynamic Orchestration boasts a hierarchical approach to deployment. All components work seamlessly together at every level, from service to domain levels. This allows managed transformation, domain by domain, all leveraging the same technology.

Ericsson Dynamic Orchestration components and features

Ericsson's Dynamic Orchestration comprises
several pre-integrated, modular products,
thus offering an end-to-end, closed-loop solution
with the flexibility to meet operator needs.
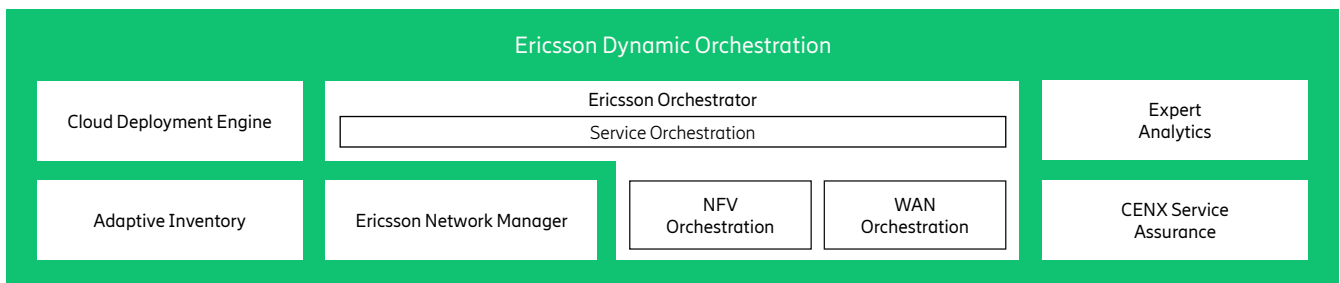
Ericsson Orchestrator
In the context of ETSI NFV-Management and
Orchestration (MANO), Ericsson Orchestrator
plays the role of NFV Orchestration
(NFVO), Generic VNF Management
(G-VNFM) and Service Orchestration.
It consists of three modules – Service,
NFV and WAN Orchestration – that
can be offered individually.

Service Orchestration:
– For new 5G, IoT and network
  slicing use cases.
– Provides network slice management,
  including LCM and configuration by
  using TOSCA as the template language.
– Real-time inventory check carried out to
  generate a service instance design, which
  is then deployed across the resources.

NFV Orchestration:
– Performs NFVO, G-VNFM and Service
  Configuration Management (SCM).
– Enables orchestration of resources across
  different Virtual Infrastructure Managers
  (VIMs) (OpenStack or VMware) and
  both intra- and inter-data centers.
– Automates the network
  service instantiation described
  in TOSCA/JSON formats.
– Performs fault and performance
  management for the infrastructure
  by collecting and correlating alarms
  from the hardware and VIM.
– Interfaces with multivendor Element
  Management System (EMS)/VNF Manager
  (VNFM) through the Or-VNFM interface.
  The G-VNFM function provides LCM of
  VNFs that do not have a specific VNFM.

WAN Orchestration:
– Enables cross-domain orchestration
  across access, transport and core by
  interfacing with different domain
  managers and transport Software-Defined
  Networking (SDN) controllers.

Ericsson Network Manager
Our Network Manager offers a uniform
operational environment with a
collection of consolidated management
functions. It provides a set of unified
applications and tools to manage radio
access, transport and core networks in
a controlled and secure way.

Network Manager offers VNFM
combined with analytics and
policy-based auto-scaling.

The product offers automation for
best operational efficiency, superior
network performance and fast TTM, with
several automation capabilities built in.
Network Manager also provides a set of
open and easy to use integration points
for your existing OSS environment;
for example, configuration changes
can be made through a single
format for all technologies.

You can also release independence
with model-driven node integration.
Network Manager provides a fast pass
capability, enabling new mobile network
software to be deployed without upgrading
to the network management system.
All this is fully managed by the product.

Ericsson Adaptive Inventory

This plays a central role in providing a new level of automation to every aspect of your operational environment that depends on accurate inventory. It has all the flexibility and functionality to be your inventory hub, helping you make the best use of your resources and capital.

Within Dynamic Orchestration, Adaptive Inventory contains an accurate view of available and planned resources and capacity. It also houses the end-to-end representation of the service.

Ericsson Cloud Deployment Engine

In the digital operator landscape of a multivendor environment with different deployment types (e.g. PNFs, VMs and containers), the process of onboarding, testing and validation is a time-consuming and cumbersome task. The Engine's main focus is on automating this process to hugely reduce opex and TTM. Digital operators can now enable new use cases and provide as per end-user needs.

CENX Service Assurance

This system ingests, audits and contextualizes all of a network's big data to provide a comprehensive, abstracted view of what is most important about a company's service and network operations. It not only allows operators to visualize complex multi-dimensional topologies, but also automates and assures services across many domains (physical, virtual and hybrid).

CENX Service Assurance fundamentally changes the way service providers work with their networks, by providing actionable visibility of the entire network in near real time, generating closed-loop triggers, and performing inventory and fault correlation, augmented with analysis on performance data from disparate systems.

Ericsson Expert Analytics

Our Expert Analytics is a real-time, multivendor, cross-domain, big-data analytics platform that produces actionable insights on customer experience and behavior. These insights can then drive decisions (and even automate actions) across marketing, customer care, operations and planning. Expert Analytics ensures the best individual user experience, and can identify probable root causes as well as recommended resolutions for network incidents and other issues.

Ericsson has been named best-positioned supplier for NFV and SDN MANO.

For more information, click here

Dynamic Orchestration offers end-to-end assurance, closed-loop processing and flexibility in one solution

Use cases

Ericsson Dynamic Orchestration supports a variety of use cases that aid virtual and physical network provisioning, as well as assurance for enterprises, resulting in rapid TTM and high-quality service.

Enterprise Service Orchestration

Dynamic Orchestration supported the full lifecycle of service implementation.

Verizon leveraged the end-to-end automated model that allows third-party vendors to rapidly onboard VNFs. This significantly reduced the provisioning time from weeks to days, as well as TTM of new services.

To discover how we accomplished this with Verizon, click here

Orchestrate end-to-end across domains

Dynamic Orchestration can orchestrate across RAN, core and transport on 4G and 5G networks with one single orchestrator. This manages process from radio base stations to the data center, including core applications such as the IP Multimedia Subsystem and packet core. With an orchestrator that can scale and heal VNFs, you can support multiple different use cases. When deploying services, this drastically reduces the need for cumbersome manual procedures. You can address the operational complexity and reduce the integration cost, which creates a more efficient high-performing network with optimized TCO.

To learn how we accomplished this with Swisscom, click here

Network slicing at scale

Ericsson and BT's study found that network slicing can create economic benefits for new service launches. It enables new revenue generation, lower opex and greater capex efficiency. The greater the number of slices, the more economical the model becomes, with increased revenue and cost saving.

– Increase revenue by 35 percent
– Reduce impacted opex by up to 40 percent
– Payback of investment in one to two years

The case reflects a ramp-up of 40 annual service launches during 5 years.

To find out more about this Ericsson and BT study, click here

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.