Nokia Commissioning Expert
Release 19.8

The Nokia Commissioning Expert solution shortens the interval to service turn-up and revenue. It does this by enabling the rapid identification of Nokia optical networking equipment required to support Carrier Ethernet and optical Wavelength services, simplifying service work order entry, providing end-to-end work order processing and automating equipment commissioning and service activation. Commissioning Expert is part of the Nokia optical networking WaveSuite software applications portfolio.

Selecting, ordering, commissioning and activating optical networking equipment for services has traditionally been labor-intensive, potentially error-prone, and slow to perform. This can lead to unsatisfied customers and delayed service revenue. The Nokia Commissioning Expert solution modernizes the process to enable faster time to service revenue and therefore satisfied customers. It complements SDN in that it gets the service supporting equipment up and running quickly, after which SDN controllers and applications can provide dynamic SLA customization and assurance.

Automated service commissioning and activation are particularly important due to the potential for large numbers of Carrier Ethernet and Wavelength services customer endpoints. The Nokia Commissioning Expert solution reduces installer time on-site and minimizes the potential for site revisits to correct commissioning errors.

<table>
<thead>
<tr>
<th>Features</th>
<th>Benefits</th>
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<tr>
<td>Simplified, easy to use; everything you need equipment selection to support Carrier Ethernet and Wavelength services</td>
<td>• Shortens the time interval to service revenue</td>
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<td>End-to-end work order processing: • Abstract service data models to facilitate simplified work order creation • Work order tracking • Work order installer assignment</td>
<td>• Reduces the expertise required to select and implement services • Everything needed to implement a service ordered as a bundled package • Shortens the time interval to service revenue • Facilitates the outsourcing of equipment installation to contractors, improving workforce scalability and minimizing cost • Enables quick troubleshooting of work order implementation</td>
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<td>Rapid on-site equipment commissioning and service activation: • Work order processing client software for common mobile devices to facilitate on-site work order implementation and service activation</td>
<td>• Reduces potential for commissioning errors and site revisits • Reduces the expertise required to implement services • Leverages mobile devices to support service deployment and activation</td>
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How the Commissioning Expert works

Customers are presented with an easy-to-understand work order interface that depicts an abstracted view of common service deployments. Once the customer selects the service deployment they need, the tool automatically selects the appropriate equipment/equipment bundle that is required to implement the service. The user then augments the work order by entering the fundamental commissioning data that is unique to the service. All other data is automatically populated based on the selection of the common service deployment, further streamlining the commissioning process. A work order can be associated with specific equipment or can be automatically associated with equipment of the same type during the on-site commissioning process. Work order data is stored on a server awaiting automated download to the equipment once an installer is required to implement the service. Work orders can then be dispatched to various installers who use a related mobile device software client/app to quickly and reliably commission, and optionally activate, services with minimal installer interaction. Installers can download work orders at any time. Work orders indicate to the installers what equipment is required, and where they need to go to deploy it.

Example of commissioning steps to support a service over a point-to-point equipment interconnection:

- A work order is created using the easy-to-use Commissioning Expert Server (CE-S) work order tool.
- The equipment installer starts the Commissioning Expert Client (CE-C) on the mobile device.
- A work order list is downloaded for the specific equipment installer. The work order includes the service deployment sites, contact and location details to direct the installer to the right location with the right equipment.
- At the site, the installer installs the equipment and connects it to power and the fiber plant.
- The installer plugs the Commissioning Expert Wireless Access Adapter (CE-A) into the equipment craft Ethernet port.
- If not previously done, the installer’s commissioning device (e.g. mobile device) is paired with the CE-A.
- The installer’s commissioning device camera can be used to scan the equipment product code/serial number for work order verification, or the automated association of equipment to a work order.
- The installer verifies and optionally modifies the work order data on-site (e.g. locations, IP addresses) and then selects the CE-C “Initialize Device” button. This causes the equipment to initialize with its deployment-specific commissioning data.
- When commissioning is complete, the equipment and CE-C UI transitions to a “node ready” state. This is indicated with a flashing blue virtual LED illumination on the CE-C UI.
- If the equipment network interface is properly connected and functional, then the equipment transitions to “transport ready” state. This is indicated with a solid blue virtual LED illumination on the CE-C UI.
- When the other service endpoint is similarly commissioned, the equipment at both ends of the connection will transition to in-service once client interfaces are turned up. Service activation is indicated with solid green virtual LEDs illuminated on the equipment LED and the CE-C UI.
Product components

The Nokia Commissioning Expert solution consists of three seamlessly integrated components:
- Commissioning Expert Server (CE-S)
- Commissioning Expert Client (CE-C)
- Commissioning Expert Wireless Access Adapter (CE-A)

Commissioning Expert Server (CE-S)

The CE-S allows users to easily select and commission the equipment they need for various service deployments. This can be done by either entering high-level service deployment needs, or selecting from a list of predefined service deployments. Once the solution has been selected, a corresponding work order UI is presented to capture related work order information including:

Deployment information
- Work order name
- Customer name
- Site addresses
- Equipment solution name

Fundamental equipment commissioning data
- Equipment and gateway IP addresses
- Equipment Configuration
- Management system access

Installer information
- Names
- Companies
- Contact information

Figure 1. High-level view of Commissioning Expert steps to commission equipment
Key benefits of the CE-S software include its ease of use to match equipment with service needs, the automatic commissioning of equipment and its ability to easily track and manage a service order from start to finish.

Figure 2. CE-S Work Order UIs

Commissioning Expert Client (CE-C)
The CE-C client software allows equipment installers to use commonly accessible devices to simplify and automate equipment commissioning. It presents an easy-to-use and intuitive UI to help ensure accurate and rapid equipment commissioning. For a list of supported commissioning devices consult the “Technical specifications” portion of this document.

Figure 3. CE-C UI

Start App  Update location  Initialize device and connect!  Transport Ready  Service Activated
Commissioning Expert Wireless Access Adapter (CE-A)

The CE-A provides an easy-to-use, standards-based wireless connection between the equipment to be commissioned and the CE-C running on the client. Two options are provided for wireless access: Wi-Fi and Bluetooth.

Technical specifications

Capabilities

- Equipment deployment topologies supported:
  - Point-to-point
- Services supported:
  - MEF compliant Wavelength services (OTN-based)
  - MEF Carrier Ethernet 2.0 services (future)
- Supported equipment:
  - 1830 Photonic Service Demarcation (PSD)
  - WaveLite Access 200, Metro 20, Metro 200, Mux 16 and Amplifier
  - 1830 PSI-M, PSI-2T

Commissioning Expert Server (CE-S)

- Supported operating systems:
  Linux RHEL 6 & 7 or equivalent CentOS
- Supported browsers: Firefox or Chrome (up to date)

Commissioning Expert Client

Supported mobile operating systems: Android 6 and up on Nokia6, Samsung Galaxy, Google Pixel

Commissioning Expert Wireless Access Adapter (CE-A)

Compliance: FCC class B, CE

Order codes

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<thead>
<tr>
<th>APN</th>
<th>Short description</th>
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<td>ESWP CE-S R19.8 Server Software</td>
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Related standards

Data models

CE-S north-bound interface to server:

- Northbound integrations (OSS and service orchestration) via REST APIs

Related materials

- 1830 Photonic Service Demarcation (PSD) includes related application notes and technical papers.
- WaveLite includes related optical private network application notes and technical papers.
- 1830 PSI-M, PSI-2T includes related application notes and technical papers.