Nokia Learning Solutions

Partner Training Supplement 2005

NOKIA

CONNECTING PEOPLE

Nokia Partner Training

While a common approach can be applied to some of the training that Nokia delivers to its operator customers and subcontractors, there are some areas in which subcontractors need a structure tailored more closely to their needs. The Nokia Learning Solutions Training Catalogue 2005 describes the services and products offered to both groups, but the services and products in this supplement target Nokia subcontractors specifically.

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Complete partner competence

Complete partner competence

Nokia uses the concept of complete partner competence in all its dealings with Nokia subcontractors and this document adopts the same approach, explaining the self-assessment tool eValuation for partners, Nokia training, Nokia Licensing and Nokia Certification.

Nokia implements the concept of partner competence wherever it manages subcontractors. The concept can be depicted as a wheel in order to show that is an ongoing, evolving process. The wheel also illustrates that any individual may “go around” the cycle many times as their need for competence evolves based on the work subcontracted by Nokia.

The subcontractors may be undertaking work such as telecom implementation, first line maintenance, second line maintenance, software upgrades, hardware retrofits or network management, but in all cases the basic elements of complete partner competence are:

- Competence planning, which targets the most appropriate training
- Competence development, which targets a creative, thorough and cost-effective solution
- Competence verification, which targets the effective implementation of Nokia Licensing and Nokia Certification

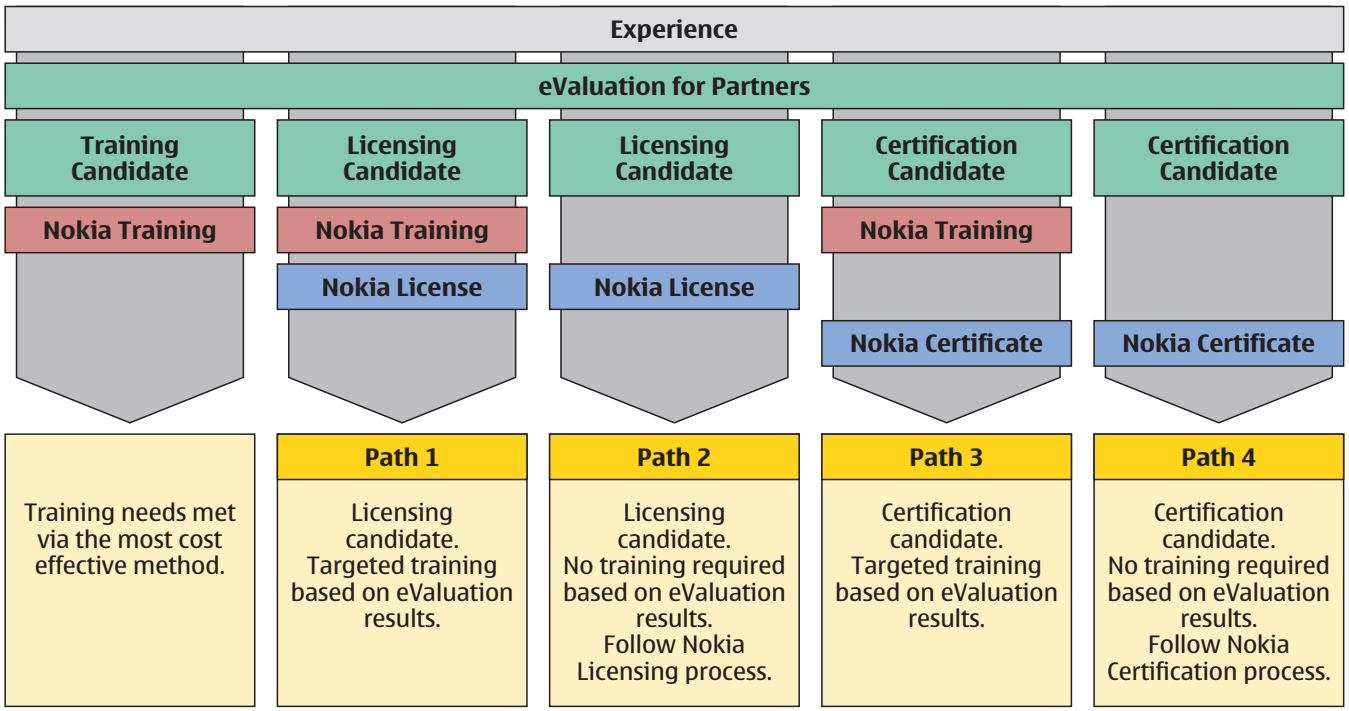
The services and methods Nokia uses for competence planning, competence development and competence verification are implemented to a global standard so they can be compared between different projects and different countries.

While the implementation methods are standardized, the degree to which the services are applied in a particular project will vary depending on factors such as:

- The project set up; are the tools employed in the project suitable for the implementation of Nokia Licensing in a cost effective manner?
- The type of work being carried out; telecom implementation or first line maintenance
- The volumes of the work to be carried out; 200 BTS or 2000 BTS
- The project life cycle; is this a new project?
- The scope of the project; which services and products are needed?

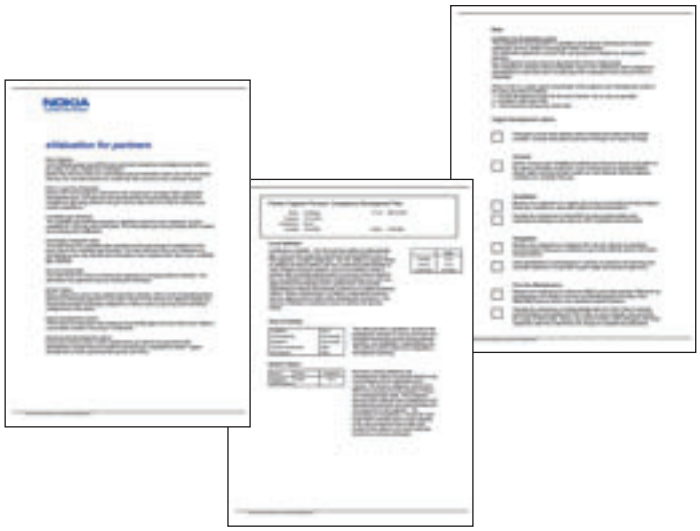
Learning solutions are combined with services from other departments within Nokia to provide the best balance between cost-effectiveness and operational efficiency.

eValuation for partners



eValuation for Partners paths

eValuation for partners is an online tool used for self-assessment of skills for an individual Nokia network element or a group of Nokia network elements.
All self-assessments are agreed with an individual's manager or supervisor and an individual report per eValuation is delivered. Subcontractors use the tool to create a competence development plan, helped by Nokia Partner Training Service Managers (P-TSMs).



Example Partner Engineer Personal Competence Development plan

eValuation for partners targets individuals who have multiple competences on a particular network element. It examines skills across installation, commissioning, integration, hardware retrofits, software upgrades and troubleshooting.

eValuation for partners is used in several ways:

- To assess the employee's individual competence in a particular technology area. This assessment is then verified by a supervisor in the partner organization
- To identify competence gaps in a specific technology area to allow competence planning
- To indicate, based on the self-assessment, whether the employee needs competence development or competence verification in the complete partner competence concept
- For competence planning with the P-TSM and subcontractor organization when discussing and agreeing the next steps in implementing complete partner competence

Competence development planning for partners

The agreed process is that the P-TSM will propose a competence development plan that covers both the short-term needs of a project and the long-term development plan for the subcontractors, based on discussions with both the subcontractors and Nokia.

The competence development plan will contain two components as follows.

Long-term competence development planning for partners

This aims to:
- Define the partner's long-term competence development needs
- Include all competence development needed to help the partner deliver Nokia services
- Describe development actions for the partner's key people

Short-term competence development planning for partners

This aims to:
- Define the partner's competence development needs in order to deliver the required services for a specific contract
- Describe the competence development actions for the individual engineers

Nokia Training

The competence development methods used will vary and the chosen method depends heavily on a number of factors. For example:
- The business case for the subcontractor's service delivery to Nokia
- The size of the target group; 1–2 people or 12 people
- The type of training needed; in a classroom, test bed, online or on a site
- The location of the training need; is there a local Nokia presence?

The P-TSM is an expert in creating efficient competence development solutions and is the trusted partner for dealing with all competence issues among subcontractors employed by Nokia.

Please refer to the Nokia Learning Solutions Training Catalogue 2005 for the training details presented in the flows in brackets. All other training details can be found in this supplement.

Competence verification explained

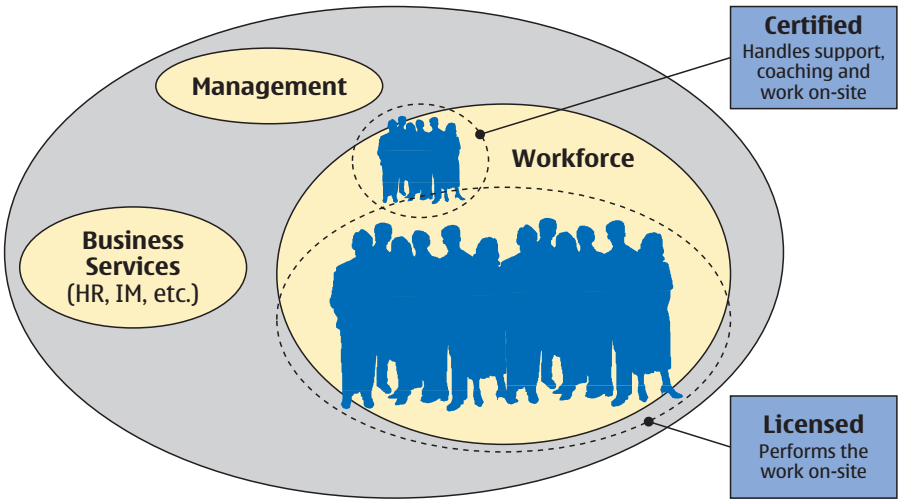
Competence verification targets different aspects of an individual's competence. With Nokia's subcontractors training is a tool towards achieving competence verification.

Nokia Licensing requires an individual to be assessed in a test bed or live network to prove they can implement, operate and maintain the functions of one or more Nokia network elements.

Nokia Certification requires an expert to pass a closed book examination, which is created by Nokia experts for one or more Nokia network elements.

During competence development planning, a single or series of Nokia Licenses or a Nokia Certificate is often the agreed target to verify that the agreed competences have been achieved.

For example, in a telecom implementation project, the subcontractor's "key personnel", team leaders, supervisors and so on, may be Nokia Certified Engineers. These key personnel can assist with the on-site training and support of the majority of the workforce, who will be licensed to perform specific tasks, such as BSC commissioning. Some 10% of the workforce may be Nokia Certified and the remaining 90% will be Nokia Licensed. The individuals may be licensed to perform BSC installation, BSC commissioning, BSC integration or a combination of the three, depending on how the subcontractor organizes the work.



Licensing vs Certification Partner/Subcontractor Organization

How a Nokia License or Nokia Certificate will benefit your organization

There are a number of benefits for subcontractors in having their competences verified using the Nokia License and Nokia Certificate services:

- It enables you to identify, benchmark and manage the overall competence level of your organization
- It enables you to link your competence/career ladder to Nokia Licensing and Nokia Certification
- It provides you with a method to identify competence across international affiliates
- It provides you with a requirement standard when recruiting engineers

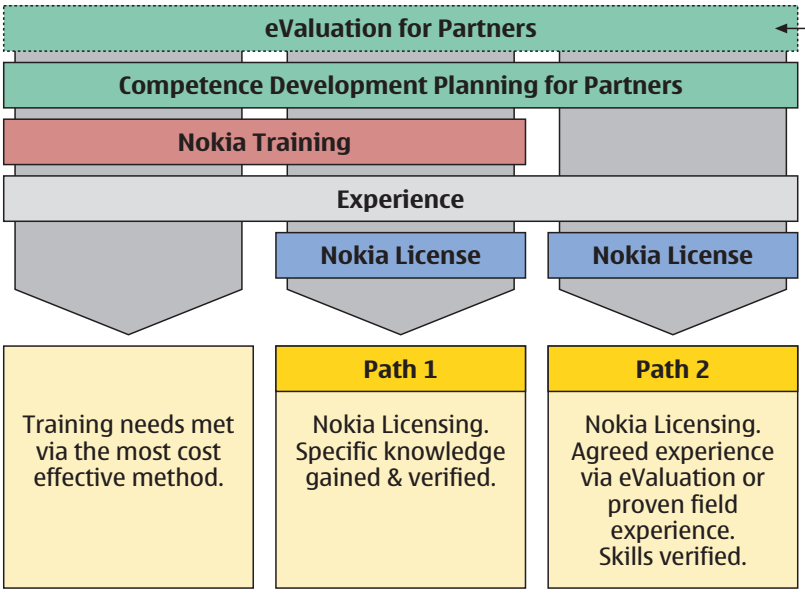
The key benefits for the individual in the subcontractor organization are:

- Licensing offers the opportunity to prove your skills to your employer
- Certification offers the opportunity to prove your skills and expert knowledge to your employer
- A successful individual will receive a Nokia Licensed Engineer id badge or Nokia Certified Engineer id badge

In brief, a Nokia License verifies the basic tasks of performing BTS installation or BTS commissioning. The project specifics of local implementation concerning local health and safety, cabling, and so on, will be explained for each project.

Nokia Certification requires an individual to attend courses on Service Excellence and on-site coaching and then pass a Nokia Certificate exam. The exam is designed to ask different types of questions about a wide variety of tasks. If an individual achieves a Nokia Certified Engineer standard they must have a wide variety of competence in a particular Nokia network element or group of network elements.

Nokia License



Nokia Licensing paths

A Nokia License targets an individual who has proved their ability to implement, operate and maintain functions on Nokia network elements via testing in a test bed or live network. There are a number of possible ways to achieve a Nokia License.

A Nokia License targets selected tasks for specific equipment. It may include:

- Specific training
- Scenario-based testing of practical skills in test beds
- Knowledge of escalation processes
- Selected tasks that follow a pre-defined process and are carried out during network implementation

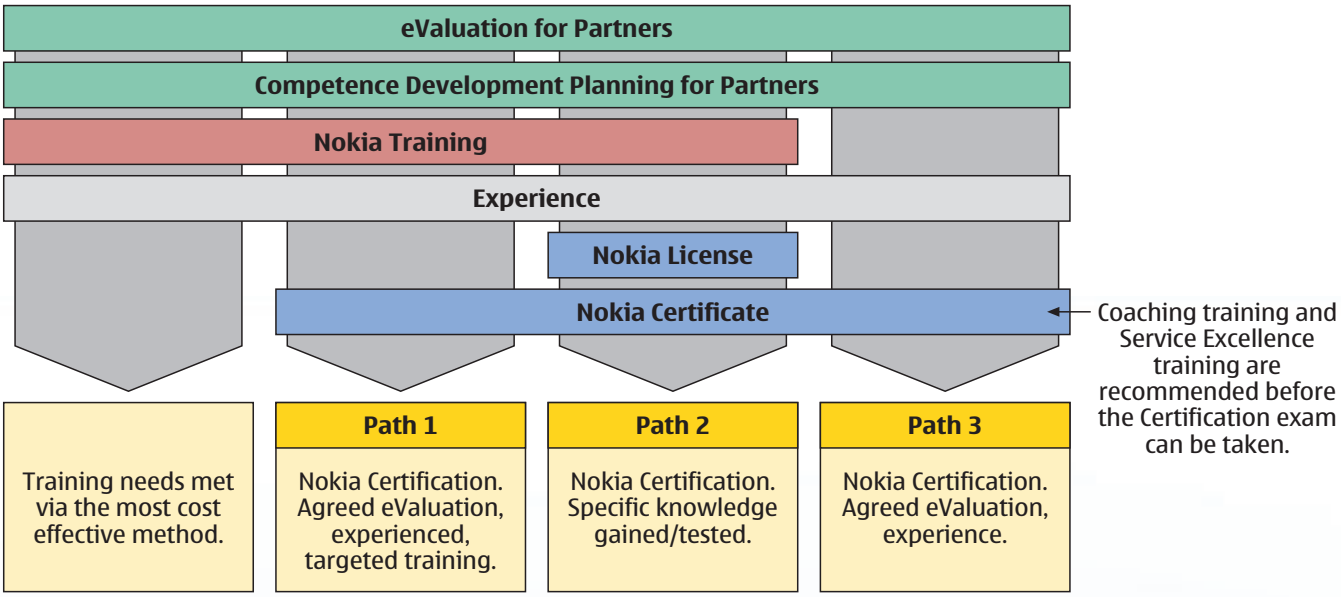
Skills may be verified by using one or more methods:

- Performing the task on-site, e.g. NOC monitoring
- As part of the Nokia quality control process in the Nokia project, e.g. BTS commissioning
- As an individual is assessed on-site, e.g. BTS commissioning
- Observation of an individual performing the tasks in a live network, e.g. NOC monitoring
- Performing the task in a test bed
- Online testing

Non-licensed engineers working on-site

If an individual does not hold a valid Nokia License he must work under the supervision of a Nokia engineer, a Nokia Licensed Engineer or a Nokia Certified Engineer.

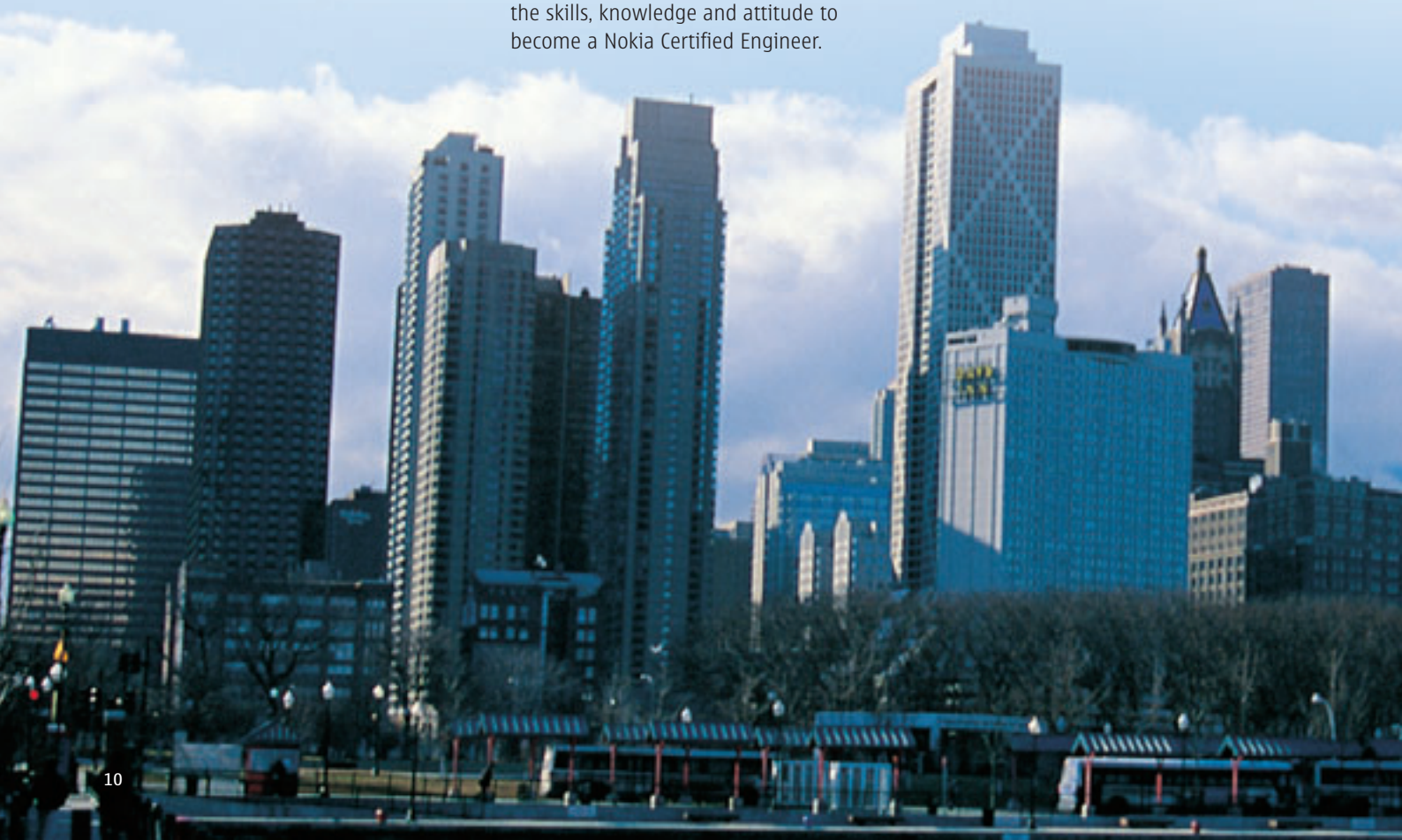
Nokia Certificate



Nokia Certification paths

Nokia Certification is a tool for assessing an engineer's knowledge and skills regarding one or a group of Nokia network elements. There are a number of different paths to achieving a Nokia Certificate.

A Nokia Certificate has two mandatory training components. Service Excellence for partners explains some of the attitudes and mindsets needed to supply Nokia customer services. On-site coaching explains tools and processes to facilitate efficient on-site coaching. The mandatory training is an integral part of an individual's attempt to prove they have the skills, knowledge and attitude to become a Nokia Certified Engineer.



Service Excellence for partners

SERVEX

Target group
External partner personnel who will be performing services at customer sites on behalf of Nokia.

Objectives
After the training, the participant will be able to:
- Create a personal action plan to improve Service Excellence

Prerequisites
None

Duration
1 day

No. of participants
24

Modules
- Service Excellence for Service Partners

On-site coaching training

CCHTRN

Target group
Certification candidates who need to be able to deliver competence transfer on-site.

Objectives
After the training, the participant will be able to:
- Describe the adult learning styles
- Explain the on-site coaching process
- Describe the usage of coaching templates
- Carry out a simulation plan of an actual on-site coaching for a Nokia project

Prerequisites
Technical knowledge on area where the participants are going to conduct on-site coaching

Duration
1 day

No. of participants
8

Modules
- On-site coaching theory
- On-site coaching simulation

Guidelines for implementing complete partner competence for different target groups

Target groups / Services	Telecom Implementation	First Line Maintenance	Second Line Maintenance	Network Operations	HW retrofits and SW upgrades
eValuation for Partners	Mandatory for Certification candidates Optional for multiple skills	Mandatory for Certification candidates Optional for multiple skills	Mandatory for Certification candidates Optional for multiple skills	Optional for multiple skills	Mandatory for Certification candidates Optional for multiple skills
CoDe planning	PaM and P-TSM	PaM and P-TSM	PaM and P-TSM	PaM and P-TSM	PaM and P-TSM
Nokia Training	Available	Available	Available	Available	Available
Nokia License	85–90% of your staff, depending on the project	95–100% of your staff, depending on the project	Optional	100% of your staff	Optional
Nokia Certificate	5–10% of your staff, depending on the project	0–5% of your staff, depending on the project	100% of your staff	Not available	50% of your staff

The services are available as tools for the P-TSM and the Nokia subcontractors to use in creating competence development plans. Some of the services are better suited to certain target groups than others.

The tailoring of the services by the P-TSM's and the subcontractors is agreed on a case-by-case basis with Nokia Partner Management (PaM).

The diagram above is very linear which of course competence management is not. The Nokia Certification closed book examination is the same for all of the above target groups. A Nokia Certified Engineer is an asset to the subcontractor organisation as the Nokia Certified competence standard is recognized in a variety of target groups.

Additionally, the reality is that there will be cross-target group work performed by all of the subcontractors. Below are a few synergy examples; many other synergies can be achieved. For example, a subcontractor that is contracted for second line maintenance may also be contracted to perform a BSC software upgrade. Another example is that the subcontractor used for a rollout may perform the first line maintenance as that subcontractor has a good understanding of the network.

Symbols explained

Our recommended solutions are based upon generic target groups, and are designed to ensure the best number of days and flexibility. All the courses and workshops listed here are available globally as open courses. If you require customization, please contact your Nokia training contact person.

For more detailed and up to date description of all our courses and workshops, please visit our pages on NOLS (www.online.nokia.com).

Courses relevant for GSM

Courses relevant for GSM and 3G

Courses relevant for 3G

Introductory course

Intermediate course

Advanced course

Expert course

eValuation

On-the-job Training

Nokia License

Nokia Certificate

Classroom course – A structured training session that has clear learning objectives, uses standardized material and can be delivered either in a classroom or through a virtual learning environment. Nokia provides two types of courses:

- **Product-based training** – provides the participants with knowledge and skills necessary to handle Nokia equipment and fully understand how it is implemented.
- **Task-based training** – are programs built round specific tasks that are performed in network operations. These may include using more than one element and are designed so the task is performed in the best way.

Workshop – Typically an unstructured training event based on completing set objectives or tasks. It adopts a more relaxed approach involving group work and discussion with reference material used in place of formal training material.

Base transceiver station

Competence planning

eValuation for partners
There are several paths to follow based on the eValuation for partners results. These flows are illustrated on page 6.

Competence development planning
This will be agreed between the Nokia Partner Manager and the subcontractors, with input from the Partner Training Service Manager.

2G Base Transceiver Station eValuation for partners

EVAL 2G BTS

Target group
Engineers who are responsible for multiple tasks in telecom implementation, first line maintenance or second line maintenance of Nokia 2G BTS.

Scope of eValuation
- Nokia MetroSite
- Nokia UltraSite
- Nokia InSite
- Nokia TalkFamily
- Cellular transmission microwave radios
- Site support systems
- Nokia MetroHub
- Network management systems

Option for LMU

Testing methods
Internet-based tool

Validity and renewal
Valid for 6 months. Renewal is based upon request from your Partner Training Services Manager.

Notes
Every individual using this tool needs a PTid.

3G Base Transceiver Station eValuation for partners

EVAL 3G BTS

Target group
Engineers who are responsible for multiple tasks in telecom implementation, first line maintenance or second line maintenance of Nokia 3G WCDMA BTS.

Scope of eValuation
- Nokia MetroSite
- Nokia UltraSite
- Nokia UltraSite WCDMA Base Station Optima Compact
- Triplemode
- AXC
- CT microwave radios
- Site support systems
- Network management systems

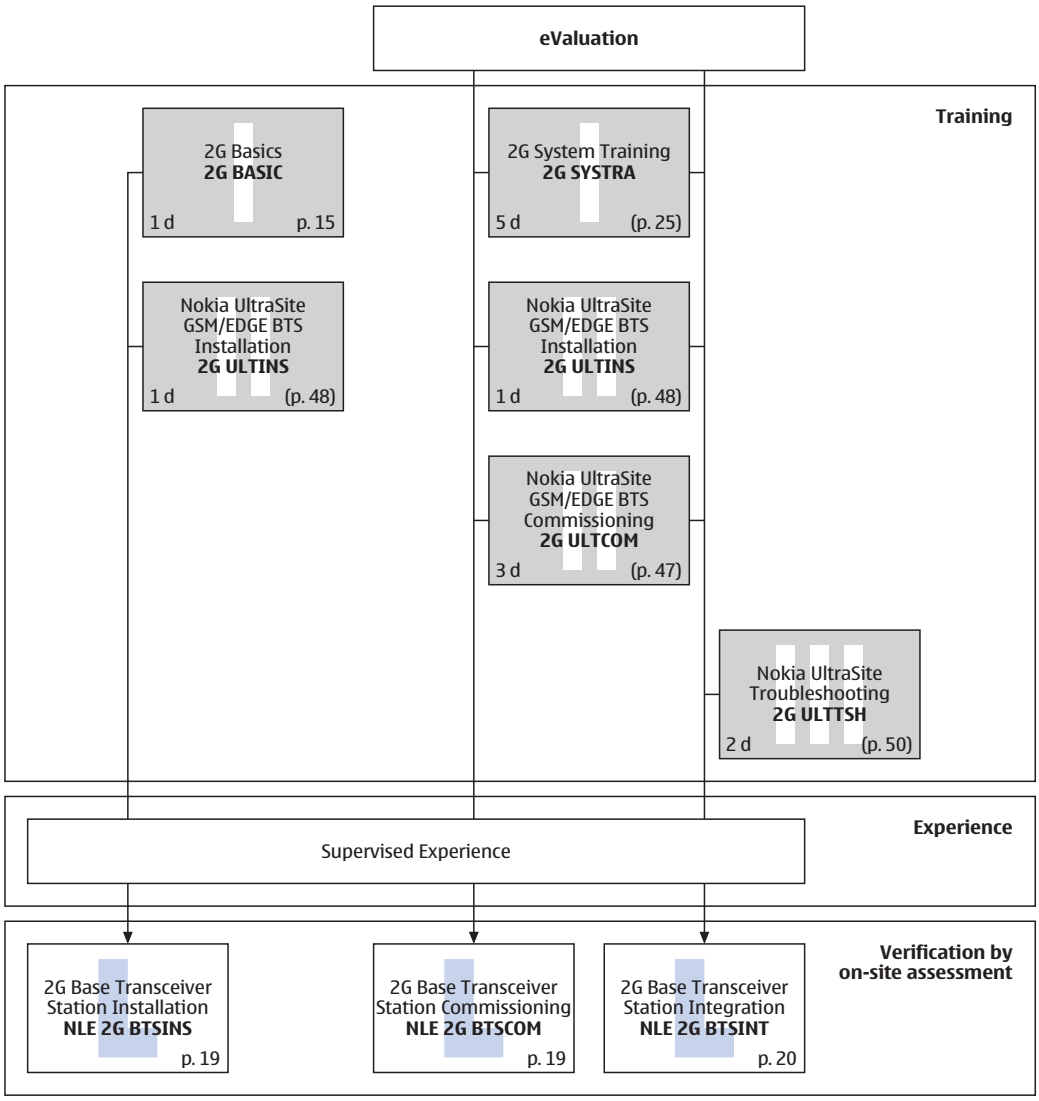
Option for LMU

Testing methods
Internet-based tool

Validity and renewal
Valid for 6 months. Renewal is based upon request from your Partner Training Services Manager.

Notes
Every individual using this tool needs a PTid.

Competence development



2G base transceiver station telecom implementation

Please refer to the Nokia Learning Solutions Training Catalogue 2005 for the training details presented in the flows in brackets. All other training details can be found in this supplement.

2G Basics

2G BASIC

Target group
Installation personnel.

Objectives
After the training, the participant will be able to:
- Explain the architecture functionality of GSM and GPRS network elements
- Explain, in basic terms, the speech digitisation process
- Explain the differences between the following interfaces: A, Ater, Abis and Air Interface
- Describe the solutions adopted to overcome propagation problems

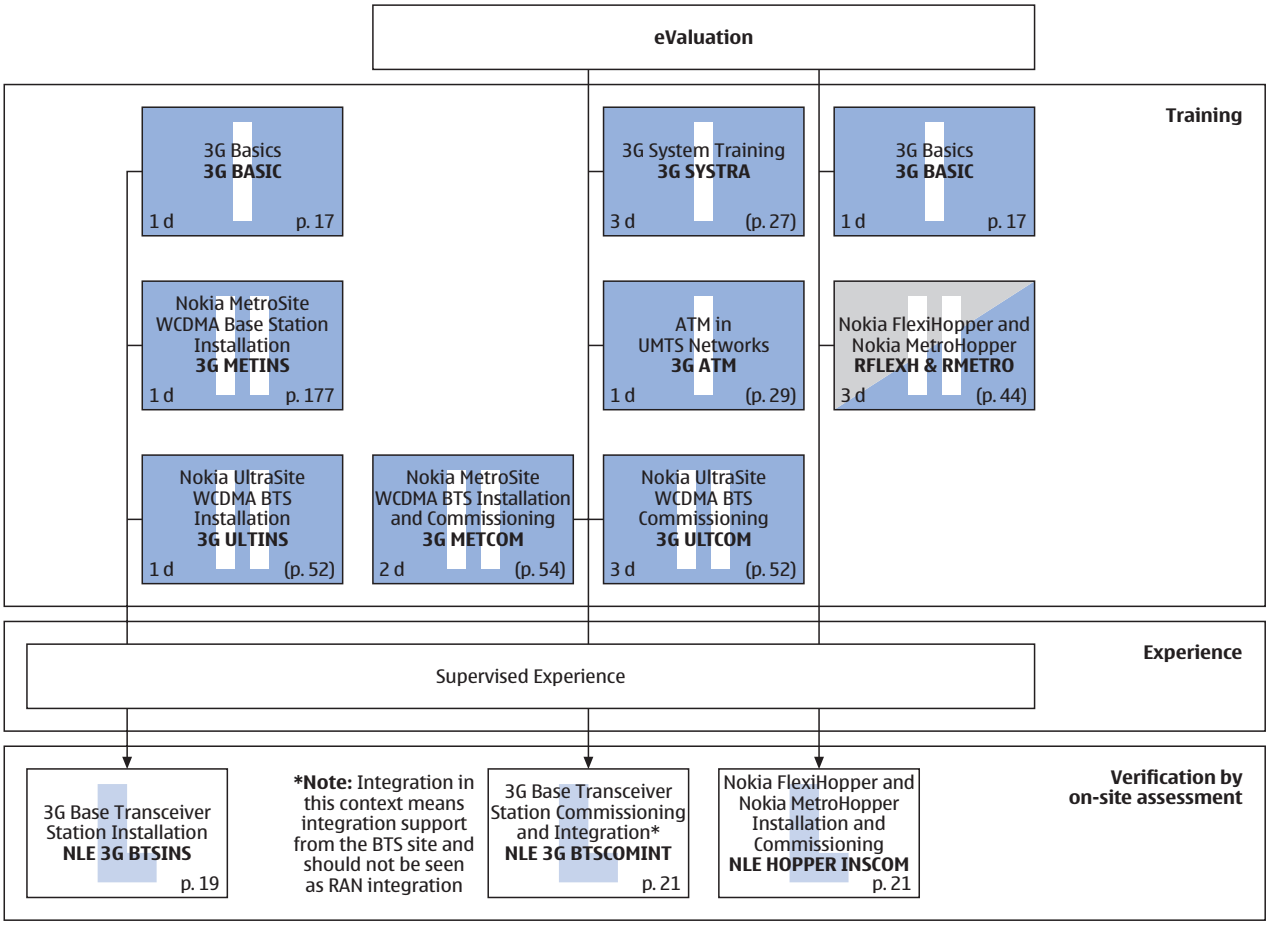
Prerequisites
General knowledge on the basics of telecommunications

Duration
1 day

No. of participants
24

Modules
- GSM technology overview

Assessment
N/A



3G base transceiver station and cellular transmission telecom implementation licenses

Please refer to the Nokia Learning Solutions Training Catalogue 2005 for the training details presented in the flows in brackets. All other training details can be found in this supplement.

3G Basics

3G BASIC

Target group
Personnel who will install Nokia 3G equipment.

Objectives
After the training, the participant will be able to:
- Explain the architecture functionality of WCDMA network elements
- Without reference to the material, draw and label the key components and interfaces of the Nokia 3G solution
- Using a simplified model, explain the key elements of the 3G/WCDMA radio path and transmission
- At an overview level, explain what WCDMA radio resource management is, and describe its effect on network planning
- Outline the functions of the different management layers within traffic management
- List and give examples of 3G services and how they are implemented into a WCDMA network

Prerequisites
General knowledge on the basics of 3G networks

Duration
1 day

No. of participants
24

Modules
- Introduction to 3G networks
- 3G network architecture
- Introduction to 3G radio resource management and network planning

Assessment
N/A

Nokia MetroSite WCDMA Base Station Installation

3G METINS

Target group
BTS installation personnel.

Objectives
After the training, the participant will be able to:
- Install the Nokia MetroSite for WCDMA elements

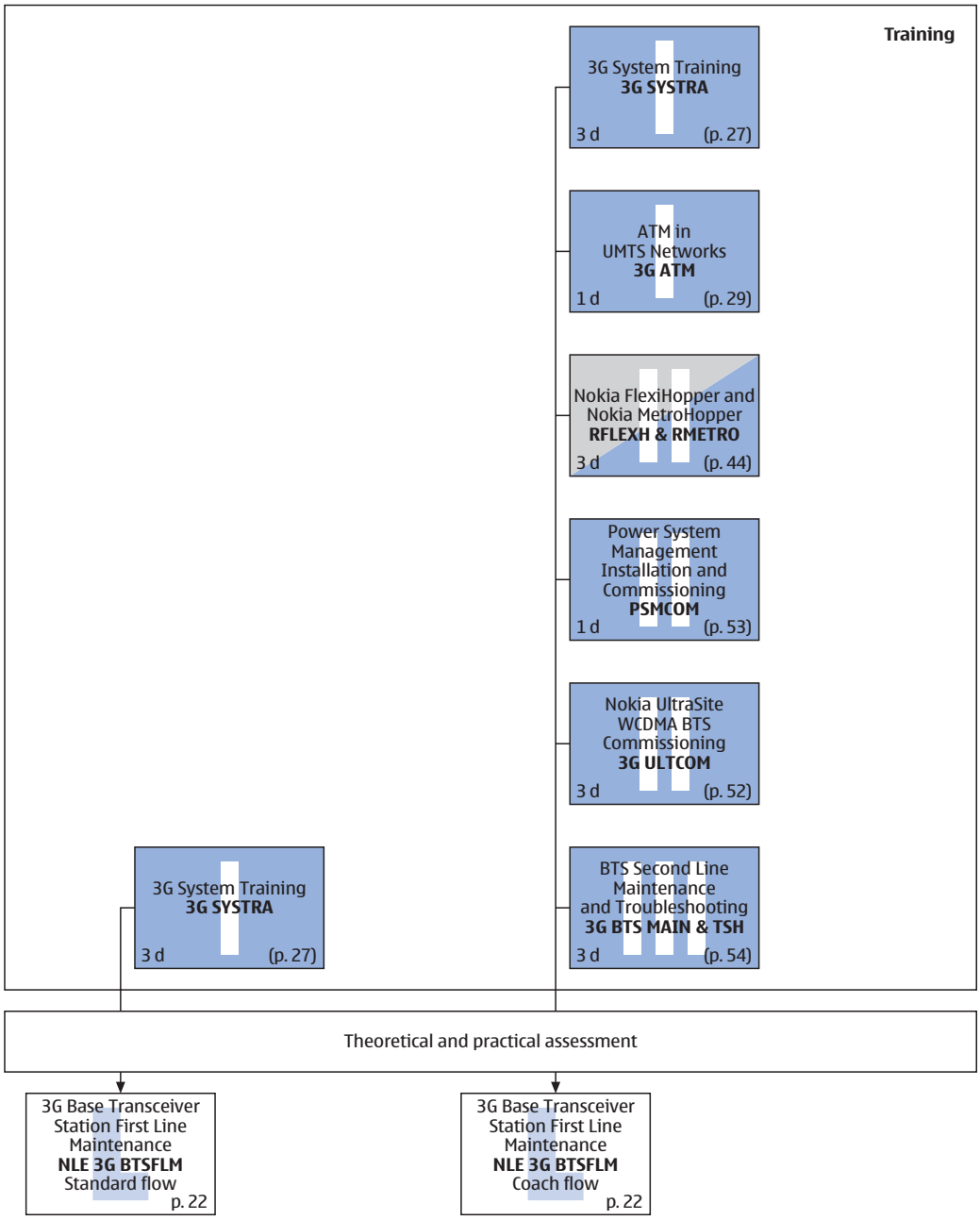
Prerequisites
General electrical installation knowledge, knowledge of telecommunications equipment, good knowledge of safety instructions

Duration
1 day

No. of participants
4–8 depending on the delivery method

Modules
- Nokia MetroSite WCDMA BTS overview
- Nokia MetroSite WCDMA BTS unit overview
- Nokia MetroSite WCDMA BTS installation

Assessment
N/A



3G base transceiver station and cellular transmission first line maintenance licenses

Please refer to the Nokia Learning Solutions Training Catalogue 2005 for the training details presented in the flows in brackets. All other training details can be found in this supplement.

Competence verification

Nokia License
is recommended for individuals to prove their ability to implement, operate and maintain functions on Nokia network elements.

There are several paths to follow to achieve a Nokia License. For more information about these flows, which are tailored to specific needs, see page 9.

Nokia Certificate
is the recommended competence verification standard for second line maintenance engineers. Second line maintenance engineer training flows are explained in the Nokia Learning Solutions Training Catalogue 2005 under the Field engineering (page 43).

There are several paths to follow to achieve Nokia Certification. For more information about these flows, which are tailored to specific needs, see page 10.

Nokia License – 2G Base Transceiver Station Installation

NLE 2G BTSINS

Target group
Engineers who are responsible for the installation of Nokia 2G BTS.

Nokia equipment
Nokia UltraSite GSM/EDGE BTS and Nokia MetroSite BTS equipment, Nokia TalkFamily BTS.

Scope of License
Cabinet installation
- PIU installation
- Internal cabling and connectors

Interface cabling
- Power
- Grounding
- External alarms
- Transmission/Q1
- Fibre optics
- Barcode reading
- Documentation

Testing methods
Site quality assessment in rollout

Validity and renewal
Valid for 12 months. Renewal is based upon history in the Nokia quality management system.

Notes
The license can only be issued based on quality data from a Nokia project or via an on-site assessment arranged through Nokia Learning Solutions.

Nokia License – 2G Base Transceiver Station Commissioning

NLE 2G BTSCOM

Target group
Engineers who are responsible for the commissioning of Nokia 2G BTS.

Nokia equipment
Nokia UltraSite GSM/EDGE BTS and Nokia MetroSite BTS equipment, Nokia TalkFamily BTS.

Scope of License
- BTS commissioning
- Power measurements
- Barcode reading

Testing methods
Site quality assessment in rollout

Validity and renewal
Valid for 12 months. Renewal is based upon history in the Nokia quality management system.

Notes
The license can only be issued based on quality data from a Nokia project or via an on-site assessment arranged through Nokia Learning Solutions.

Nokia License – 2G Base Transceiver Station Integration

NLE 2G BTSINT

Target group
Engineers who are responsible for the integration of Nokia 2G BTS.

Nokia equipment
Nokia UltraSite GSM/EDGE BTS and Nokia MetroSite BTS equipment, Nokia TalkFamily BTS.

Scope of License
- Test calls
  - Circuit switch
  - Packet switch
- External alarm tests to NOC

Testing methods
Site quality assessment in rollout

Validity and renewal
Valid for 12 months. Renewal is based upon history in the Nokia quality management system.

Notes
The license can only be issued based on quality data from a Nokia project or via an on-site assessment arranged through Nokia Learning Solutions.

Nokia License – 3G Base Transceiver Station Installation

NLE 3G BTSINS

Target group
Engineers who are responsible for the Installation of Nokia WCDMA BTS.

Nokia equipment
Nokia UltraSite WCDMA BTS, Nokia MetroSite WCDMA BTS

Scope of License
Cabinet Installation
- PIU installation
- Internal cabling and connectors

Interface cabling
- Power
- Grounding
- External alarms
- Transmission/Q1
- Fibre optics
- Barcode reading
- Documentation

Testing methods
Site quality assessment in rollout

Validity and renewal
Valid for 12 months. Renewal is based upon history in the Nokia quality management system.

Notes
The license can only be issued based on quality data from a Nokia project or via an on-site assessment arranged through Nokia Learning Solutions.

Nokia License – 3G Base Transceiver Station Commissioning and Integration NLE 3G BTSCOMINT

Target group
Engineers who are responsible for the commissioning and integration of Nokia WCDMA BTS.

Nokia equipment
Nokia UltraSite WCDMA BTS,
Nokia MetroSite WCDMA BTS

Scope of License
- BTS commissioning
- Power measurements
- Barcode reading
- Test calls
- Circuit switch
- Packet switch
- External alarm tests to NOC

Testing methods
Site quality assessment in rollout

Validity and renewal
Valid for 12 months. Renewal is based upon history in the Nokia quality management system.

Notes
The license can only be issued based on quality data from a Nokia project or via an on-site assessment arranged through Nokia Learning Solutions.

Nokia License – Nokia FlexiHopper and Nokia MetroHopper Installation and Commissioning NLE HOPPER INSCOM

Target group
Engineers who are responsible for the installation and commissioning of Nokia FlexiHopper and Nokia UltraHopper.

Nokia equipment
Nokia MetroHopper, Nokia FlexiHopper and Nokia PowerHopper

Scope of License
- Indoor unit installation
- Outdoor unit and dish installation
- Flexbus cabling
- Barcode reading
- Documentation
- Commissioning of the transmission link

Testing methods
Site quality assessment in rollout

Validity and renewal
Valid for 12 months. Renewal is based upon history in the Nokia quality management system.

Notes
The license can only be issued based on quality data from a Nokia project or via an on-site assessment arranged through Nokia Learning Solutions.

Nokia License – 3G Base Transceiver Station First Line Maintenance

NLE 3G BTSFLM

Target group
Engineers who are responsible for the first line maintenance of Nokia 3G BTS and cellular transmission solution.

Nokia equipment
Nokia UltraSite WCDMA BTS

Scope of License
- Inspection of equipment
- Cleaning of the site and equipment
- Performance measurement verification
- Site status report
- Check of cabling and cable-labelling
- Removal and replacement of faulty units (e.g. plug-in units, mechanical spare parts)
- Function verification in accordance with the maintenance work instructions and the Maintenance procedure documents
- FLM work related registration of faulty HW on site and in regional stocks (update of installed base / inventory file / SSD)
- Handling the hardware units in regional stocks and for HWS spare part management
- Participating in upgrade projects with on-site activities
- Updating log-records

Testing methods
Prerequisite theory test
On-site / Test bed assessment

Validity and renewal
Valid for 12 months. Renewal is based upon proof of performance of tasks to the required license standard. If no proof exists, the practical assessment will be performed.

Notes
The license can only be issued based on quality data from a Nokia project or via an on-site assessment arranged through Nokia Learning Solutions.

Nokia Certified Engineer – 2G Base Transceiver Station

NCE 2G BTS

Target group
2G BTS specialists who have proven capability and skills on operating, maintaining, integrating and troubleshooting the Nokia 2G BTS.

Mandatory training
- Service Excellence for partners (page 11)
- On-site coaching training (page 11)

Exam domains
- Nokia GSM Radio Access Networks' architecture
- Nokia 2G BTS SW/HW
- Nokia 2G BTS implementation
- Nokia 2G BTS site support power supply systems
- Care Services
- Cellular transmission equipment
- Network management
- RF antenna

Assessment (Format/duration)
Closed book knowledge assessment examination (2hrs)

Validity and renewal
The certificate is valid for 18 months, after which the exam must be taken again.

Nokia Certified Engineer – 3G Base Transceiver Station

NCE 3G BTS

Target group
3G BTS specialists who have proven capability and skills on operating, maintaining, integrating and troubleshooting the Nokia 3G BTS.

Mandatory training
- Service Excellence for partners (page 11)
- On-site coaching training (page 11)

Exam domains
- Nokia 3G Radio Access Networks' and 3G BTS architecture
- Nokia 3G BTS implementation
- Nokia AXC implementation
- Nokia 3G BTS site support power supply systems
- Care Services
- Cellular transmission
- Network management
- RF antenna
- ATM

Assessment (Format/duration)
Closed book knowledge assessment examination (2hrs)

Validity and renewal
The certificate is valid for 18 months, after which the exam must be taken again.

Base station controller

Competence planning

eValuation for partners
There are several paths to follow based on the eValuation for partners results. These flows are illustrated on page 6.

Competence development planning
This will be agreed between the Nokia Partner Manager and the subcontractors, with input from the Partner Training Service Manager.

Base Station Controller eValuation for partners

EVAL BSC

Target group
Engineers who are responsible for multiple tasks in telecom implementation, first line maintenance or second line maintenance of the Nokia BSC.

Scope of eValuation
- BSC
- TCSM
- Network management systems

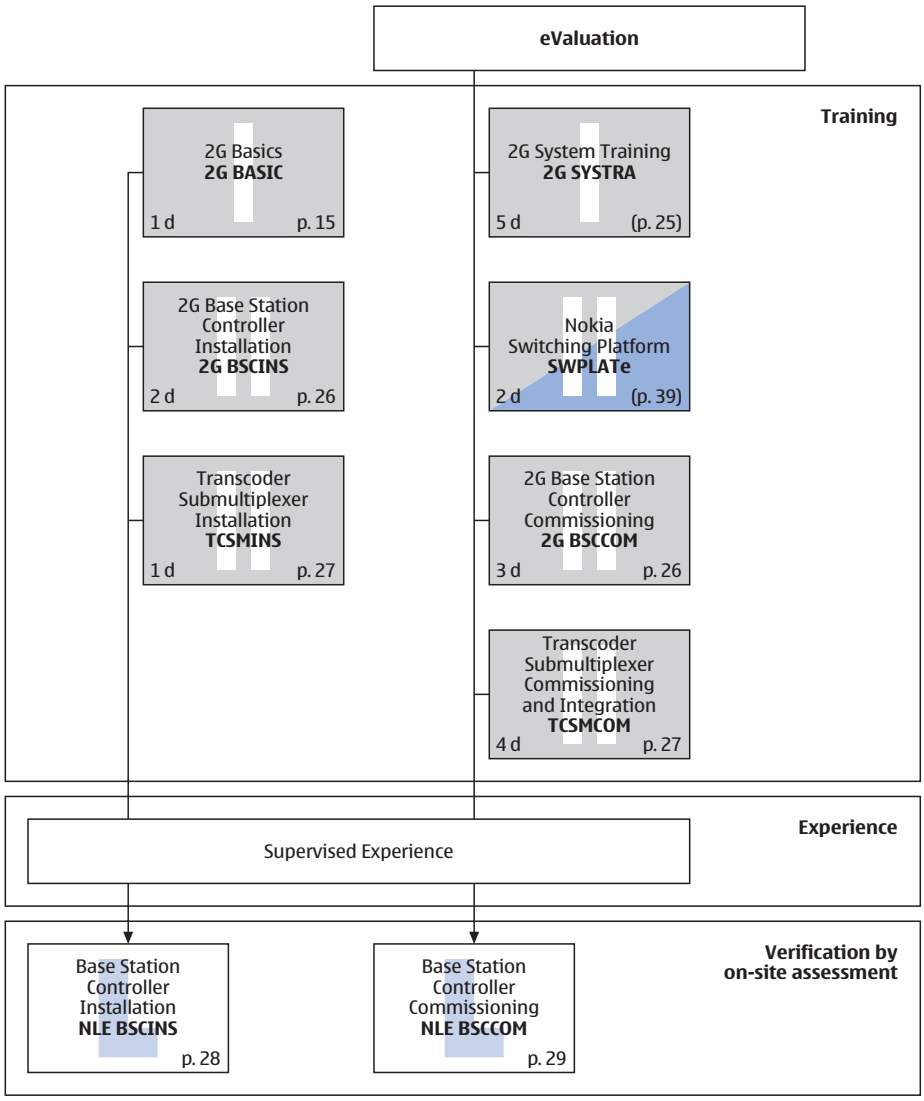
Option for Stand-alone Serving Mobile location center

Testing methods
Internet-based tool

Validity and renewal
Valid for 6 months. Renewal is based upon request from your Partner Training Services Manager.

Notes
Every individual using this tool needs a PTid.

Competence development



Base station controller telecom implementation

Please refer to the Nokia Learning Solutions Training Catalogue 2005 for the training details presented in the flows in brackets. All other training details can be found in this supplement.

2G Base Station Controller Installation

2G BSCINS

Target group
Installation personnel for BSC equipment.

Objectives
After the training, the participant will be able to:
- Describe the documentation and working order required to complete the installation
- Unpack the crates so as not to cause damage to the equipment
- Carry out an onsite inspection of the cabinet, sub racks, plug-in units and cables for any damage caused in transit
- Undertake the installation of the BSC to Nokia standards

Prerequisites
General electrical installation knowledge, knowledge of telecommunications equipment, good knowledge of safety instructions

Duration
2 days

No. of participants
4

Modules
- Health and safety
- Quality control
- BSC – Documentation for installation
- BSC – About the installation procedure
- BSC – Unpacking and checking the equipment
- BSC – Installing the cabinets
- BSC – Installing the inter-cabinet cables
- BSC – Installing the power supply cables and powering up the network element
- BSC – Installing the plug-in units
- BSC – Installing the station cables
- BSC – Finishing off the installation activity

Assessment
N/A

2G Base Station Controller Commissioning

2G BSCCOM

Target group
Personnel who need to perform BSC commissioning work.

Objectives
After the training, the participant will be able to:
- Describe the Nokia implementation of GSM architecture
- Describe Nokia DX 200 platform and BSC architecture
- Perform commissioning of BSC using defined procedures and instructions
- Perform handling of basic faults encountered during BSC commissioning procedure

Prerequisites
Good knowledge of Nokia BSC SW installation and SW installation tools

Duration
3 days

No. of participants
4–8 depending on the delivery method

Modules
- Health and safety
- Quality control
- Nokia GSM implementation
- Nokia BSC files and SW packages
- Nokia DX 200 platform and BSC architecture
- Fault handling
- SW upgrade guided procedures
- Commissioning procedures

Assessment
N/A

Transcoder Submultiplexer Installation

TCSMINS

Target group
Personnel who will install TCSM2E equipment.

Objectives
After the training, the participant will be able to:
- Describe the documentation and working order required to complete the installation.
- Unpack the crates so as not to cause damage to the equipment.
- Carry out an onsite inspection of the cabinet, sub racks, plug-in units and cables for any damage caused in transit.
- Undertake the installation of the TCSM2E to Nokia standards.
- Fill in the "Installation Certificate of Completion" after completion of quality checks.

Prerequisites
General electrical installation knowledge, knowledge of telecommunications equipment, good knowledge of safety instructions

Duration
1 day

No. of participants
4–8 depending on the delivery method

Modules
- Health and safety
- Quality control
- TCSM2E installation
- TCSM2E – Documentation for installation
- TCSM2E – About the installation procedure
- TCSM2E – Unpacking and checking the equipment
- TCSM2E – Installing the cabinets
- TCSM2E – Installing the inter-cabinet cables
- TCSM2E – Installing the power supply cables
- TCSM2E – Installing the plug-in units
- TCSM2E – Installing the station cables
- TCSM2E – Finishing off the installation activity

Assessment
N/A

Transcoder Submultiplexer Commissioning and Integration

TCSMCOM

Target group
Personnel who need to perform TCSM2E commissioning work.

Objectives
After the training, the participant will be able to:
- Describe the Nokia implementation of GSM architecture at overview level
- Describe Nokia DX 200 platform, BSC and TCSM2E architecture
- Perform commissioning of TCSM2E using defined procedures and instructions
- Perform integration of TCSM2E into a BSC using defined procedures and instructions
- Perform handling of basic faults encountered during TCSM2E commissioning procedure

Prerequisites
2G SYSTRA

Duration
4 days

No. of participants
4–8 depending on the delivery method

Modules
- Health and safety
- Quality control
- TCSM2E – Nokia GSM implementation
- TCSM2E – Nokia DX 200 Platform, BSC and TCSM2 architecture
- TCSM2E commissioning and integration
- TCSM2E – Nokia BSC files and SW packages
- TCSM2E commissioning procedures
- TCSM2E – integration of TCSM2E into a BSC
- TCSM2E – A-Interface integration
- TCSM2E – Fault handling

Assessment
N/A

Competence verification

Nokia License
is recommended for individuals to prove their ability to implement, operate and maintain functions on Nokia network elements.

There are several paths to follow to achieve a Nokia License. For more information about these flows, which are tailored to specific needs, see page 9.

Nokia Certificate
is the recommended competence verification standard for second line maintenance engineers. Second line maintenance engineer training flows are explained in the Nokia Learning Solutions Training Catalogue 2005 under the Field engineering (page 43).

There are several paths to follow to achieve Nokia Certification. For more information about these flows, which are tailored to specific needs, see page 10.

Nokia License – Base Station Controller Installation

NLE BSCINS

Target group
Engineers who are responsible for the installation of Nokia MSC/HLRi.

Nokia equipment
Nokia BSC2i
Nokia BSC3i

Scope of License
- Preparing for installation
- Preparing the equipment room
- Unpacking and inspecting the equipment
- Installing the free standing racks
- Installing the floor rails
- Installing cabinets on the floor rails
- Grounding (earthing)
- Connecting power supply
- Installing the cables
- Equipping of cabinets with plug-in units
- Installing the station cables
- Installing the doors and side plates
- Finishing

Testing methods
Site quality assessment in rollout

Validity and renewal
Valid for 12 months. Renewal is based upon history in the Nokia quality management system.

Notes
The license can only be issued based on quality data from a Nokia project or via an on-site assessment arranged through Nokia Learning Solutions.

Nokia License – Base Station Controller Commissioning

NLE BSCCOM

Target group
Engineers who are responsible for the commissioning of Nokia BSC.

Nokia equipment
Nokia BSC2i
Nokia BSC3i

Scope of License
- Check the necessary measurement devices and tools are available
- Inspect hardware
- Monitoring startup
- Open the first MML session
- Inspect software versions
- Inspect the I/O devices
- Inspect the maintenance system
- Inspect unit diagnostics and working states
- Inspect the clock and synchronization unit
- Check hardware configuration
- Copy additional software and setting the time zone
- Fill commissioning ckecklist

Testing methods
Site quality assessment in rollout

Validity and renewal
Valid for 12 months. Renewal is based upon history in the Nokia quality management system.

Notes
The license can only be issued based on quality data from a Nokia project or via an on-site assessment arranged through Nokia Learning Solutions.

Nokia Certified Engineer – Base Station Controller

NCE BSC

Target group
BSC specialists who have proven capability and skills on operating, maintaining, integrating and troubleshooting the Nokia BSC.

Mandatory training
- Service Excellence for partners (page 11)
- On-site coaching training (page 11)

Exam sections
- Nokia BSC SW/HW architecture
- Integration
- SW/HW maintenance
- Network management
- Troubleshooting
- GSM and GPRS BSS

Assessment (Format/duration)
Closed book knowledge assessment examination (2hrs)

Validity and renewal
The certificate is valid for 18 months, after which the exam must be taken again.

Notes
The license can only be issued based on quality data from a Nokia project or via an on-site assessment arranged through Nokia Learning Solutions.

Radio network controller and multimedia gateway

Competence planning

eValuation for partners
There are several paths to follow based on the eValuation for partners results. These flows are illustrated on page 6.

Competence development planning
This will be agreed between the Nokia Partner Manager and the subcontractors, with input from the Partner Training Service Manager.

Radio Network Controller eValuation for partners

EVAL RNC

Target group
Engineers who are responsible for the first line maintenance or second line maintenance of Nokia 3G RNC.

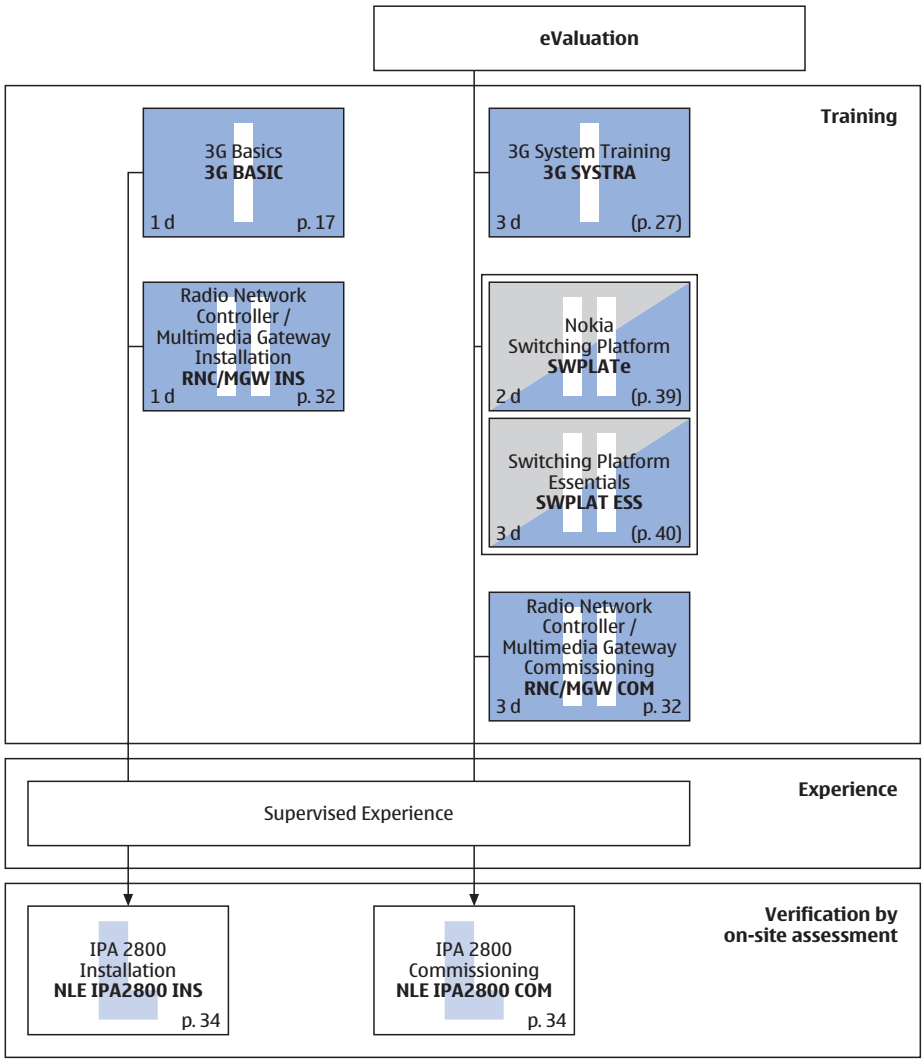
Scope of eValuation
- RNC
- Network management systems
- Site connectivity

Testing methods
Internet-based tool

Validity and renewal
Valid for 6 months. Renewal is based upon request from your Partner Training Services Manager.

Notes
PTid for every individual is used in the log in for this tool

Competence development



Radio network controller telecom implementation

Please refer to the Nokia Learning Solutions Training Catalogue 2005 for the training details presented in the flows in brackets. All other training details can be found in this supplement.

Radio Network Controller / Multimedia Gateway Installation

RNC/MGW INS

Target group
Personnel taking care of Nokia RNC and/or MGW installation.

Objectives
After the training, the participant will be able to:
- Install Nokia RNC and/or MGW

Prerequisites
General electrical installation knowledge, knowledge of telecommunications equipment, good knowledge of safety instructions

Duration
1 day

No. of participants
4

Modules
- Health and safety
- Quality control
- About the RNC and ATM installation procedure
- Unpacking and checking the RNC and ATM equipment
- Preparing the RNC and ATM cabinets for installation
- Installing the RNC and ATM cabinets
- Installing the RNC and ATM inter-cabinet cables
- Installing the RNC and ATM plug-in units
- Installing the RNC and ATM station cables
- Installing the power supply cables and powering up the RNC and ATM
- Finishing off the RNC and ATM installation activity
- Documentation for RNC and ATM installation
- Course Summary RNC and ATM installation

Assessment
N/A

Radio Network Controller / Multimedia Gateway Commissioning

RNC/MGW COM

Target group
RNC and/or MGW personnel who are responsible for the commissioning of new RNCs and/or MGWs.

Objectives
After the training, the participant will be able to:
- Correctly commission the Nokia RNC/MGW.
- Perform software upgrades on RNC/MGW

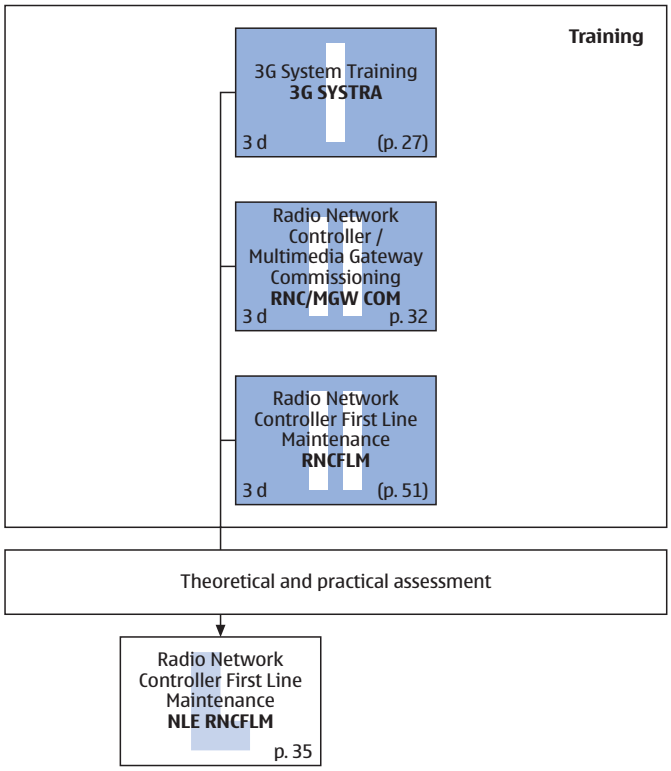
Prerequisites
IPA 2800 Platform skills, basic TCP/IP knowledge and skills

Duration
3 days

No. of participants
4–8 depending on the delivery method

Modules
- Health and safety
- Quality control
- RAN overview
- RNC/MGW overview and architecture
- Using the NEMU
- IPA 2800 commissioning
- Using HIT macro tool
- Software implementation on IPA 2800
- Introduction to NETOP
- Software upgrade on NEMU

Assessment
N/A



Radio network controller / multimedia gateway first line maintenance license

Please refer to the Nokia Learning Solutions Training Catalogue 2005 for the training details presented in the flows in brackets. All other training details can be found in this supplement.

Competence verification

Nokia License
is recommended for individuals to prove their ability to implement, operate and maintain functions on Nokia network elements.

There are several paths to follow to achieve a Nokia License. For more information about these flows, which are tailored to specific needs, see page 9.

Nokia Certificate
is the recommended competence verification standard for second line maintenance engineers. Second line maintenance engineer training flows are explained in the Nokia Learning Solutions Training Catalogue 2005 under the Field engineering (page 43).

There are several paths to follow to achieve Nokia Certification. For more information about these flows, which are tailored to specific needs, see page 10.

Nokia License – IPA 2800 Installation

NLE IPA2800 INS

Target group
Engineers who are responsible for the commissioning of Nokia RNC.

Nokia equipment
Nokia RNC

Scope of License
- Preparing for installation
- Preparing the equipment room
- Unpacking and inspecting the equipment
- Installing the free standing racks
- Installing the floor rails
- Installing cabinets on the floor rails
- Grounding (earthing)
- Connecting power supply
- Installing the cables
- Equipping of cabinets with plug-in units
- Installing the station cables
- Installing the doors and side plates
- Finishing

Testing methods
Site quality assessment in rollout

Validity and renewal
Valid for 12 months. Renewal is based upon history in the Nokia quality management system.

Notes
The license can only be issued based on quality data from a Nokia project or via an on-site assessment arranged through Nokia Learning Solutions.

Nokia License – IPA 2800 Commissioning

NLE IPA2800 COM

Target group
Engineers who are responsible for the commissioning of Nokia RNC.

Nokia equipment
Nokia RNC/MGW

Scope of License
- Inspecting hardware
- Logging into the MMI system for the first time
- Creating Telnet or HTTP connection to print out alarms
- Monitoring the unit start-up
- Inspecting the hardware management system
- Setting the calendar time and date for network element
- Interrogating HW configuration information
- Interrogating software build information
- Inspecting unit diagnostics and working states
- Inspecting recovery
- Inspecting synchronisation system
- Configuring VDS device
- Testing NEMU
- Testing element manager applications
- Checking the UGLYFIGX.XML file is copied to the LFILES directory
- Installing the change notes

Testing methods
Site quality assessment in rollout

Validity and renewal
Valid for 12 months. Renewal is based upon history in the Nokia quality management system.

Notes
The license can only be issued based on quality data from a Nokia project or via an on-site assessment arranged through Nokia Learning Solutions.

Nokia License – Radio Network Controller First Line Maintenance

NLE RNCFLM

Target group
Engineers who are responsible for the commissioning of Nokia RNC.

Nokia equipment
RNC, ATM and SDH equipment on RNC site

Scope of License
- Inspecting the hardware management system
- Cleaning of the site and equipment
- Safe copying RNC and RNC NEMU
- Testing NEMU
- Performance measurement verification
- Site status report
- Check of cable-labelling
- Removal and replacement of faulty units (e.g. plug-in units, mechanical spare parts)
- Function verification in accordance with the maintenance work instructions and the maintenance procedure documents
- FLM work related registration of faulty HW on site and in regional stocks
- Handling the hardware units in regional stocks and for HWS Spare Part Management
- Participating in upgrade projects with on-site activities
- Updating log-records

Testing methods
Prerequisite theory test
On-site / Test bed assessment

Validity and renewal
Valid for 12 months. Renewal is based upon proof of performance of tasks to the required license standard. If no proof exists, the practical assessment will be performed.

Notes
The license can only be issued based on quality data from a Nokia project or via an on-site assessment arranged through Nokia Learning Solutions.

Nokia Certified Engineer – Radio Network Controller

NCE RNC

Target group
RNC specialists who have proven capability and skills on operating, maintaining, integrating and troubleshooting the Nokia RNC.

Mandatory training
- Service Excellence for partners (page 11)
- On-site coaching training (page 11)

Exam domains
- Nokia RNC SW/HW architecture
- Integration
- SW/HW maintenance
- Network management
- Troubleshooting
- WCDMA in radio access networks
- ATM in radio access networks
- IP in radio access networks

Assessment (Format/duration)
Closed book knowledge assessment examination (2hrs)

Validity and renewal
The certificate is valid for 18 months, after which the exam must be taken again.

Circuit switched core network

Competence planning

eValuation for partners
There are several paths to follow based on the eValuation for partners results. These flows are illustrated on page 6.

Competence development planning
This will be agreed between the Nokia Partner Manager and the subcontractors, with input from the Partner Training Service Manager.

2G Circuit Switched Core Network eValuation for partners

EVAL 2G CSCN

Target group
Engineers who are responsible for the first line maintenance or second line maintenance of Nokia BSC.

Scope of eValuation
- MSC/i
- HLR/i
- Transit MSC
- Compact MSCi
- SRRi
- Network management systems

Testing methods
Internet-based tool

Validity and renewal
Valid for 6 months. Renewal is based upon request from your Partner Training Services Manager.

Notes
Every individual using this tool needs a PTid.

3G Circuit Switched Core Network eValuation for partners

EVAL 3G CSCN

Target group
Engineers who are responsible for the first line maintenance or second line maintenance of Nokia BSC.

Scope of eValuation
- MGW
- Network management systems

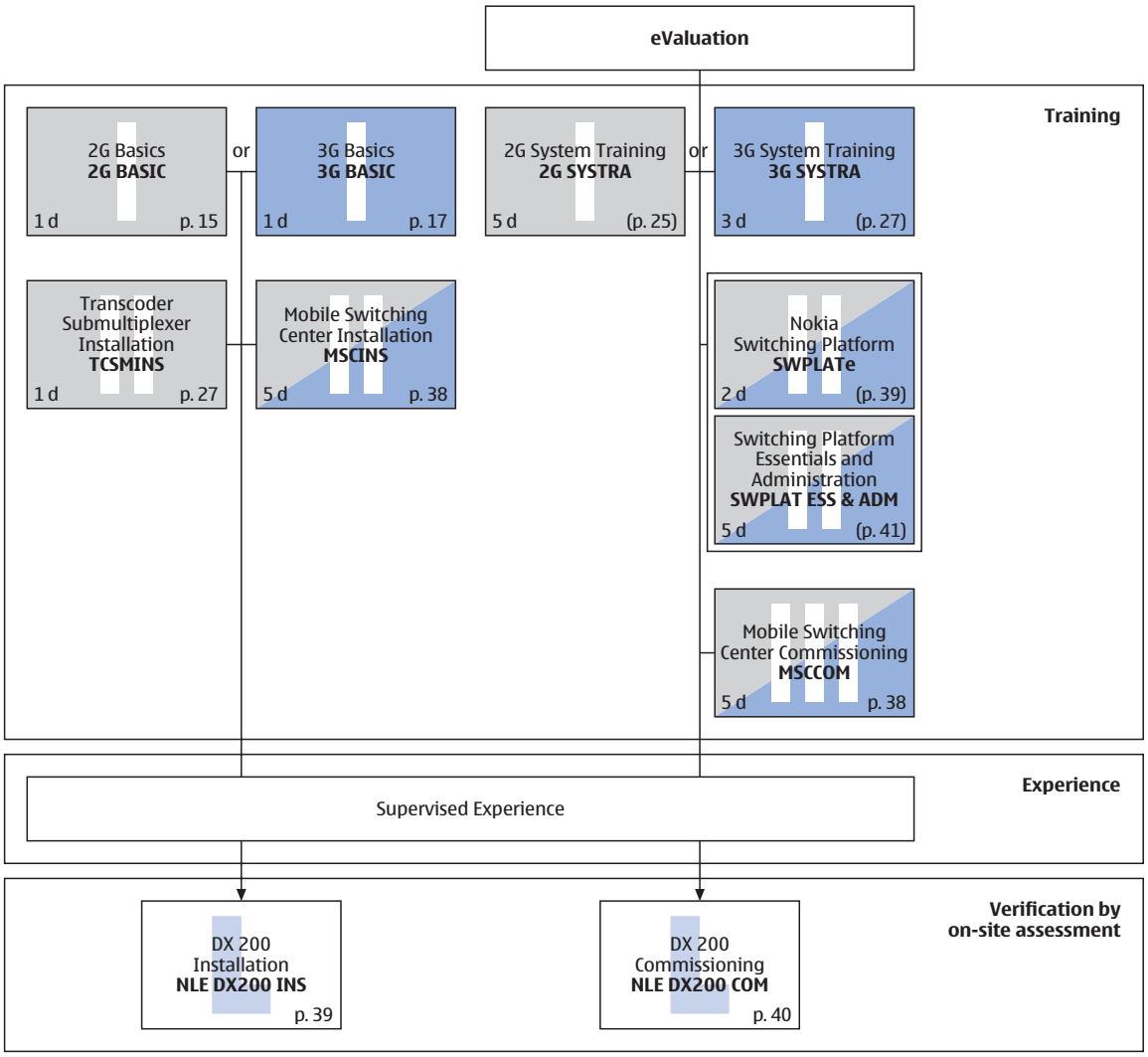
Optional site connectivity (Nokia/other FW, BG, DNS servers)

Testing methods
Internet-based tool

Validity and renewal
Valid for 6 months. Renewal is based upon request from your Partner Training Services Manager.

Notes
Every individual using this tool needs a PTid.

Competence development



DX 200 telecom implementation licenses

Please refer to the Nokia Learning Solutions Training Catalogue 2005 for the training details presented in the flows in brackets. All other training details can be found in this supplement.

Mobile Switching Center Installation

MSCINS

Target group
Personnel who will install MSCi/HLRi equipment.

Objectives
After the training, the participant will be able to:
- Perform installation of MSCi and HLRi

Prerequisites
General electrical installation knowledge, knowledge of telecommunications equipment, good knowledge of safety instructions

Duration
5 days

No. of participants
4

Modules
- Health and safety
- Quality control
- About the MSCi and HLRi installation procedure
- Unpacking and checking the MSCi and HLRi equipment
- Preparing the MSCi and HLRi racks for installation
- Installing the MSCi and HLRi racks
- Installing the MSCi and HLRi inter-rack/subrack cables
- Installing the MSCi and HLRi plug-in units
- Installing the MSCi and HLRi station cables
- Installing the power supply cables and powering up the MSCi and HLRi
- Finishing off the MSCi and HLRI installation activity
- Documentation for MSCi and HLRi installation
- Course summary MSCi and HLRi installation

Assessment
N/A

Mobile Switching Center Commissioning

MSCCOM

Target group
Personnel who will commission Nokia MSCi/HLRi equipment.

Objectives
After the training, the participant will be able to:
- Describe the Nokia implementation of GSM architecture
- Describe Nokia DX 200 platform and MSCi and HLRi architecture
- Perform commissioning of MSCi and HLRi using defined procedures and instructions
- Perform handling of basic faults encountered during MSCi and HLRi commissioning procedure

Prerequisites
Good knowledge of Nokia MSCi and HLRi SW installation and SW installation tools

Duration
5 days

No. of participants
4–8

Modules
- Introduction to commissioning
- Manuals
- Installation of hardware and software
- Creation of HW definitions
- Other necessary definitions

Assessment
N/A

Competence verification

Nokia License
is recommended for individuals to prove their ability to implement, operate and maintain functions on Nokia network elements.

There are several paths to follow to achieve a Nokia License. For more information about these flows, which are tailored to specific needs, see page 9.

Nokia Certificate
is the recommended competence verification standard for second line maintenance engineers. Second line maintenance engineer training flows are explained in the Nokia Learning Solutions Training Catalogue 2005 under the Field engineering (page 43).

There are several paths to follow to achieve Nokia Certification. For more information about these flows, which are tailored to specific needs, see page 10.

Nokia License – DX 200 Installation

NLE DX200 INS

Target group
Engineers who are responsible for the installation of Nokia MSC/HLRi.

Nokia equipment
Nokia MSC/HLR, TSCM2E, SRRi, BSC

Scope of License
- Preparing for installation
- Preparing the equipment room
- Unpacking and inspecting the equipment
- Installing the free standing racks
- Installing the floor rails
- Installing cabinets on the floor rails
- Grounding (earthing)
- Connecting power supply
- Installing the cables
- Equipping of cabinets with plug-in units
- Installing the station cables
- Installing the doors and side plates
- Finishing

Testing methods
Site quality assessment in roll out

Validity and renewal
Valid for 12 months. Renewal is based upon history in the Nokia quality management system.

Notes
It is assumed that an individual who can successfully install a MSCi, also has the required competence to install a HLRi, TSCM2E, SRRi or BSC.

The license can only be issued based on quality data from a Nokia project or via an on-site assessment arranged through Nokia Learning Solutions.

Nokia License – DX 200 Commissioning

NLE DX200 COM

Target group
Engineers who are responsible for the commissioning of Nokia MSC/HLRi.

Nokia equipment
Nokia MSC/HLRi

Scope of License
- Preparation of commissioning
- Initial inspections
- Inspection of user interfaces and SW versions
- Inspection of maintenance system
- Unit diagnostics and working states
- Finishing

Testing methods
Site quality assessment in rollout

Validity and renewal
Valid for 12 months. Renewal is based upon history in the Nokia quality management system.

Notes
The license can only be issued based on quality data from a Nokia project or via an on-site assessment arranged through Nokia Learning Solutions.

Nokia Certified Engineer – 2G Circuit Switched Core Network

NCE 2G CSCN

Target group
2G CS CN specialists who have proven capability and skills on operating, maintaining, integrating and troubleshooting the Nokia 2G CS CN.

Mandatory training
- Service Excellence for partners (page 11)
- On-site coaching training (page 11)

Exam domains
- Nokia MSC & HLR SW/HW architecture
- Installation
- Commissioning
- Integration
- MB/CLS/CLAB/SBUS
- Maintenance/upgrade
- Other issues / 2G CS CN

Assessment (Format/duration)
Closed book knowledge assessment examination (2hrs)

Validity and renewal
The certificate is valid for 18 months, after which the exam must be taken again.

Nokia Certified Engineer – 3G Circuit Switched Core Network

NCE 3G CSCN

Target group
3G CS CN specialists who have proven capability and skills on operating, maintaining, integrating and troubleshooting the Nokia 3G CS CN.

Mandatory training
- Service Excellence for partners (page 11)
- On-site coaching training (page 11)

Exam domains
- Nokia MGW SW/HW architecture
- Commissioning
- Integration
- ATM
- Maintenance/upgrade
- Other issues / 3G CS CN

Assessment (Format/duration)
Closed book knowledge assessment examination (2hrs)

Validity and renewal
The certificate is valid for 18 months, after which the exam must be taken again.

Packet switched core network

Competence planning

eValuation for partners
There are several paths to follow based on the eValuation for partners results. These flows are illustrated on page 6.

Competence development planning
This will be agreed between the Nokia Partner Manager and the subcontractors, with input from the Partner Training Service Manager.

2G Packet Switched Core Network eValuation for partners — EVAL 2G PSCN

Target group
Engineers who are responsible for the first line maintenance or second line maintenance of Nokia.

Scope of eValuation
- 2G SGSN
- GGSN
- DHCP
- Network management systems

Option for site connectivity

Testing methods
Internet-based tool

Validity and renewal
Valid for 6 months. Renewal is based upon request from your Partner Training Services Manager.

Notes
Every individual using this tool needs a PTid.

3G Packet Switched Core Network eValuation for partners — EVAL 3G PSCN

Target group
Engineers who are responsible for the first line maintenance or second line maintenance of Nokia.

Scope of eValuation
- 3G SGSN
- GGSN
- DHCP
- Network management systems

Option for site connectivity

Testing methods
Internet-based tool

Validity and renewal
Valid for 6 months. Renewal is based upon request from your Partner Training Services Manager.

Notes
Every individual using this tool needs a PTid.

Competence verification

Nokia Certificate
is the recommended competence verification standard for second line maintenance engineers. Second line maintenance engineer training flows are explained in the Nokia Learning Solutions Training Catalogue 2005 under the Field engineering (page 43).

There are several paths to follow to achieve Nokia Certification. For more information about these flows, which are tailored to specific needs, see page 10.

Nokia Certified Engineer – 2G Packet Switched Core Network — NCE 2G PSCN

Target group
2G PS CN specialists who have proven capability and skills on operating, maintaining, integrating and troubleshooting the Nokia 2G PS CN.

Mandatory training
- Service Excellence for partners (page 11)
- On-site coaching training (page 11)

Exam domains
- Nokia 2G PS CN architecture
- Network elements (GGSN, SGSN, DNS, CG, FW, DHCP, LIG)
- Interfaces (Gx, NMS, charging etc.)
- Connections to outside packet core (WAP, corporate etc.)
- Roaming
- Resiliency
- Network security
- Troubleshooting

Assessment (Format/duration)
Closed book knowledge assessment examination (2hrs)

Validity and renewal
The certificate is valid for 18 months, after which the exam must be taken again.

Nokia Certified Engineer – 3G Packet Switched Core Network — NCE 3G PSCN

Target group
3G PS CN specialists who have proven capability and skills on operating, maintaining, integrating and troubleshooting the Nokia 3G PS CN.

Mandatory training
- Service Excellence for partners (page 11)
- On-site coaching training (page 11)

Exam domains
- Nokia 3G PS CN architecture
- Network Elements (GGSN, 3G SGSN, DNS, CG, FW, DHCP, LIG)
- Interfaces (Gx, NMS, charging etc.)
- Connections to Outside Packet Core (WAP, corporate etc.)
- Roaming
- Resiliency
- Network security
- Quality of Services
- Troubleshooting

Assessment (Format/duration)
Closed book knowledge assessment examination (2hrs)

Validity and renewal
The certificate is valid for 18 months, after which the exam must be taken again.

Network operations and control

Competence planning

eValuation for partners
There are several paths to follow based on the eValuation for partners results. These flows are illustrated on page 6.

Competence development planning
This will be agreed between the Nokia Partner Manager and the subcontractors, with input from the Partner Training Service Manager.

Network Management System eValuation for partners

EVAL NMS

Target group
Engineers who are responsible for the first line maintenance or second line maintenance of Nokia BSC.

Scope of eValuation
- Nokia NMS 10
- Nokia NMS 100
- Nokia NMS 1000
- Nokia NMS 2000

Option for
- Nokia NMS 5000
- Network Data Warehouse (NDW)
- Nokia NetAct Traffica
- Nokia NMS 400

Testing methods
Internet-based tool

Validity and renewal
Valid for 6 months. Renewal is based upon request from your Partner Training Services Manager.

Notes
Every individual using this tool needs a PTid.

Nokia NetAct eValuation for partners

EVAL NETACT

Target group
Engineers who are responsible for the first line maintenance or second line maintenance of Nokia BSC.

Scope of eValuation
- Regional cluster
- Nokia NetAct Planner
- Node manager

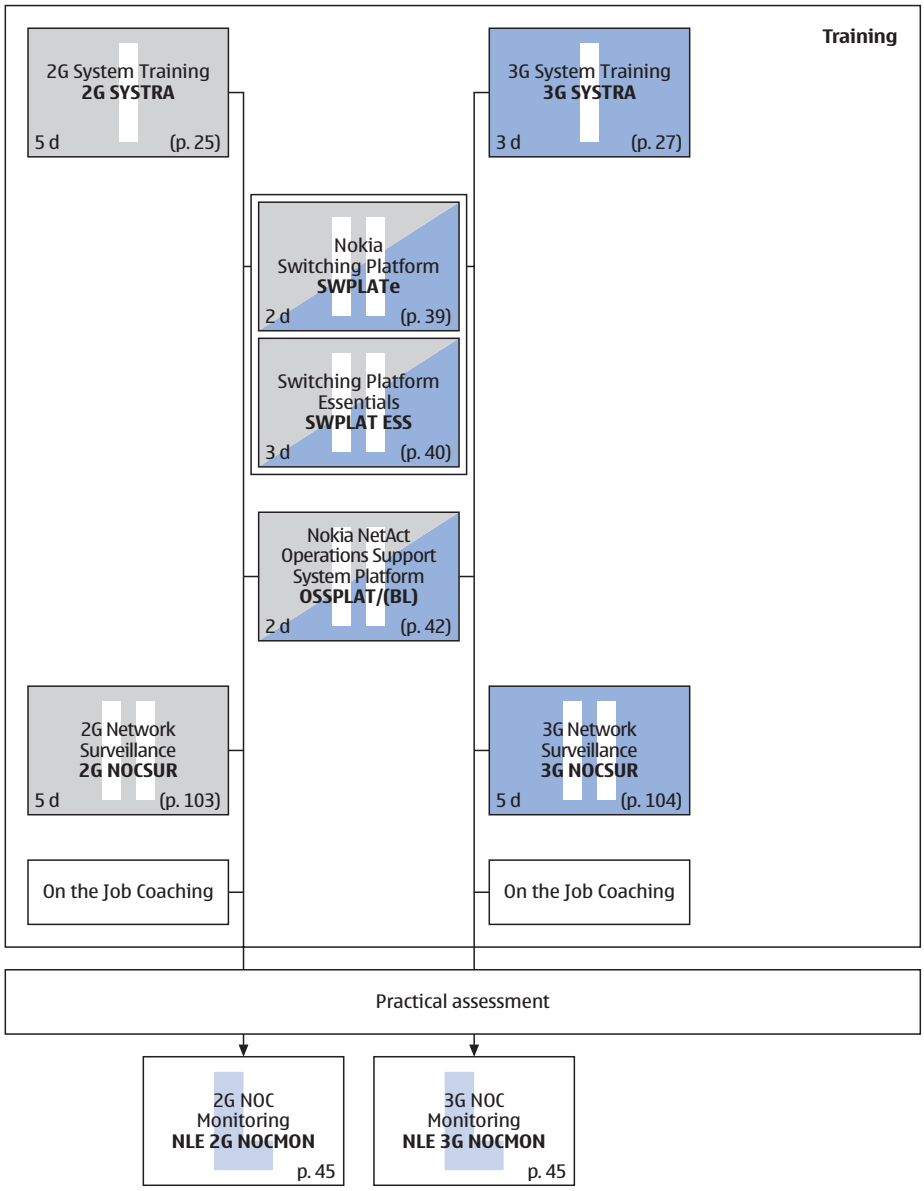
Option for
- Global Cluster
- Network Data Warehouse
- Traffica
- Service Quality Manager
- Packet Core Configurator
- Work Flow Manager

Testing methods
Internet-based tool

Validity and renewal
Valid for 6 months. Renewal is based upon request from your Partner Training Services Manager.

Notes
Every individual using this tool needs a PTid.

Competence development



2G and 3G NOC monitoring

Please refer to the Nokia Learning Solutions Training Catalogue 2005 for the training details presented in the flows in brackets. All other training details can be found in this supplement.

Competence verification

Nokia License
is recommended for individuals to prove their ability to implement, operate and maintain functions on Nokia network elements.

There are several paths to follow to achieve a Nokia License. For more information about these flows, which are tailored to specific needs, see page 9.

Nokia License – 2G NOC Monitoring
Nokia License – 3G NOC Monitoring

NLE 2G NOCMON
NLE 3G NOCMON

Target group
Engineers who are responsible for the monitotoring of Nokia 2G or 3G networks via Network Operations Centre (NOC).

Nokia equipment
Nokia NetAct/OSS Fault Management applications for all Nokia delivered 3G network e.g. WCDMA BTS, RNC, MSC/HLR, MGW, BG, CG, Cellular Transmission FH/MH, Nokia PowerHopper.

Scope of License
- Follow the network indicators
- Monitor and acknowledge alarms
- Receive customer complaints from Customer Care
- Receive other reported problems form other operators
- Follow performance indicators and warnings for abnormal network behavior
- Check for remote correction (e.g. lock/unlock, reload, restart) depending on the instructions received from second line maintenance
- Create trouble ticket
- Analyze if ERP should be activated and if so forward to monitoring shift leader
- Assign and ensure acknowledgement
- Follow problem resolution
- Close trouble ticket
- Report the network and ongoing work status

Testing methods
Assessment in NOC

Validity and renewal
Valid for 12 months. Renewal is based upon proof of performance of tasks to the required license standard. If no proof exists, the practical assessment will be performed.

Notes
The license can only be issued based on quality data from a Nokia project or via an on-site assessment arranged through Nokia Learning Solutions.

Competence verification

Nokia Certificate
is the recommended competence verification standard for second line maintenance engineers. Second line maintenance engineer training flows are explained in the Nokia Learning Solutions Training Catalogue 2005 under the Field engineering (page 43).

There are several paths to follow to achieve Nokia Certification. For more information about these flows, which are tailored to specific needs, see page 10.

Nokia Certified Engineer – 3G Transmission Network Planning

NEW!

NCE 3G TRS

Target group
3G Transmission network planners who have proven capability and skills on operating, maintaining, integrating and troubleshooting the 3G Transmission Network.

Mandatory training
- Service Excellence for partners (page 11)
- On-site coaching training (page 11)

Exam domains
- Transmission dimensioning
- Initial transmission topology and capacity planning
- Physical layer planning
- Microwave link route planning
- ATM detailed planning
- Nokia RAN Architecture
- DCN Management Planning
- Integration process

Assessment (Format/duration)
Closed book knowledge assessment examination (2hrs)

Validity and renewal
The certificate is valid for 18 months, after which the exam must be taken again.

Nokia Certified Engineer – 3G Radio Network Planning

NEW!

NCE 3G RNP

Target group
3G Radio network planners who have proven capability and skills on operating, maintaining, integrating and troubleshooting the Nokia 3G Radio network.

Mandatory training
- Service Excellence for partners (page 11)
- On-site coaching training (page 11)

Exam domains
- Network Dimensioning
- Nominal Planning
- Detailed planning
- Pre-optimisation and drive test measurements ntegration

Assessment (Format/duration)
Closed book knowledge assessment examination (2hrs)

Validity and renewal
The certificate is valid for 18 months, after which the exam must be taken again.

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