



# Training Offer Catalogue

[www.nexans.com/LANsystems](http://www.nexans.com/LANsystems)







Introduction,

"The transmission quality of a cabling installation depends on the cabling system used, as well as the installation itself."

Nexans Cabling Solutions has elaborated its training program. Trainings are given at the Competence Centre in Brussels, as well as on demand at your premises worldwide or in our Local Training centres in different regions.

No matter what your level is, we'll find the best training program meeting all of your needs. The LAN technology evolution requires a wide and varied range of skills. No two projects are the same and our partner's position is important in this business. The aim is to find the synergy between your needs and our training program.

In order to make this "level training" program possible, the trainings have been divided into different modules which are all addressing different topics aimed at different people.

- Installers
- Project Managers
- Designers, Consultants and Architects
- Commercial Staff that would like to improve their sales techniques End Users
- Anybody involved in cabling that would like to improve his knowledge and skills in this domain.

Trainees can obtain a "Nexans Cabling Solutions Supervisor certification" when they succeed in the 3-day Expert training.

It is clear that a new VAR, Distributor, or Certified Solutions Partner will be required to succeed in the Expert training. If the new partner has no experience it is recommended that he will first attend the full Expert training. If the partner has previous experience, he can follow a tailored Expert training.



## Training Modules Overview

### Basics

Module 3	<i>Nexans Copper Cabling Solutions *</i>	<b>6</b>
Module 8	<i>Nexans Optical Fibre Cabling Solutions *</i>	<b>8</b>

### Expert Knowledge

Module 1	<i>Premises Cabling Standards *</i>	<b>5</b>
Module 2	<i>Parameters for Copper Cabling *</i>	<b>5</b>
Module 4	<i>Installation Rules and Guidelines *</i>	<b>6</b>
Module 7	<i>Optical Fibre Theory and Principles *</i>	<b>8</b>
Module 12	<i>Design Training: Project Study</i>	<b>1%</b>
Module 14	<i>Design Training: Project Engineering</i>	<b>12</b>
Module 15	<i>Design Training: Project Tendering</i>	<b>13</b>
Module 16	<i>Project Management</i>	<b>13</b>

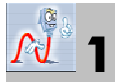
### Hands-on

Module 5	<i>Installation Practice &amp; Testing Class D-E-EA Links *</i>	<b>+</b>
Module 6	<i>Installation Practice &amp; Testing Class F-FA Links</i>	<b>+</b>
Module 9	<i>Fibre Installation Practice with Direct Termination</i>	<b>9</b>
Module 10	<i>Fibre Installation Practice on Fusion Splicing</i>	<b>9</b>
Module 11	<i>Testing Optical Fibre Links *</i>	<b>1\$</b>
Module 13	<i>Nexans Easy Design Visio Software</i>	<b>1%</b>

\* Modules part of the 3 Day Expert Training Program

To apply for a training, please contact your local Nexans sales representative or  
[alain.geypens@nexans.com](mailto:alain.geypens@nexans.com)

# Training modules



## 1 Premises Cabling Standards\*



Contains:

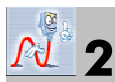
- Introduction to Data Cabling
- Universal Cabling: Concept and evolution
- Standardization:
  - Comparison of the different norms
  - What, Why, impact on cabling
  - ISO/IEC 11801, Cenelec 50173, EIA/TIA 568-A/B/C
  - Categories versus Class performances
  - Configuration model
  - Evolution
- Horizontal channel design:
  - 2, 3 and 4 connector channels
  - Length calculation of a channel
- Horizontal & Vertical Signal routing:
  - Voice Signal routing for Analog, Digital or VoIP
  - Data Signal routing Copper and Fibre
  - Entrance facilities

Time required: 4:00h

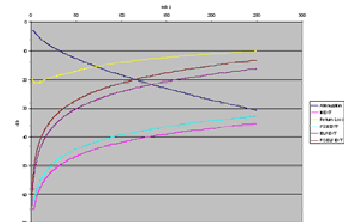
This module enables you to:

- Understand requirements and philosophy of the Premises Cabling System Standards
- Identify components in a structured cabling system
- Identify vertical and horizontal routing of data and voice signals.
- Calculate maximum distances for horizontal channels
- Define requirements for a Structured Cabling System on Campus, Riser and Horizontal links.

Prerequisites: none



## 2 Parameters for Copper Cabling\*



Contains:

- Technical Parameters
  - Megabits versus Megahertz
  - Data applications: Ethernet, Token Ring, Fast Ethernet, ATM, Gigabit Ethernet, Encoding systems
  - IL, NEXT, ACR-N
  - PS specs, FEXT, ACR-F, RL, NVP, Delay Skew
  - Alien crosstalk parameters, SNR
  - Coupling attenuation
  - Their influence on cabling installation practices

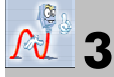
Time required: 2:00h

This module enables you to:

- Analyse Test results
- Identify errors in a copper link
- Create high performance copper links

Prerequisites: Knowledge of Standards on Copper Cabling





### **3** Nexans Copper Cabling Solutions\*

Contains:

E-ssential range  
 Why Systems?  
 LANmark 5, 6, 6A and 7(A) Systems  
 GG45 Cat-7, Cat-7A  
 When and how to use each Cabling System Class?  
 The Nexans Warranty Programm  
 Voice range  
 Structural Hardware  
 Cabinets  
 Services

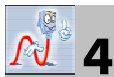


Time required: 2:00h

*This module enables you to:*

- Identify each component in the copper product range
- Select a Cabling System according to the end-users needs
- Discover unique features of the Nexans Cabling System Products
- Be more competitive in the market

Prerequisites: Knowledge of Standards on Copper Cabling



### **4** Installation Rules and Guidelines\*

Contains:

Indoor cabling  
 Outdoor cabling  
 Fire restrictions  
 Numbering and labelling  
 Cabinet location  
 DATA - POWER separation  
 Earthing and Grounding
 

- Safety versus EMC
- Requirements for correct Earthing and Grounding

 Administration and documentation
 

- Master cable schedule
- Floor distributor Cable schedule
- Building cabling plans
- Cabinet Layout
- Nexans Visio Templates



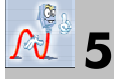
Time required: 2:30h

*This module enables you to:*

- Acquire basics on installation practices
- Apply installation rules and guidelines during design
- Create professional administration documents
- Understand requirements from Standards on installation practices
- Increase performance in a cabling system

Prerequisites: Knowledge of Standards on Copper Cabling





## 5 Installation Practice & Testing Class D-E-EA Links\*

Contains:

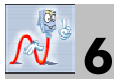
- Termination of U/UTP, F<sup>1</sup>/UTP, F<sup>2</sup>/UTP, SF/UTP, S/FTP copper cables
- How to build high performance Class D, Class E and Class EA Links
- Installation practices for 2, 3 & 4 Connector links
- LANmark-5/6 screened and unscreened:
  - PCB termination
  - EVO termination
- LANmark-6A screened
  - EVO termination
- Earthing and Gounding
- Testing:
  - Using Certified Level III-IV (Cat 6A) testers
  - Testing 2, 3 and 4 connector links
  - Calibration, Firmware, Testing limits
  - Analyses of the test results
  - Troubleshooting

Time required: 4:00h

This module enables you to:

- Create high performance copper links
- Decrease installation times
- Testing Class D, E and Ea links according to the Standards
- Solve problems of failing links

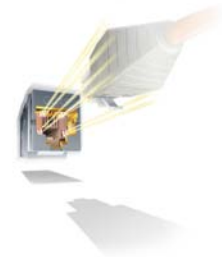
Prerequisites: Knowledge of Cabling Installation Rules and Copper Cabling Parameters



## 6 Installation Practice & Testing Class F-FA Links

Contains:

- Termination of LANmark-7 & 7A S/FTP copper cables
- GG45 termination practice
- Easy termination tool
- 2, 3 & 4 Connector links
- Testing:
  - Using Certified Level IV (Cat 7) testers
  - Testing 2, 3 and 4 connector links
  - Calibration, Firmware, Testing limits
  - Analyses of the test results
  - Troubleshooting



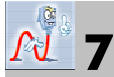
Time required: 4:00h

This module enables you to:

- Create high performance copper links
- Decrease installation times
- Test Class F and FA links according to the Standards
- Solve problems of failing links

Prerequisites: Knowledge of Cabling Installation Rules and Copper Cabling Parameters

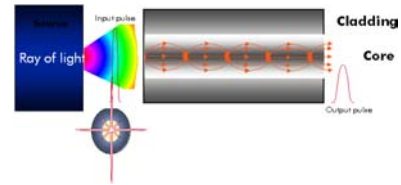




## 7 Optical Fibre Theory and Principles\*

Contains:

Theoretical Introduction  
 Fiber Construction, Fiber types  
 Optical windows, Refractive index  
 Multimode versus Singlemode  
 Step Index, Dispersion and Graded index  
 Optical Transmitters:  
   - LED, VCSEL, LASER  
   - Launch conditions  
 Transmission characteristics:  
   - Attenuation  
   - Bandwidth, dip, maximum link length  
 Advantages of Optical Fiber  
 Fibre Termination



Time required: 2:00h

This module enables you to:

- Identify Fibre types
- Consider Length restrictions during design
- Identify Components of an optical fibre link
- Define Optical Fibre cabling requirements

Prerequisites: none



## 8 Nexans Optical Fibre Cabling Solutions\*

Contains:

LANmark-OF Fibre types  
 Application to Length implication  
 Cable constructions:  
   - Outdoor  
   - Indoor  
 Modular patch panels, Snap-in Couplers  
 Optical Fibre Termination products:  
   - Splicing  
   - Direct Termination  
 Patch cords  
 Fibre To The Desk Solutions  
 Pre-terminated Fibre / MPO systems  
 The Nexans Warranty Program



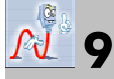
Time required: 2:00h

This module enables you to:

- Identify each component in the Optical Fibre product range
- Select a Cabling System according to the end-users needs
- Discover unique features of the Nexans Cabling System Products
- Be more competitive in the market

Prerequisites: Knowledge of Standards on Optical Fibre Cabling





## Fibre Installation Practice on Direct Termination

Contains:

- Fibre Installation Practice
- Recommendations to maintain Duplex OF Channel Polarity
- Patchpanel & Zone Distributionbox:
  - Anaerobic Connectorisation
    - ST, SC, LC on 900 $\mu$  Fibres
    - ST, SC, LC on 2 or 3mm Patchcable
  - Hotmelt connectorisation
    - ST, SC on 900 $\mu$  Fibres
    - ST, SC on 3mm Patchcable

Time required: 2:00h

This module enables you to:

- Identify each component in the Optical Fibre link
- Maintain Duplex OF Channel Polarity
- Create high performance Fibre links
- Decrease installation times
- Troubleshoot

Prerequisites: Knowledge of Fibre Theory and Principles



## Fibre Installation Practice on Fusion Splicing

Contains:

- Fibre Installation Practice
- Recommendations to maintain Duplex OF Channel Polarity
- Fusion Splicing Methods
- Patchpanel & Zone Distributionbox:
  - Organisation of fibres in Splicetrays
  - Protecting splices:
    - Metallic
      - 250 $\mu$  fibres
    - Heatshrink
      - 250 $\mu$  & 900 $\mu$  Fibres

Time required: 2:00h

This module enables you to:

- Identify each component in the Optical Fibre link
- Maintain Duplex OF Channel Polarity
- Create high performance Fibre links
- Decrease installation times
- Troubleshoot

Prerequisites: Knowledge of Fibre Theory and Principles





## Testing Optical Fibre Links\*

Contains:

- Parameters
- Causes of Attenuation
- Optical Budget calculation
- Optical Fibre Measurement
  - Microscope
  - Power Meter Types
    - Power meter principle
    - Setting Reference
    - Analysing results
  - OTDR
    - Optical Time Domain Reflectometry principle
    - Dead zones
    - Connections and splices
    - Analysing results
    - Ghosting

Time required: 4:00h

*This module enables you to:*

- *Identify each component in the Optical Fibre link*
- *Test Opticle Fibre links according to the Standards*
- *Solve problems of failing links*
- *Certifiy Installations*

Prerequisites: Knowledge of Standards on Optical Fibre Cabling and Fibre Theory



## **12** Design Training: Project Study

Contains:

Cabling System Concept  
Impact of the Active Equipment  
Horizontal & Vertical Signal Routing  
Interfaces with other systems  
Data Collection  
2 ways: starting from scratch or from an Invitation To Tender (ITT)  
Level of performance

- Telecom Outlets
- Backbones
- Interfaces

Cabling System Design  
Backbone design

- Voice, Data copper, Data OF

Horizontal channel design

- 2 connector link, Consolidation point, Lengths, Outlets

Exercise  
Data collection from an Invitation To Tender (ITT)  
Design production  
Analysis and corrections

Time required: 12:00h

*This module enables you to:*

- *Identify each component in a Universal Cabling System*
- *Consolidate information from a tender*
- *Identify missing information in a tender*
- *Collect all information needed to design a Universal Cabling System*
- *Create professional drawings*

Prerequisites: none



## **13** Nexans Easy Design Visio Software

Contains:

Software installation  
Discovering the Using Interface  
Analyses of the tabs  
By means of exercise filling out the fields  
Launching the design tool  
Evaluating the created drawings  
Creating a Bill of Material

Time required: 4:00h

*This module enables you to:*

- *Quickly adapt to the design tool*
- *Learn basics of Visio*
- *Create professional drawings*
- *Create a Bill of Material*

Prerequisites: Knowledge of Standards on Copper and Fibre Cabling



## 14 Design Training: Project Engineering

Contains:

Labeling

Identifying Non-NCS components

Scope of work

- Cabling System Infrastructure
- Existing or out of the Scope Of Work
- Routing analysis
- Presence of cables from other systems
- Size check
- Routing up to Cabling System components
- Accessibility
- Included in the Scope Of Work
- Routing
- Containment, Sizing, specific requirements
- Earthing
- Accessibility
- Installation works
- Cabling System products
- Other works
- Project Management Team
- Transportation & Local costs
- Subcontracting

Engineering exercise

Create Bill Of Quantities (BOQ)

- Accessories
- Interfaces with other systems
- Non-NCS components

Time required: 12:00h

*This module enables you to:*

- Collect all information for before design
- Investigate building site and/or plans
- Specify Scope of Work
- Create a Bill of Quantities

Prerequisites: Knowledge of Standards on Copper and Fibre Cabling



## 15 Design Training: Project Tendering

Contains:

Files to include in a tender

- BOM – BOQ using Nexans Easy Design
- Pricing
- Design drawings using Nexans Easy Design
- Technical Description and Planning
- NCS & N-NCS data sheets + general docs
- Quality – Safety
- Specific Requirements

Follow up and feedback

- Tender follow up during the decision process

Feedback if awarded:

- First step: from Sales + decision makers
- Second step: from Project Manager during installation phase

Time required: 8:00h

This module enables you to:

- Create all documents for Tender
- Support Sales team on technical details
- Support team during implementation and to use feedback

Prerequisites: Knowledge of Standards on Copper and Fibre Cabling and NED tool



## 16 Project Management

Contains:

Rules and advises

Project preparation

- Preliminary study of the dossier
- Transfer meeting from Sales & Engineering to PM
- Thorough analysis of the dossier and quotation
- On site pre-installation survey
- Material order and installation works planning

On site quality management (Pictures illustrated)

On site installation

- Kick off
- Installation
- Testing and reception

As-built files, financial results and invoicing

Time required: 8:00h

This module enables you to:

- Manage Project preparation
- Analyse documents and quotations
- Collect information during pre-installation site survey
- Plan Works and Support installation from beginning to end

Prerequisites: Knowledge of Standards on Copper and Fibre Cabling and Project Study, Engineering and Installation Rules and Guidelines