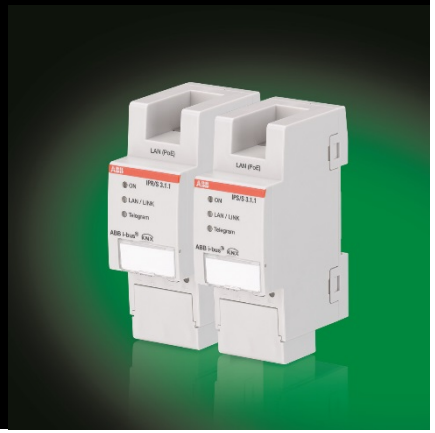
Jürgen Schilder and Thorsten Reibel – October 2015

ABB GPG Building Automation Webinar ABB i-bus® KNX

New IP devices: IP Router IPR/S 3.1.1 and IP Interface IPS/S 3.1.1



Power and productivity for a better world™

Webinar “IP Router IPR/S and IP Interface IPS/S”
Agenda

IP Router IPR/S 3.1.1 and IP Interface IPS/S 3.1.1

- Overview and Principle
- Devices, Features and ETS Application
- Integration i-bus Tool
- Applications and Solutions

Webinar “IP Router IPR/S and IP Interface IPS/S” Agenda

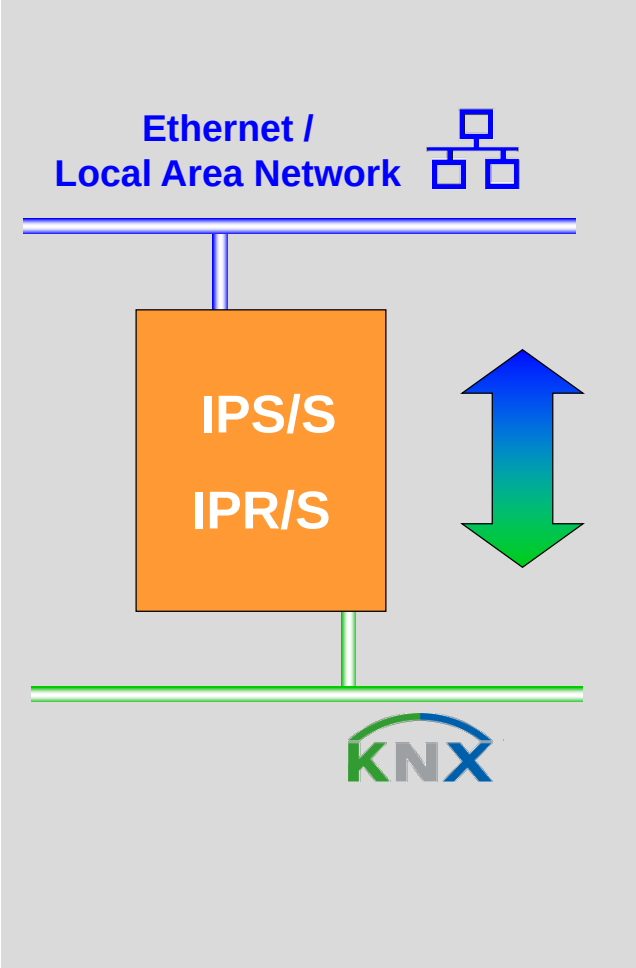
IP Router IPR/S 3.1.1 and IP Interface IPS/S 3.1.1

- Overview and Principle
- Devices, Features and ETS Application
- Integration i-bus Tool
- Applications and Solutions

Next Webinar (25th of Nov.) IP Devices Part 2: Advanced Features

- i-busTool
- Filter Table
- Unicast Groups
- Record Telegrams on IP
- Remote Access / VPN
- …

Webinar “IP Router IPR/S and IP Interface IPS/S”
Principle



- Converts KNX telegrams in IP telegrams (KNXnet/IP) and vice versa
- KNX telegrams can be sent to or received from other devices via the IP network

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Webinar “IP Router IPR/S and IP Interface IPS/S”
IP Interface

- To connect a PC to KNX via IP
  - Visualisation
  - Connection of Tablet/Smart Phone with App via WiFi
  - Programming with ETS
- KNXnet/IP Capabilities:
  - Tunneling

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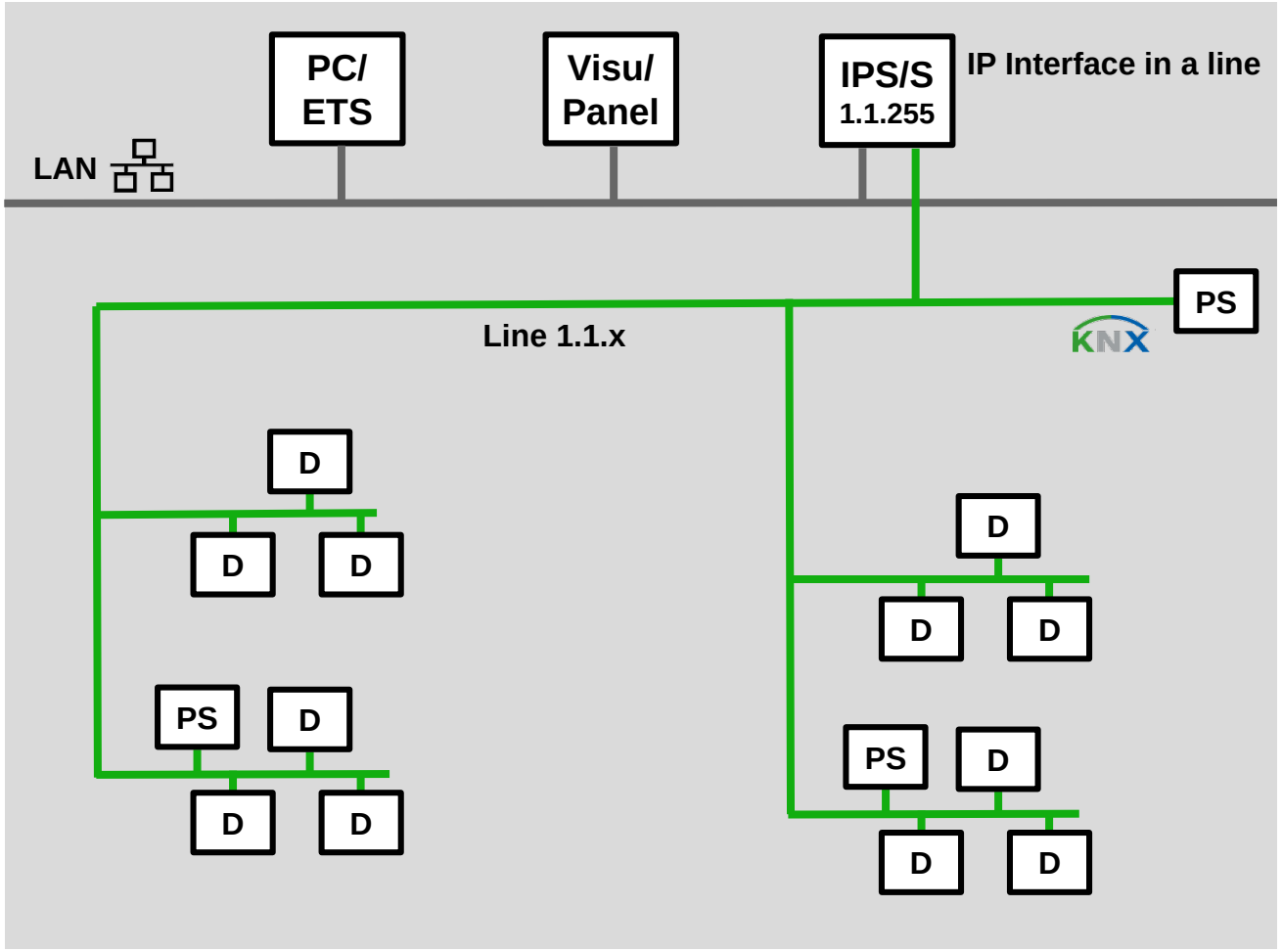
Webinar “IP Router IPR/S and IP Interface IPS/S”
IP Interface connection: Tunneling



D = Device PS = Power

Webinar “IP Router IPR/S and IP Interface IPS/S”
IP Router

- Connection of KNX Lines and Areas over IP, Routing of KNX telegrams
- To connect a PC to KNX via IP
  - Visualisation
  - Connection of Tablet/Smart Phone with App via WiFi
  - Programming with ETS
- KNXnet/IP Capabilities:
  - Tunneling (Interface)
  - Routing (Coupler)

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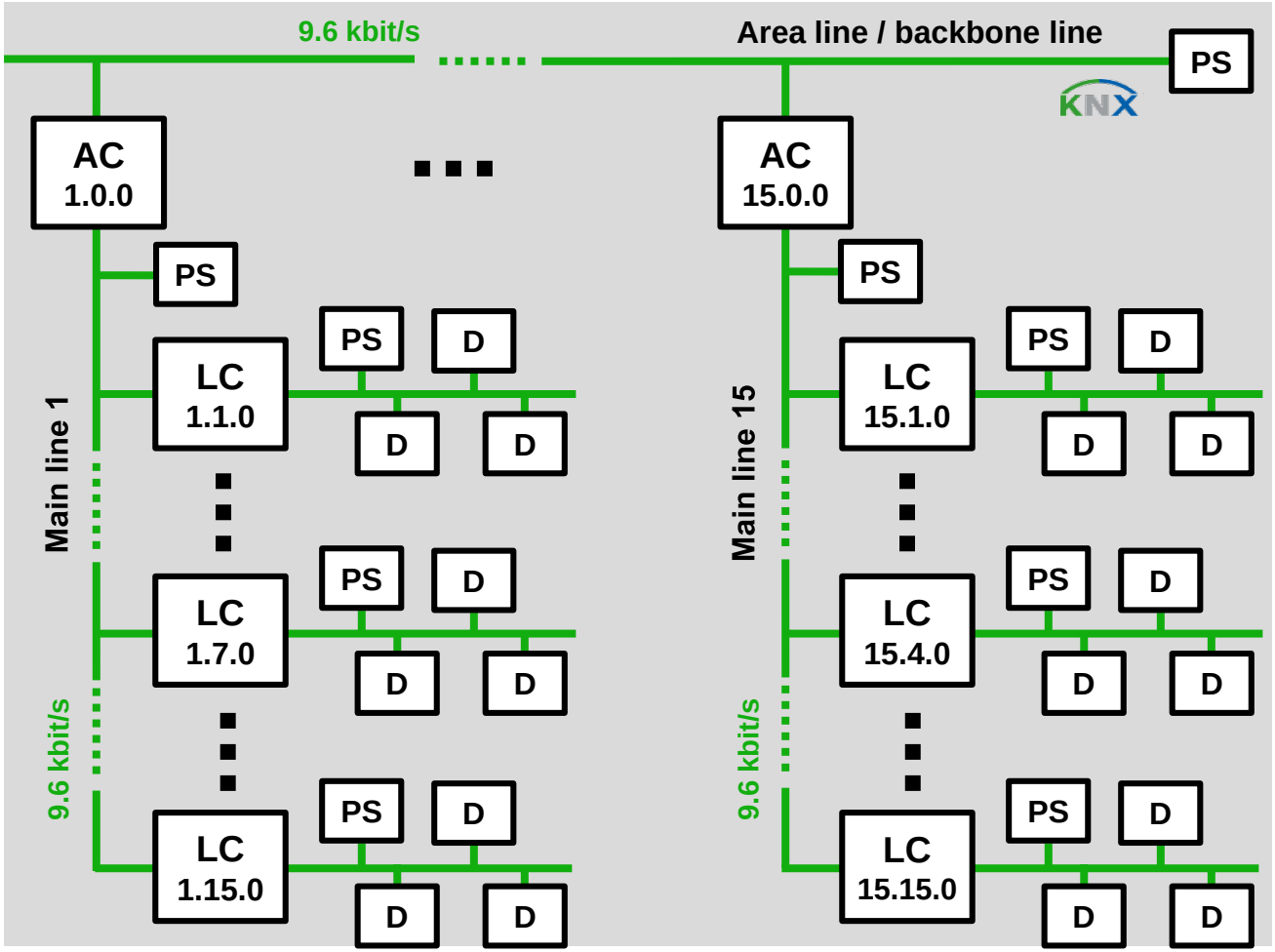
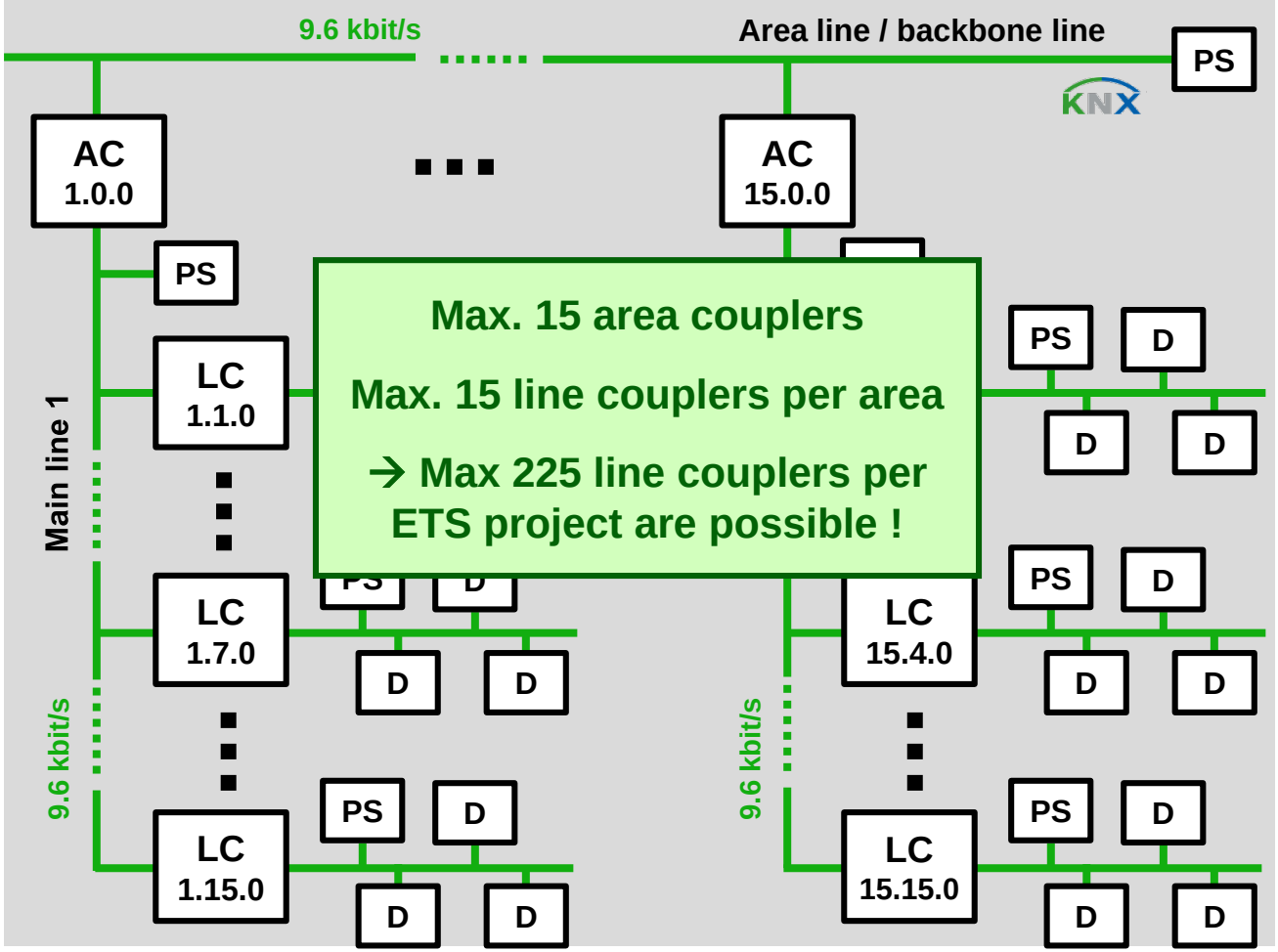
Webinar “IP Router IPR/S and IP Interface IPS/S”
KNX Topology classic



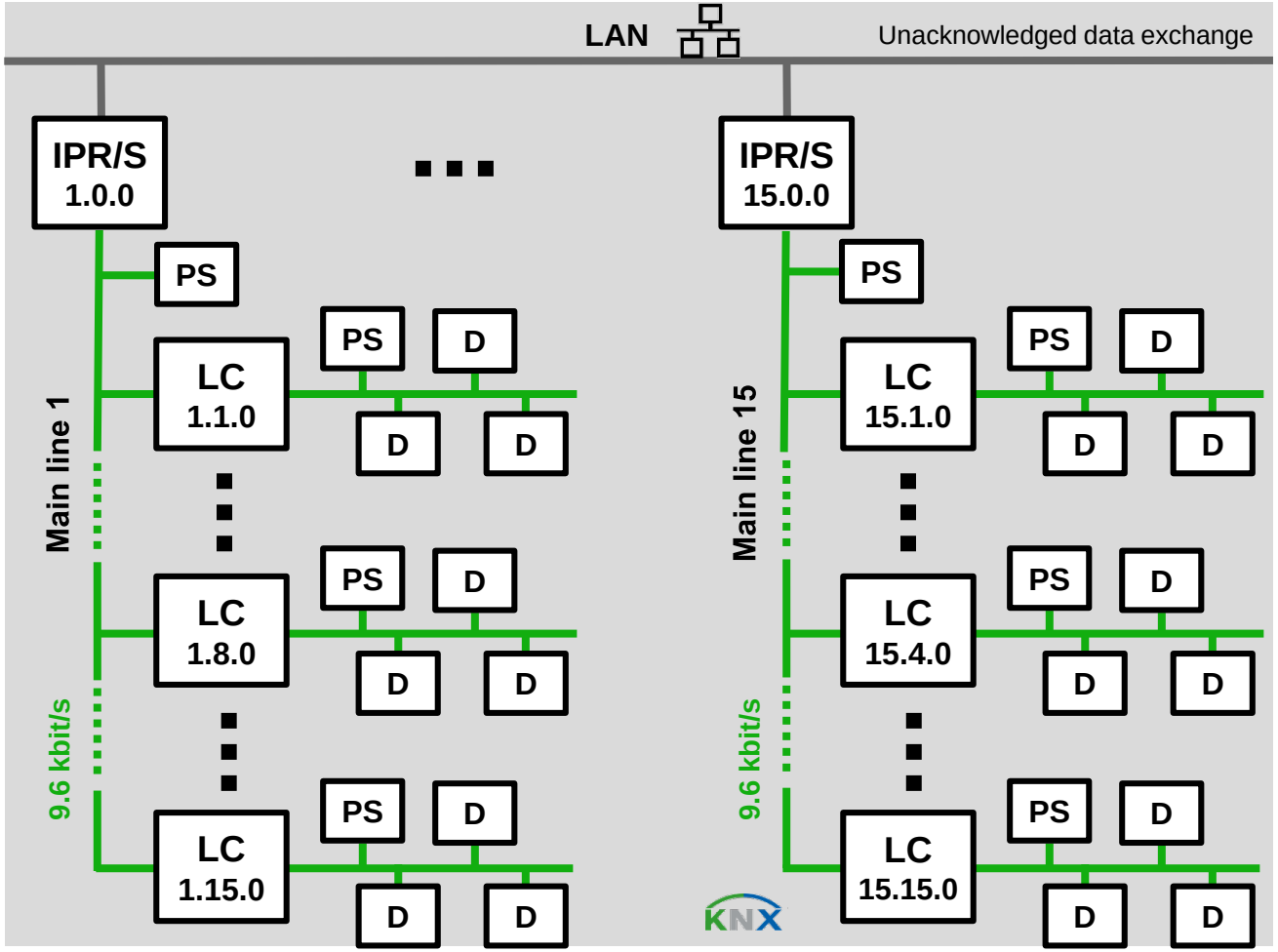
D = Device PS = Power Supply LC = Line Coupler AC = Area Coupler

Webinar “IP Router IPR/S and IP Interface IPS/S”
KNX Topology classic



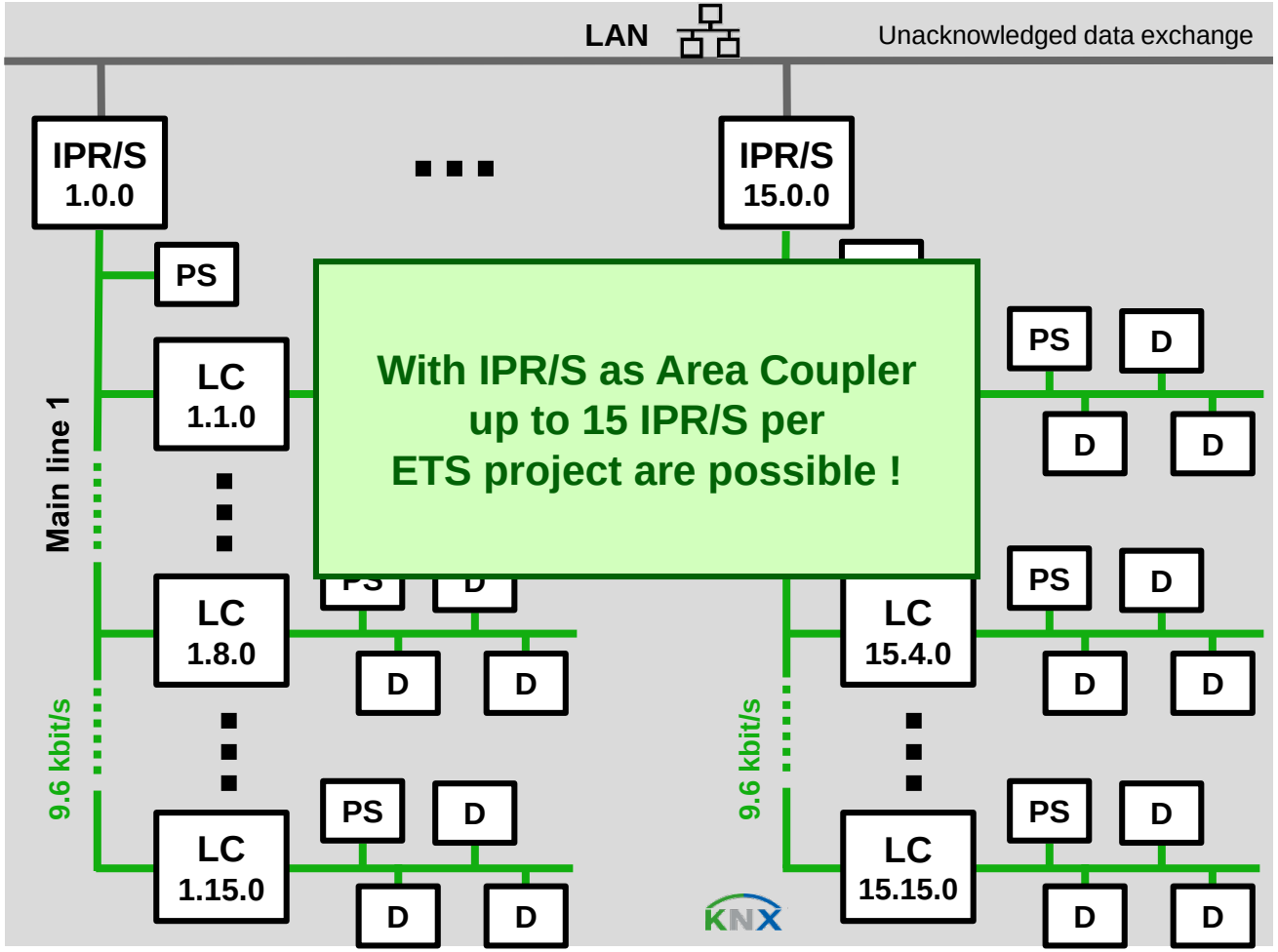
D = Device PS = Power Supply LC = Line Coupler AC = Area Coupler

Webinar “IP Router IPR/S and IP Interface IPS/S”
IP Router as Area Coupler



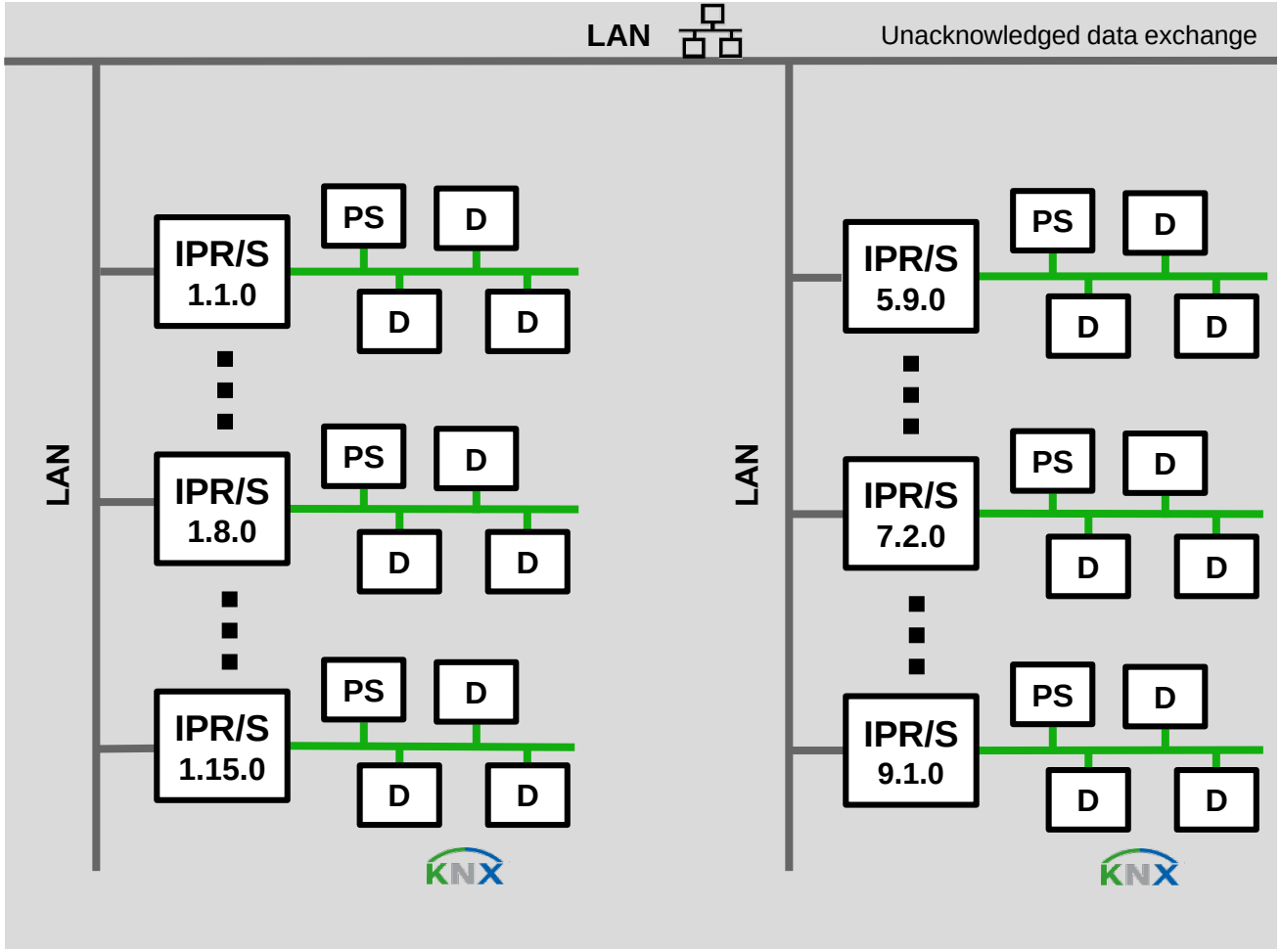
D = Device PS = Power Supply IPR/S = IP Router as Area Coupler

Webinar “IP Router IPR/S and IP Interface IPS/S”
IP Router as Area Coupler



D = Device PS = Power Supply IPR/S = IP Router as Area Coupler

Webinar “IP Router IPR/S and IP Interface IPS/S”
IP Router as Line Coupler



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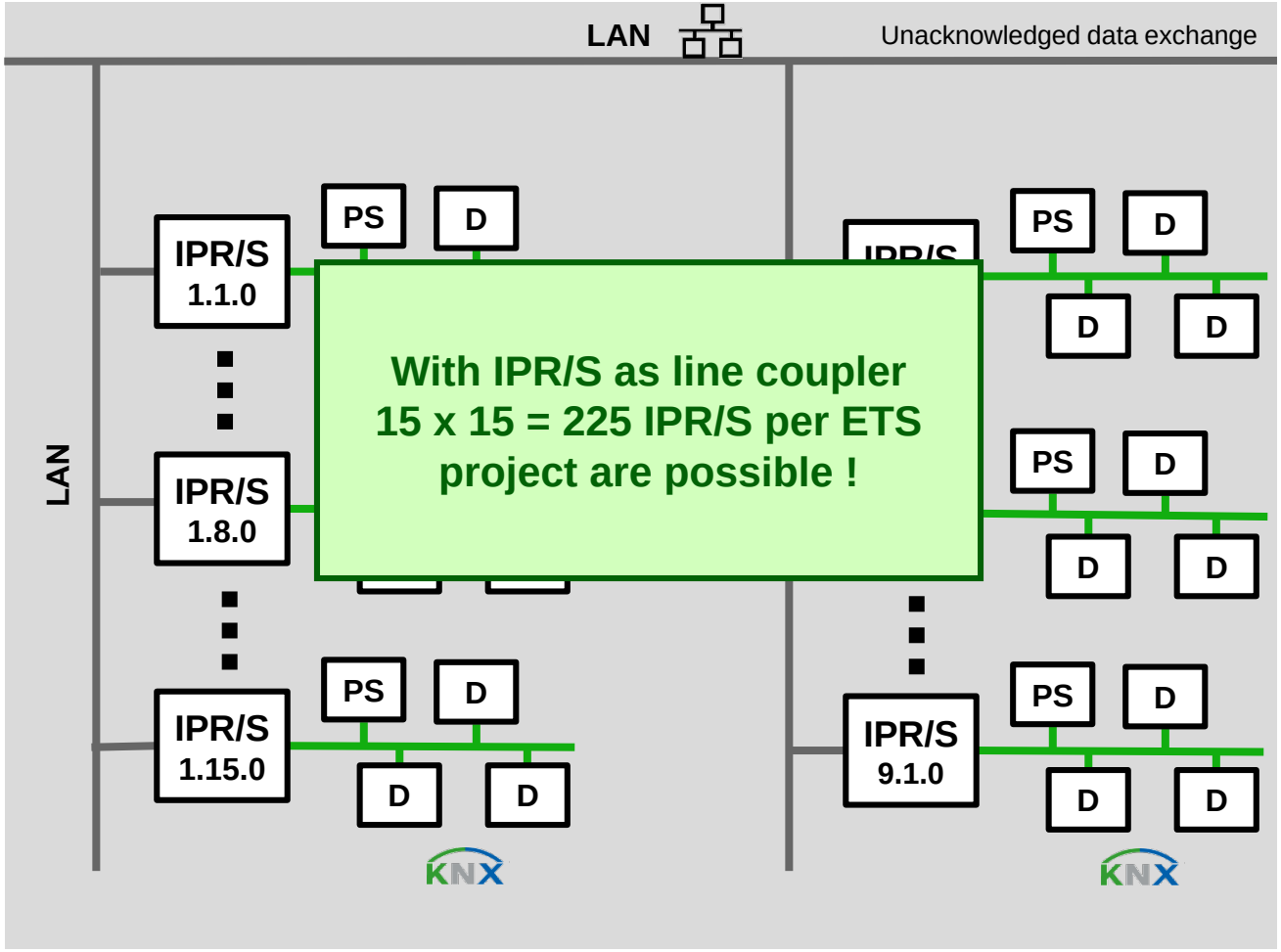
Webinar “IP Router IPR/S and IP Interface IPS/S”
IP Router as Line Coupler



D = Device PS = Power Supply IPR/S = IP Router as Line Coupler

Webinar “IP Router IPR/S and IP Interface IPS/S”
IP Interface IPS/S 3.1.1

- 5 Tunneling Server NEW
- Power supply
  - 12 … 30 V DC
  - Power over Ethernet (PoE) IEEE 802.3af class 1 NEW
- Adapted hardware NEW
  - Network cable connection
  - Labelling field
  - DIN rail connection
  - Cover cap
  - Programming button

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Webinar “IP Router IPR/S and IP Interface IPS/S”
IP Interface IPS/S 3.1.1

- LAN: 10/100 Mbit
- ABB i-bus Tool support

NEW

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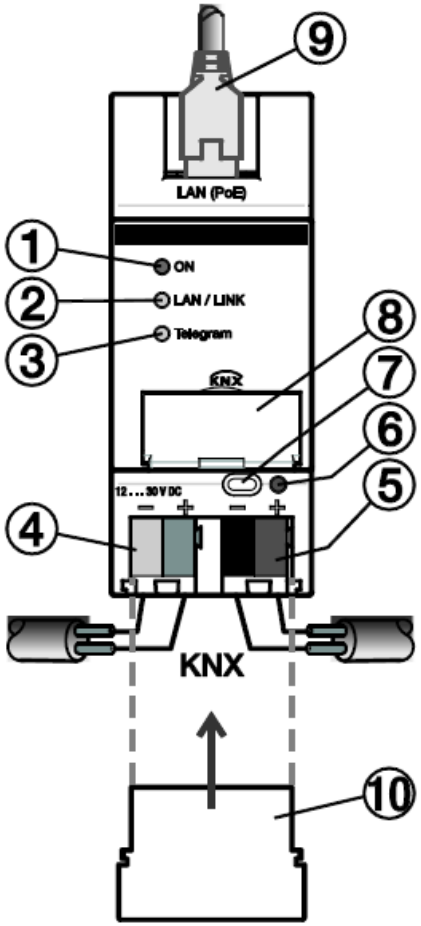
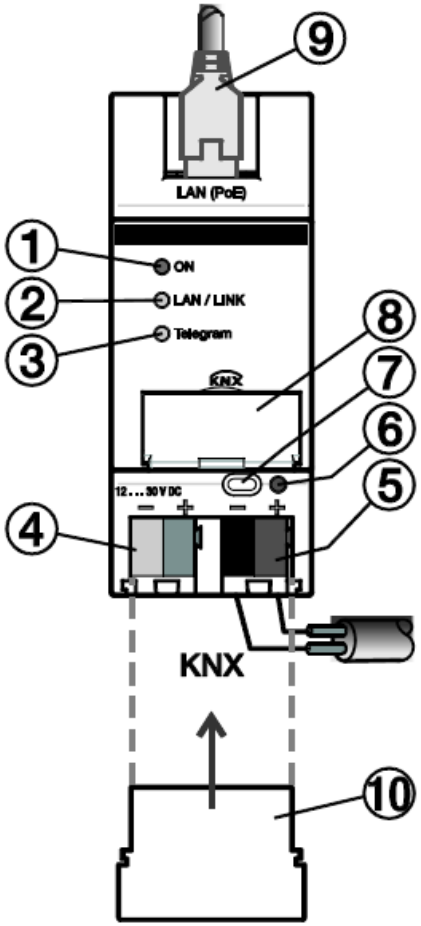
Webinar “IP Router IPR/S and IP Interface IPS/S”
IP Devices – Connection Diagram





1) LED ON
2) LED LAN/LINK
3) LED telegram
4) Supply voltage connection
5) KNX connection
6) Programming LED
7) Programming button
8) Label carrier
9) LAN/LAN-PoE connection
10) Covering cap

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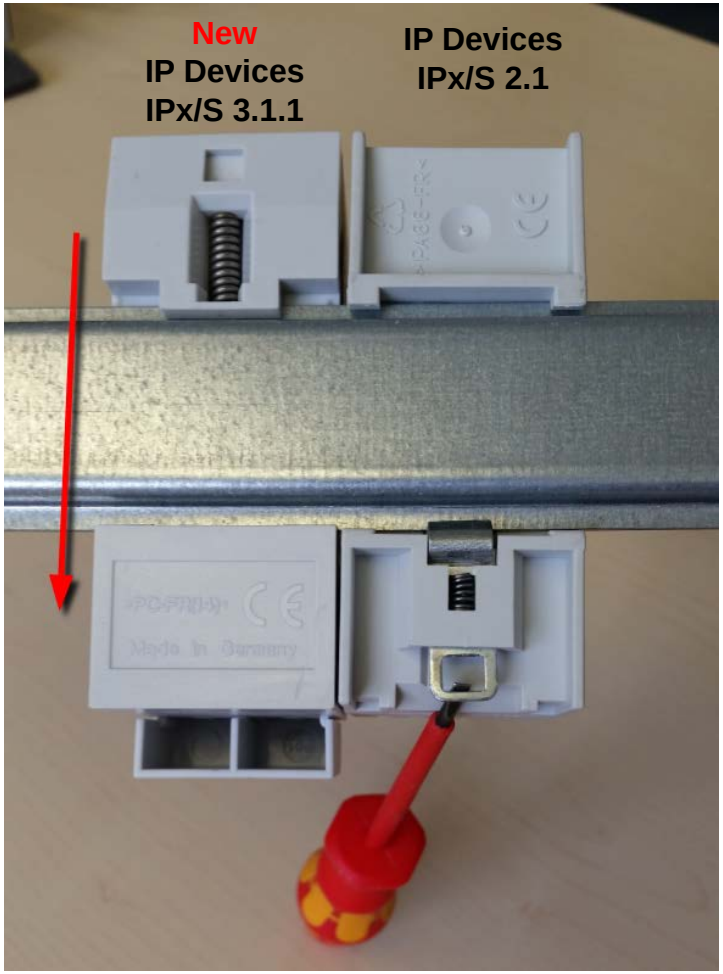
Webinar “IP Router IPR/S and IP Interface IPS/S”
IP Devices



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Webinar “IP Router IPR/S and IP Interface IPS/S”
IP Interface IPS/S 3.1.1 – Application ETS3 and ETS4/ETS5

Device Application ETS	IPS/S 3.1.1 IP Interface/1.1 ETS 3	IPS/S 3.1.1 IP Interface/2.0 ETS 4/ETS 5
Properties of the *IP Interface*		
Number of tunneling servers	**1**	**5**
IP discovery (i-bus® Tool)	■	■
Firmware update (i-bus® Tool)	■	■

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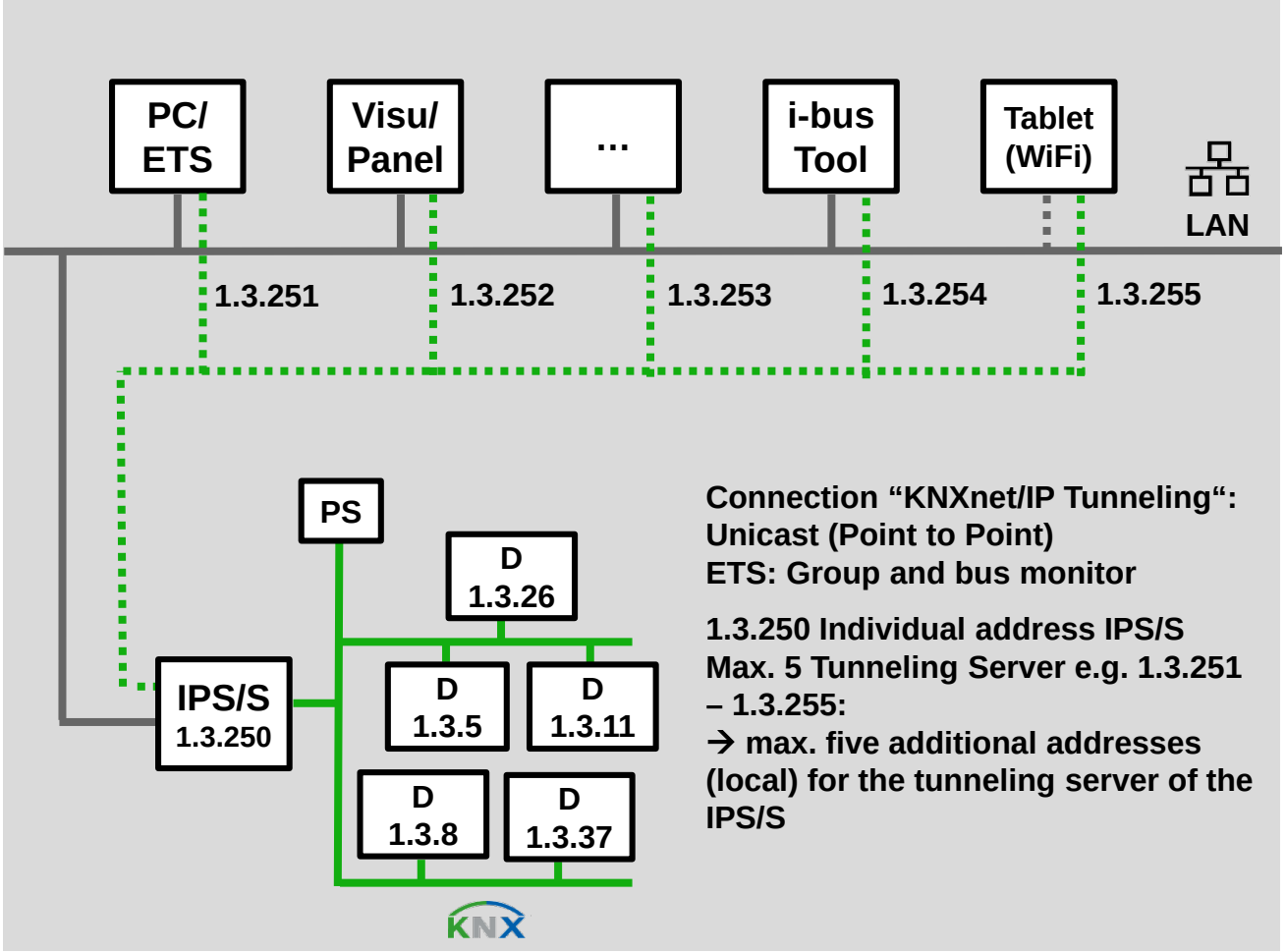
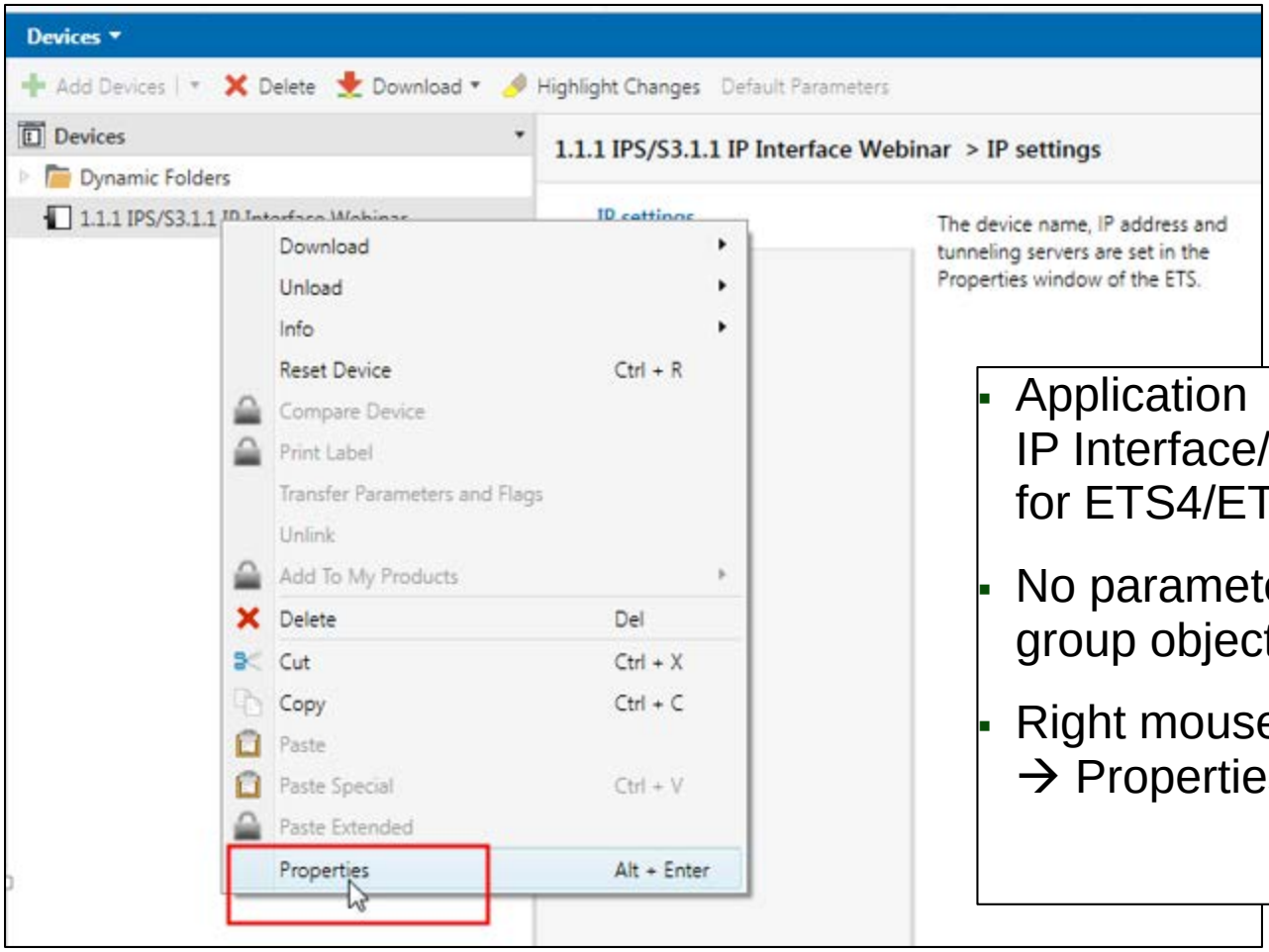
Webinar “IP Router IPR/S and IP Interface IPS/S”
IP Interface IPS/S 3.1.1 - Tunneling



Connection “KNXnet/IP Tunneling“:
Unicast (Point to Point)
ETS: Group and bus monitor

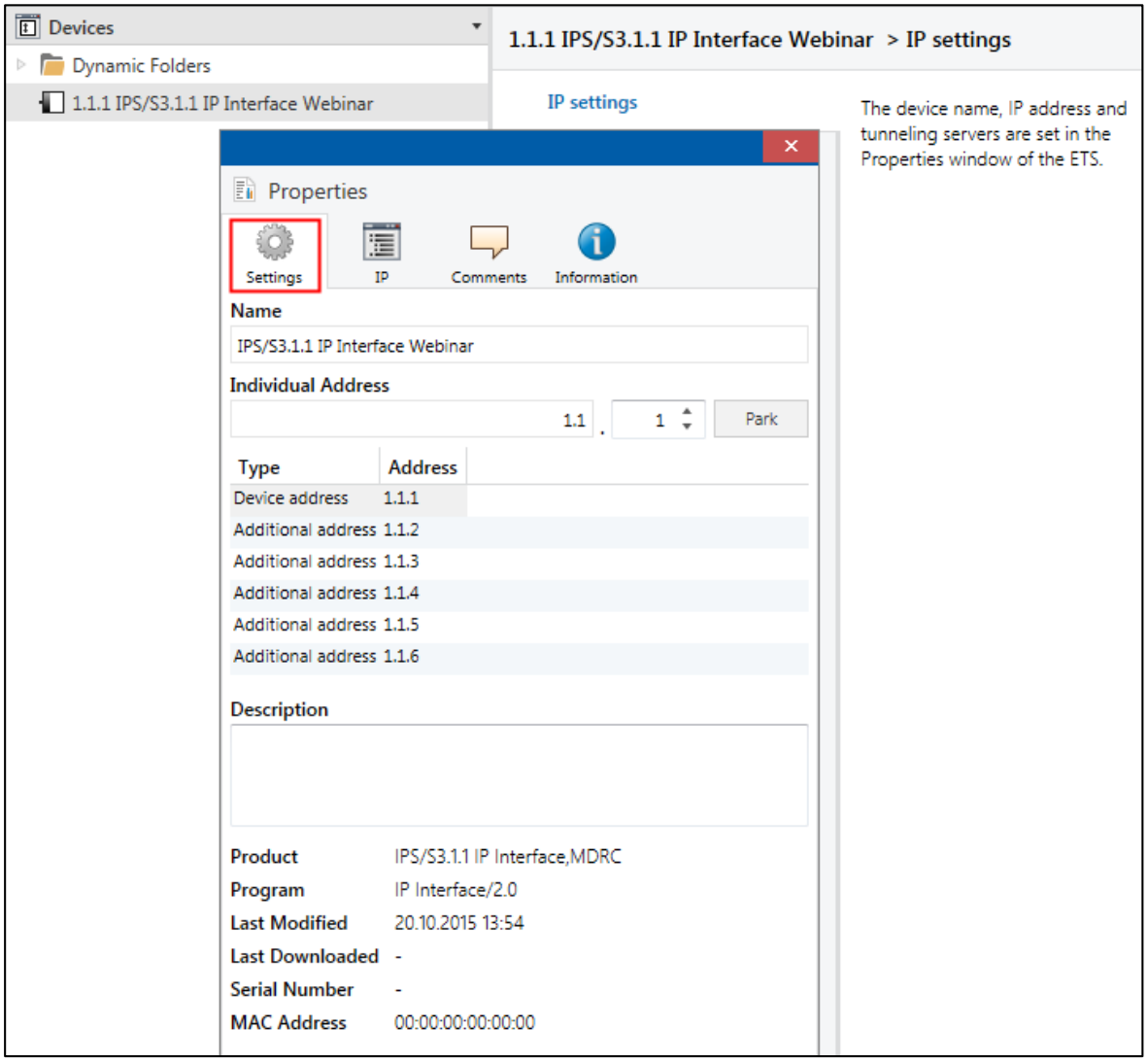
1.3.250 Individual address IPS/S
Max. 5 Tunneling Server e.g. 1.3.251 – 1.3.255:
→ max. five additional addresses (local) for the tunneling server of the IPS/S

Webinar “IP Router IPR/S and IP Interface IPS/S”
IP Interface IPS/S 3.1.1 – ETS Application

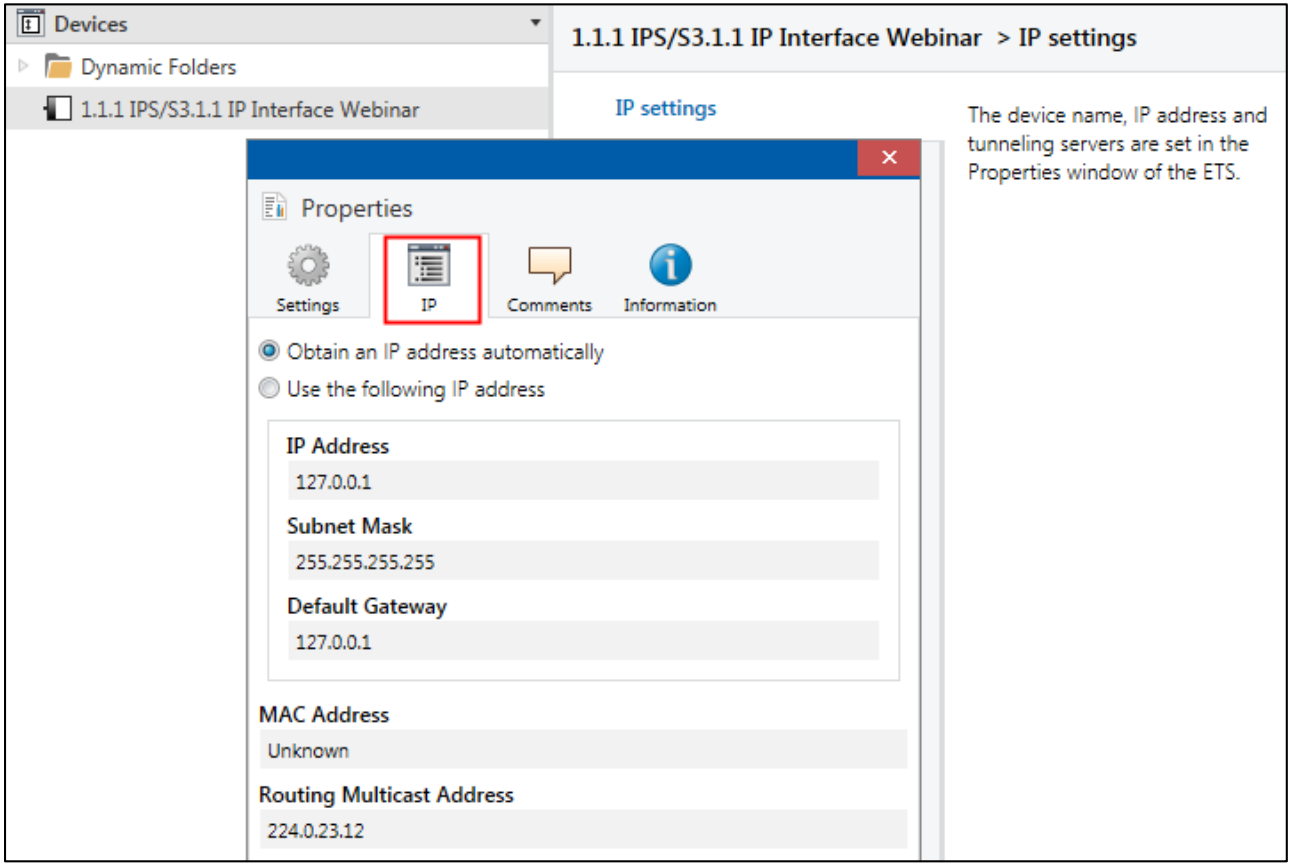


- Application IP Interface/2.0 for ETS4/ETS5
- No parameter and group objects
- Right mouse button → Properties

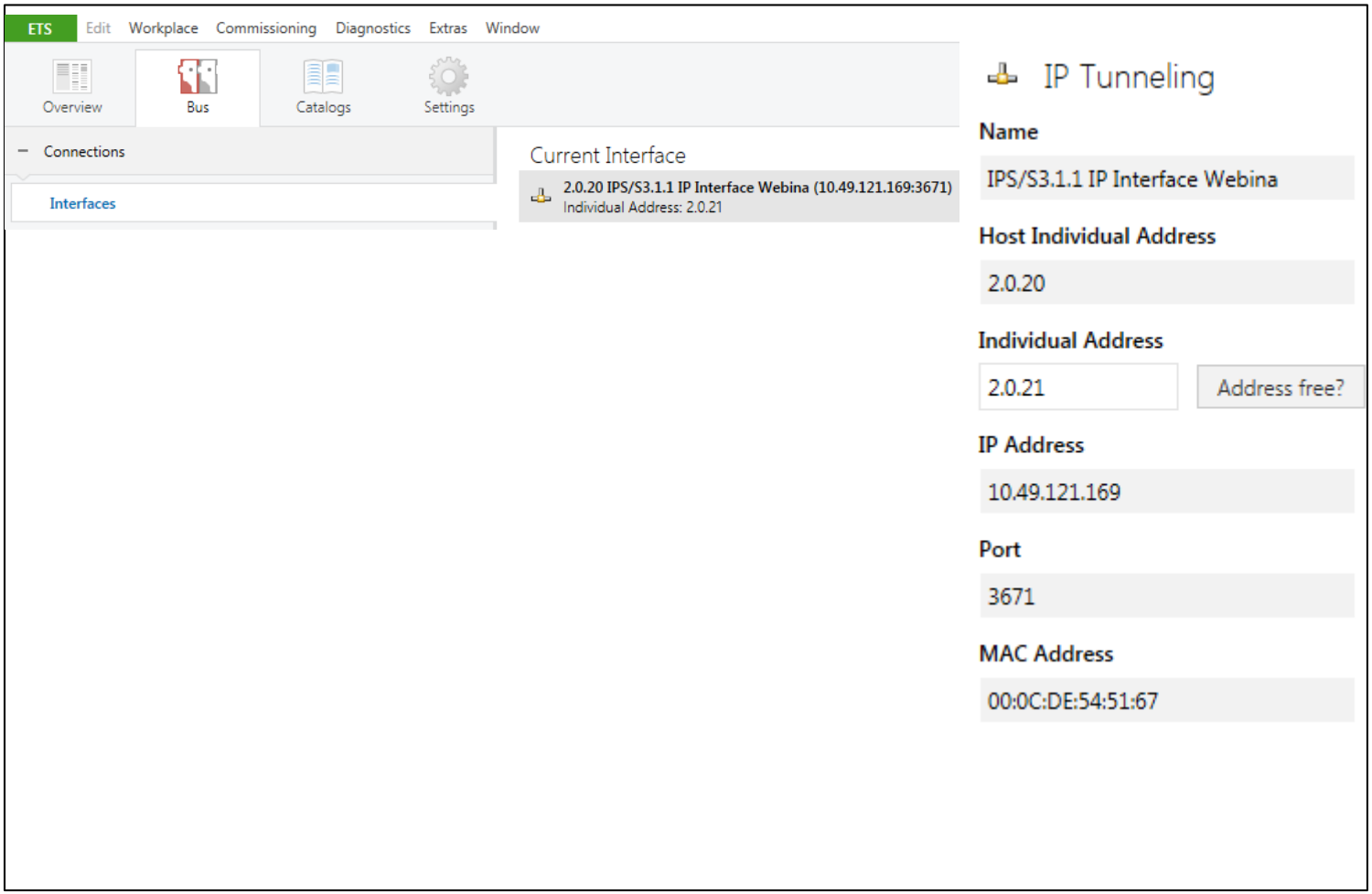
Webinar “IP Router IPR/S and IP Interface IPS/S”
IP Interface IPS/S 3.1.1 – ETS Application



Webinar “IP Router IPR/S and IP Interface IPS/S”
IP Interface IPS/S 3.1.1 – ETS Application



Webinar “IP Router IPR/S and IP Interface IPS/S”
IP Interface IPS/S 3.1.1 – Programming ETS5



Webinar “IP Router IPR/S and IP Interface IPS/S”
IP Router IPR/S 3.1.1

- 5 Tunneling Server NEW
- Power supply
  - 12 … 30 V DC
  - Power over Ethernet (PoE) IEEE 802.3af class 1 NEW
- Adapted hardware NEW
  - Network cable connection
  - Labelling field
  - DIN rail connection
  - Cover cap
  - Programming button

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Webinar “IP Router IPR/S and IP Interface IPS/S”
IP Router IPR/S 3.1.1

- Unicast Communication possible with up to 10 IPR/S 3.1.1 (KNX netIP: Multicast)
- Network management function “Monitoring for KNX bus voltage failure“ NEW
- Support of full filter table for all main groups 0…31 (or group addresses 1…65,535 with free group address view) NEW NEW
- ABB i-bus Tool support
- Enhanced Hardware
- LAN: 10/100 Mbit

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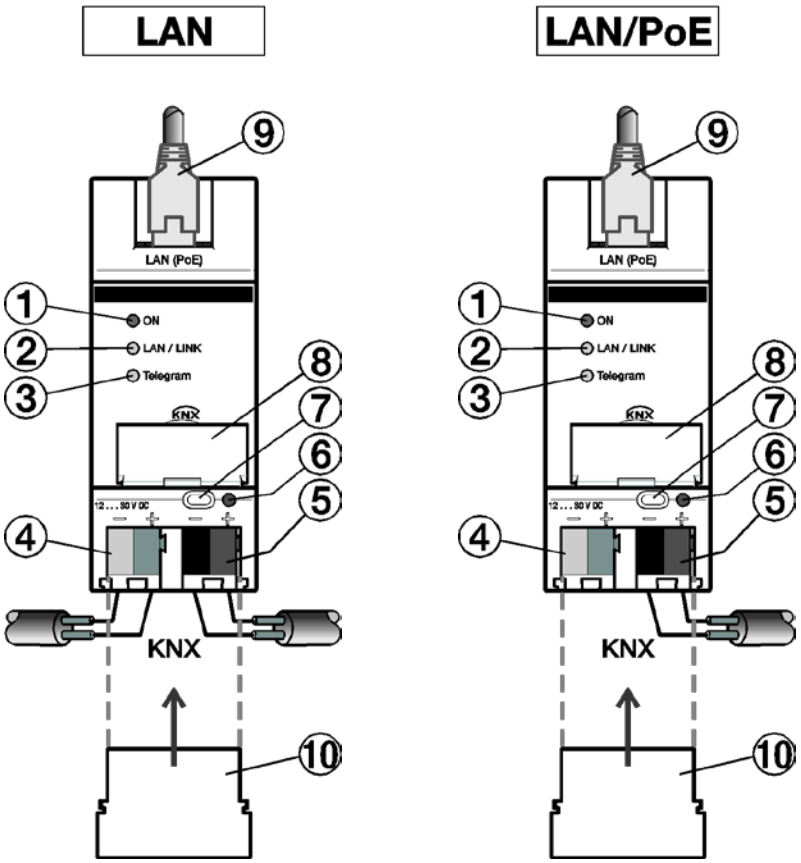
Webinar “IP Router IPR/S and IP Interface IPS/S”
IP Router IPR/S 3.1.1

- Circuit diagram



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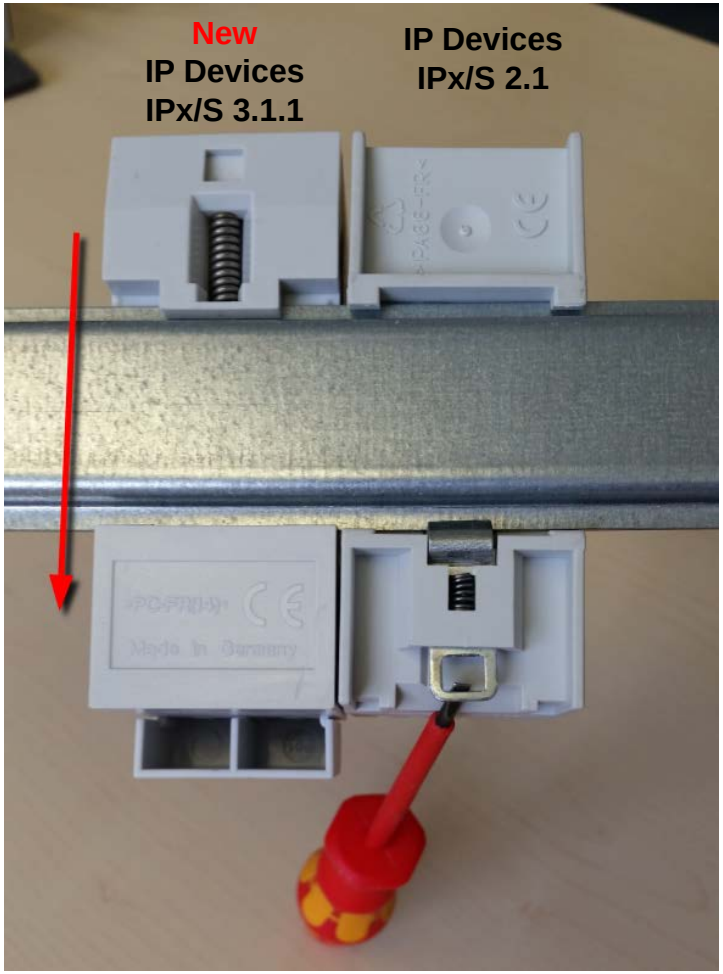
Webinar “IP Router IPR/S and IP Interface IPS/S”
IP Devices



Webinar “IP Router IPR/S and IP Interface IPS/S”
IP Router IPR/S 3.1.1 – Application ETS3 and ETS4/ETS5

Device Application ETS	IPR/S 3.1.1 IP Router/1.1 ETS 3	IPR/S 3.1.1 IP Router/2.0 ETS 4/ETS 5
Properties of the *IP Router*		
Number of tunneling servers	**1**	**5**
Number of unicast connections	**10**	**10**
Monitoring for bus voltage failure	■	■
Filter Group telegrams main group 0...13	■	■
Filter Group telegrams main group 14...31	**-**	■ (ETS 4.1.7 or higher)
IP discovery (i-bus® Tool)	■	■
Firmware update (i-bus® Tool)	■	■
Unicast parameterization (i-bus® Tool)	■	■

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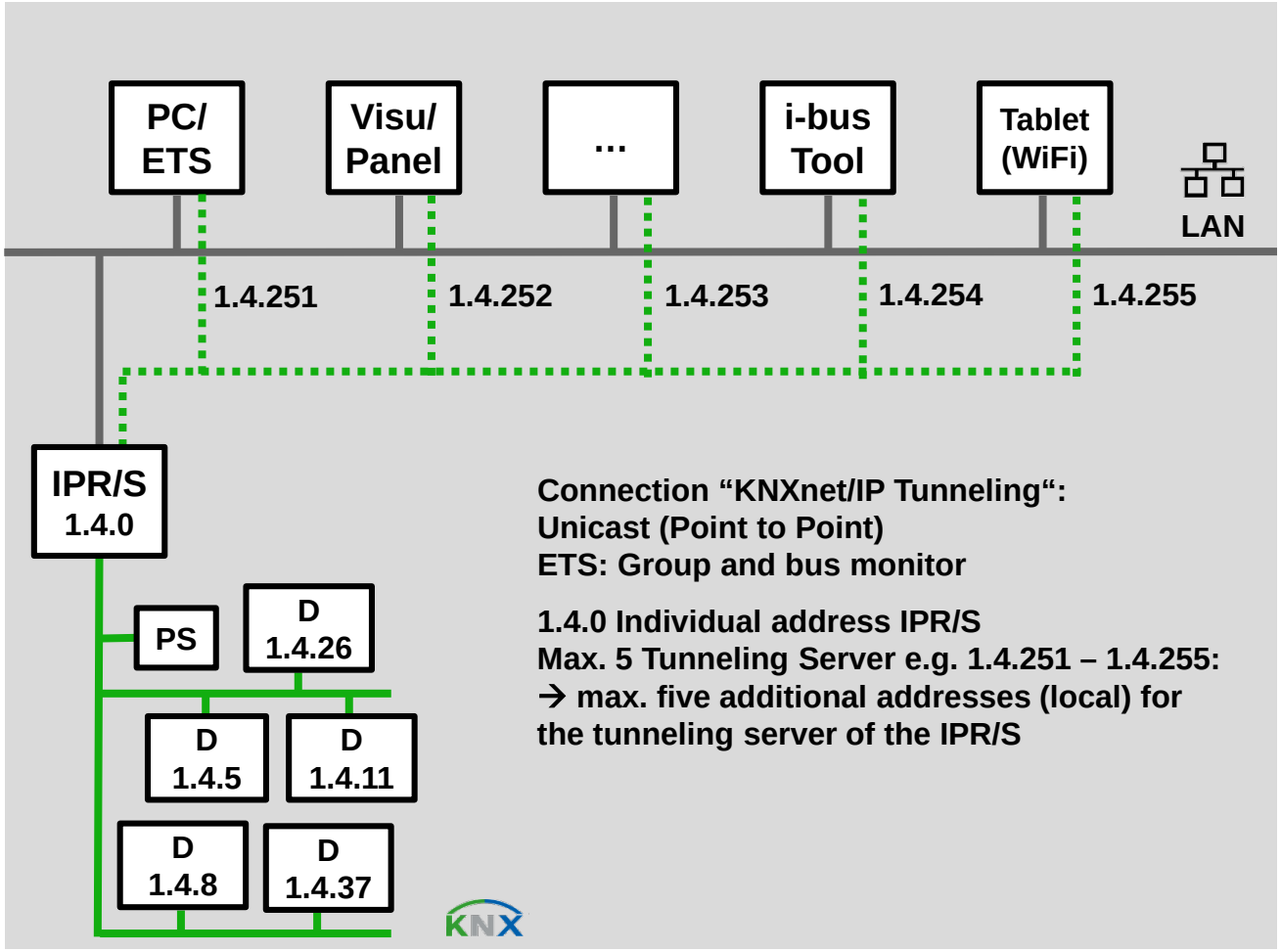
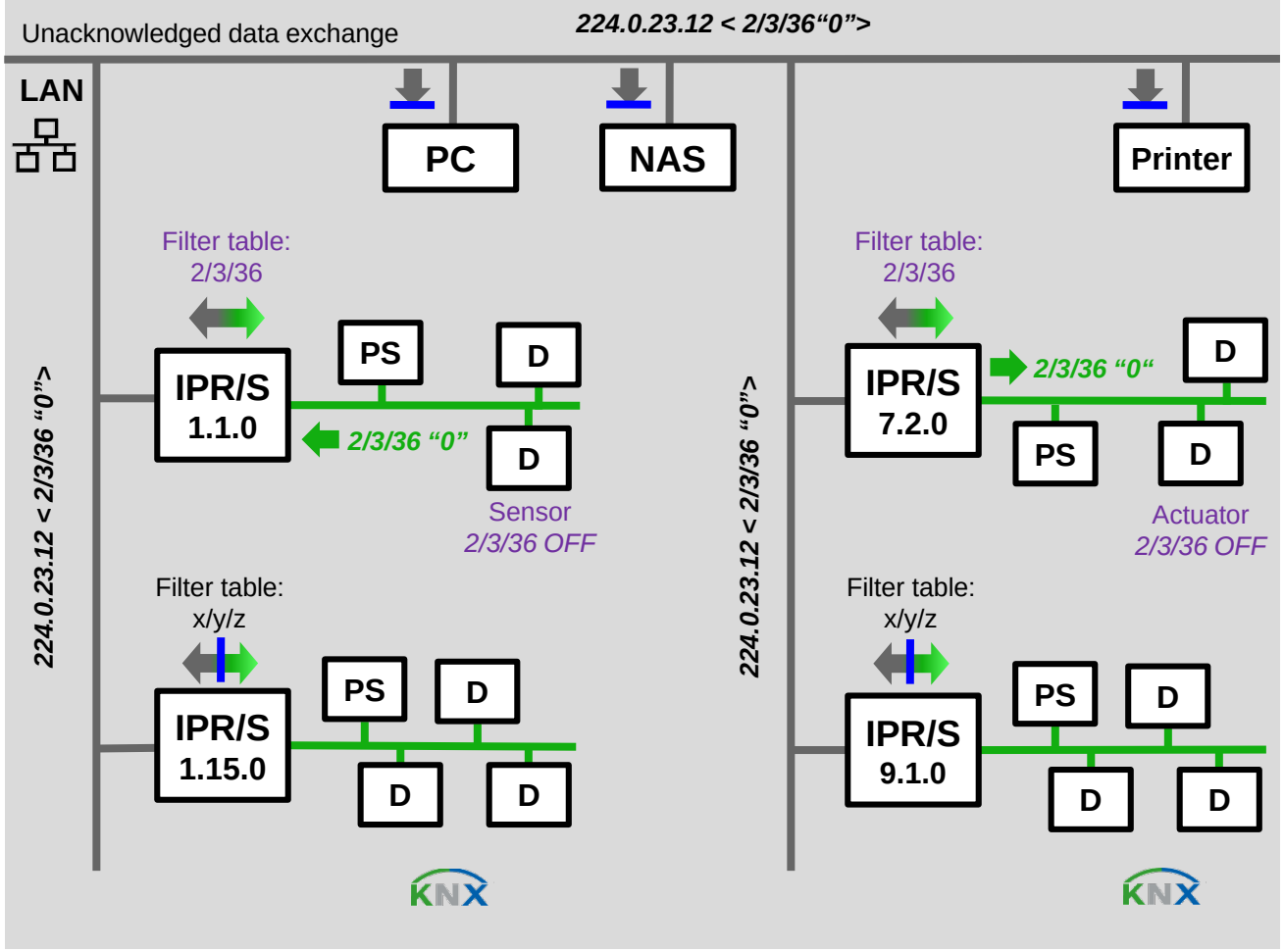
Webinar “IP Router IPR/S and IP Interface IPS/S”
IP Router IPR/S 3.1.1 - Tunneling



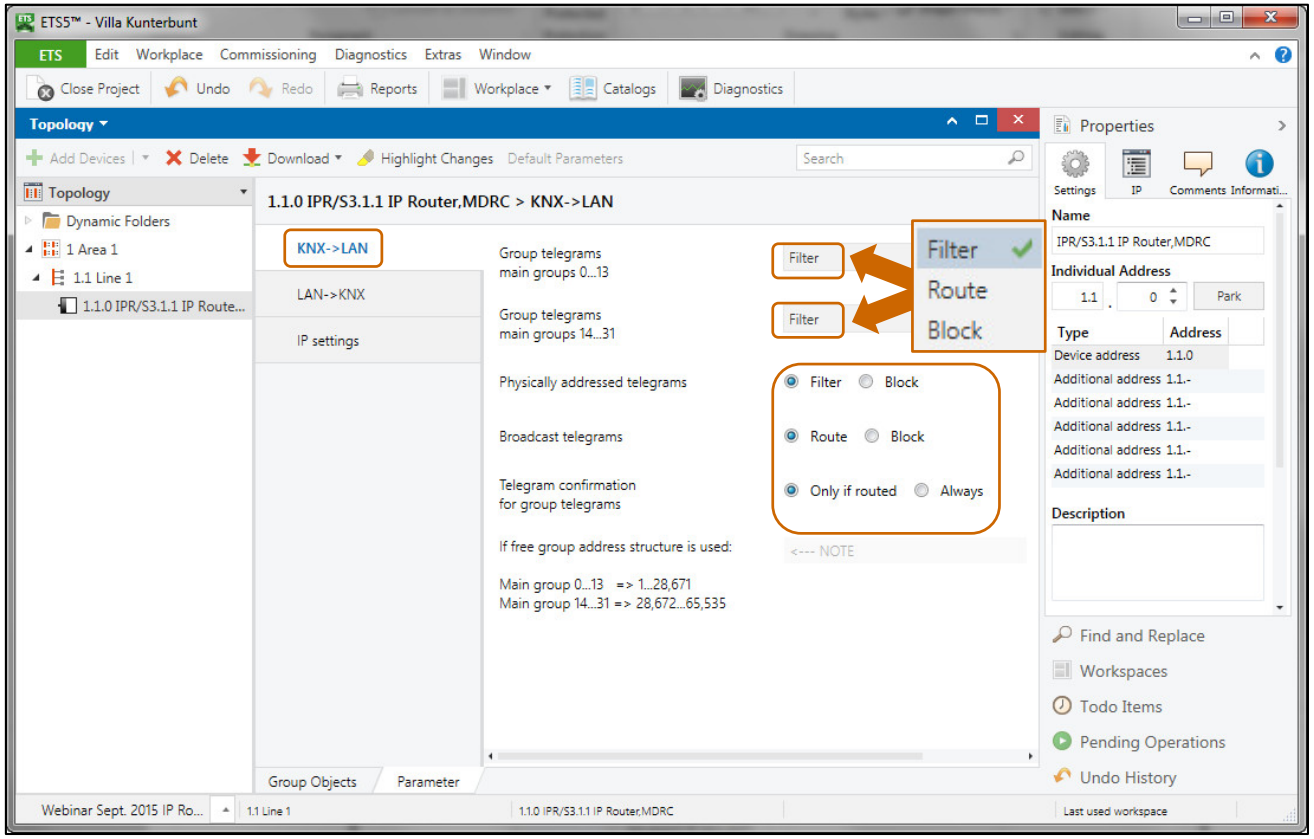
Webinar “IP Router IPR/S and IP Interface IPS/S”
IP Router – Routing Multicast Address 224.0.23.12



D = Device PS = Power Supply IPR/S = IP Router as Line Coupler

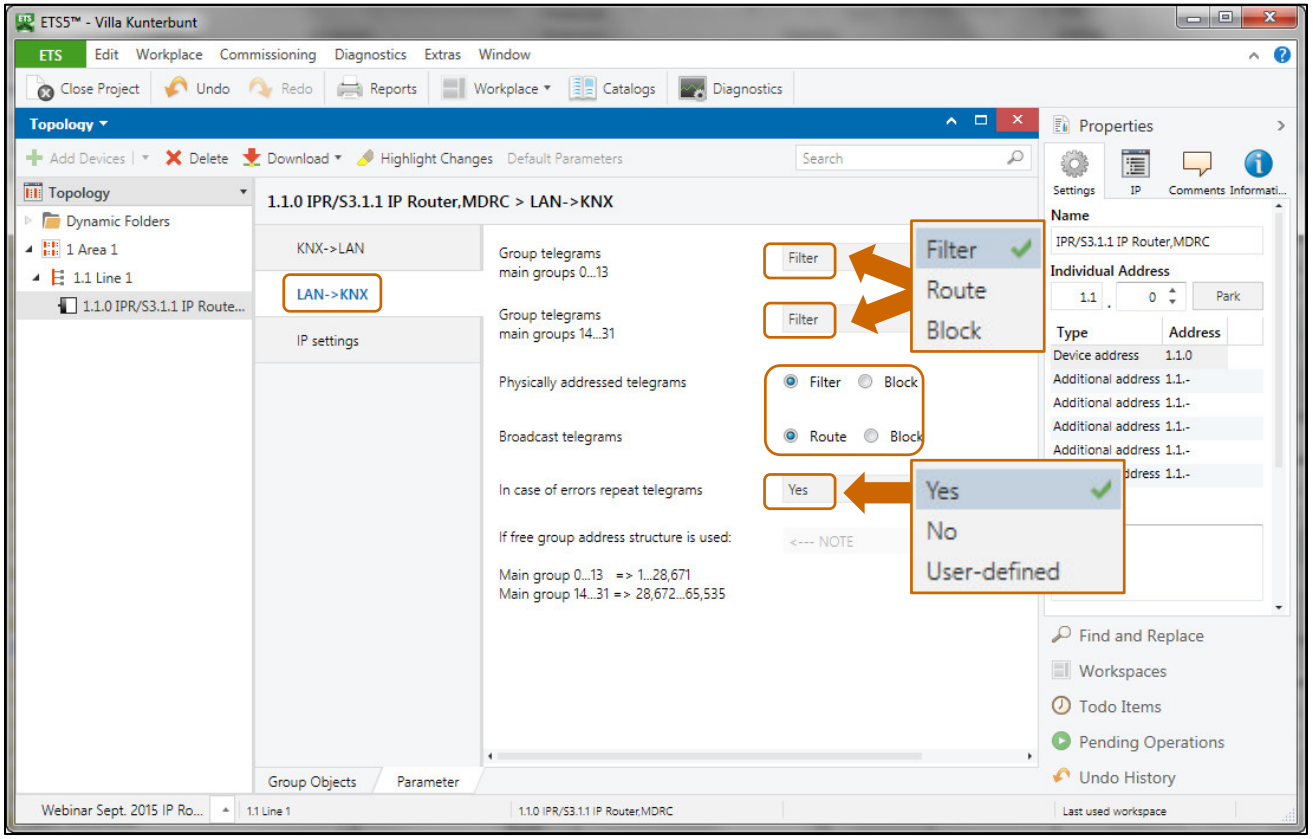
Webinar “IP Router IPR/S and IP Interface IPS/S”
IP Router IPR/S 3.1.1 – ETS Parameter

- KNX → LAN



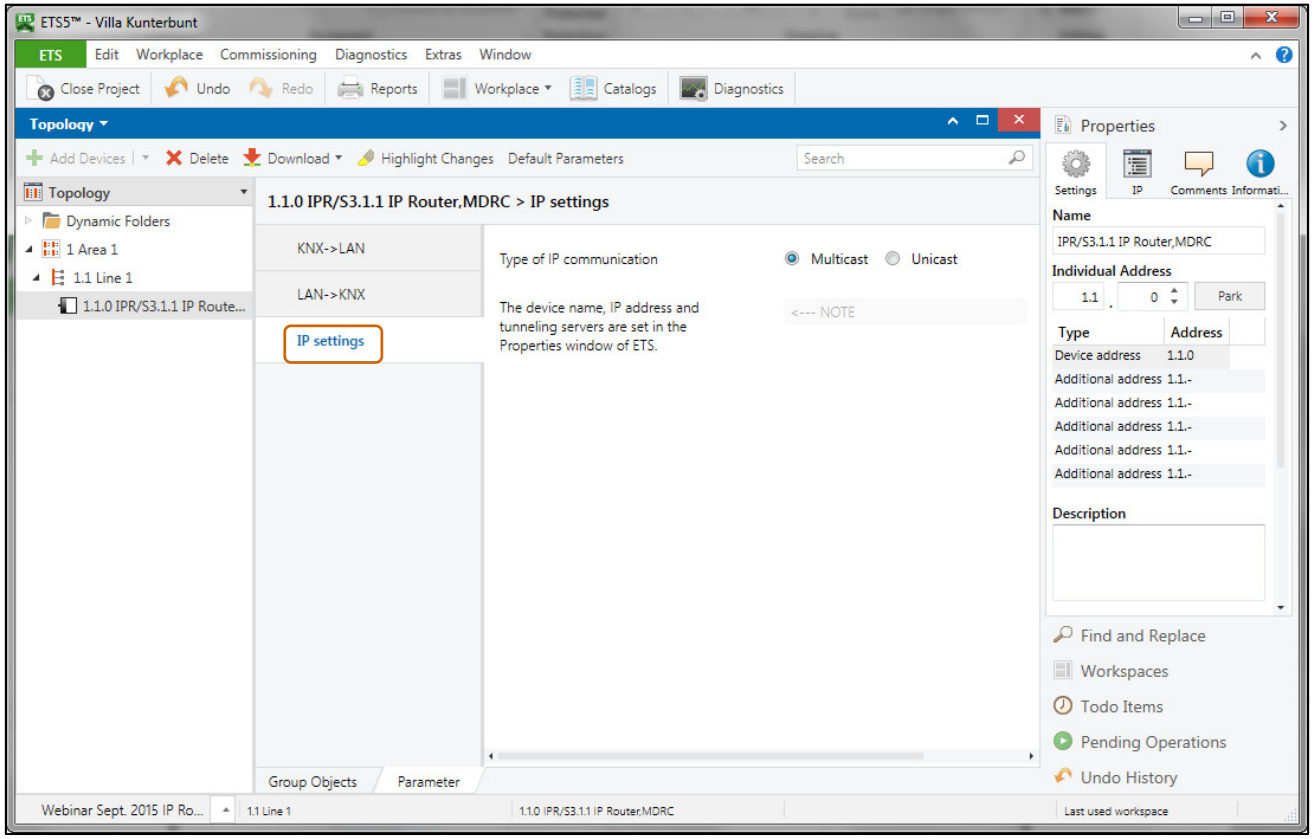
Webinar “IP Router IPR/S and IP Interface IPS/S”
IP Router IPR/S 3.1.1 – ETS Parameter

- LAN → KNX



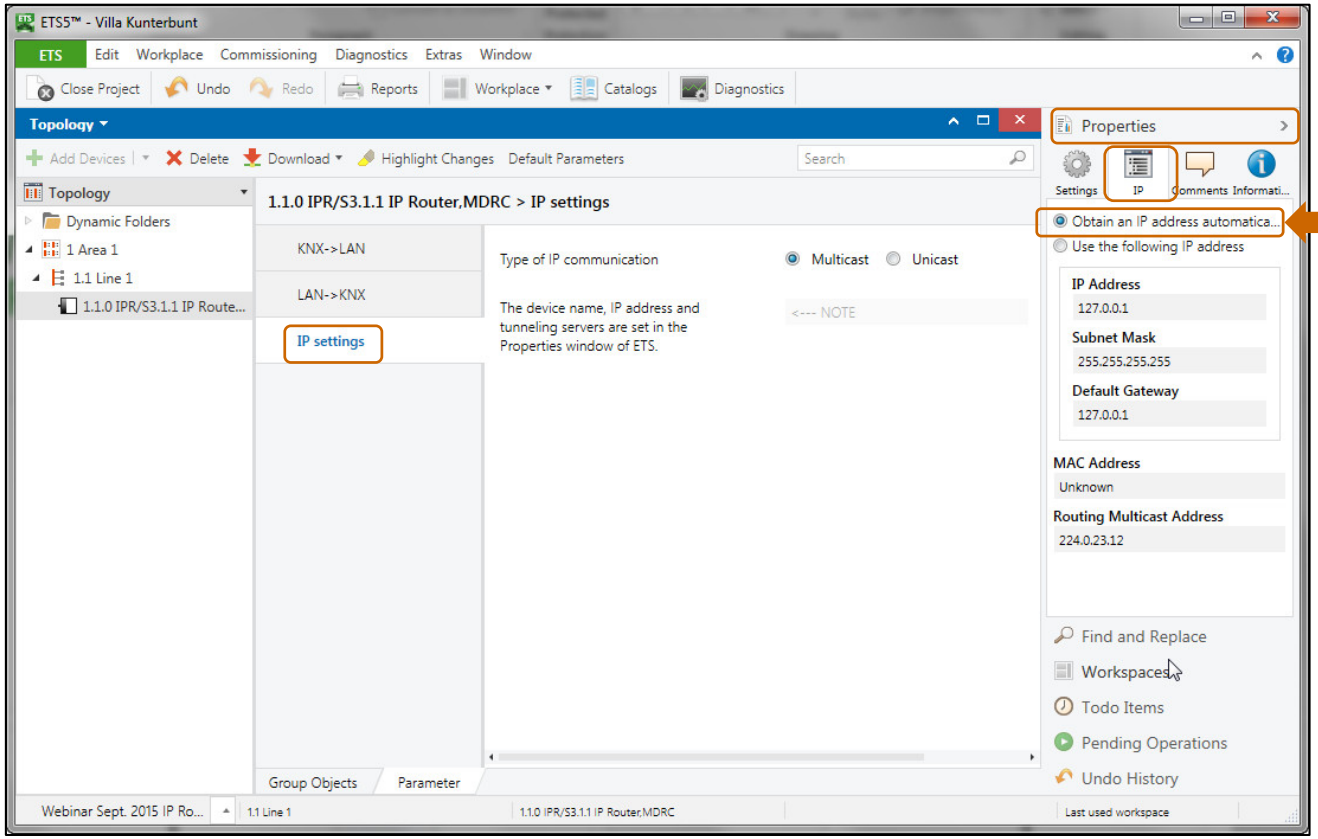
Webinar “IP Router IPR/S and IP Interface IPS/S”
IP Router IPR/S 3.1.1 – ETS Parameter

- IP Settings – Multicast



Webinar “IP Router IPR/S and IP Interface IPS/S”
IP Router IPR/S 3.1.1 – ETS Parameter

- Properties – IP

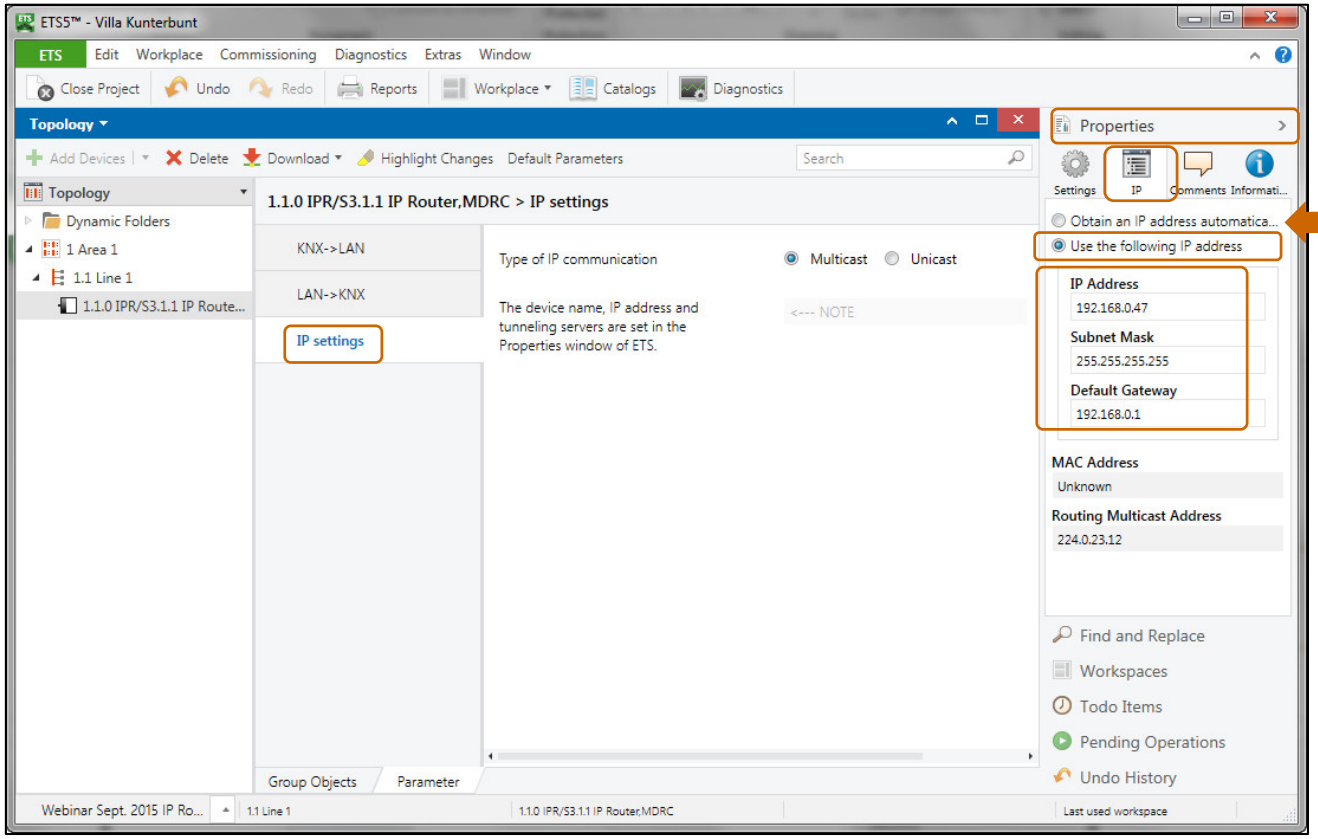


NEW

IP address assignment: *Automatically (DHCP, AutoIP)*

Webinar “IP Router IPR/S and IP Interface IPS/S”
IP Router IPR/S 3.1.1 – ETS Parameter

- Properties – IP

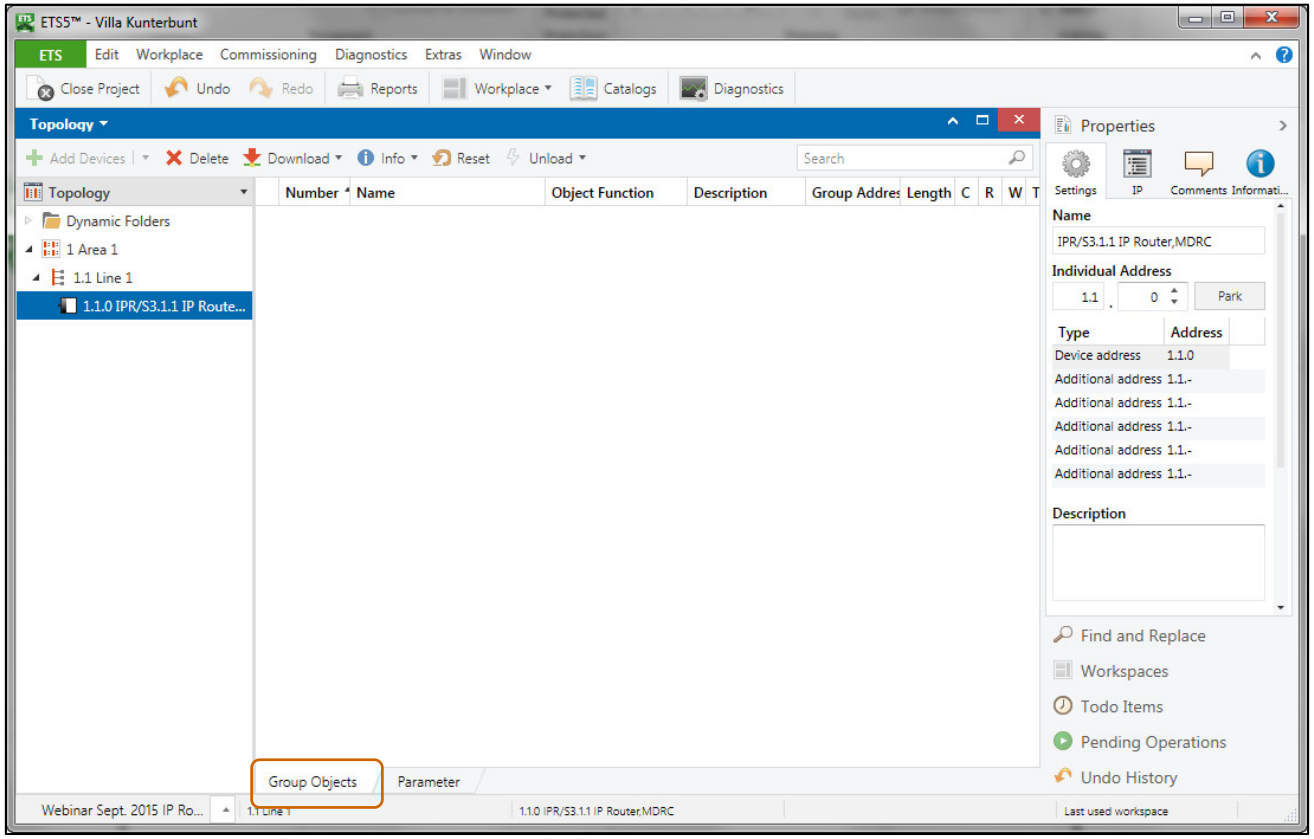


NEW

IP address assignment: *Fixed*

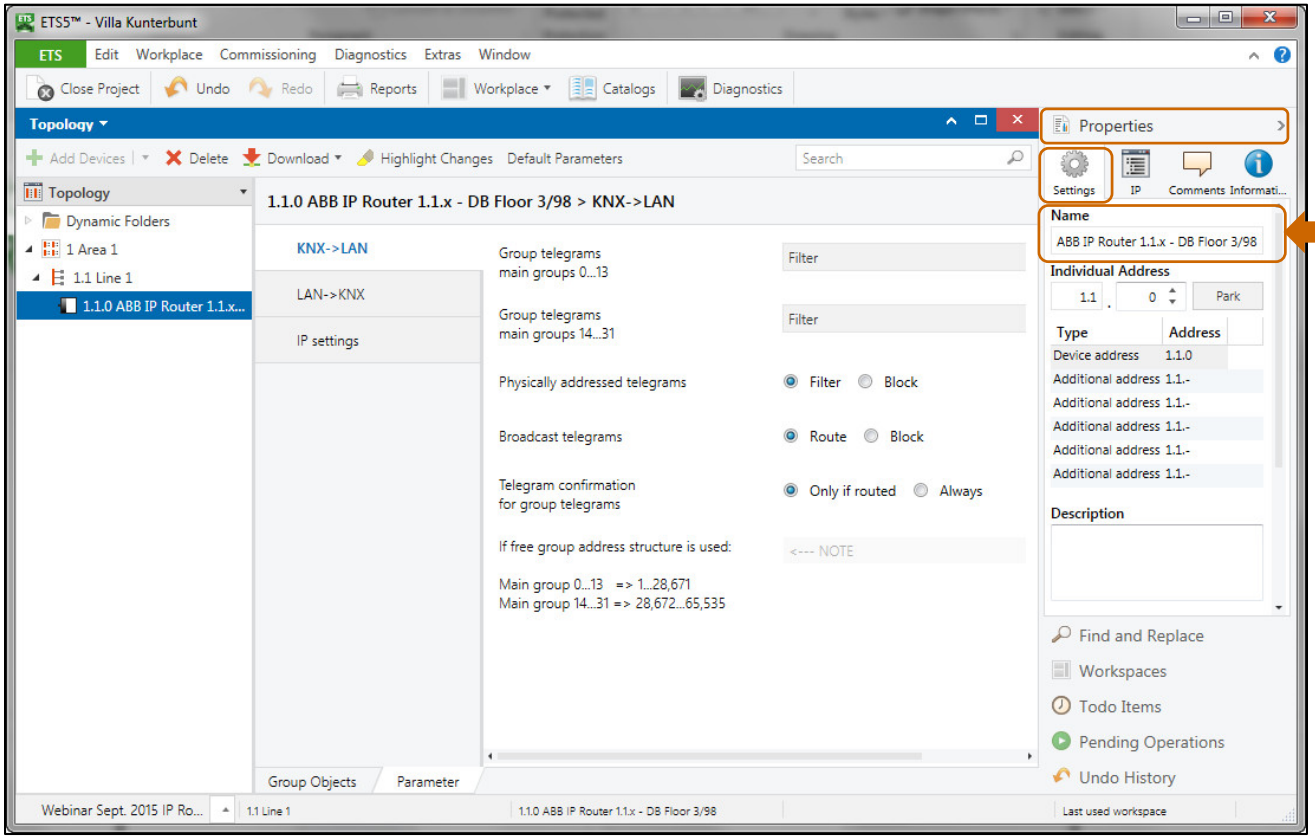
Webinar “IP Router IPR/S and IP Interface IPS/S”
IP Router IPR/S 3.1.1 – ETS Parameter

- Group Objects



Webinar “IP Router IPR/S and IP Interface IPS/S”
IP Router IPR/S 3.1.1 – ETS Parameter

- Device name

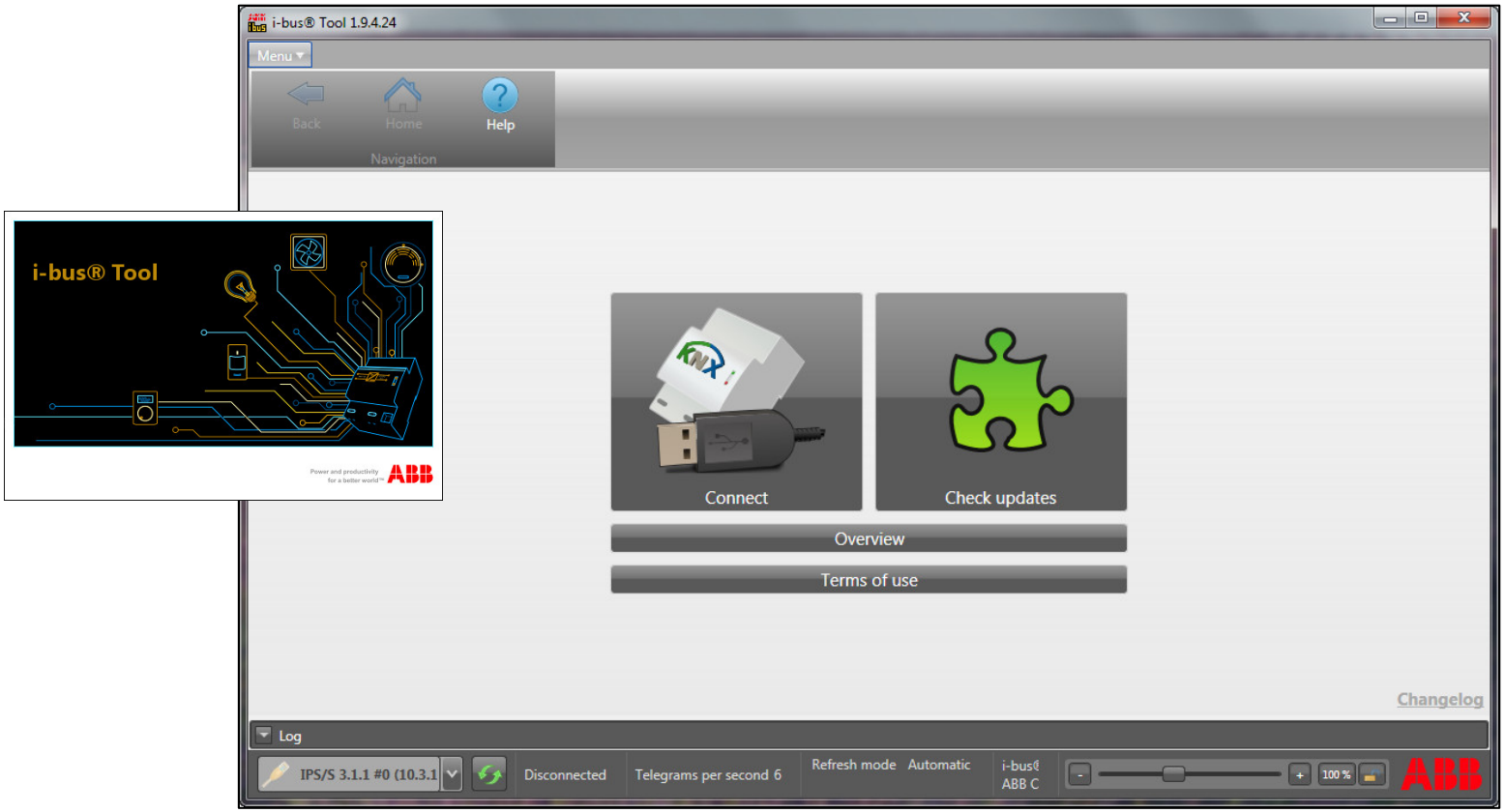


NEW

The Name of the IP Router is downloaded into the device

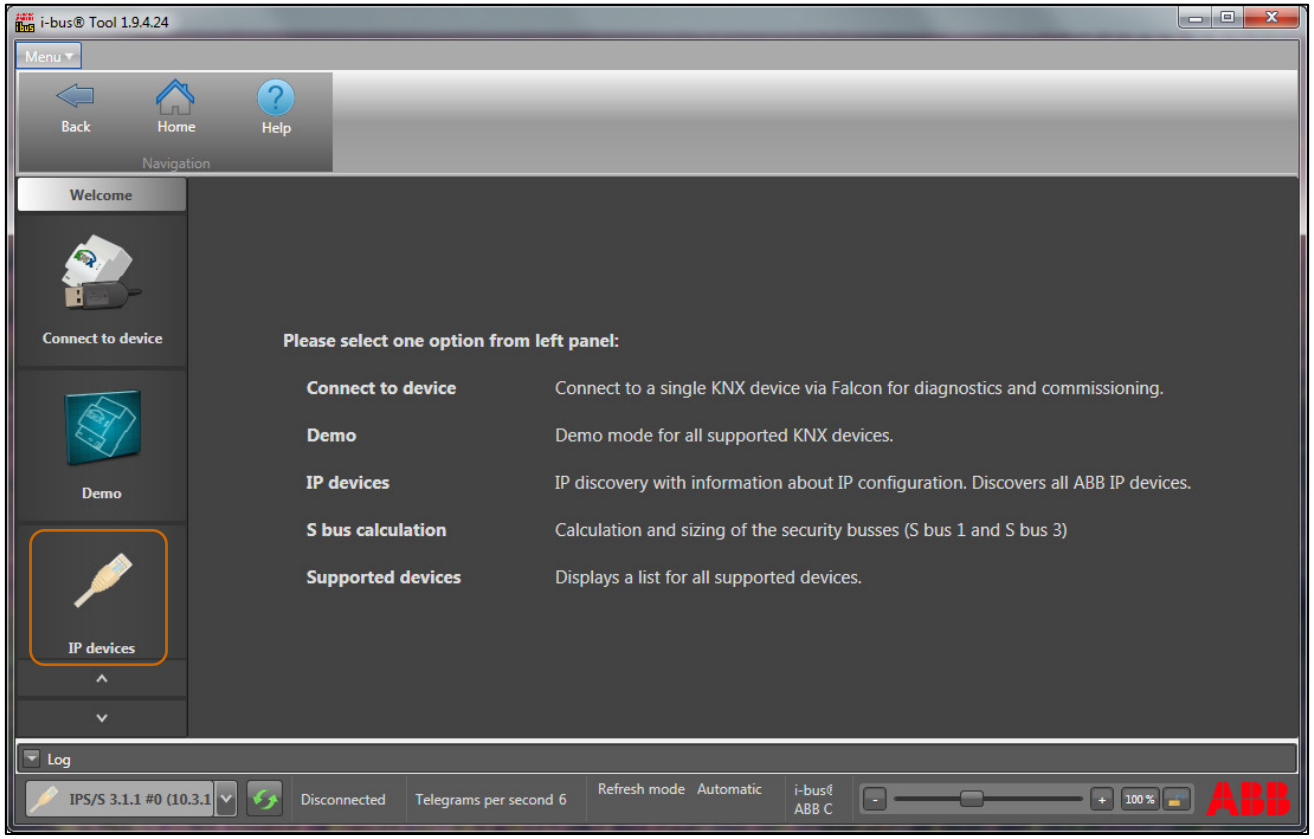
Webinar “IP Router IPR/S and IP Interface IPS/S”
IP Router IPR/S 3.1.1 – i-busTool

- A professional diagnostics and commissioning tool



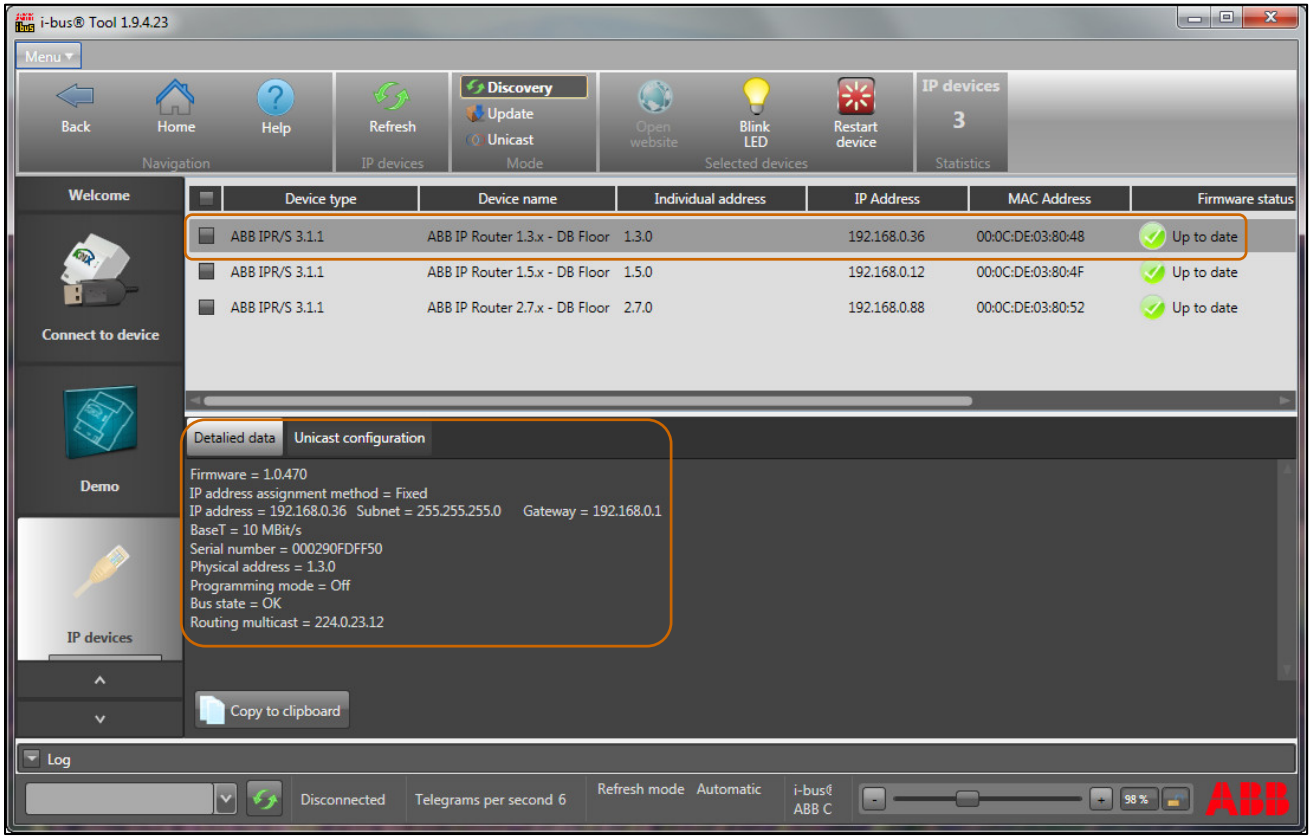
Webinar “IP Router IPR/S and IP Interface IPS/S”
IP Router IPR/S 3.1.1 – i-busTool

- IP Devices



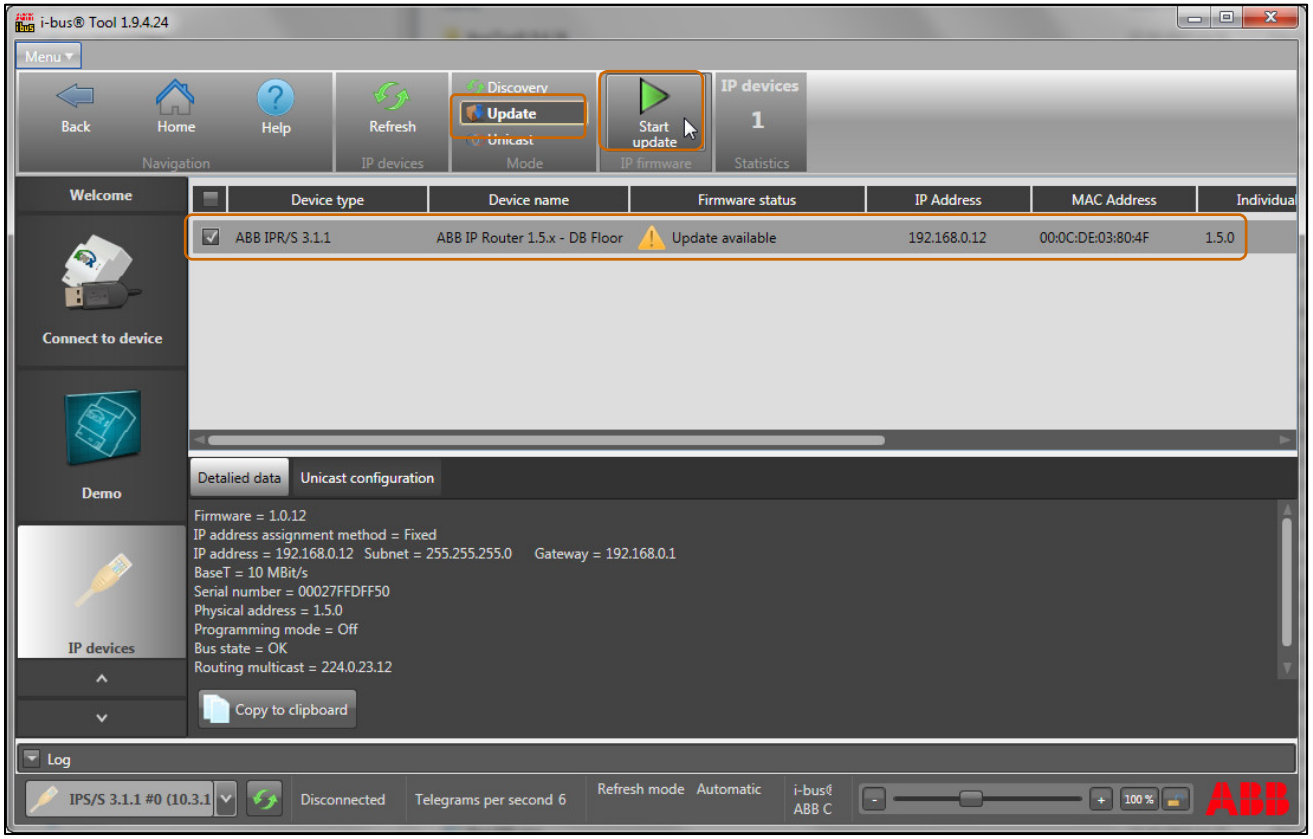
Webinar “IP Router IPR/S and IP Interface IPS/S”
IP Router IPR/S 3.1.1 – i-busTool

- Discovery



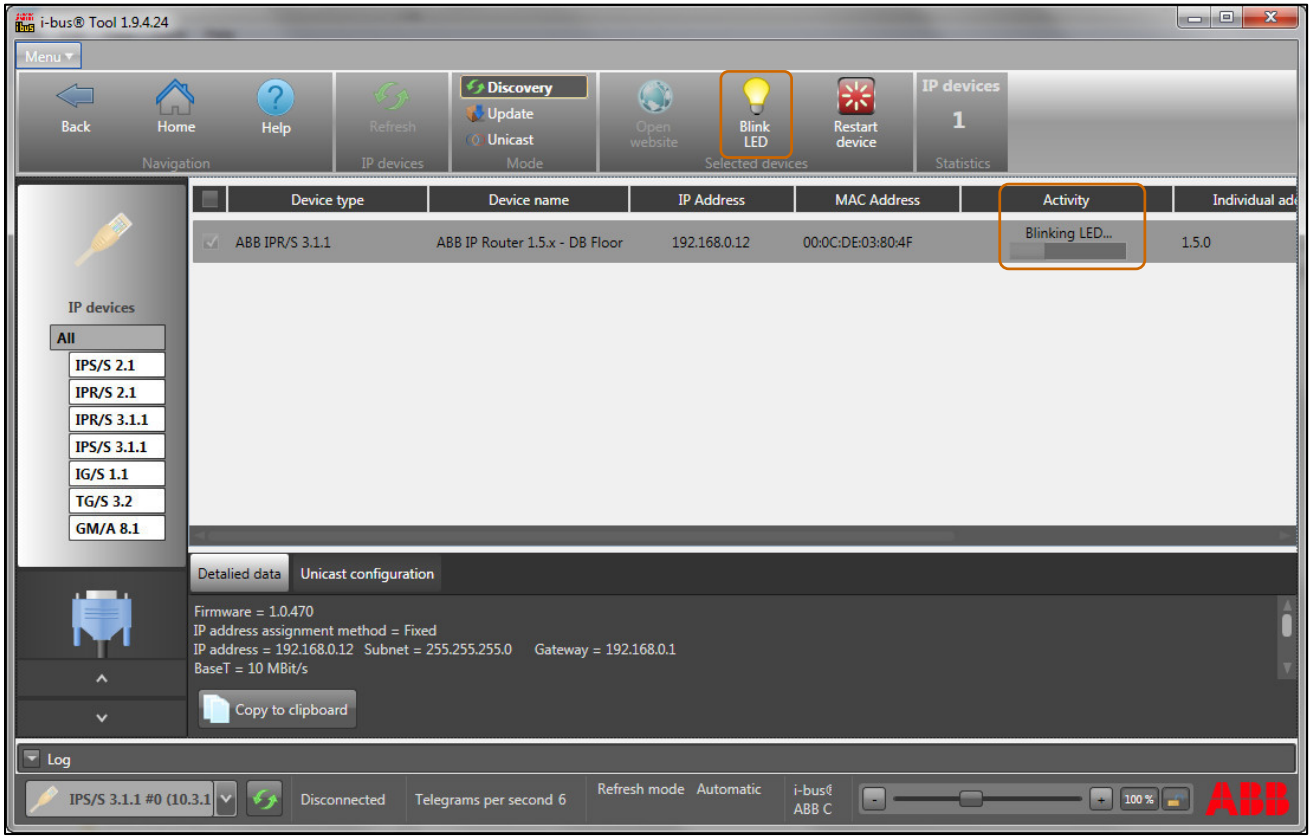
Webinar “IP Router IPR/S and IP Interface IPS/S”
IP Router IPR/S 3.1.1 – i-busTool

- Firmware update



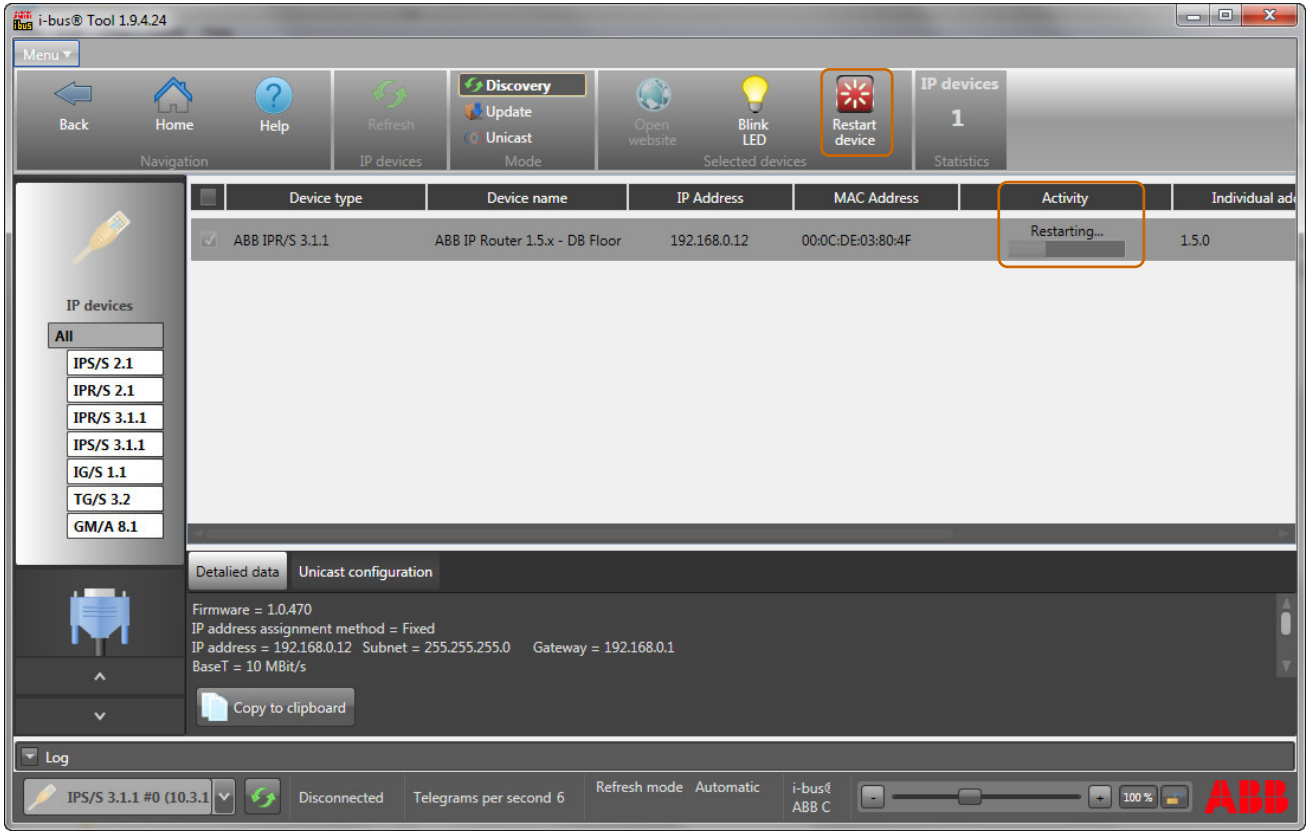
Webinar “IP Router IPR/S and IP Interface IPS/S”
IP Router IPR/S 3.1.1 – i-busTool

- Blink LED

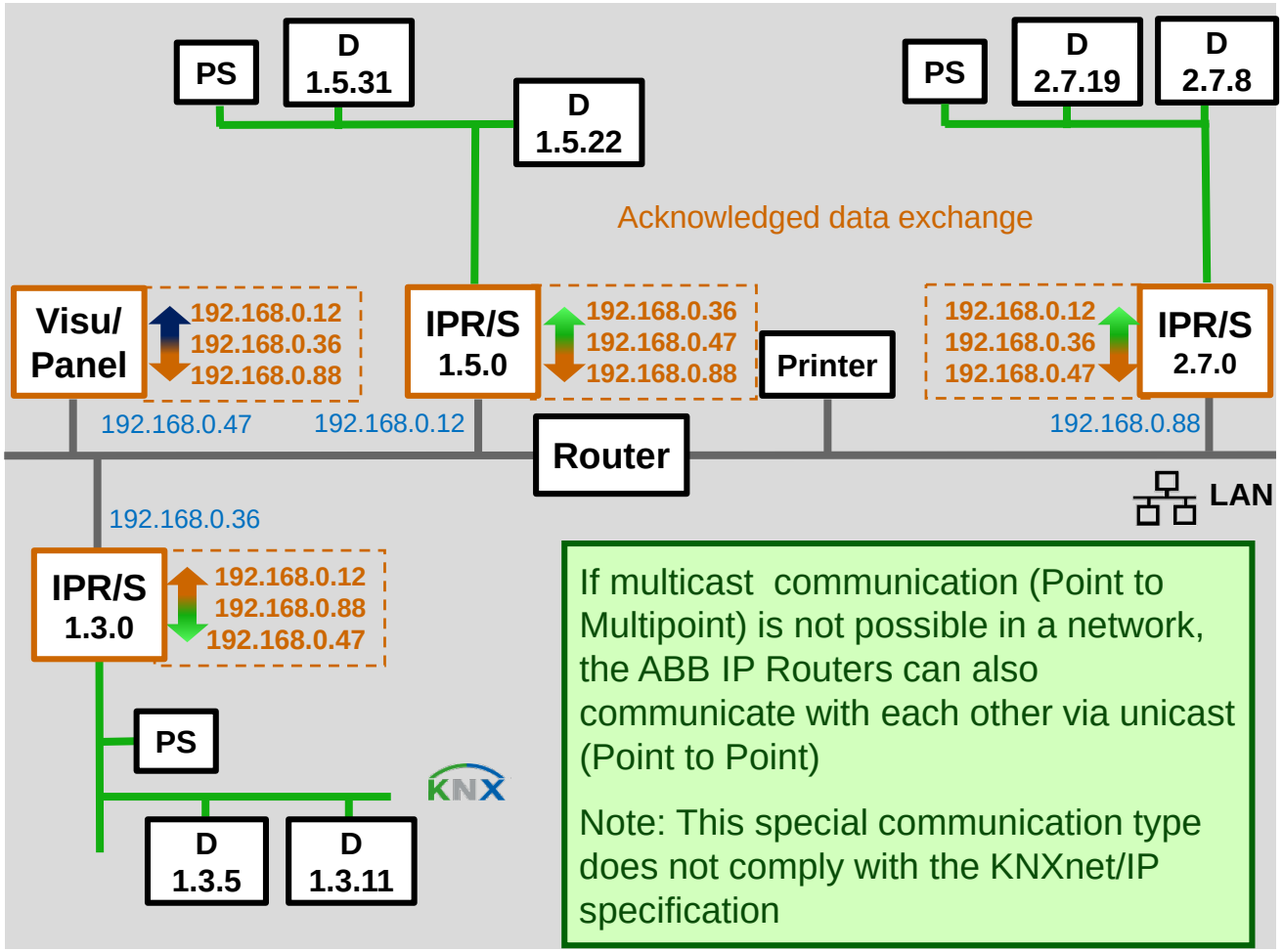


Webinar “IP Router IPR/S and IP Interface IPS/S”
IP Router IPR/S 3.1.1 – i-busTool

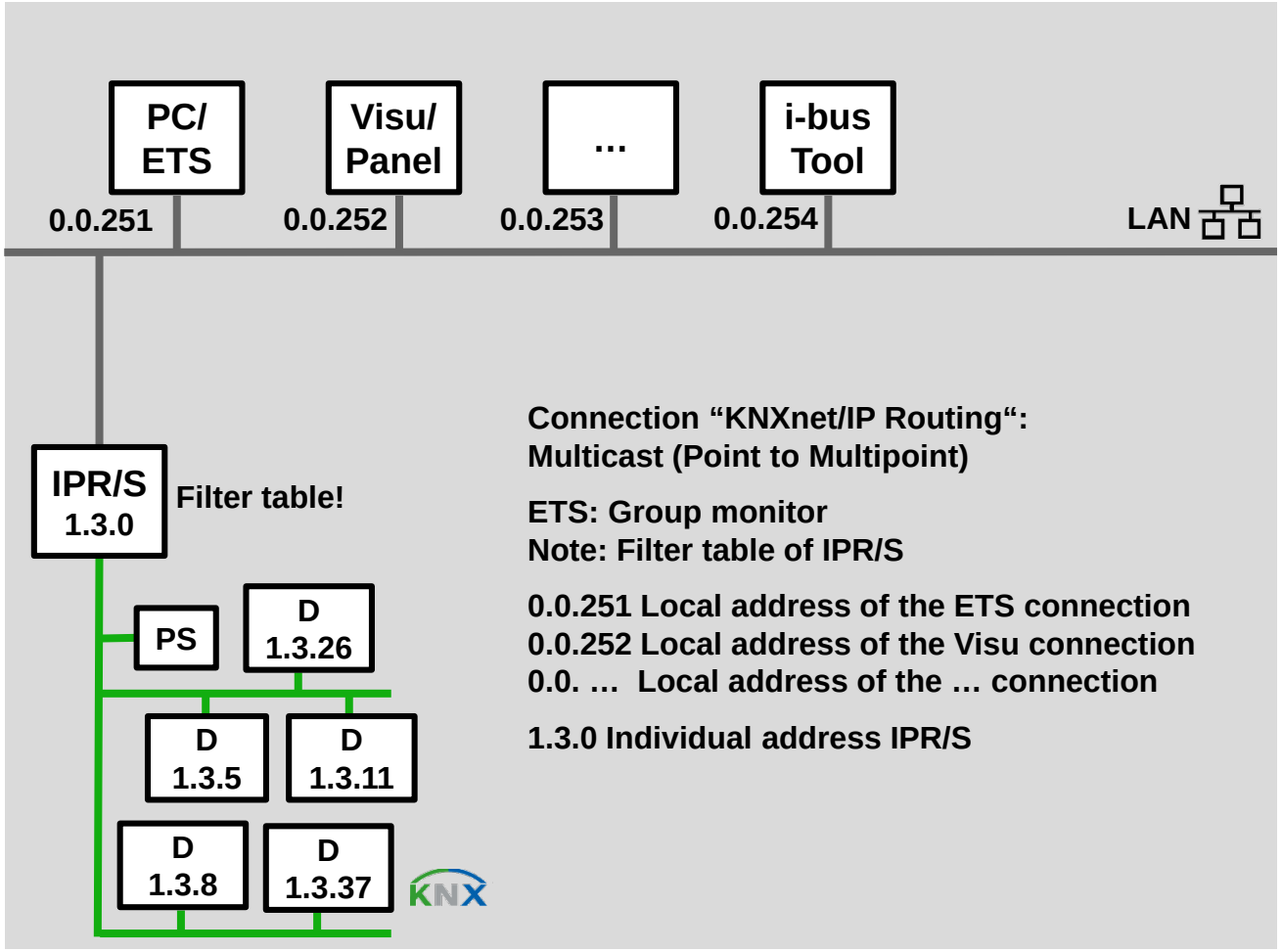
- Restart device



Webinar “IP Router IPR/S and IP Interface IPS/S”
IP Router IPR/S 3.1.1 – Unicast Group (max. 10 dev.)



Webinar “IP Router IPR/S and IP Interface IPS/S”
IP Router connection: “ETS”-Routing (only one)



Webinar “IP Router IPR/S and IP Interface IPS/S”
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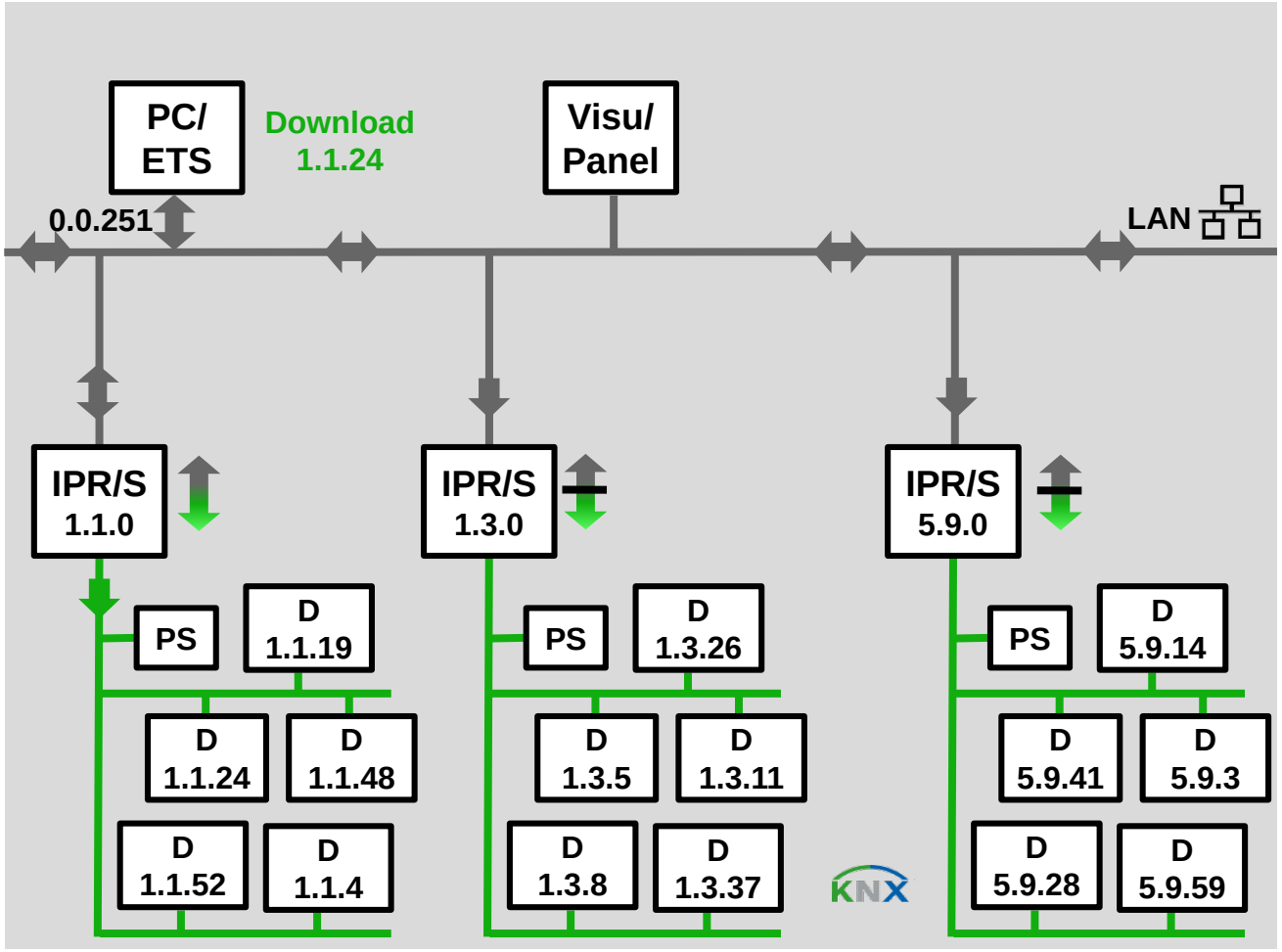
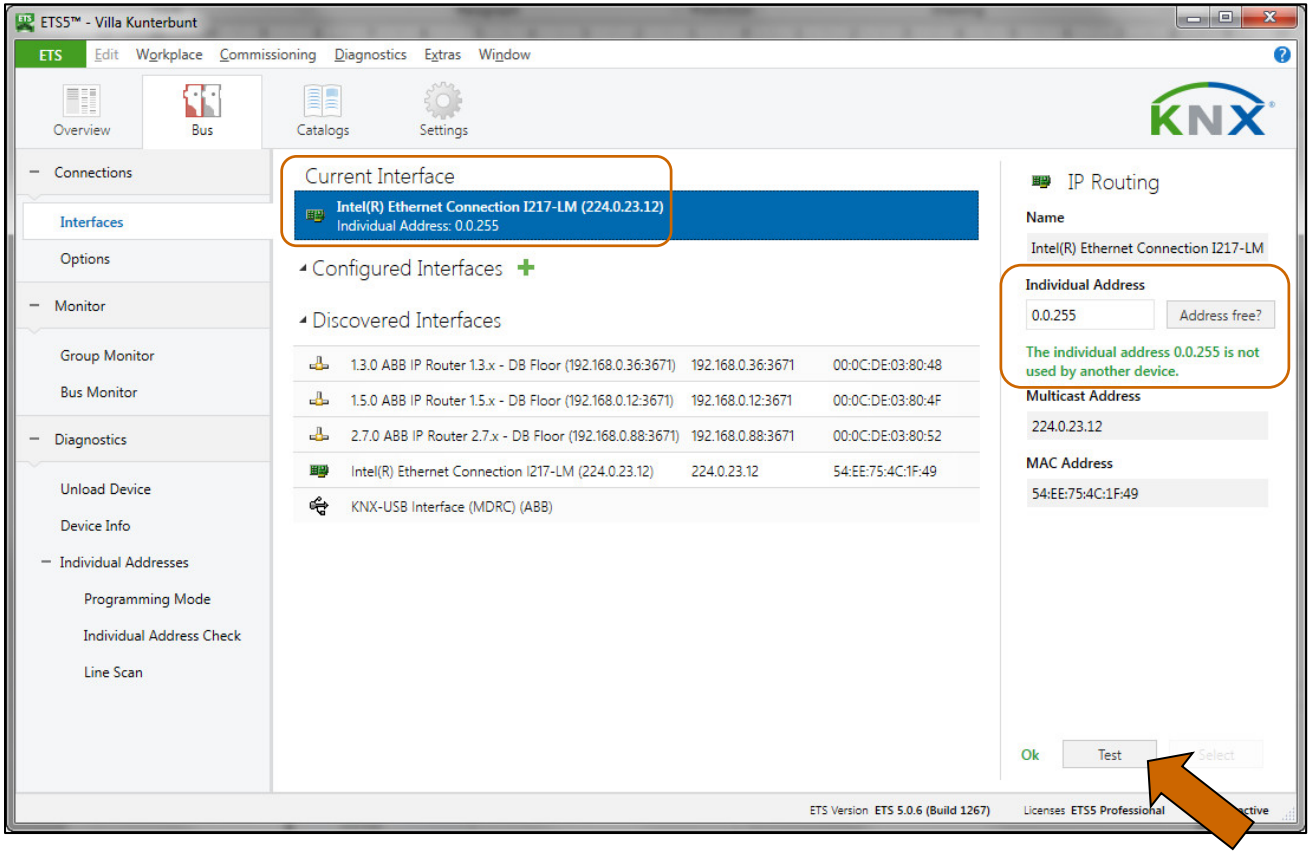
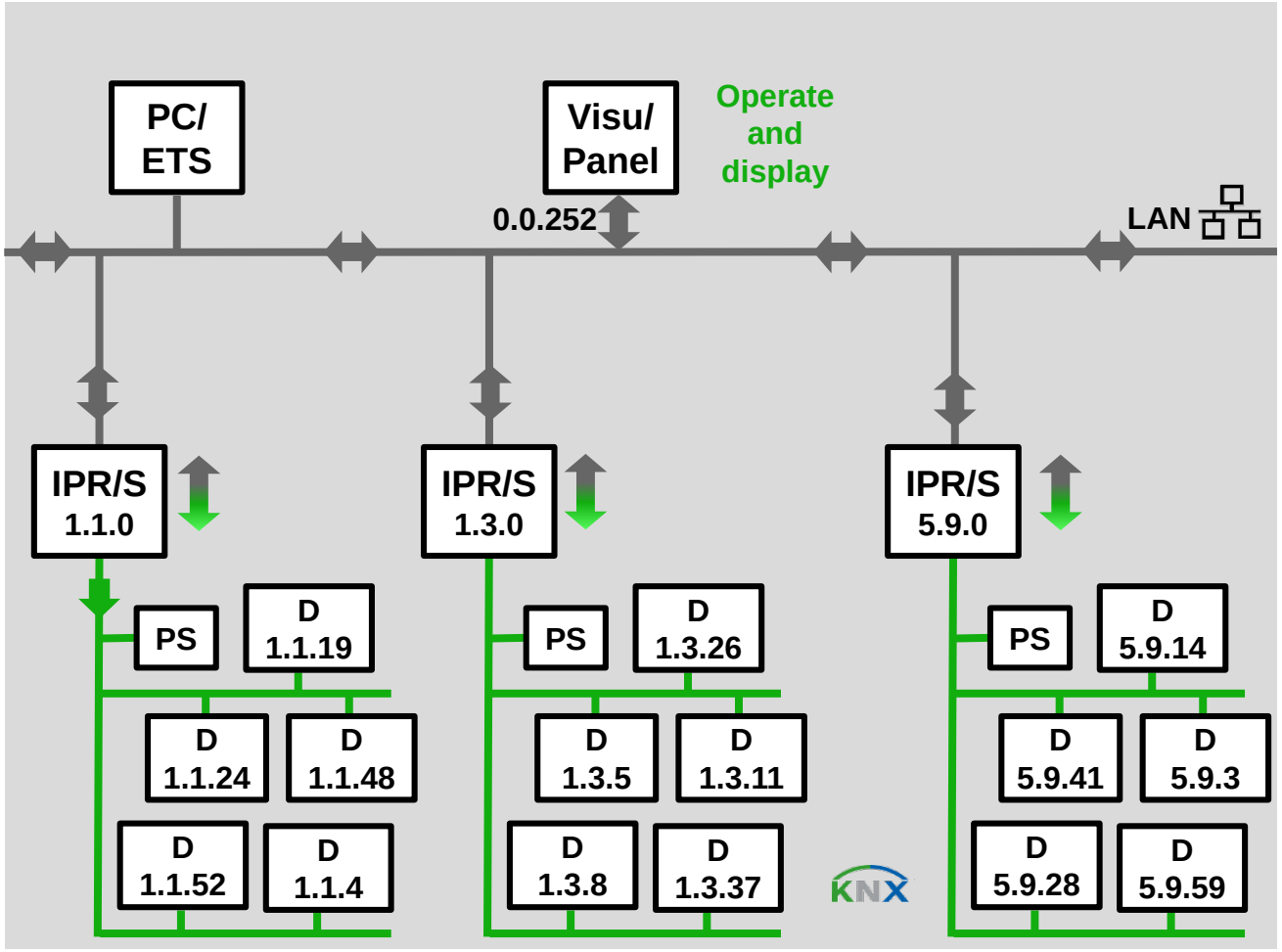


Webinar “IP Router IPR/S and IP Interface IPS/S”
IP Router connection: “ETS”-Routing (only one)



Webinar “IP Router IPR/S and IP Interface IPS/S”
IP Router connection: “Visu”-Routing (only one)



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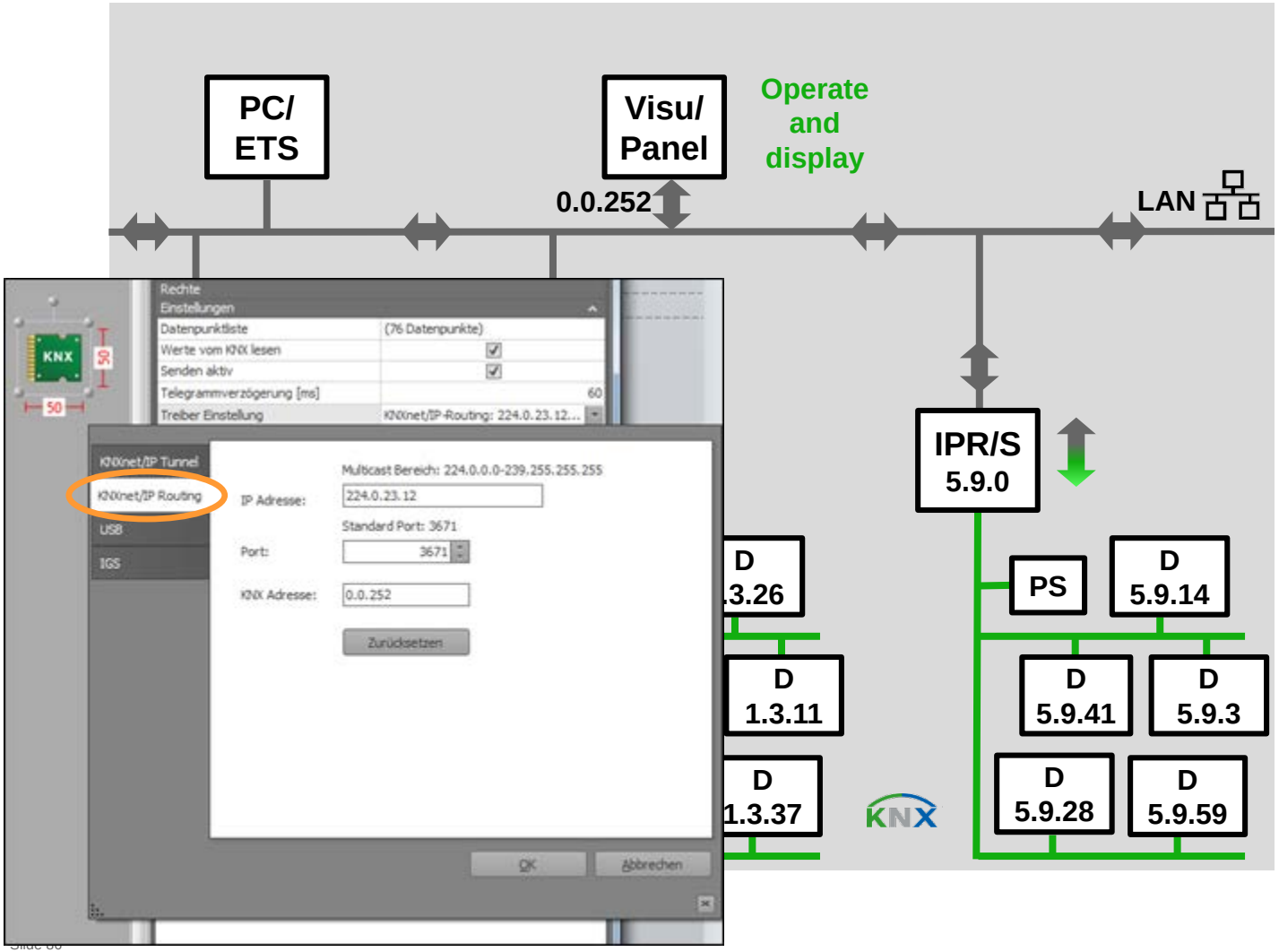
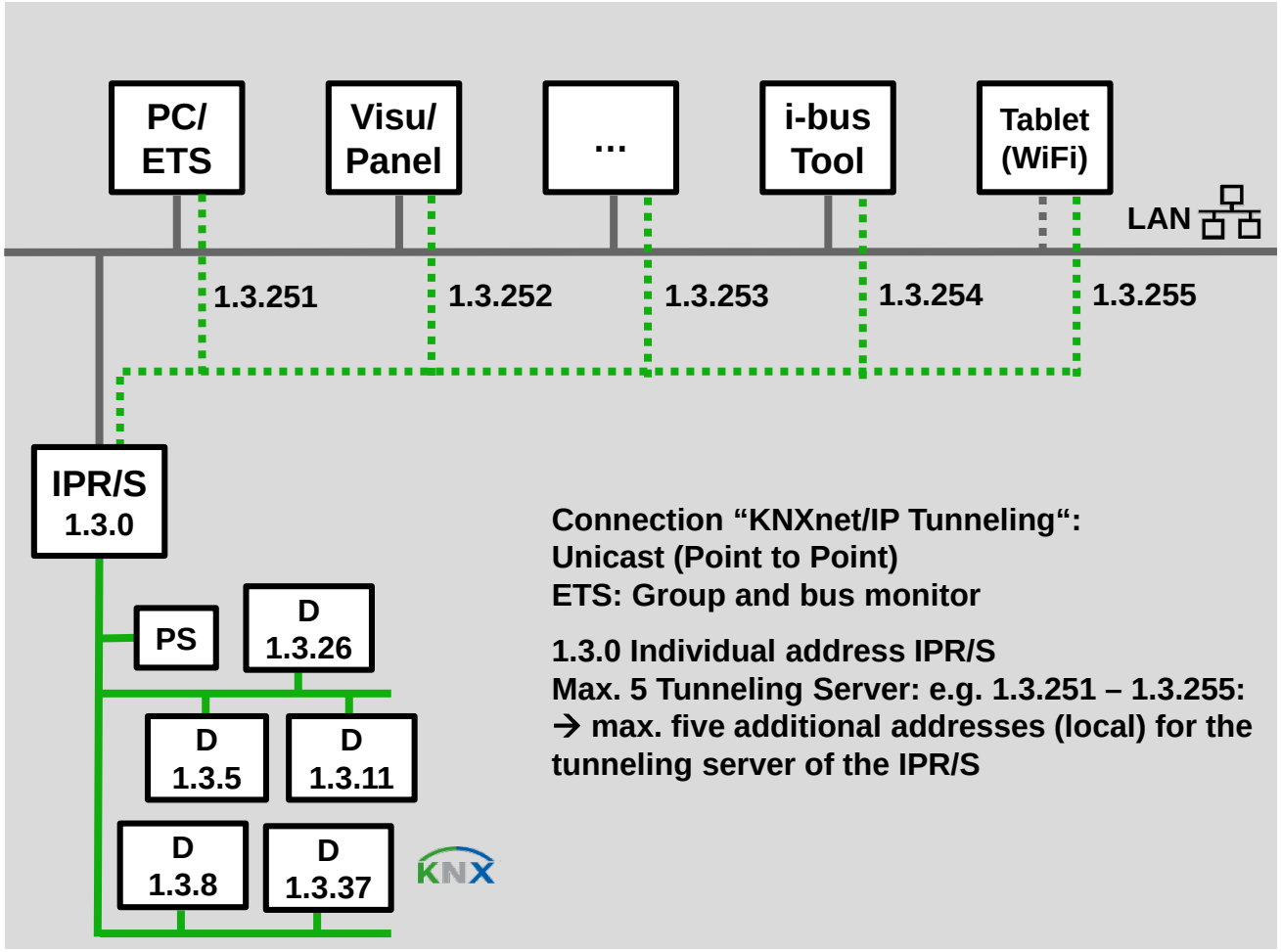


Webinar “IP Router IPR/S and IP Interface IPS/S”
IP Router connection: “ETS”-Tunneling to each IPR/S



Webinar “IP Router IPR/S and IP Interface IPS/S”
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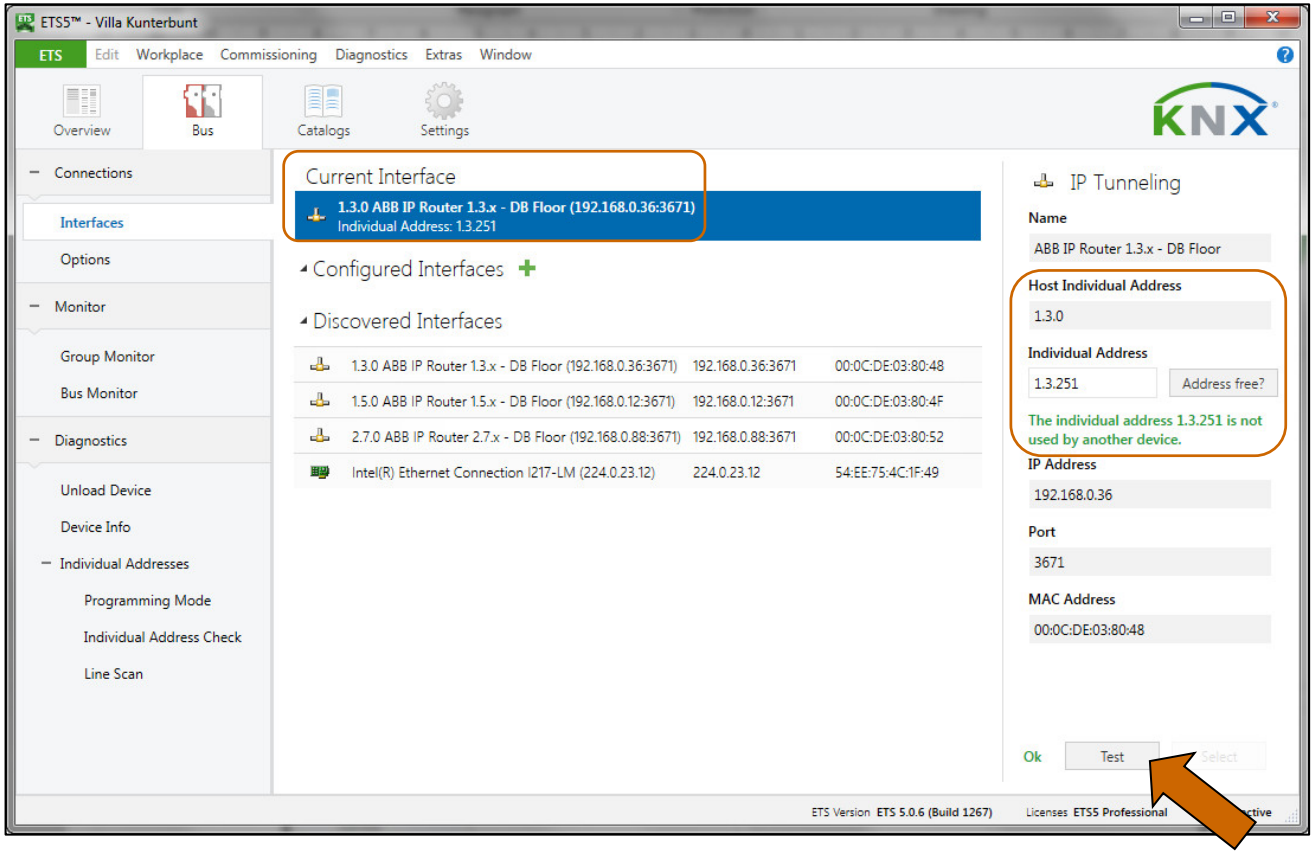

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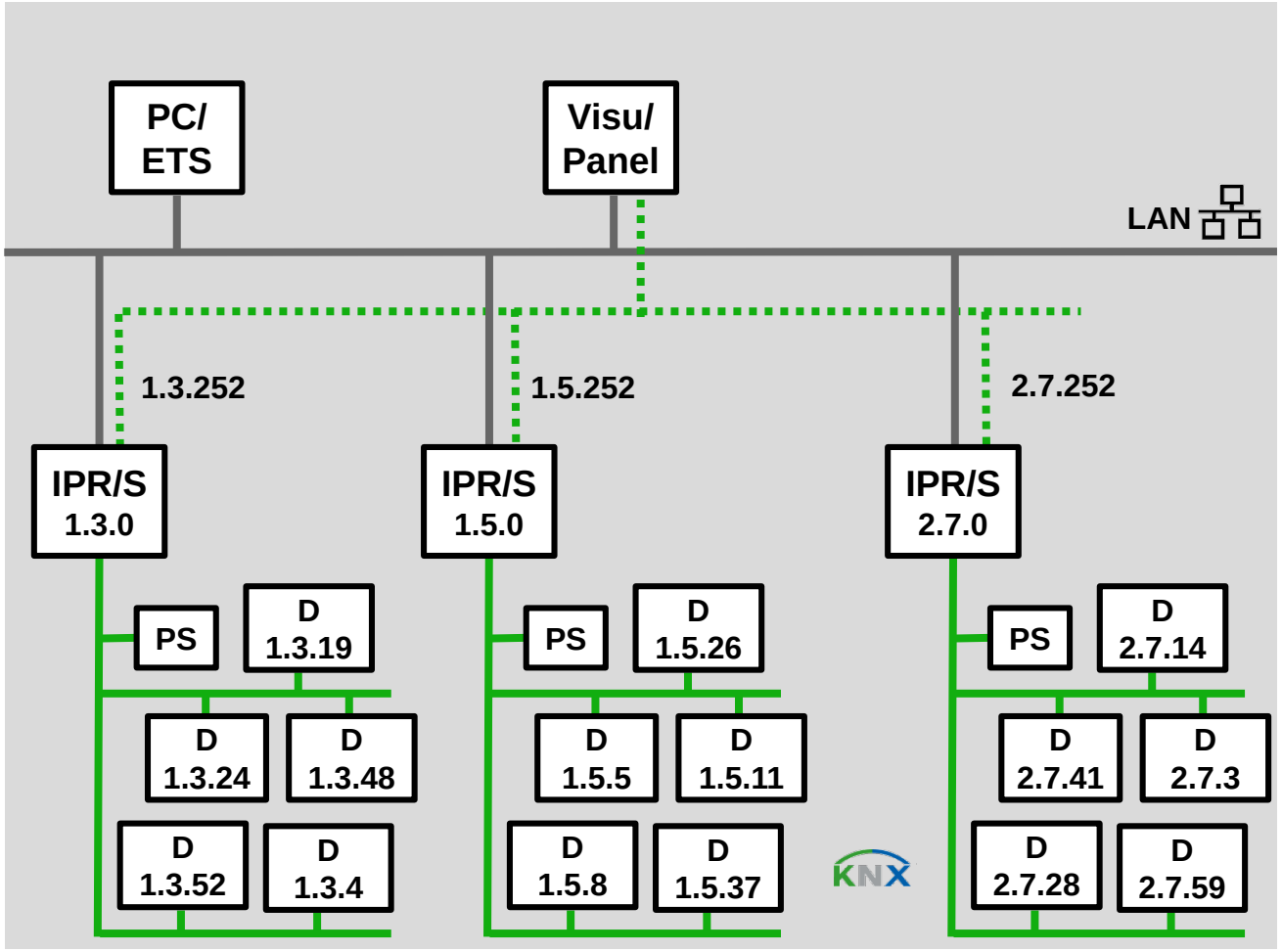

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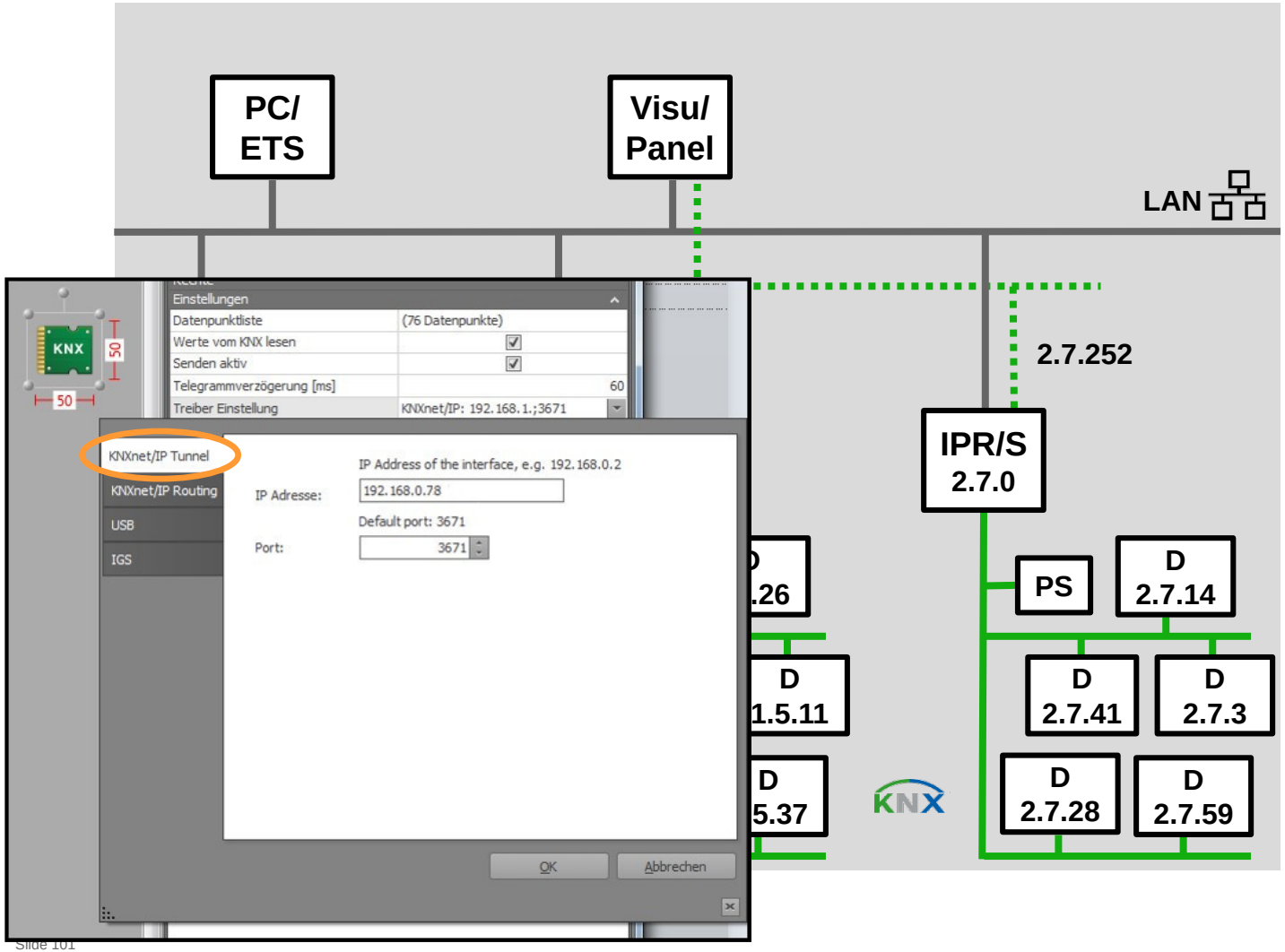
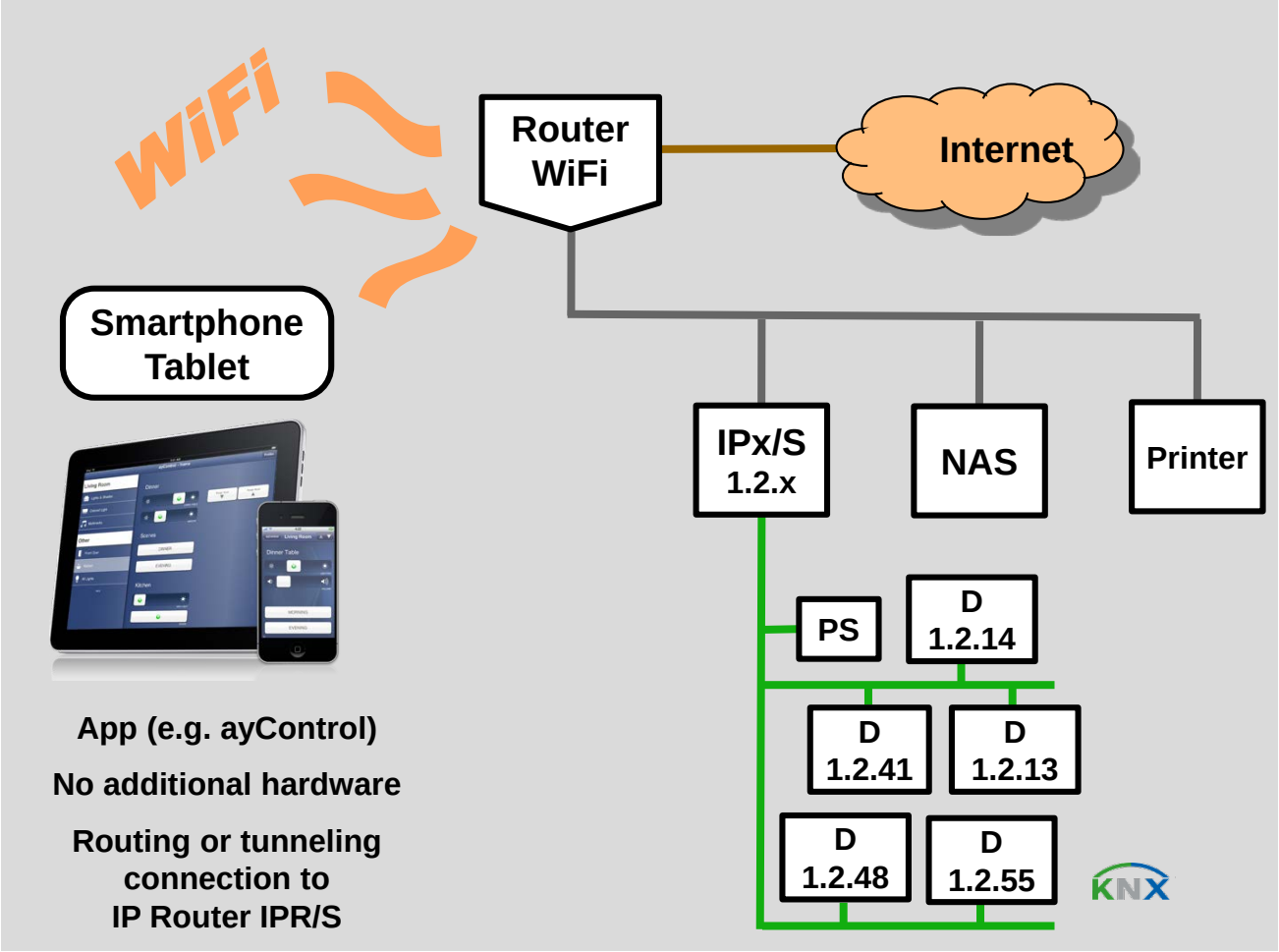
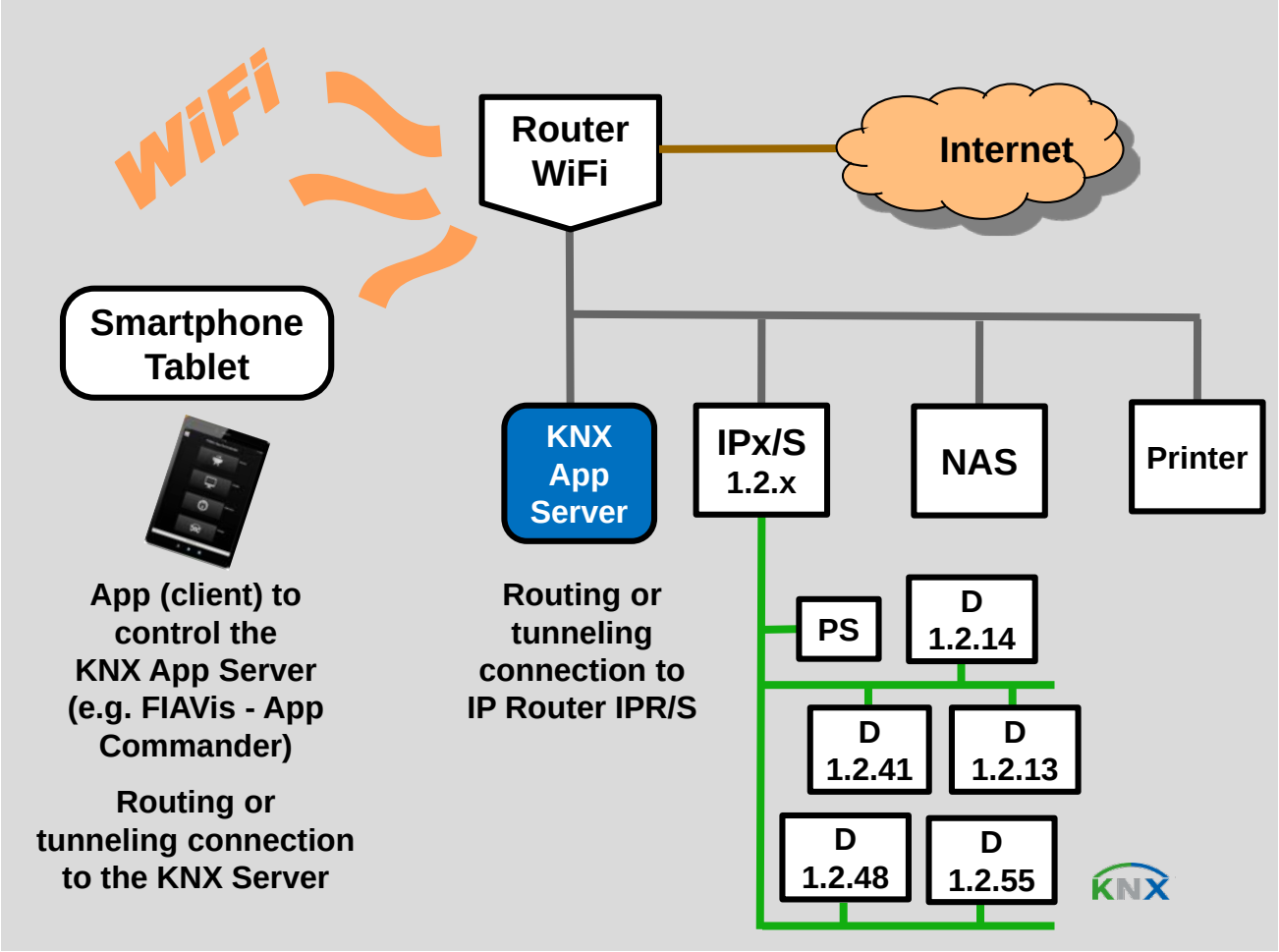


Webinar “IP Router IPR/S and IP Interface IPS/S”
Remote access to KNX



IPx/S = IP Router IPR/S or IP Interface IPS/S

Webinar “IP Router IPR/S and IP Interface IPS/S”
Remote access to KNX



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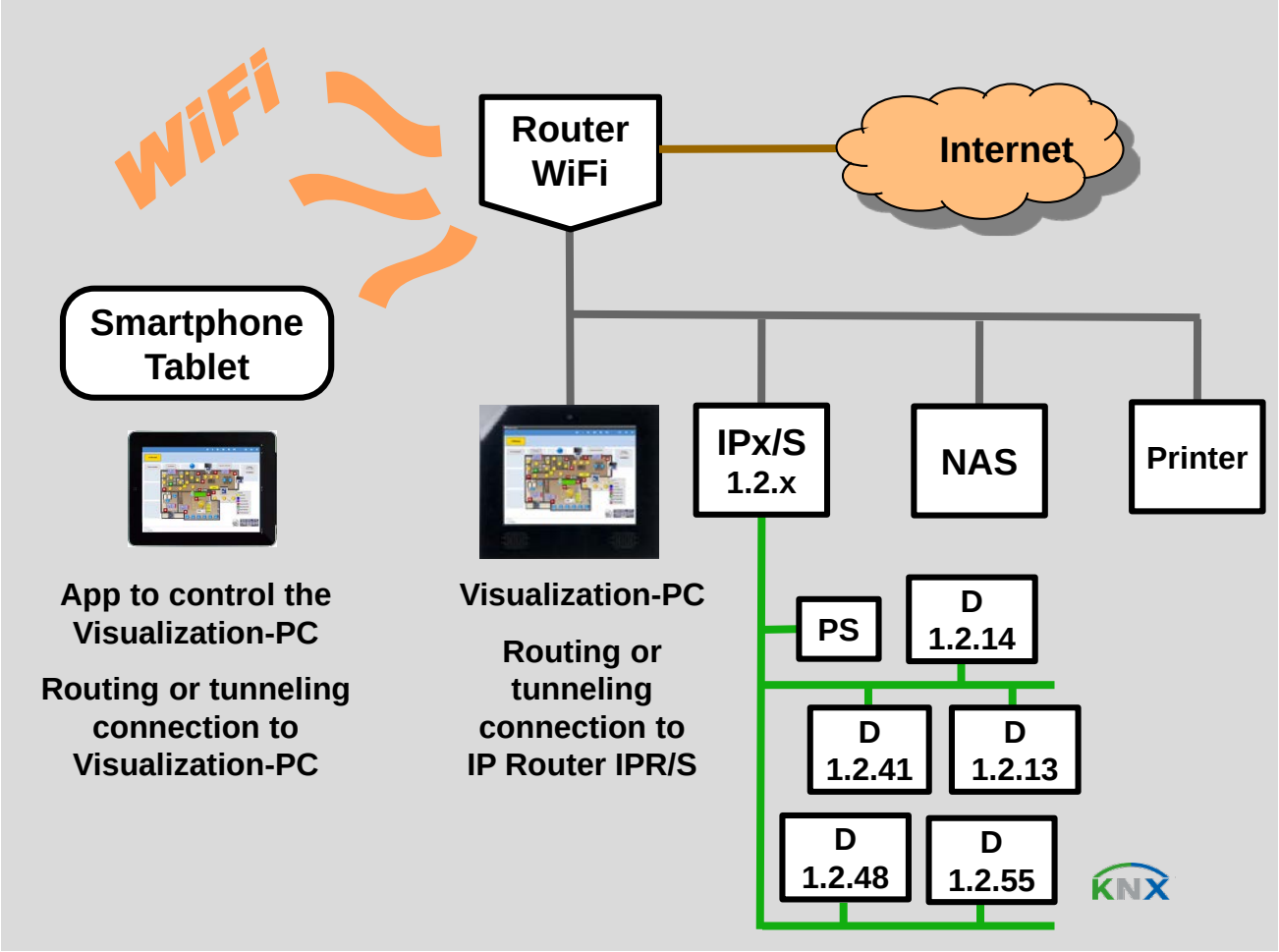

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Webinar “IP Router IPR/S and IP Interface IPS/S”
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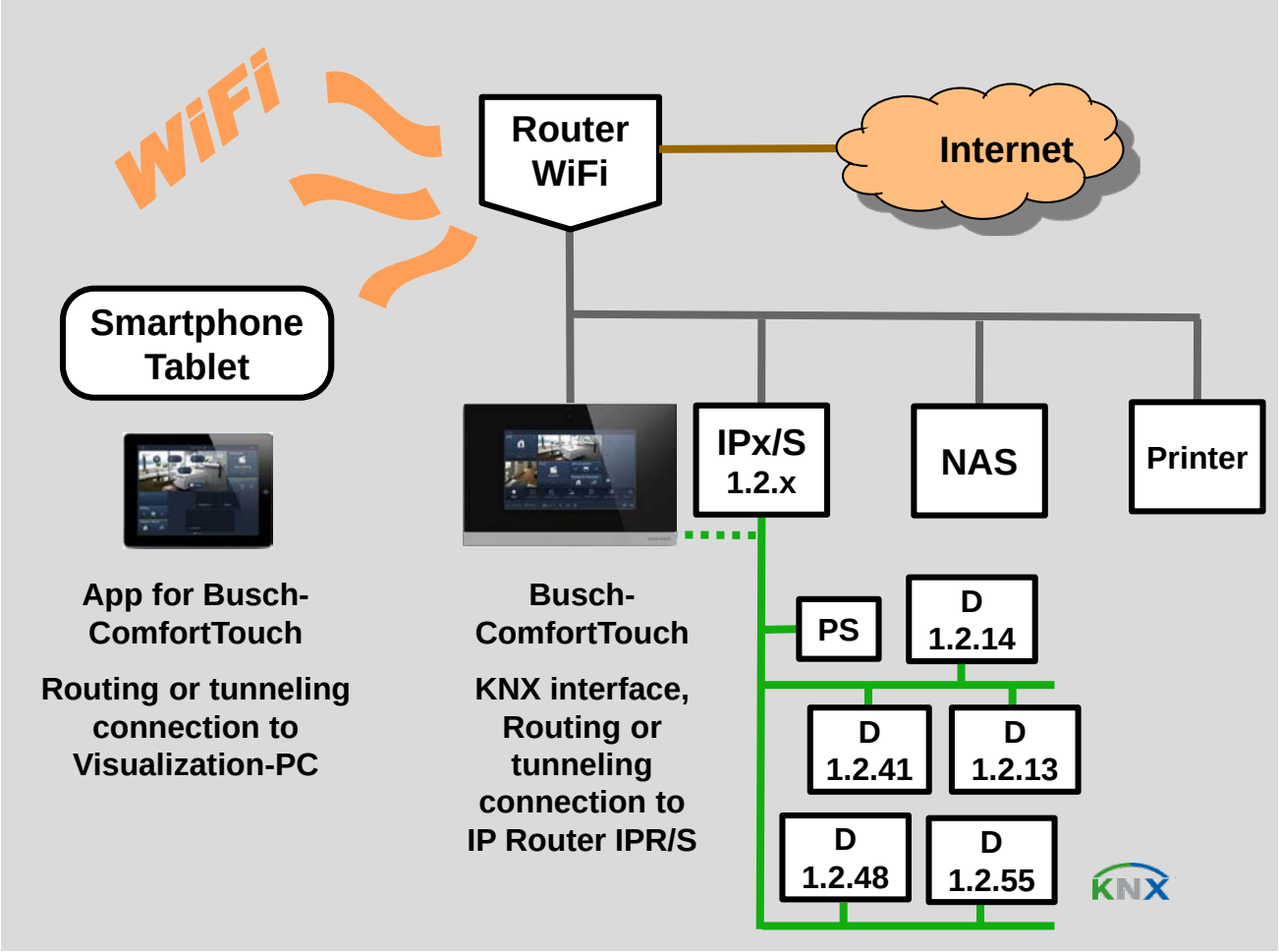
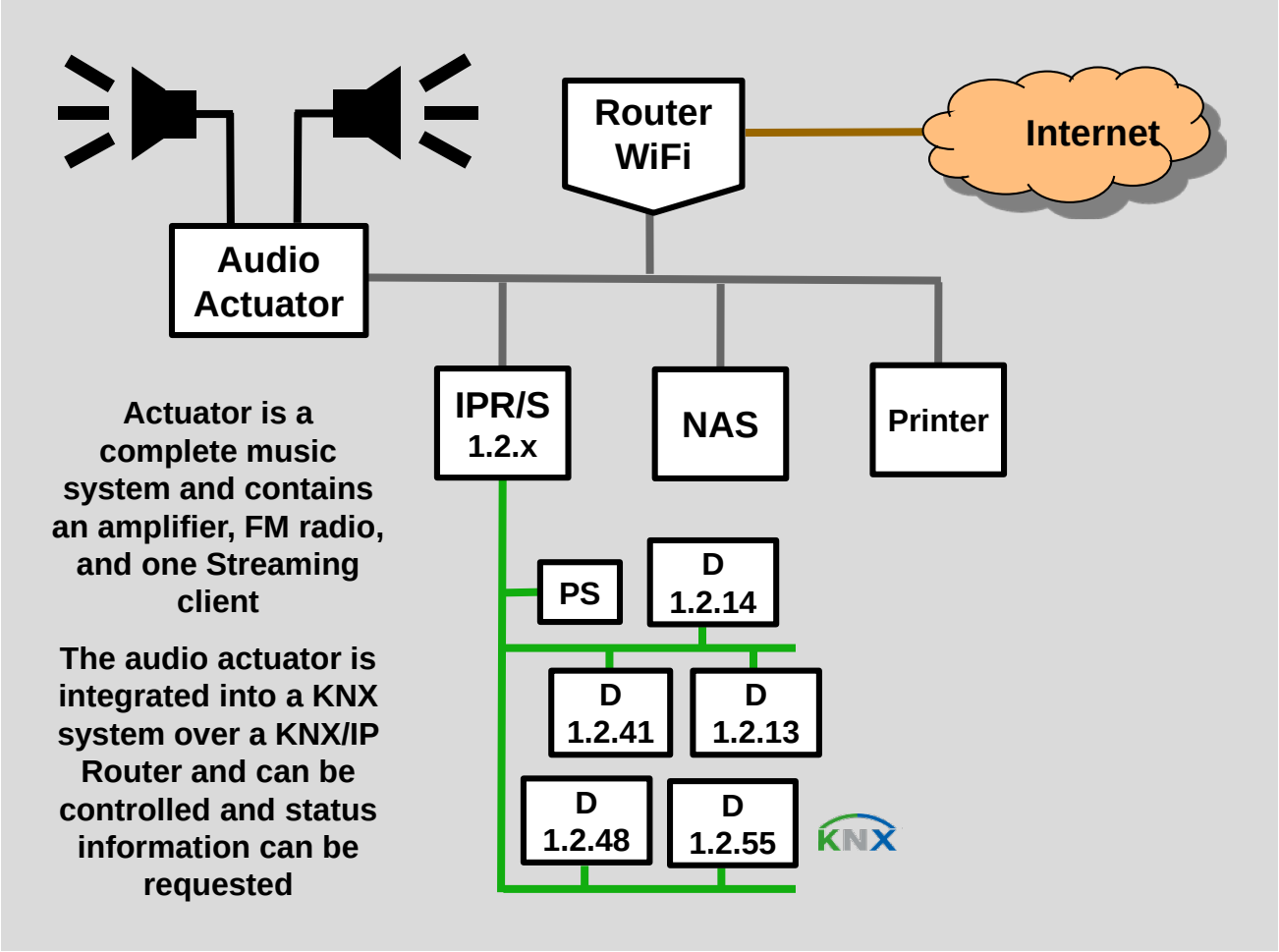


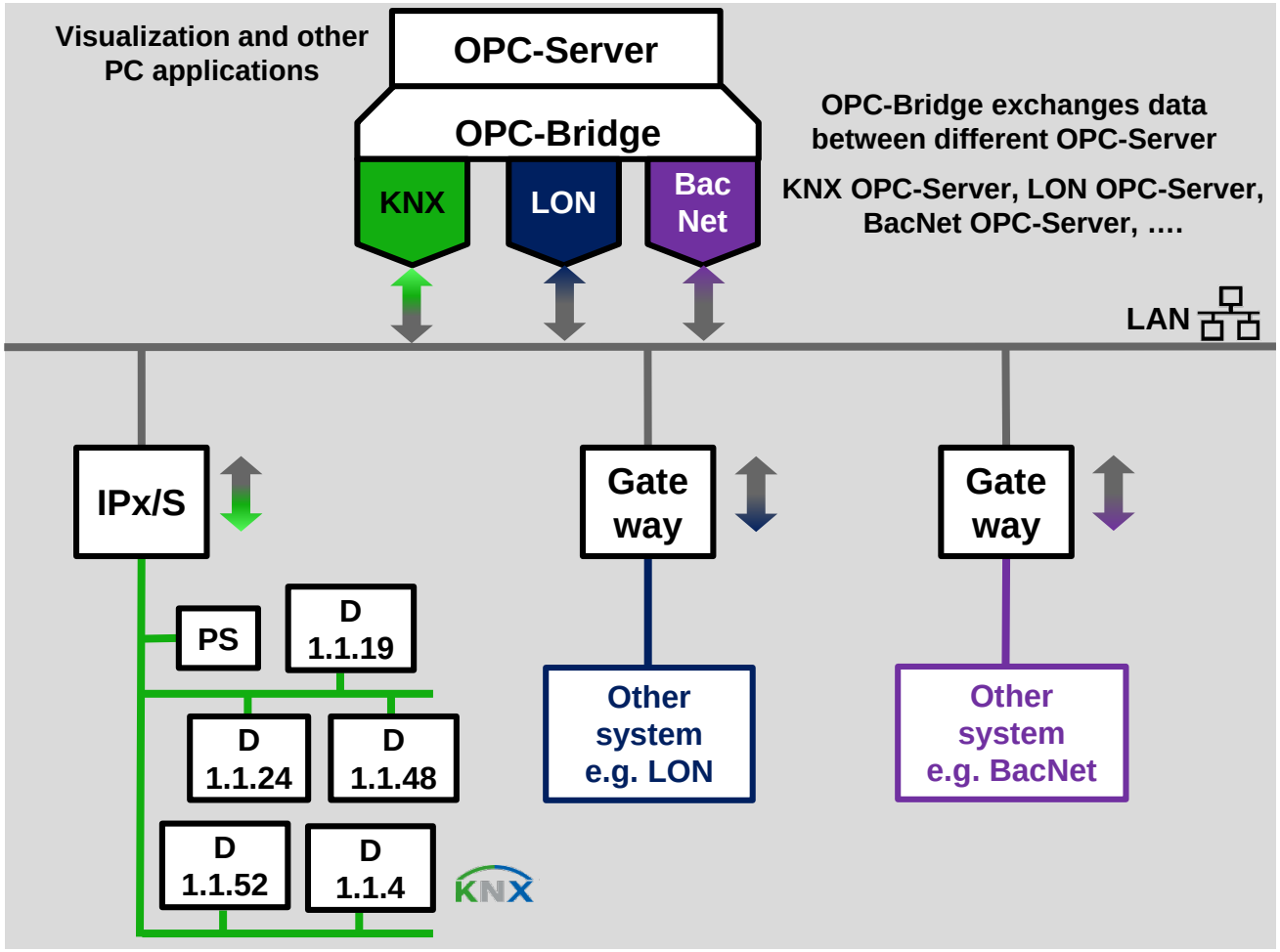
IPx/S = IP Router IPR/S or IP Interface IPS/S

Webinar “IP Router IPR/S and IP Interface IPS/S”
KNX and Audio

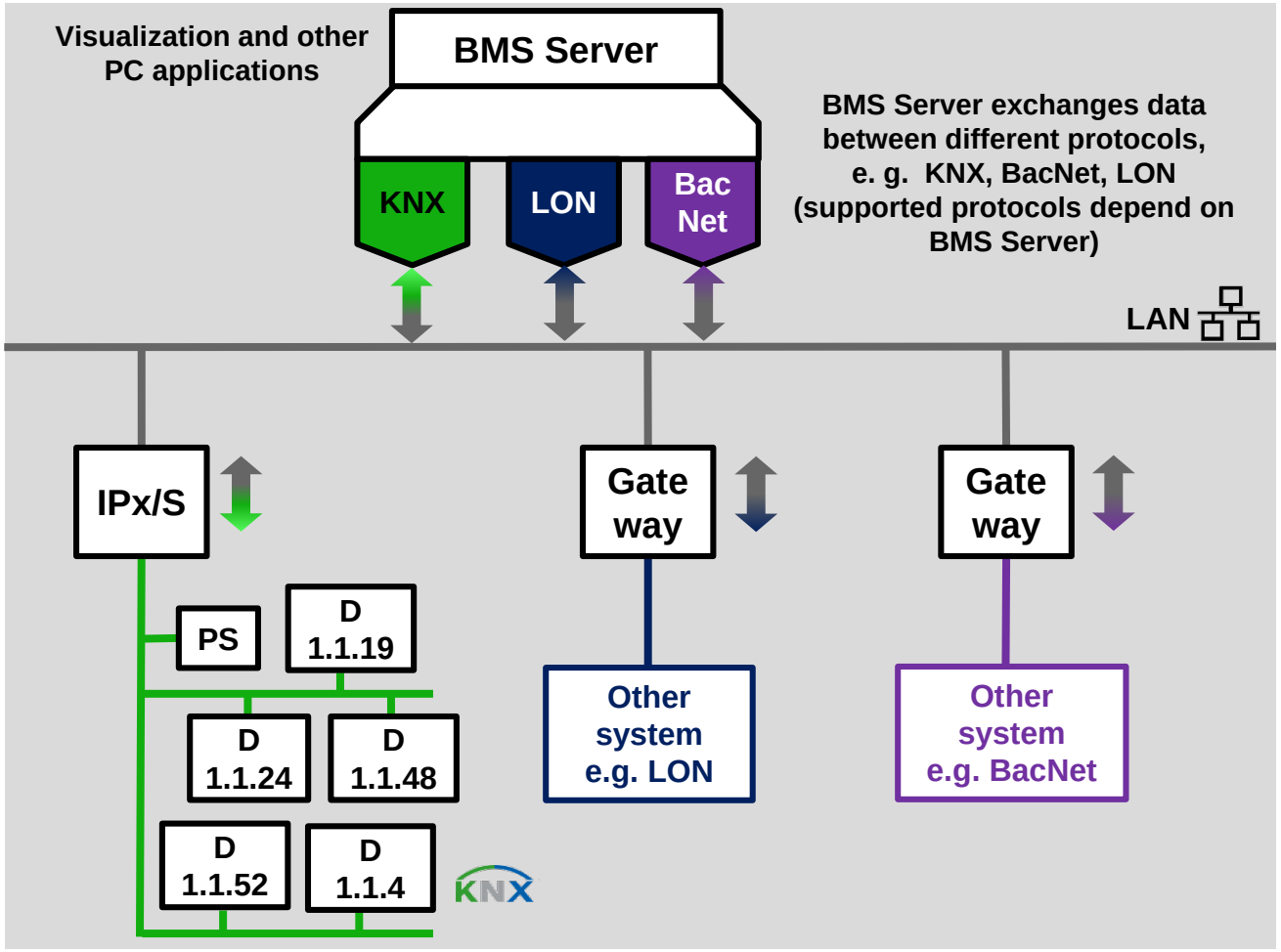


IPR/S = IP Router

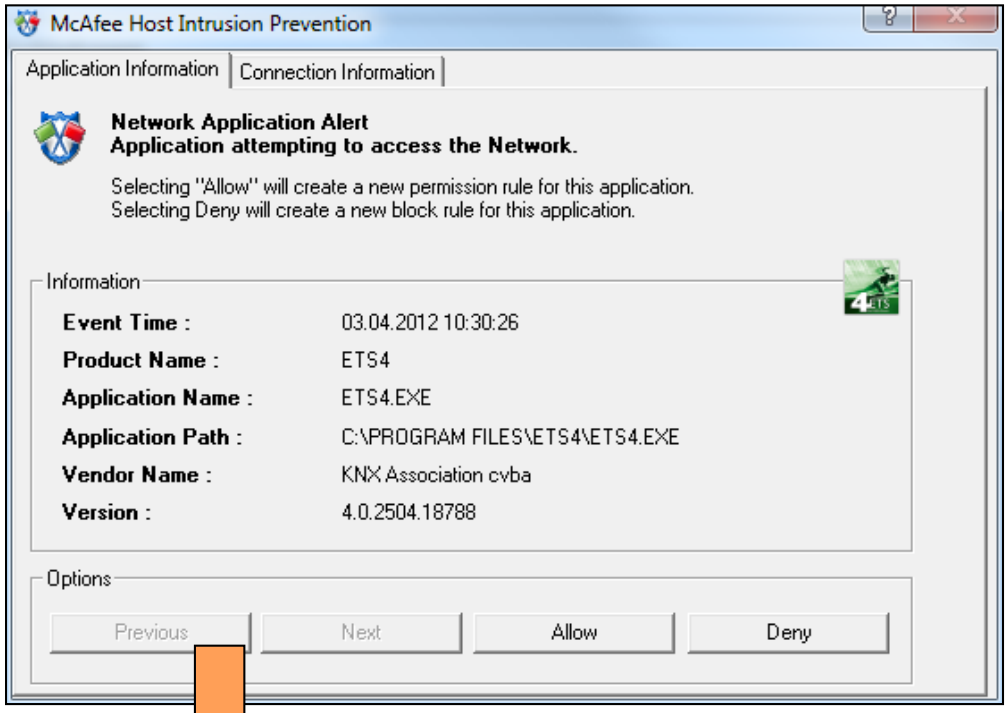
Webinar “IP Router IPR/S and IP Interface IPS/S”
KNX-Gateway Connection via OPC

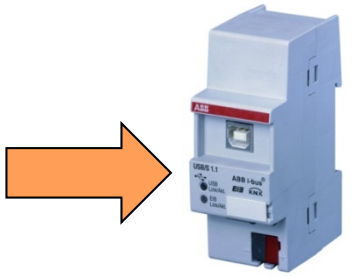


Webinar “IP Router IPR/S and IP Interface IPS/S”
KNX-Gateway Connection via BMS



Webinar “IP Router IPR/S and IP Interface IPS/S”
Firewall, virus scanner, … can block a download





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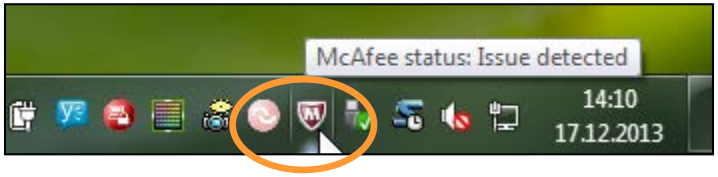
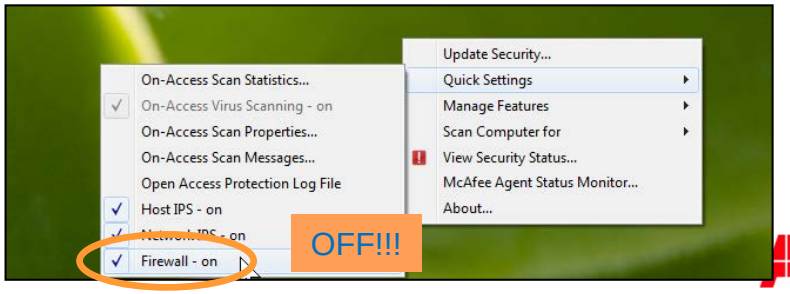
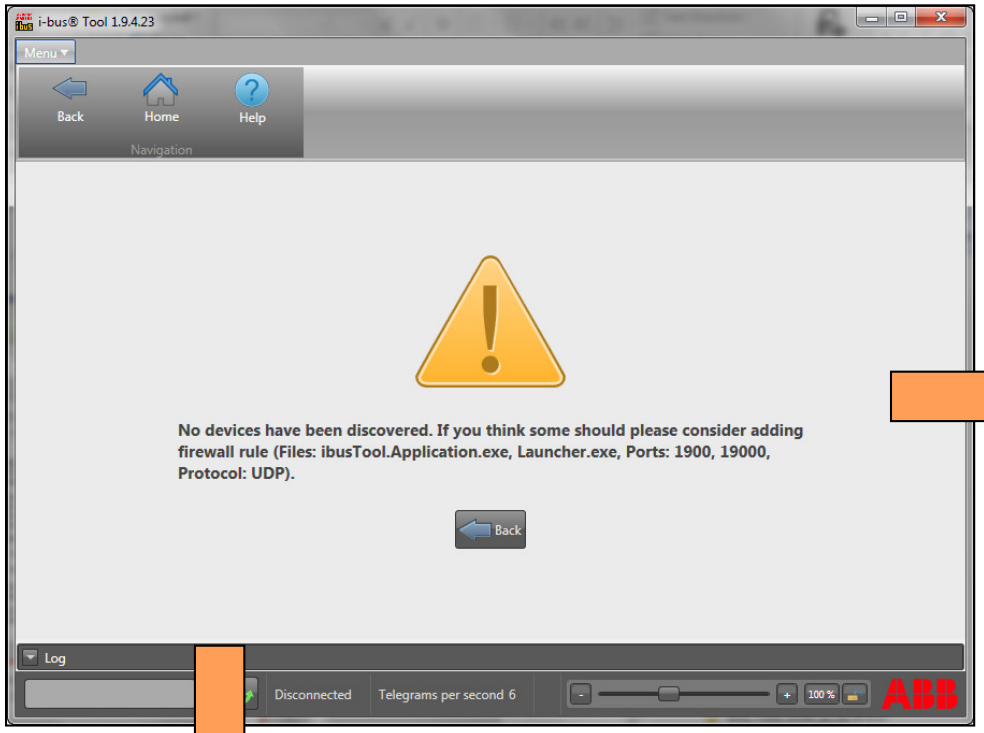
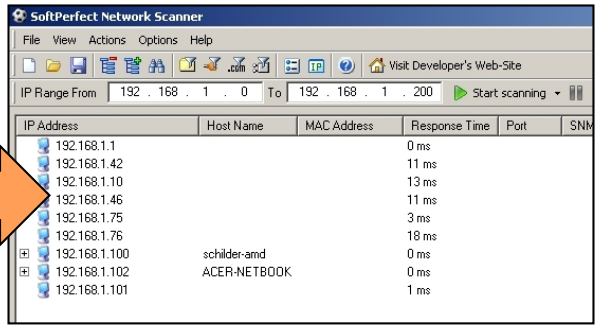
USB Interface



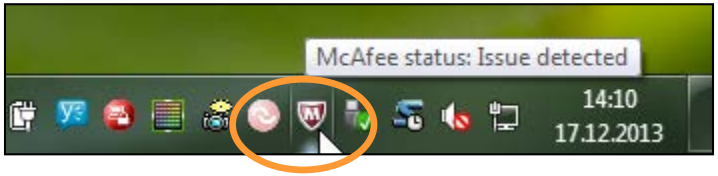


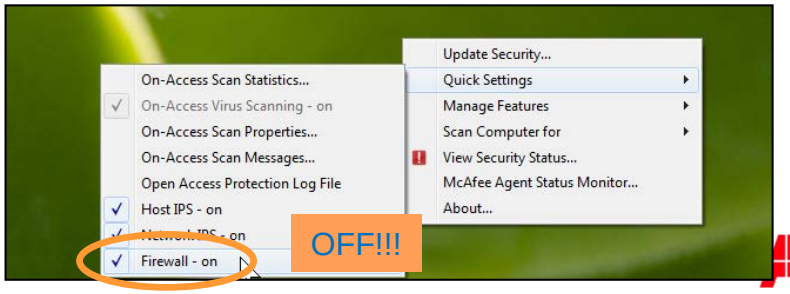
Webinar “IP Router IPR/S and IP Interface IPS/S”
i-busTool Discovery: Firewall, virus scanner, …





Network scanner





Webinar “IP Router IPR/S and IP Interface IPS/S”
IP Interface IPS/S 3.1.1 – Summary of the Features

- 5 Tunneling Server → *parallel access, less hardware*
- Power over Ethernet (PoE) → *no additional power supply, less wiring*
- ABB i-bus Tool support → *easier commissioning and diagnostic*
- Smart housing concept → *better and safer installation, wiring and commissioning*

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Webinar “IP Router IPR/S and IP Interface IPS/S”
IP Router IPR/S 3.1.1 – Summary of the Features

- Unicast Communication → *Solution if Multicast is not possible*
- Network management function “Monitoring for KNX bus voltage failure“ → *improved performance of the complete solution*
- Support of full filter table for all main groups 0…31 → *no restrictions for usage of the extended group address range*

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Webinar “IP Router IPR/S and IP Interface IPS/S“
Market Introduction

IPS/S 3.1.1

IPR/S 3.1.1

IPS/S 2.1

IPR/S 2.1

- Market Launch: Week 44/2015 (End of October)
- Official product information will follow

Ident No.	Type	Status
2CDG110177R0011	IPS/S 3.1.1	New
2CDG110175R0011	IPR/S 3.1.1	New
2CDG110098R0011	IPS/S 2.1	to be discontinued
2CDG110061R0011	IPR/S 2.1	available further on

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Webinar “IP Router IPR/S and IP Interface IPS/S“
Marketing Material

IPS/S 3.1.1

IPR/S 3.1.1

- Product Manuals
- Technical Data
- www.abb.com/knx

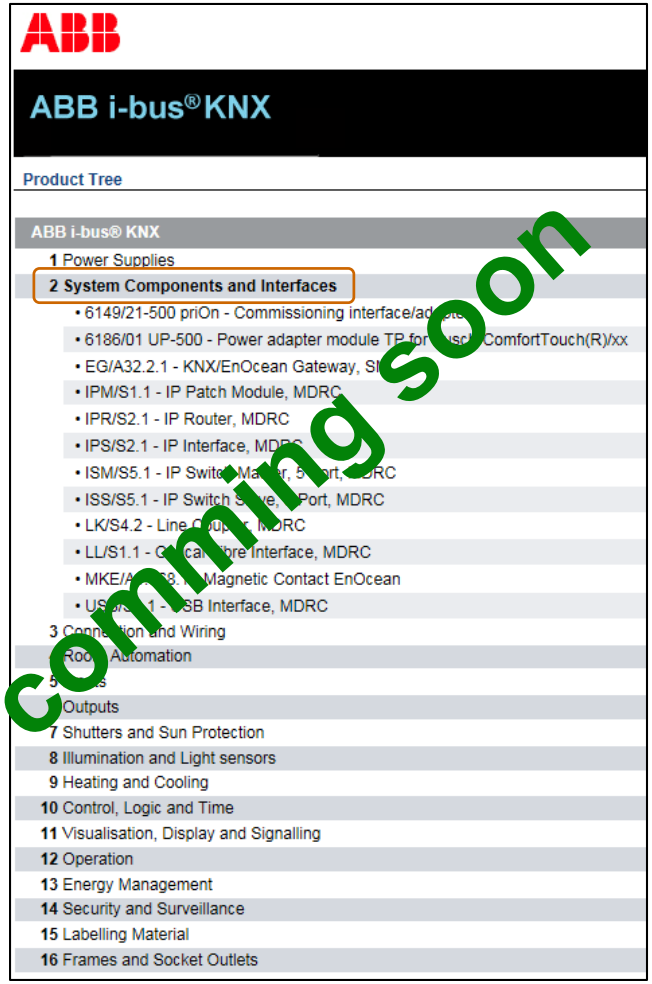
Webinar “IP Router IPR/S and IP Interface IPS/S“

www.abb.com/KNX

→ Product categories → System Components

IPS/S 3.1.1

IPR/S 3.1.1



- Application Software ETS3 and ETS4/5
- Product Manual
- Technical Data
- Installation and Operating Instructions
- Specification Text
- Product Information
- Presentation Slides
- CE Declaration of Conformity (.PDF)
- Environmental Information
- RoHS - Declaration of Conformity
- • • •

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Webinar “IP Router IPR/S and IP Interface IPS/S“
Next Webinar

IPS/S 3.1.1

IPR/S 3.1.1

- **Wednesday 25th of November 2015**
  - Morning 09:00 am Europe Time (Berlin, UTC + 1h)
  - Afternoon 03:00 pm Europe Time (Berlin, UTC + 1h)
- **IP Router IPR/S and IP Interface IPS/S**
  - Advanced features
    - i-busTool
    - Filter table
    - Unicast groups
    - Record telegrams on IP
    - Remote access / VPN
    - …

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