

Information on installing transmission paths (Wholesale products VPN 2.0 and CFV 2.0)

Your obligatory role



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Date October 2024

Checklist: An overview of your obligatory role

To ensure that your line can be set up smoothly, please go through this checklist. Here is a brief list of what you need to do before the installation date can take place. Please make sure you forward this checklist to all the required contact persons.

Up to three weeks before installation:



Have these requirements been met?

- Written permission from the owner of the house and property.
- The opening and reclosing of fire seals will be ensured (if necessary).
- The internal connection cable (“IVK”) is guaranteed to have continuity and adequate capacity that matches the ordered product (glass/copper).
- Adequate space for hardware (at least 3 connected rack units (“HE”) for the rack and free installation space for the table device).
- Enough free power outlets to supply power within the hardware's range. In the case of 48 V DC, a proper, standards-compliant interconnection point is required (Power-D box and backup).

Other preparations (in the case of outdoor housing and telehouse)

- Miscellaneous details for installation in outdoor housings (MFG 48 V) have been followed and carried out.
- For telehouse locations: Completed patch form have to be returned to Telekom.

On the day of installation:



Is access guaranteed for the Telekom technicians?

- To the utility room where the hardware will be installed.
- To Telekom's line termination point (“APL”).

Have all the parties involved been informed?

- Communicative contact persons are informed and on-site (e.g., custodian/key manager/IT technician)

Thank you for your cooperation!

Technical information

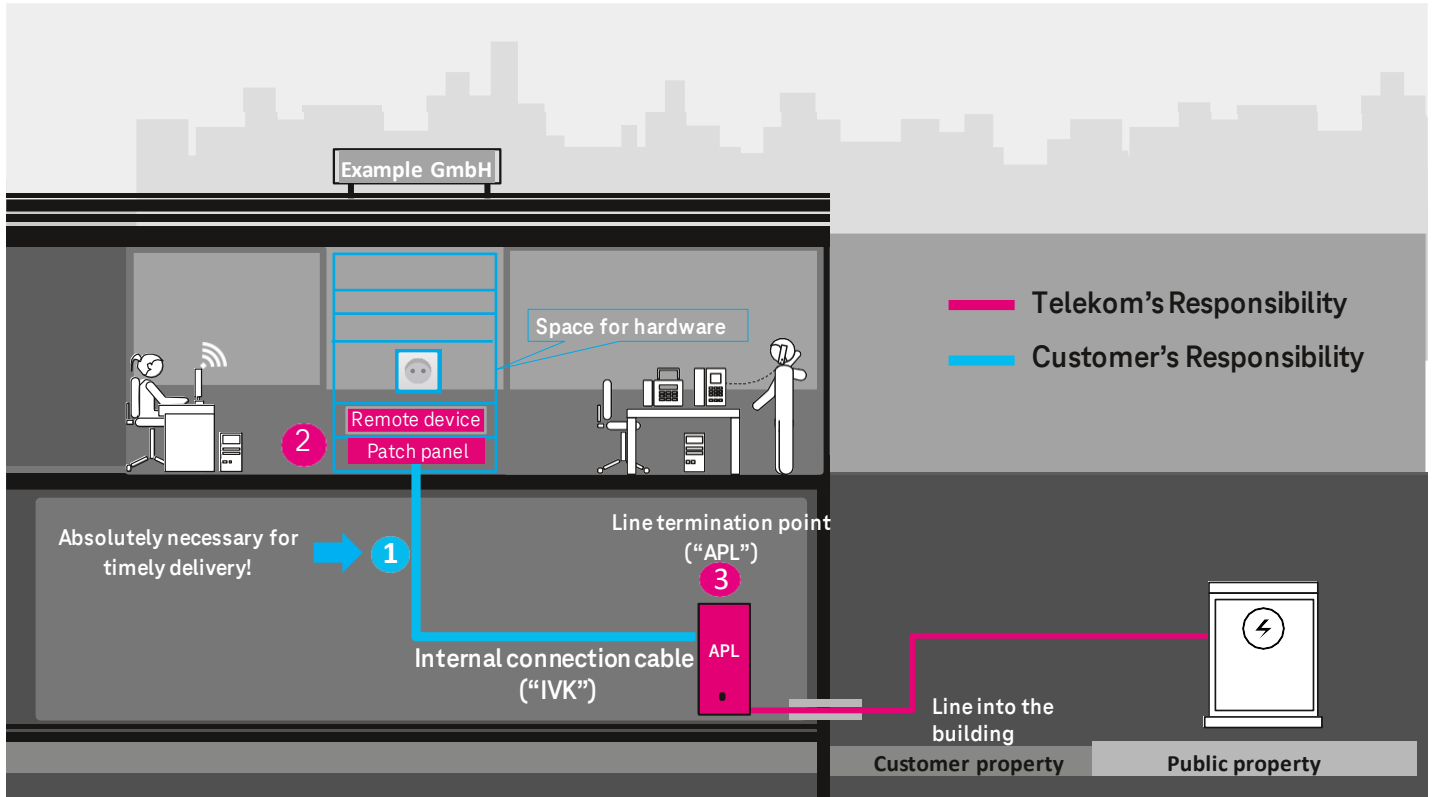


Image 1: Connection between line termination point ("APL") and remote device (RD).

a) Internal connection cable ("IVK") 1

We will hand over your connection to you on a Remote Device (RD) 2. This will usually be in a different location from the Telekom line termination point ("APL") 3. Therefore, an **internal connection cable ("IVK")** 1 must be used to establish a connection between the remote device and the glass/copper termination point. You have to **install or draw in** this internal connection cable yourself in a manner suitable for the ordered product (glass/copper), and it is your responsibility. Please ensure that the conditions specified below (free capacity and technical specifications) are fulfilled according to the medium.

According to the "Rules for standard installation" (Document only in German available [„Regeln für die Standardinstallation“](#)), the line product includes on-wall mounting for up to 15m of internal connection cable, including a maximum of one wall or one ceiling break, but without opening and closing the fire partitions. However, more extensive measures are often required; if so, it is up to you as the customer to install the IVK in due time.

If your rooms / your building are rented, please remember to get any necessary permissions from the owner / landlord and to settle matters of the implementation with them prior to the installation.

IVK for optical fiber lines

Lines with symmetrical speeds greater than 20 Mbit/s always use an optical fiber cable. The internal connection cable ("IVK") for optical fiber lines 1 between the APL and remote device **require two free single-mode optical fibers**, that **at least** meet the ITU-T G.652.D standard. Multi-mode optical fiber cables that are common in in-house areas cannot be used.

IVK for copper lines

Lines with speeds of up to 20 Mbit/s mostly use copper cables, and only in rare cases use optical fibers. The internal connection cable ("IVK") for copper cables 1 between the APL and the remote device **requires up to 8 available copper cores**. At least one CAT-3 copper cable must be used. However, if **new cabling is to be installed**, we recommend **CAT-5 or higher**.

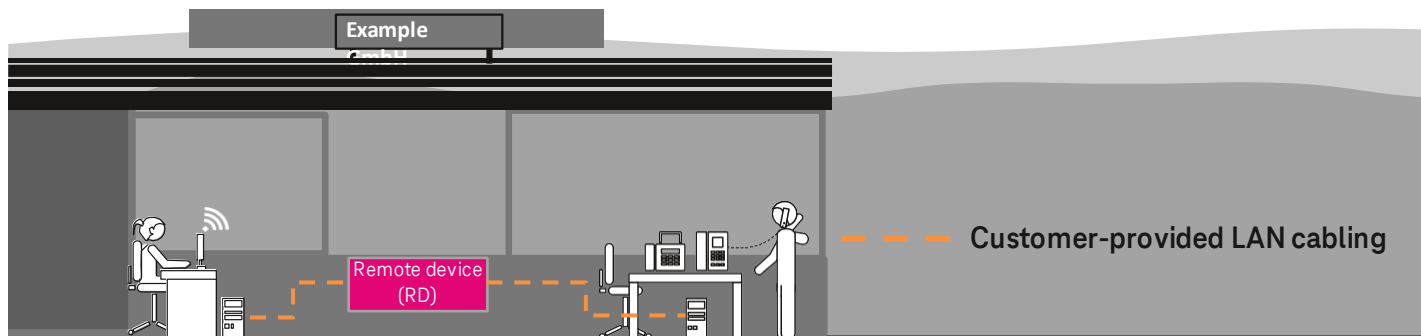


Image 2: Connection between the remote device (RD) and the customer's Local Area Network (physical interface)

b) Interface to your Local Area Network (LAN)

The physical **interface** between **your LAN** and the remote device (RD) must match. To assist you, we have put together an overview of the possible interfaces for you below. This information is already necessary when you make an **order with customer-provided interfaces/port**.

Important: Changes to your order after it has been submitted will delay the provision of your line.

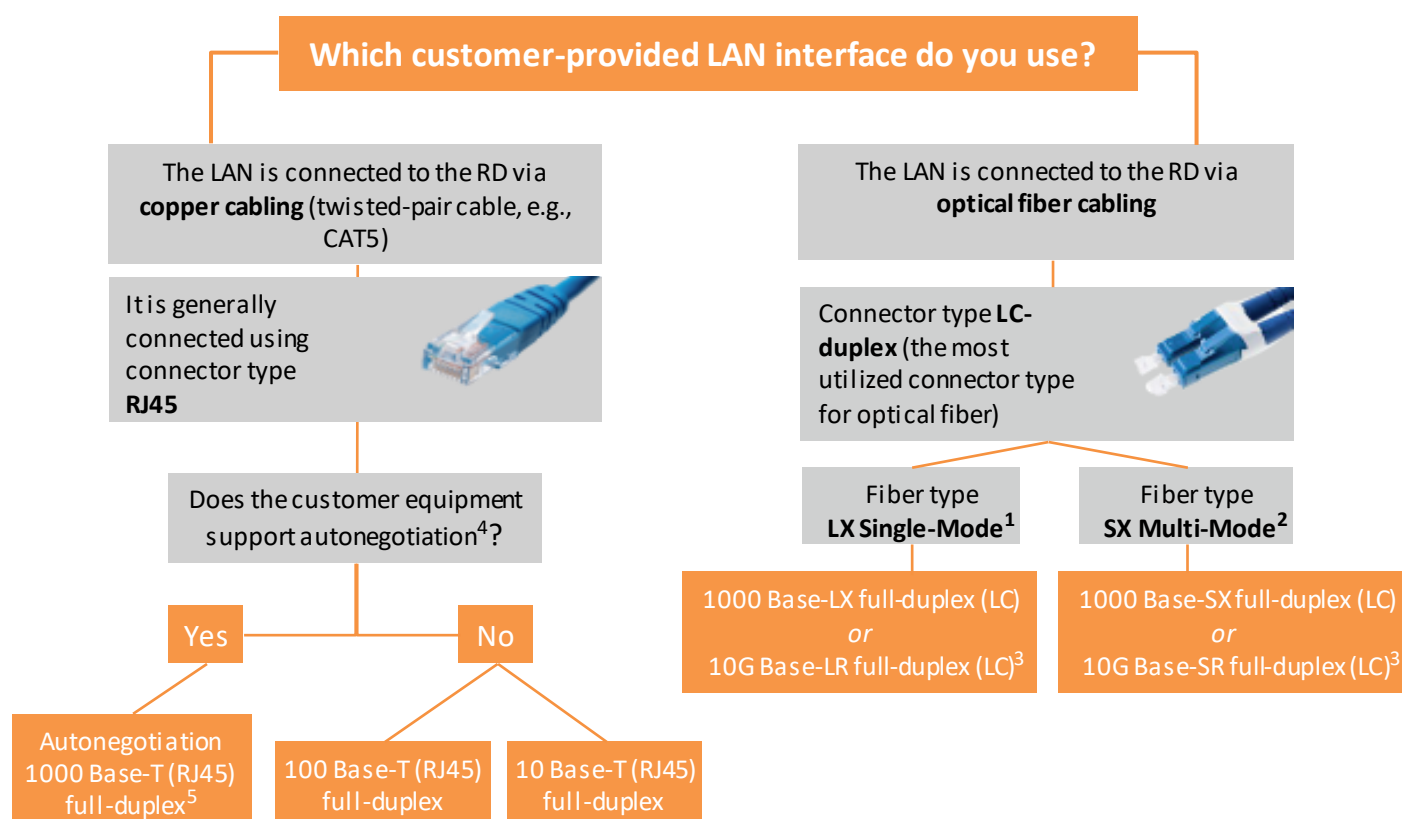


Image 3: Available LAN port types

- 1) LX Single-mode: long wavelength. Range approx. 5 km at 1000 Mbit/s and approx. 10 km at 10 Gbit/s. Used mostly on extensive company premises.
- 2) SX Multi-Mode: Short wavelength. Range approx. 500 m at 1000 Mbit/s and approx. 300-400 m at 10 Gbit/s. The most commonly deployed fiber type.
- 3) For 10G LAN interfaces, a UNI-10G port must be selected configuration-wise on the RD
- 4) Autonegotiation = automatic selection of the right port speed
- 5) The 1000 Base-T interface (copper with RJ-45 socket) is always technically implemented with autonegotiation.

Note: Adapters to convert from Lucent Connector duplex connectors to the older SC/PC connector standard are available on the open market (e.g., FO patch cable single mode, LC/APC-SC/APC; length 0.5 m for < 10 euros).

Your obligatory role in detail

Please understand that we cannot carry out your order and set up the line as scheduled without your cooperation.

During the **scheduling talks**, we will contact your technical contact person to coordinate the provision date and to clarify outstanding issues associated with your role. At this point, your technical contact person must be **capable of providing information** about the requirements listed below. Afterwards, we will confirm the specific provision date in writing with the order confirmation.

If you are unable to comply with the cooperation obligations listed below in due time, please inform us immediately. You can find our contact information in the order confirmation.

These requirements must be fulfilled:

- The **Telekom line termination point (“APL”) in your building must be easily accessible**. If there are any particular admission restrictions for your site, please let us know, e.g., when we speak to you to arrange the initial provision date.
- If structural changes in/to the building or excavation work on your land are required in order to install the line, you must obtain **permission for this from the building or land owner**. If the **fire protection bulkheads** are affected by the building work, the building owner will be **fully responsible for opening and reclosing them**. The building owner is responsible for the fire load and fire partitions in the building.
- The room in which the remote device is to be installed must be **accessible, dust-free, and dry three weeks before the installation**.
- The required **internal connection cable (“IVK”)** must be available in sufficient capacity **three weeks before delivering** and must comply with the technical specifications (connectors are not required on the cables). According to the “Rules for standard installation” (Document only in German available [„Regeln für die Standardinstallation“](#)), the line product includes on-wall mounting for up to 15m of inner cabling, including a maximum of one wall or one ceiling break, but **without** opening and closing the fire partitions.
- Please ensure you have the **required free space available in the rack or free installation space on the table for the remote device (RD)**. **Three connected rack units (“HE”)** are required for each line when installed in a rack. The copper or optical fiber line must be terminated in the same racks. Air conditioning: Indoor in temperature range from - 5°C to + 55°C.
- Enough free power outlets to supply power within the hardware's range are also required. You can supply power (according to the order) via **230 V (Schuko plug)** or **48 V**. For the 48 V DC power supply variant, please follow the information in the following information sheet “Rules for providing a 48 V DC connection to remote devices (RD)” (Document only in German available [„Regeln für die 48V Gleichstrom Anschaltung von Remote Devices \(RD\)“](#)).
- Please remember to inform **any contact persons** (e.g., in-house technicians, contact persons for the in-house network) about the installation date.

Other preparations (in case of outdoor housing or telehouse)

- When provisioning transmission paths in customer-owned **outdoor multifunction enclosures (“MFG”)**, please follow the information in the “Rules for installing and connecting a remote device with a 48 V DC power supply in a customer-owned outdoor multifunction enclosure.” (Document only in German available [„Merkblatt zur Montage und Anschluss eines Remote Devices mit 48 V DC Stromversorgung im kundeneigenen Outdoor-Multifunktionsgehäuse“](#)).
- If your site is in a **telehouse (data center)**, you must ask your **telehouse operator for an in-house patch and an access permit for our technician** so that they can carry out the necessary work in your installation rack. To request an in-house patch from your telehouse operator, you need the switching point in the Telekom line termination point (“APL”) from us. We will notify you of this in our **patch form** in a timely manner. On the patch form, we will also specify exactly how much space is needed. You must then complete the patch form with the necessary data and return it to Deutsche Telekom so that we can continue processing your order.

Other information:

- Expect a line service interruption, if you are **changing product** from an existing line to a new product.
- For **additional components on your end**, you must also have additional, free power sockets and the required space.

Thank you for your cooperation!



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