# VISOCALL IP Planning & Installation

The configuration of communication systems as well as the installation, commissioning and maintenance of the products (and the systems built with them) require special expertise and may therefore only be performed by trained specialist personnel.

For the detailed planning of the VISOCALL IP system, please refer to the technical documentation in the latest edition and the country-specific regulations and guidelines for the planning and installation of call systems.

## Future-proof through IP technology

**The increasing demands of a modern hospital require intelligent solutions for planning, implementation and future expansion. Conventional systems no longer meet these requirements in terms of functionality and life-cycle costs. System integration with mature IP technology creates new possibilities:**

- A powerful network for a wide variety of services and functions avoids a large number of individual installations, cabling expenditure and investment costs.
- System integration offers higher availability and reduced maintenance and operating costs over the entire system life.
- Simple data exchange using the Internet protocol overcomes conventional barriers and enables the smooth interconnection of various trades.

- Nurse call
- Telephony
- Voice communication between patient and staff
- Announcements
- Provision of media content (radio, TV, video streaming, Internet, intranet)
- Control of light, blinds, TV
- Logging care data
- Cost accounting
- Connection of external systems (DECT, alarm server, fire alarm system, disorientation protection, ELA systems)
- Information from external devices (medical devices, sensor mats etc.) Cost-effective for installation and operation

**Cost-effective for installation and operation**

- Secure, modular and expandable system structure offers planning freedom for all functions and services in the nursing sector
- Plug & Play modules reduce commissioning and maintenance costs
- Durable and low-maintenance products

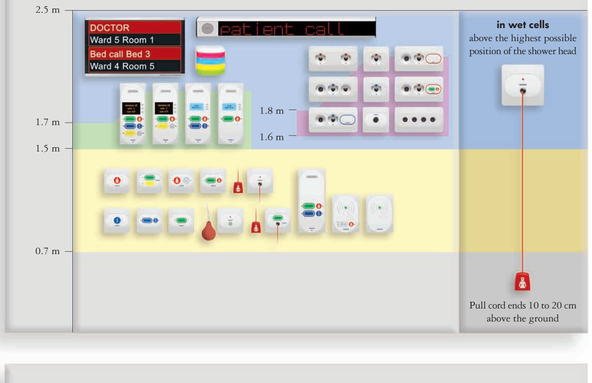
**For all forms of organization in healthcare**

- Suitable for centralized, decentralized and mixed organizational forms
- Care organization across ward boundaries
- Call prioritization for fast and targeted response (emergency calls, heart alarm, etc.)
- Large selection of devices for exact adaptation to the care needs
- Intuitively operable devices for staff and patients

**Reliable, compliant with standards and safe**

- Highest reliability due to decentralized, intelligent modules
- Redundant structures for uninterrupted system availability
- Clear prioritization of network services by means of quality of service
- Permanent and automatic function control
- VISOCALL IP is certified according to VDE 0834 and thus meets the highest requirements with regard to safety and reliability

## Installation height




## System limits

**In general:**
- max. 75 wards
- max. 130 rooms per ward
- max. 16 beds per room
- max. 6 SW19 per cascade
- max. 8 sum criteria per SW19
- max. 2,000 IP components to one Management Center
- max. 1,000 IP components to one Logical Delivery Point

**IP components:**
- max. 100 m cable from uplink
- max. 100 m cable to KMT / DZT
- max. 60 m cable to ST-TOUCH
- max. 60 m to connection module / PAT
- max. 7 PAT per SW19

**Staff Mobile:**
- max. 20 Staff Mobile per ward
- max. 750 Staff Mobile per system

**IO-Bus:**
- max. 20 rooms without speech per SW19
- max. 1,200 m cable length
- max. 127 participants
- max. 500 mA per IO-Bus

**Basic components:**
- max. 50 m cable length to basic components

## Software



**Staff Terminal & Staff Mobile**
The VISOCALL IP Staff Terminal is used for the central query and processing of calls. The operation is carried out via a 7 inch touch screen with clearly structured, intuitive menu navigation, pictograms and plain text information. With the Staff Mobile, these functions are also available for mobile use.



**Control panel**
The ward and/or central control panel ensures a clear and simple PC-supported display and operation of the VISOCALL IP system. The graphic interface provides clear ward plans, interactive room buttons, event lists and context-related control buttons. It thus provides a clear overview at any time of the events occurring in the respective ward.

**Event database**
The VISOCALL IP event database supports the care documentation.
All calls, presence of personnel and system events are recorded with time, date and corresponding information about the ward and the room name.
The database can be searched for events depending on a time period and/or a location, whereby the display and evaluation of the server-side stored data takes place via a web browser.

**System Monitor**
The VISOCALL IP System Monitor is used for building service departments to evaluate system changes and fault memories or to display system faults. It has password-protected access and can manage several VISOCALL IP systems.

**Audio Manager**
The VISOCALL IP Audio Manager enables targeted announcements, voice prompts or calls to patients and staff. By assigning inputs, audio content can be sent to predefined wards and general announcements can be controlled by external systems.

**Patient Management**
VISOCALL IP Patient Management is used to collect, display and print important patient data, which should be displayed immediately on the screen when a phone call is received. The patient data is required for the entries in the event database, but can also be used optionally, e.g. for the recording and billing of fee data or for the detailed display of alarms from the RTLS system.

**SecoCareASSIST**
The service call button on the patient terminals can be converted into a function key: After pressing the button, a menu appears in the display showing the configured additional call types (e.g. request for service and auxiliary personnel, bed cleaning, etc.).

## Networking

### Interfaces to other systems

### Layer 2 network

VISOCALL IP's own or customer-provided network structure – all VISOCALL IP components are located in the same network.

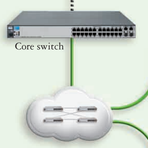



### VISOCALL IP system components

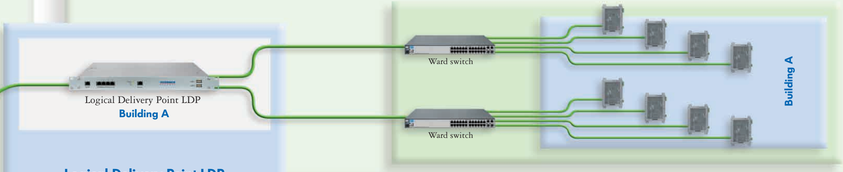



### Layer 3 network

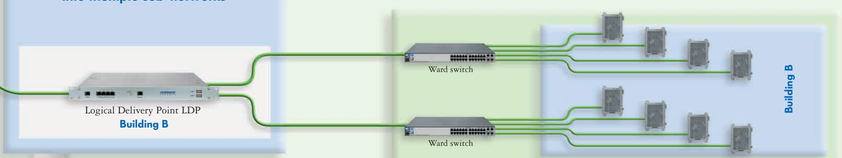
The VISOCALL IP components are located in separate networks.




### Layer 2 network ①




**Logical Delivery Point LDP Segments VISOCALL IP networks into multiple sub-networks**




### Layer 2 network ②

### VISOCALL IP system components with LDP

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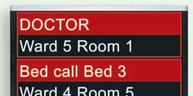
VISOCALL IP

# IP components

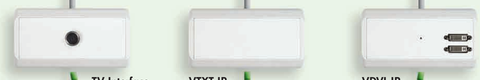
- Control panel
- Event database
- VISOTAX IP
- SecoCareDATA
- Audio Manager
- System monitor
- Patient management
- SecoCareASSIST

**Text terminal**
For clear displaying of VISOCALL IP events – with built-in loudspeaker for announcements.

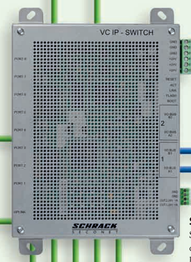
**TV sets**
For room-by-room or bed-by-bed television with operation via patient terminal.




**Text display**
For displaying VISOCALL IP events on large screens.



**Multimedia Terminal, IP-TV, Internet**
For bed-by-bed patient entertainment (TV, radio and Internet), menu orders, interactive patient surveys and much more.




Ward switch

- max. 8 IP ports
- max. 2 IO-Bus
- max. 4 multimedia terminals per SWI9

**MS4-I**
Multi Sound Interface as interface to external audio systems.

External audio system

**SWI9**
System switch as a decentralized communication node for data exchange between the system devices.

- IP ports for connecting IP-enabled system devices
- Interfaces for the connection of IO-Bus devices
- 24V outputs for additional power supply of system devices
- Designed for redundant operation

**SM-S**
Connection module for connecting staff terminal and patient terminals.

**ST-TOUCH**
Staff Terminal as a central communication and information center for staff within a ward.

- Integrated VoIP telephone
- 7 inch colour touch screen
- Overview of all events
- Intuitive operation
- Icons for faster overview of upcoming events
- Interactive screen content
- Direct selection of communication and patient terminals
- Also suitable for wall mounting

**KMT**

**KMT-L**

Communication terminals with optical and acoustic call forwarding for all rooms of the ward in which a speech connection for the staff is required.
The KMT and KMT-L Communication Terminals have a fully graphic display, as well as call, presence and function keys (radio, timer function, etc.).

**ICT-IP**
Intercom Terminal in stainless steel design for use as door intercom.

**SM**
Connection module for connecting staff terminal, patient terminals, diagnostic devices, radio receivers or diagnostic adapters.

**SM-MMC**
Connection module for connecting patient terminals, diagnostic devices, radio receivers or diagnostic adapters.

**DM1-IP**
Diagnostic module for room-by-room connection of diagnostic devices, radio receivers or diagnostic adapters.

**AD-DIA**
Diagnostic adapter for integration of third-party products, e.g. foot mats etc.

| Functions of Patient terminals | PAT | PAT-E | PAT-L | BT-IP |
|---|---|---|---|---|
| Nurse call with reassurance and locating light | • | • | • | • |
| Room and reading light control (optional KNX) | • | • | • | • |
| Housing and keyboard in fungicidal design | • | • | • | • |
| IntelliFIX self-disconnecting plug | • | • | • | • |
| Nurse call with communication possibility | • | • | • | |
| LC display with position alignment | • | • | • | |
| Headphone socket | • | • | | |
| Service call with communication possibility | • | • | | |
| Radio function | • | • | | |
| Channel selection and volume control for system TV | • | • | | |
| Integrated IP phone | • | • | | |
| SecoCareDATA | • | • | | |
| SecoCareASSIST | • | • | | |
| Blind control (optional KNX) | • | • | | |
| IR reception for integration of environmental control devices | • | • | | |
| Automatic volume switching | • | • | | |
| Menu-driven operator guidance | • | • | | |
| Numeric keypad | • | | | |

# IO-Bus components

System devices such as call and cancel buttons, light modules etc. are connected to the SWI9 system switch and thus to the VISOCALL IP network via the IO-data bus.

- max. 20 rooms without speech per SWI9
- max. 1,200 m cable length
- max. 127 participants per IO-Bus
- max. 500 mA per IO-Bus

**RT-IO**
Call button with integrated finder / reassurance light.



**AWT-IO**
Presence button with two buttons (green and yellow) with control LEDs.

**ART-IO**
Doctor call button with integrated finder / reassurance light.

**ARAT-P-IO**
Doctor call and cancel button with integrated finder / reassurance light and piezo buzzer.

**SRT-IO**
Call and service call button with integrated finder / reassurance light, nurse call button and service call button with control LEDs.

**ZTB-IO**
Pull button with integrated finder / reassurance light and 2 m pull cord.

**PT-IO**
Pneumatic call button with integrated finder / reassurance light, 2 m pneumatic hose and pressure ball.

**ZRAT-IO**
Pull and cancel button with integrated finder / reassurance light and 2 m pull cord.

**AT-IO**
Cancel button with control LED.

**RATB-IO**
Call and cancel button with integrated finder / reassurance light.

**RAT-P-IO**
Call and cancel button with integrated finder / reassurance light and piezo buzzer.

**SSR-IO**
Latching relay for direct connection of up to 2 independent light sources (e.g. room light and reading light). Operation by means of PAT, PAT-E, PAT-L, BT-IP and BT-B.

**IO-M**
Input/output module as bidirectional and potential-free interface to external devices. VISOCALL IP events can thus be forwarded to other systems or taken over by other systems.

**IO-M-P**
Input/output module as bidirectional interface to external devices with three potential-bearing inputs and three potential-free outputs. VISOCALL IP events can thus be forwarded to other systems or taken over by other systems.

**ZTD-B**
Room terminal with optical and acoustic call forwarding for all rooms of the ward in which no speech connection is required for the staff. It has call, presence and function buttons (display brightness / contrast, volume) and is suitable for connecting up to 5 basic components.

**ZTD-B-L**
Room terminal with optical and acoustic call forwarding for all rooms of the ward in which no speech connection is required for the staff. It has a call and presence button, function keys (display brightness / contrast, volume) and is suitable for connecting up to 5 basic components.

**ZT-B**
Room terminal with optical and acoustic call forwarding for all rooms of the ward in which no speech connection is required for the staff. It has call and presence keys and is suitable for connecting up to 5 basic components.

**ZE-B**
Control electronics with integrated circuit board for expanding the functions of individual rooms, suitable for installation in electrical distributors, cavity ceilings etc. and for connecting of up to 5 basic components.

**SM-B**
Connection module with call and presence button with integrated finder / reassurance light for connecting BT-B push buttons, diagnostic devices, radio receivers with power supply unit (with disconnection call). Suitable for connecting up to 4 basic components.

**SMU-B ****
Connection module with call and presence button with finder / reassurance light for connecting BT-B push buttons, diagnostic devices, radio receivers or AD-DIA (with disconnection call).

**DMU-IO ****
Diagnostic module for connecting diagnostic devices, a radio receiver or AD-DIA (with disconnection call).

**DM-IO**
Diagnostic module for connecting 4 diagnostic devices or a radio receiver with power supply unit (with disconnection call).

**RFID-IO**
Card reader for setting the presence in the patient's room – can be used in combination with communication or room terminals.

**RFID-IO-FRT**
Card reader for setting presences in the patient room with function key, call key and control LEDs.

**LM-IO**
Lamp module, visible from afar for visual signalling of information, configurable as a room, direction, care group or ward lamp.

** These components require an additional power supply from the SWI9 system switch or from the system power supply unit

# Basic components

**SM2-B**
Connection module for connection of 2 BT-B push buttons.

**SM1-B-S**
Connection module for connecting a BT-B push button.

**BT-B**
Push button with 2 call buttons, integrated finder / reassurance light and two light buttons.

max. 50 m to basic components

**SM1-B**
Connection module for connecting a BT-B push button and a diagnostic device.

**RT-B**
Call button with integrated finder / reassurance light.

**Medical devices**
with galvanic isolation according to EN 60601-1 (e.g. infusion pumps etc.)

**ZRTB-B**
Pull switch with integrated finder / reassurance light and 2 m pull cord.

**PT-B**
Pneumatic call button with integrated finder / reassurance light, 2 m pneumatic hose and pressure ball.

**AT-B**
Cancel button with control LED.

**ZRAT-B**
Pull and cancel button with integrated finder / reassurance light and 2 m pull cord.

**ART-B**
Doctor call button with integrated finder / reassurance light.

**RATB-B**
Call and cancel button with integrated finder / reassurance light.

**LM-B ****
Lamp module, visible from afar for visual signalling of information, configurable as a room lamp.

**SMF-B ****
Radio connection module for connecting a radio receiver with automatic input monitoring and independent call triggering.

# Radio components

**VR6-5**
Wireless receiver, can be connected to SM, SM-MMC, DM1-IP, DMU-IO, SMU-B.

**VR6-5 DIN-NT**
Wireless receiver with power supply unit (safe isolation according to DIN 60601-1 / 2xMOPP), for connection to all connection and diagnostic modules.

**PS 3**
Large-scale wireless pneumatic transmitter with battery monitoring and protection class IP 44.

**F-PS-869**
Wireless pneumatic ball button for wall mounting with control LED, battery monitoring and protection class IP 66.

**F-ZS-869**
Wireless pull button with approx. 2 m pull cord, control LED, battery monitoring and protection class IP 68.

**F-VMS-869**
Wireless combi-transmitter with call button, battery monitoring and control LED with protection class IP 68 in plastic housing with elastic wrist strap and neck cord.

**F-RTS-869**
Wireless call button with control LED, battery monitoring and protection class IP 68.

**A01T-L869 und B01T-L869**
Pressure-sensitive CareMat sensor mat with integrated radio transmitter and battery monitoring as bed mat for patients in need of care (110 x 70 or 70 x 40 cm).

**F-MP-869**
Wireless cushion with highly sensitive pressure sensors, battery monitoring and protection class IP 30.