



## COMMUNICATION SOLUTION

The comprehensive, modular communications (rack) system

### **elmeg hybrid 600**

- IP-based voice system for complex solutions
- Highly flexible modular configuration
- Universal range of interfaces
- Solution orientated - integrated voice applications
- Configuration Interface - individual user portal
- Management via WEB browser for administrators
- Rack system for up to 120 users



## elmeg hybrid 600

### The comprehensive, modular communications (rack) system

The modular hybrid 600 voice and data rack system provides IP functionality and 6+2 slots for FXS, UP0/S0 and FXO modules. Licenses for 20 terminals, 2 SIP channels, 5 SIP clients are included.

#### hybird Systems

The elmeg hybrid systems are the first fully-migrated products that were developed based on a standard software (SW) platform. This SW platform combines the core competences of both the elmeg PABX and the bintec router/gateway products. hybrid stands for the seamless migration of future IP technology with "conventional" technology and supports the appropriate standards (internal and external SIP).

The elmeg hybrid systems were developed as pure IP-PABX with the possibility of using hybrid technologies via an extremely flexible module concept. Investment security was of particular importance during the development; i.e. reusing existing infrastructure and equipment such as telephones for example (2nd and 4th existing system telephones via a new SW release), external applications etc.

The systems does not have fixed TDM ports; meaning therefore that the basic configuration is a pure IP system. A number of interfaces are fixed to the motherboard: 2 x V.24 (1 x for service, 1 x for call data output), 1 SD card slot, 2 contacts, 4+1 Ethernet interfaces and 1 reset key.

In delivery status the hybrid 600 licenses for 20 terminals, 2 SIP channels and 5 SIP clients are included.

#### Connectors

hybird 600 rack version supports up to 120 extensions and offers 6 module slots. 4 different modules are available for these slots: Modules 8FXS / 16FXS with 8 / 16 analogue extensions, Module 4S/U+4U with 4 switchable and 4 fixed digital interfaces. The 4 switchable interfaces can be operated in S0 internal / S0 external / Up0 modes, and the 4 fixed interfaces are operated in the fixed Up0 mode. On the other hand the Module 4S/U+6FXS implements 4 variable digital interfaces combined with 6 analogue connectors. All extension modules can be optionally equipped with RJ45 plugs or terminal blocks.

In order to ensure future security levels, separate option module slots are available: With respect to media transfer, i.e. the connection from "traditional" technology to IP telephones or to SIP providers, the elmeg hybrid can be upgraded if required by a further 2 powerful DSP modules that provide parallel usable media transfers. Two further special module slots are provided for the operation of analogue exchange lines. The Module 4FXO offers 4 ports for the connection of analog exchange lines.

#### Management

Management of the hybrid is done through the FCI (Configuration Interface) via the web browser.

The setting of important functions via the various individual user portals can be selected personally by the user; the administrator is therefore not required. Individual portals are also available for the various integrated applications (call centre, hotel reception, telephone booking system etc). This allows the authorised employee to look after the administration of the various integrated solutions.

## Terminals with system telephony features

The new elmeg S530/560 system telephones are used as digital terminals. This family of terminal devices is perfectly tailored to the feature set of the hybrid systems. Menus provide for excellent usability. The elmeg hybrid assumes centralized management duties for the system telephones. Consequently, the system telephones are configured from the hybrid system. The main configuration parameters are transferred directly to the system telephones. This makes it much easier to configure the system-there is no longer a need to perform configurations directly on the telephone.

As IP system telephones elmeg IP120/IP130/IP140 are used. Here are no SIP-Client licenses at the hybrid system required. There is an automated setup via the hybrid communication system (auto provisioning). This terminals access the central system telephone book of the hybrid via LDAP. Advanced features like BLF keys and MWI signalling are supported.

Safeguarding previous investments was also a high priority in developing the hybrid systems. As a result, existing infrastructure or equipment such as the system telephones elmeg CS290, CS400xt, CS410 or elmeg IP-S290/IP-S400 can continue to be used.

## Integrated hotel application

The integrated hotel application is intended for small and medium-sized hotels and guest houses and is a complete solution with its own admin access.

### The functions are:

- Check in/out: Releasing/blocking of line access authorisation
- Room status (cleaning) can be set via the room telephone
- Printout of call data with itemised billing
- Configurable cost factor for calls
- Information about existing messages on room telephone (MWI)
- Reception telephone with room function keys
- Wake-up to room telephones

## Integrated voice applications

### Mini call center

The mini call center is a dedicated solution with its own administrator access and provides features for a small call center team of up to 16 employees. This solution is ideal for smaller groups within the company with high and varying call volumes such as internal sales, support, order hotlines, order processing, and customer service.

### Features:

- Flexible allocation of lines and agents to the call center Supervisors can make changes on the

- fly (according to call volume)
- Queue management (calls distributed to agents after a break)
- Statistics on lines and agents
- Web portal for administration

### **Voice applications**

The integrated voice applications are based on WAV files and provide a wide range of solutions:

- Auto attendant: with the option of selecting the desired department by entering a number on the keypad after the announcement, or dialing an extension directly
- MoH: customized music is played to callers on hold
- Greeting / announcement: recorded message for the caller, for instance hours of operation

Calendars are used to schedule features and applications to run on specific dates at specific times. There are calendars for the team features (call types), nighttime answering service, door intercom functionality, class of service, etc.

### **TAPI**

The newly developed elmeg hybrid TAPI interface is 64-bit compatible and allows for a wide variety of CTI applications. The compatibility to ESTOS and C4B enables the integration of CTI functions in different applications (Exchange, Outlook, Lotus Notes, Tobit, David, CRM systems etc). All system telephones as well as analogue and ISDN standard terminals can be connected via the "new" TAPI. The interface enables TAPI clients to be connected to the LAN; either with or without using a TAPI server.

#### External applications server

The connection to MS Exchange implements the following unified messaging functions:

- Voice Messaging – access to messages, appointments, contacts and voice messages by voice/tone dialling; any messages in the mailbox are read.
- Voice control – any messages in the mailbox can be controlled using your voice.
- Answering machine – the exchange mailbox can be used as an answering machine.
- Auto Attendant (16 languages) – transfer of calls with possibility to search in address book as well.

### **LDAP**

elmeg hybrid provides an integrated LDAP server. LDAP-capable devices such as standard IP telephones can access the central system telephone book of the hybrid. Accessing the private telephone book of a user is also possible — with username and password protection.

### **Mobility**

To equip employees with cordless telephones, a DECToIP system can be connected to the hybrid using the SIP protocol — without an integrated module. This mobility solution combines two proven technologies: DECT is employed to connect base stations and terminal devices (good radio coverage and voice quality), and IP is used between the DECT base stations and the elmeg

hybird. Radio coverage can be adapted to the site of the installation thanks to the flexibility of positioning base stations and DECT repeaters.

## IP

The hybrid systems can be connected to the LAN via the existing Ethernet interfaces and shall use the existing infrastructural components such as: routers, WLAN access points and application servers. IP system telephones, standard SIP terminals and SIP lines are also connected to the system via the IP infrastructure. It is also possible to integrate offsite extensions and home offices, or to connect a number of sites via the Internet. The hybrid systems implement the transmission of faxes in accordance with the T.38 protocol.

## Variants

|                                      |   |
|--------------------------------------|---|
| <b>elmeg hybrid 600</b> (5510000185) | Rack system, int. version: system telephony, 6+2 slots for FXS/S0/Up0/FXO, integr. IP Gateway, TAPI, hotel, mini call center, voice applications, VoIP ready, license for 20xterminals/2xSIP channels/5xSIP clients |
|--------------------------------------|---|

## Features

| <b>Hardware - modular expansions</b> |   |
|--------------------------------------|---|
| Expansion slots                      | 6 module slots for expansion modules for extensions/lines   |
| Modules for expansion slots          | Module 4SU+4U with 8 digital interfaces (IF), Module 4SU+6FXS with 4 digital extension/line IFs and 6 analogue extension IFs, Module 8FXS with 8 analogue extension IFs, Module 16 FXS with 16 analogue extension IFs |
| Special slots for FXO                | 2 special slots for separate use of line modules  |
| Modules for special slots            | Intended for module 4FXO with 4 analogue exchanges  |
| DSP special slots                    | 2 special slots to be used by DSP modules for media transfers from IP to TDM  |
| Modules for DSP special slots        | Module DSP 4 with 4 channels, module DSP 8 with 8 channels, module DSP 32 with 32 channels  |
| Modules for overvoltage protection   | Module FSM for use on each extension/line module per port to identify any overvoltages  |

| <b>Hardware - Basic configuration</b>             |  |
|---|--|
| Serial 1 - Interface for console (support)        | Service interface for direct access to system console                      |
| Serial 2 - Interface for PC or serial printer/API | Application interface for hotel API, printout of charges on serial printer |
| Contacts  | 2 x NO switches, activated by entering code internally/externally          |

## Hardware - Basic configuration

|                                    |  |
|------------------------------------|--|
| Module - Log off key (maintenance) | To log (or switch) the modules off from the 6 slots (not within rel. 1)                          |
| Media transfers (TDM - IP)         | 5 DSP channels on board, codecs: G.711, G.722, G.729, G.726                                      |
| Reset key/factory settings         | Restart or reset to ex works state   |
| Status LEDs                        | Display of operational states  |
| SD card slot                       | Used for a SD memory card SD 1.0, 1.1, 2.0 (SDHC) to store messages, announcements, charges etc. |
| 12 V voltage                       | To control a 2nd alarm etc, Load: 12 V, 300 mA   |
| Module power supply (mains unit)   | Up to 2 modules (module 1 for slots 1-3 in the scope of supply, module 2 optional for slots 4-6) |
| LAN interfaces                     | 4+1: WAN, DMZ configurable via SW  |
| Switch                             | 10/100/1000 Mbit/s, auto sensing   |
| Fans                               | 2 fans, 1st fan linked to mains unit 1; 2nd fan linked to mains unit 2                           |

## Technical data

|                         |   |
|-------------------------|---|
| Dimensions              | 440 x 88 x 293 mm   |
| Housing                 | Metal rack housing, 2 height units, screw-on metal brackets, connectors on the front side   |
| Power supply            | 230 V   |
| Power consumption       | At rest: 12 W, active: 80 W (modules: 6 x 16 FXS - 50% load, 48 calls in progress)  |
| Weight                  | 5.2 kg without packaging and accessories  |
| Operating conditions    | Operating temperature: +5° C to +40° C; storage: -20°C to +70°C; relative humidity: max. 85 % non-condensing, dry rooms, dust-free                    |
| Standards and approvals | R&TTE Directive 1999/5/EC; EN 60950-1; EN 55022; EN 555024  |
| FXS traffic load (1)    | The FXS modules are designed for a long-term traffic load of 30 - 50% of the connected terminals.   |
| FXS traffic load (2)    | If this value is exceeded over a long period then this causes the modules to heat up. At 80°C the affected module is switched off for safety reasons. |

## Content of Delivery

|                                    |                                     |
|------------------------------------|-------------------------------------|
| LAN cable, CAT.5                   | 2 parts per 3m                      |
| Network cable                      | 1 x 1.5m with IEC connector         |
| Installation and mounting material | 2 brackets, terminal blocks, screws |
| Documentation                      | Brief start-up procedure manual     |
| Data storage devices               | SW, documentation, brochure etc.    |

## Max. system values

## Max. system values

|                                   |  |
|-----------------------------------|--|
| Max. number of ISDN S0 connectors | Total: max. 24; external: max. 24; internal: 24 for the connector of S0 standard telephones or system telephones |
| Up0 connectors                    | Max. 48 Up0 connectors for max. 48 U-SysTels (when using S0 output - additional 48 S0 SysTels)                   |
| IP telephones (IP-SysTels)        | Max. 120 IP system telephones  |
| Internal analogue connectors      | For the operation of max. 96 analogue terminals  |
| Door terminals                    | Max. 4 door terminals  |
| SIP provider (VoIP)               | Max. 25 SIP providers  |
| External SIP channels             | Max. 2 to 65 SIP channels (license model)  |
| Media transfers (TDM - IP)        | Max. 64, modules equipped with 4/8/32 channels, as well as 5 DSP channels on Board.                              |
| Standard IP telephones (SIP)      | 5 to 125, 5 per standard licence, can then be extended in increments of 10                                       |
| Calendars/switching points        | Max. 20 calendars can be set for all types per max. 10 switching points.   |
| User                              | Max. number of users: 120  |

## Maintenance

|                    |   |
|--------------------|---|
| Web browser access | Access over ISDN: Configuration, SW update, system status, readout of important system data, tracing, fault diagnosis |
| ISDN Login         | Telnet (console) access, access to diagnostic memory, traces  |

## Quality of Service (QoS)

|                 |   |
|-----------------|---|
| Liability       | 2 year manufacturer guarantee including advance replacement |
| Software update | SW system, SW management etc.                               |

## PABX functions

|   |  |
|---|--|
| Alphanumeric central phonebook                | 1000 entries in phonebook, individual authorisation for phonebook access, import/export possibility, name display on phonebook   |
| Analogue ports - internal                     | To connect analogue terminals: MFC dialling method, adjustable flash times, setting as: phone/fax/modem/answ.machine/combo device, name display on phonebook for (CNIP/CNIR), transfer of phone numbers to internal analogue ports (CLIP, CLIP off Hook) |
| Internal call waiting                         | Call waiting is signalled by a call waiting tone on FXS ports. Possible procedures: ignore call waiting (timeout after 30 secs), accept directly, accept through hold for enquiry, reject  |
| Call waiting protection                       | The call waiting protection is configurable per FXS extension (Ext.) as well as via Class of Service (CoS); the ext. is implemented in the terminal for ISDN extensions.   |
| Do not disturb feature for internal ports (1) | The do not disturb feature (at rest) for FXS ports is configurable for a) just internal calls, b) just external calls, or c) internal and external calls;  |
| Do not disturb feature for internal ports (2) | A special dial tone signals that the do not disturb feature is active; it shall however be possible to accept calls whilst in do not disturb mode.   |

| <b>PABX functions</b>   |   |
|---|---|
| Call assignments  | Team and door terminal lists can be automatically switched on via programmable weekly calendars. It shall be possible for an authorised extension to manually switch on   |
| Set up call forwarding remotely                                       | Call forwarding can be remotely carried out in the system.  |
| Call forwarding (CF) immediately/after a period of time/when busy (2) | Set up of call forwarding for internal extensions via user portal as well. The call forwarding set up is also possible with standard telephones via the telephone code procedure; this can also be done externally via the 2nd B channel. |
| Call forwarding during a call (CD - call deflection)                  | Automatic call deflection to PtMP connector if an incoming external call is to be forwarded externally.   |
| Call forwarding during a call (partial rerouting) for PtP             | Automatic execution if a internal extension has set up an external call forwarding. In the event of failure the call forwarding is done via the 2nd B channel.  |
| Release (if dialled incorrectly, or if no answer)                     | Release to a configurable destination in the event of: incomplete DDI (after a period of time); if dialled incorrectly and if all team extensions are logged out etc.   |
| Call assignment   | External calls can be flexibly assigned to extensions, teams or to voice applications as well.  |
| Exchange access right   | The exchange access right can be set at different levels per user: internal, incoming, local, national, unlimited.  |
| Switchable exchange access right                                      | The exchange access right can be controlled via the calendars through appropriate authorisation in the CoS  |
| Automatic outside line  | The automatic outside line is configurable per user; an internal number can therefore be dialled by pressing *  |
| Global exchange access  | The dialling code (typically 0) can be programmed freely.   |
| ARS   | Automatic route selection (LCR) is a dial control with a telephone number-dependent bundle selection. ARS is configurable per extension via the CoS.  |
| Authority matrix (Class of Service)                                   | The CoS contains a list of functions for the user; the CoS can be switched via the calendars/manually.  |
| Bundle formation/division   | Authorisation to assign a bundle is done via the CoS.   |
| Specified bundle assignment   | The bundle assignment can be done via the code on standard terminals or via the bundle key on SysTel.   |
| Call Through (2)  | Cheap tariffs, e.g. when dialling abroad, can therefore be used. When the ARS is switched on, routing is also possible via internal analogue GSM gateways.  |
| Boss/secretary function   | Functional linking of 2 system telephones - routing of calls via call function  |
| CLIP no screening for point-to-points                                 | Sending of call number that does not belong to connector, e.g.: as central call number for call centre. Application to the provider necessary   |
| CLIPO (Calling Line Identification Presentation Override)             | Transmission of suppressed numbers to special connectors (e.g. police)  |
| Data protection for analogue extensions                               | The data protection option prevents call waiting for analogue faxes, modems and door intercoms.   |
| Date/time   | Implemented through clock component, clock software, time servers etc. The clock can be adjusted via FCI, synchronisation with ISDN network time is possible. Automatic changeover to summer/winter time                                  |
| Diagnostic function   | Fault logbook and diagnostic history memory in the system (to be saved to SD card)  |



| <b>PABX functions</b>   |   |
|---|---|
| Direct call   | Automatic call setup after x secs to a preset destination after the receiver is lifted without dialling; can be programmed per user, special dialling tone for active direct calls; adjustable reaction time of 0 - 39 secs can be adjusted centrally |
| Three-party conference call   | Up to 8 three-party conference calls for TDM terminals. Possible procedures during the conference call: Disconnect individual extensions, return to active connections and connections on hold  |
| Announcement/announcement block   | Announcement to system telephone with notification tone for both the calling party and the called party; can be set per extension   |
| Advanced call assignment for point-to-points                              | Additional MSNs (exceptional call numbers) that can be configured centrally for all point-to-points. For non-configured call numbers, the call is released to a configurable global default destination.  |
| Fax connection possibility  | Connection possibility of a fax to analogue or ISDN internal connectors:  |
| Follow me (1)   | Tracing of call diversion of internal extensions via the code procedure; configuration of follow me function externally possible by dialling externally in the PABX (service call number) - protected by PIN2   |
| Follow me (2)   | The remote switching authorisation is set centrally.  |
| Charges (1)   | Transmission both during (AOC-D) and at the end (AOC-E) of the call in units or currency amounts; operation of pay phones at the internal So bus possible   |
| Charges (2)   | Forwarding of charges to internal analogue/digital connectors, charge pulses 12 kHz/16 kHz, charge meter per extension  |
| GSM gateway   | GSM gateways can be switched on on hybrid external ISDN ports. The automatic routing via ARS can be adjusted. The post-dial delay on analogue GSM gateway ports can be configured centrally, the ISDN clock synchronisation can be switched.          |
| Pickup  | Pickup of calls to other extensions: Pickup within a group; group assignment can be programmed per extension.   |
| Pickup specified  | Specified pickup by entering the extension call number; this covers all groups  |
| Pickup of answering machine   | Pickup of a call that has already been answered from an answering machine   |
| ISDN connectors, point-to-multipoint/point-to-point with DDI (also mixed) | In the hybrid both external point-to-points (P-P) as well as point-to-multipoints (P-MP) can be set up.   |
| Calendars (PBX Day/Night, CoS, door terminal, teams) (2)                  | Several different switching times can be selected for each weekday. Exceptions for public holidays can be configured  |
| Changeable codes for important functions                                  | Programmable telephone codes: exchange access, pickup, specified pickup, speeddial number, project number, bundle assignment, open hold for enquiry   |
| Keypad procedures in exchange   | Control of performance features in the exchange, authorisation per extension in the CoS   |
| Speeddial number  | Access to entries in the phone book via a code combined with the respective entry index (000-999)   |
| Layer 2 on exchange connector switched to active non-stop                 | The ISDN Layer 2 is kept active non-stop. Can be configured per exchange connector  |
| Brokering   | Any change between internal and external connections; the respective caller on hold hears MoH.  |
| Save message on SysTel  | Signalling via UUS 1  |
| Name display in the call and in the connection                            | During the call as well as during the connection, the caller's number is displayed (CLIP). If the call number is entered in the phone book, the corresponding name is displayed.  |

| <b>PABX functions</b>   |   |
|---|---|
| Name assignment for connectors, terminals and teams                   | In the configuration, names can be assigned to the individual ports. For internal calls the name is displayed on the terminal. In addition the name is also visible in the PABX menu and in FCI, as well as on the terminal for team calls. |
| Emergency functions with priority circuit (blockade break for ISDN)   | A terminal that is configured as an emergency telephone disconnects an occupied exchange port if it is attempting to use an exchange. Any internal extensions can be configured as emergency telephones.                                    |
| Emergency number storage/emergency telephone/alarm point-to-point (1) | In the hybrid, 10 emergency numbers (up to 20 digits) can be set up. The occupied ISDN exchange is then subject to a blockade break if one of the saved emergency numbers is dialled.   |
| Emergency number storage/emergency telephone/alarm point-to-point (2) | The emergency number dial is, provided that all exchange lines (incl. SIP provider) are occupied, always routed via ISDN (VoIP blocked).  |
| Open hold for enquiry - park in system                                | By using the open hold for enquiry function, the caller is held in the system queue. The call can be transferred to any telephone via the code procedure or with SysTel park keys.  |
| Internal and external room monitoring                                 | Room monitoring via a telephone that has been approved for this and whose receiver has been lifted or whose hands free has been switched on. Room monitoring can also be remotely activated.  |
| Separation of direction   | A fixed exchange/bundle assignment can be configured for each user.   |
| Call number plan  | Flexible internal call number plan can be programmed in a variable manner from 1 to 4 digits  |
| Call number prefix  | The national/international dialling code can be set up centrally.   |
| Call number transmission/suppression                                  | The transmission and suppression of call numbers is implemented in the hybrid via (CLIP/CLIR/COLP/COLR)   |
| Ringing AC voltage (frequency)  | For all FXS ports, the frequency of the ringing AC voltage can be adjusted centrally between 25/50 Hz.  |
| Day/night operation   | Switching to the respective operating status for the entire system  |
| Display extension status data   | The current settings for a particular user can be displayed. Call number (MSN), name, current authorisation class, assigned interfaces, costs   |
| Appointment call/wake-up call   | For telephones in hotel rooms, a wake-up call can be set up by the guest or by reception.   |
| PABX menu   | Access to system functions of system telephone: phone book, follow me, direct call, hotel functions, editing of public holidays in calendars  |
| On-hold queue   | Callers can be switched to on-hold queues and then retrieved by pressing the correct code.  |
| Music on hold   | The MOH to be used for each extension can be configured via Class of Service. Options: no MOH, internal melody 1, internal melody 2, external connector, voice application MOH (external source via jack or WAV file)                       |
| Queue   | The number of calls on-hold for the team can be individually set.   |
| Return call (1)   | A return call shall occur: when put on hold for enquiry, when dialling, when busy, if transferred incorrectly; after a period of time (30 secs). Return call from open hold for enquiry   |
| Return call (2)   | The time for the return call can be adjusted separately for iUBA, busy and open hold for enquiry.   |

## PABX functions

|   |  |
|---|--|
| Dial control (blacklist/whitelist)                    | Up to 30 16-digit blacklist numbers and up to 60 16-digit whitelist numbers can be set up in the system. Assignment to the various extensions is done via the CoS.   |
| Simplex operation/simplex operation block             | Simplex operation is typically only possible with SysTels. By using this function, the called device is switched immediately to hands free mode and the call is accepted. A simplex operation is ended after 2 minutes for security reasons. |
| X.31  | Connection of X.25 Point of Sale terminals (data transmission in D channel) X.31 case B; up to 4 TElS with fixed internal/external allocation can be configured  |
| Central configuration of (system) telephones via PABX | Installation and administration of important system telephone parameters in the hybrid   |

## Security

|                                   |  |
|-----------------------------------|--|
| Admin password                    | Administrator system - access for web configuration  |
| Passwords for application portals | Access for web configuration of integrated solutions: hotel, mini call centre, phone book, call data |
| Password for user portal          | User access to web configuration of individual settings  |
| PIN protection for remote access  | Remote access to the system is protected by a 6-digit programmable PIN2.                             |

## Team functions

|  |   |
|--|---|
| Team function - General (2)  | 16 extensions can be put into one team. Divisible call signalling can be configured for each team. Team call assignments are allocated to each team. The switching on of call assignments can either be done manually or automatically. |
| Release  | For a particular team, a release to another team can be configured.   |
| Call assignments   | 4 call assignments are allocated to each team, these can be switched on either manually or via calendars.   |
| Call forwarding (2)  | It can also be set up whether a call forwarding should be done externally in the VST via call deflection/partial rerouting and should be cancelled if the entire team call is successful.   |
| Call list control (SysTels)  | If an answering machine within the team accepts the call, the call will remain in the call lists for all telephones.  |
| Automatic call acceptance (with parallel signalling within the team) | Team calls can be accepted with MOH; the team extensions are then called in parallel. Once a team extension accepts the call, the connection is made.   |
| Call signalling  | Call signalling can be individually configured for each team: simultaneous, linear, rotating, constructing, parallel after a period of time, uniform call assignment according to average talk time.                                    |
| Team call signalling to internal/external terminals                  | The team call signalling can be done to internal team extensions or to external call numbers. The allocation is done in the call assignments, which can be controlled via the calendars.  |
| Team log in/log off  | Team extensions can log themselves in and out of the team. This is possible for both individual as well as all teams; if all extensions are logged out then a call is released to the default destination.                              |
| Transfer functions   | Transfer functions can be configured for each team: busy options, release options, transfer to busy extensions, automatic release immediately/if busy/if no reply.  |

## Door terminals

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|--|--|
| Door terminals - General (1)           | Door terminals can be switched on on internal FXS ports. For each door terminal, 8 internal extensions or 1 external call nr. (chemist&quot;s circuit) are included in the call signalling each time it is rung. Refer to call signalling in the day/night ser |
| Door terminals - General (2)           | Door terminal authorisations (call door terminal/open door) are done via the CoS. The door terminal switching authorisation (day/night) can be configured for each extension via CoS; door intercom calls can be picked up.                                    |
| Doorbell signalling                    | The signalling time can be programmed for both internal and external use. The monitoring can be switched on or off.  |
| Door terminal external call monitoring | A timer limits the call duration. Can be configured for each door terminal and doorbell  |
| Door terminal call signalling          | The call signalling duration can be adjusted.  |

## Call transfer

|  |   |
|--|---|
| Hold for enquiry                                 | Can be freely executed on all internal or external extensions. Possible functions: Disconnect active connection, disconnect connection on hold, redial. The extension on hold shall hear MoH. |
| Hold for enquiry                                 | Hold for enquiry from an active connection to an internal/external extension. The other extension is held in the system.  |
| Transfer to busy extension                       | A call can be transferred to a busy extension. At the end of the call the connection is made. Automatic return to the original extension after time has expired.                              |
| Exchange to exchange transfer                    | Following the return of an existing exchange connection to the exchange, both external channels can then be interconnected. Not available for FXO   |
| Transfer without advance notice (blind transfer) | Transfer a call by replacing the receiver from the hold for enquiry.  |
| Transfer with advance notice                     | Transfer a call by replacing the receiver from the hold for enquiry after notifying the extension   |
| Transfer (ECT)                                   | Transfer of calls in exchange (if LM available). Can be reached via FCI, although external-external ECT is allowed.   |
| Transfer of active call through call waiting     | Analogue terminals can transfer the incoming call with R5 etc whilst on the call via the code procedure.  |

## Configuration access

|                                   |   |
|-----------------------------------|---|
| Web configuration                 | Configuration access is implemented both locally and remotely via IP: HTTP/HTTPS without signed certificate.                                  |
| Remote configuration via ISDN (1) | Access to the hybrid can be done both remotely as well as via S0. Remote web browsing accessed via external ISDN S0 with X.75 / HTTP protocol |
| Remote configuration via ISDN (2) | Remote access can be enabled for 30 minutes or permanently; access only by dialling with special service configuration management tool        |
| Remote maintenance                | ISDN Login/Telnet access  |
| Firmware download                 | Via IP  |
| DIME Manager support              | The hybrid can also be configured via the DIME Manager.   |
| Management                        | Management via SNMP, SSH  |

## Configuration access

|              |                   |
|--------------|-------------------|
| SNMP browser | Integrated in FCI |
|--------------|-------------------|

## Voice applications

|                            |  |
|----------------------------|--|
| General voice applications | Voice applications are based on WAV files with music, announcements etc. Max. 8 voice applications can be configured as: announcement before query, infobox, wake-up message or MOH; WAV files are stored on the memory card (SD). |
| Announcement/infotext      | A WAV file can inform the caller of any changes to opening hours in the form of an announcement/infotext.  |
| Volume control of files    | The WAV files can be adjusted by a volume control.   |
| Wake-up message            | Wake-up calls for guests can be set up in conjunction with the hotel application.  |
| Music on hold              | Music on hold (MoH) can be configured based on WAV files.  |

## Compilation of call data

|   |   |
|---|---|
| General compilation of call data (1)              | Compilation of records in FLASH with: internal extension no., external call number suppressed/shortened/not shortened), date/time, call duration, currency amount, project number, connector type, exchange line no./MSN/DDI index; |
| General compilation of call data (2)              | can be configured for each extension; storage of incoming calls either generally or only by entering a project number.  |
| Output of records                                 | Available   |
| Storage of records per user can be configured (1) | Possible output of call records on V.24 printer. Output of records in currencies standardised by a ratio of 1/1000; the factor and currency text can be configured.   |
| Storage of records per user can be configured (2) | Shortened numbers are indicated with # character. Printout via V.24 can be switched via PABX menu   |
| Call records in memory                            | 2000 records are held in the memory.  |
| Shortened storage of external call numbers.       | The storage of shortened call numbers (privacy) is possible.  |

## Mobile extensions

|                                 |   |
|---------------------------------|---|
| Mobile extensions - General (1) | Integrated application: parallel signalling of incoming calls to an internal terminal and an external call number (e.g. mobile phone). The assignment can be switched on or off via a code.                     |
| Mobile extensions - General (2) | The parallel call is initiated by directly dialling the internal extension. During the external connection, hold for enquiry and call transfer to hybrid extensions are both possible via DTMF code procedures. |

## TAPI

|                |   |
|----------------|---|
| TAPI - General | TAPI is supported for: TDM and IP system telephones. MS Windows XP, Vista, Win7. Support for 32 bit/64 bit, 1st and 3rd parties via LAN, TAPI authorisation for each extension can be adjusted via Class of Service |
|----------------|---|

## TAPI

|                    |  |
|--------------------|--|
| TAPI functions (1) | Automatic call acceptance via elmeg system telephones, incoming and outgoing calls, call forwarding, hold for enquiry, brokering, call transfer, three-party conference call, call waiting, charge information, call deflection, pickup of calls |
| TAPI functions (2) | Signalling of call forwarding number(s), MSN/DDI signalling, cause signalling, specified pickup, park/unpark   |

## User - configuration portal

|                                     |  |
|-------------------------------------|--|
| User-configuration portal - General | Each user within the system has access to their own telephones and settings. Individual user names/PIN are accessed via the user portal. |
|-------------------------------------|--|

## Application portals

|                               |  |
|-------------------------------|--|
| Application portals - General | For the integrated solutions, i.e. hotel, phone book, mini call centre, call data etc, the individual application portals are available. |
|-------------------------------|--|

## Mini call centre

|                            |  |
|----------------------------|--|
| Mini call centre - General | Integrated solutions for up to 16 agents for small groups that need to communicate both frequently and in a dynamic manner. The administration is done via a separate portal.      |
| Functions                  | Flexible assignment of agents and lines, dynamic customisation depending on call volume, call assignment with idle periods for agents, statistical information on agents and lines |
| Status information (1)     | Different status information is displayed, e.g.: lines and assigned agents, number of agents logged on per line.   |
| Status information (2)     | Agents in post-processing, active calls (active connections), calls on hold, number of calls accepted today, number of missed calls today.   |

## DECT connection

|                              |   |
|------------------------------|---|
| Singlecell/multicell via LAN | As DECToIP system used with existing Ethernet interfaces via SIP protocol |
|------------------------------|---|

## Hotel functions

|  |  |
|--|--|
| Hotel function - General                         | Integrated functions. This is operated from reception telephones via the system menu on the elmeg Hybrid.  |
| Check in/out                                     | A check in/out can be done from the reception telephone (SysTel). Here the room telephone authorisation is switched on and the charges are deleted following notification.                       |
| Call cost output on printer/display in SysTel    | Output of charge meter in PABX menu, output of charge records and total lines via printer (PC) on hybrid V.24 connector. Hotel-specific text headers and trailers can be edited for the printout |
| Hotel charge factor                              | When reading out or printing the call records upon check out via the PABX menu, any call records incurred are then multiplied by the cost conversion factor.                                     |
| Switching hotel MWI from the reception telephone | Generate MWI to internal ISDN and analogue terminals (can be configured via MWI extension flag), along with possible callback function from hotel room.  |

## Hotel functions

|   |   |
|---|---|
| Hotel portal for reception                    | Password protected access to hotel application configuration  |
| Hotel room key (check in/out, status display) | Function key for direct check in/out, room status display   |
| System telephones: Reset personal information | Automatic resetting of automatic redialling, call lists and other personal data when in hotel check in/out, or manually via code programming procedure if extension data/LMs are deleted. |
| Wake-up function                              | A wake-up call can be set up from the guest/reception telephone. The wake-up call is a call that plays music on hold.   |
| Room status setting from telephone            | Not cleaned, cleaned, cleaned and checked   |

## IP & routing functions

|  |  |
|--|--|
| DHCP   | DHCP Client/Server/Proxy for easy configuration of TCP/IP  |
| DNS client   | DNS Server/Proxy/Relay support   |
| Integration into existing LANs                               | Available  |
| IP accounting  | Detailed IP accounting, source, destination, port, interface and packet/bytes counter, transmission also via syslog protocol to syslog server  |
| IP packet filters  | Filters of IP packets with the aid of different criteria such as IP protocols, source/destination of IP address, source/destination of port, TOS/DSCP, Layer 2 priority for each interface can be configured in a different manner |
| NTP Client/Server  | Automatic update of NTP date/time from time server. Internal time server for connected IP terminals.   |
| QoS / TCP Download Rate Control                              | Used to reserve bandwidth for VoIP connections.  |
| Scheduling   | Control of actions as well as time and event-controlled, e.g. such as Reboot Device, Activate/Deactivate Interface, Activate/Deactivate WLAN, Trigger SW Update and Configuration Backup   |
| Stateful Inspection Firewall                                 | Packet filtering depending on the direction with controlling and interpretation of each single connection status   |
| Switch Port Separation                                       | hybird makes it possible to run the switch ports as one interface or to logically separate these from each other and to configure them as independent Ethernet interfaces.   |
| System logging & status information                          | hybird has both logging and status information available   |
| VLAN   | VLAN tagging on IP interfaces can be configured  |
| System interface, sub-system operation via IP                | For the system interface, 2 systems are interconnected via a bidirectional connection - without global performance feature. The sub-system operation represents a single connection from the main system to the sub-system.        |
| Connector to SIP providers                                   | The connector to the SIP providers can be done either via an individual call number or via a DDI.  |
| Connector of standard SIP terminals/IP system telephones (1) | Standard SIP telephony in LAN; telephony via (WAN) SIP providers; general SIP and router settings: SIP RTP port, TOS value (SIP packets), TOS value (RTP packets)  |

## IP & routing functions

|  |  |
|--|--|
| Connector of standard SIP terminals/IP system telephones (2) | System telephony with IP-S290 & IP-S400 (tunnel for ISDN SysTel protocol via RTP), FW download via http; VoIP protocol with the IP SysTels when using compressed codecs  |
| Number of simultaneous SIP connections per provider          | The number of simultaneous SIP connections per provider can be configured.   |
| Offsite extensions   | Offsite extensions can be set up with IP system telephones or SIP telephones.  |
| Bandwidth management with support for multiple locations (1) | Locations can be set up in order to use the bandwidth management. A location is identified with the aid of its fixed IP address or DynDNS address, or by using the interface to which the device is connected.   |
| Bandwidth management with support for multiple locations (2) | The available VoIP bandwidth (upstream and downstream) can then be set up for each location.   |
| Codecs   | Codecs G.711, G.726, G.729, DTMF Inband, DTMF Outband, SIP Info, T.38  |
| Codec profile for locations, SIP providers or IP terminals   | Different codec profiles can be defined in order to influence the voice quality and to establish certain provider-relevant provisions. Codecs can be sorted and offered in accordance with a nr. of different criteria: E.g. acc. to quality, bandwidth etc. |
| Early media connect  | Early media connect connects voice or audio data (e.g.: announcements) before the call was accepted.   |
| Quality of Service   | DSCP header/ToS bit configurable   |
| SIP 2.0  | Conforms to RFC 3261   |
| STUN   | A STUN server is required to allow VoIP devices access to the Internet behind an active NAT. This determines the current public IP address for the connection and uses this for remote addressing.   |
| T.38   | Fax support  |
| Dialling end identifier/shortening via #                     | The time after which the system begins to dial externally; i.e. after dialling the last digit of a call number. The time can be shortened by entering #.   |

## Accessoires

### Modules for PABXs

|                                      |   |
|--------------------------------------|---|
| <b>Module 8FXS</b> (5510000191)      | 8 FXS ports for the connection of analogue terminals - without connection module  |
| <b>Module 16FXS</b> (5510000227)     | 16 FXS ports for the connection of analogue terminals - without connection module   |
| <b>Module 4S/U+4U</b> (5510000189)   | 4 switchable digital ports (S0 int./ext., Up0) for the connection of ISDN exchange lines, terminals or system telephones + 4 Up0 ports for the connection of system telephones - without connection module      |
| <b>Module 4S/U+6FXS</b> (5510000190) | 4 switchable digital ports (S0 int./ext., Up0) for the connection of ISDN exchange lines, terminals or Up0 system telephones + 6 FXS ports for the connection of analogue terminals - without connection module |
| <b>Module 4FXO</b> (5510000188)      | 4 FXO ports for the connection of analog exchange lines for hybrid 300/600  |
| <b>Module PSU rack</b> (5510000196)  | Power Supply Unit to support the module slots 4 - 6 in the rack system  |
| <b>Module tray rack</b> (5510000273) | Module tray for operation of the modules in the rack system   |



## Modules for PABXs

|   |   |
|---|---|
| <b>Module connection RJ45</b> (5510000195)  | Connection module RJ45 for operation of the modules (S, U, FXS) in the rack / wall system   |
| <b>Module connection clamp</b> (5510000194) | Connection module clamp for operation of the modules (S, U, FXS) in the rack / wall system  |
| <b>M 4 DSP</b> (1092189)                    | Module with 4 digital, highly compressed voice channels, speech compression (Codecs) as per G.711, G.723.1, G.726, G.729a/b                                     |
| <b>M 8 DSP</b> (1092316)                    | Module with 8 digital, highly compressed voice channels, speech compression (Codecs) as per G.711, G.723.1, G.726, G.729a/b                                     |
| <b>M 32 DSP</b> (5510000041)                | Module for ICT and modular hybrid systems with 32 digital, highly compressed voice channels, speech compression (Codecs) as per G.711, G.723.1, G.726, G.729a/b |
| <b>Module FSM</b> (1086774)                 | Usable on elmeg T484, elmeg hybrid, elmeg C46e / C46xe / C48m / C48.net / C46xe-rack / C46xe-rack-plus / C88m / C88m Up0 / ICT-Series                           |

## Software Licenses

|   |   |
|---|---|
| <b>License upgrade 5 terminals</b> (5500001209)       | License to enhance the system by 5 additional terminals               |
| <b>License upgrade 10 terminals</b> (5500000947)      | License to enhance the system by 10 additional terminals              |
| <b>License upgrade 20 terminals</b> (5500000948)      | License to enhance the system by 20 additional terminals              |
| <b>License upgrade 5 VM boxes</b> (5500001154)        | License to enhance the system by 5 additional hybrid VoiceMail boxes  |
| <b>License upgrade 10 VM boxes</b> (5500001155)       | License to enhance the system by 10 additional hybrid VoiceMail boxes |
| <b>License upgrade 5 SIP channels</b><br>(5500000869) | License to enhance the system by 5 additional SIP channels            |
| <b>License upgrade 10 SIP clients</b><br>(5500000868) | License to enhance the system by 10 additional SIP clients            |

## Pick-up Service / Warranty Extension

|   |  |
|---|--|
| <b>Service Package 'large'</b> (5500000811)           | Warranty extension of 3 years to a total of 5 years, including advanced replacement for bintec elmeg products of the category 'large'. Please find a detailed description as well as an overview of the categories on <a href="http://www.bintec-elmeg.com/servicepackages">www.bintec-elmeg.com/servicepackages</a> . |
| <b>ServicePackageBundle hybrid600</b><br>(5500001360) | Warranty extension of 3 years to a total of 5 years, incl. advanced replacement for 'hybrid 600 incl.6 modules (e.g. 8FXS, 16FXS, 4FXO, 4S/U+6FXS, 4S/U+4U)'. For detailed description see <a href="http://www.bintec-elmeg.com/servicepackages">www.bintec-elmeg.com/servicepackages</a> .                            |

## Add-ons

|                                     |  |
|-------------------------------------|--|
| <b>SD card</b> (5500001380)         | SD memory card for elmeg hybrid systems, pre-initialized with multi-lingual voice mail voice messages, and firmware for system telephony |
| <b>RJ 45 Y-Adapter</b> (5500000870) | RJ 45 Y - Adapter for the splitting of double assigned ports (M 16 FXS, M 4 S/U+6FXS), 10 pcs.   |

## Cables

**Console Cable MiniUSB to DSUB9**  
(5500000717)

Serial console cable for RS23x, RT, Rxx02 Series and hybrid (Mini USB to D-SUB 9)

**DECT150** (5530000087)

DECT over IP singlecell base station for 6 handsets / 4 voice channel (elmeg D130, elmeg D140); powered by PoE; power supply

**DECT200M** (5530000088)

DECT over IP multicell manager for 100 handsets / 30 voice channel (elmeg D130, elmeg D140; elmeg DECT200 basestations necessary); seamless roaming & handover; powered by PoE; power supply not included

**DECT200** (5530000089)

DECT over IP multicell base station for 100 handsets / 30 voice channel (elmeg D130, elmeg D140); seamless roaming & handover; powered by PoE; power supply not included

**D130** (5530000090)

DECT handset, brilliant, 1.8" TFT colour display with 7 lines, intuitive, icon-based user interface; Headset connection via Bluetooth® or 2.5 mm jack, integration of hybrid phone book and voicemail, incl. charging tray

**D140** (5530000091)

Slim line DECT handset, brilliant, 1.8" TFT colour display with 8 lines, intuitive, icon-based user interface; vibration function, headset connection via Bluetooth® or 2.5 mm jack, integration of hybrid phone book and voicemail, incl. charging tray

**D150R** (5530000181)

DECT handset, IP65 standards (dust, waterproof, shock resistance), functionality and equipment like D130, no Bluetooth, additional vibration alert and LED torch, Rubber surface for perfect grip, incl. Charging tray