Unify OpenScape Cordless IP V2
The SIP-based cordless solution

OpenScape Cordless IP upgrades IP communications systems by a campus-wide mobility solution.

Mobility

Providing staff with cordless phones allows for direct, location-independent communication and is ideally suited for instant availability and enabling decisions to be taken quickly. This generates organizational and economic advantages.

The flexibility in the number of stations, station frequency, surface coverage, upgrading and the provision of comfort functions with the most modern handsets characterize the system architecture of OpenScape Cordless IP.

The digital transmission standard DECT (Digital Enhanced Cordless Telecommunication) is used worldwide and works in a secured frequency range.

The OpenScape Cordless IP solution also makes the established DECT standard available in Voice over IP infrastructures. SIP (Session Initiation Protocol) is used to connect to the communication systems. This enables DECT cells to optimally complete SIP-enabled Voice over IP systems as the basis for mobile communication solutions.

Multi-cell technology

The radio coverage required in the building or on company grounds is achieved by means of multi-cell technology. The synchronized cells of the base stations installed at the
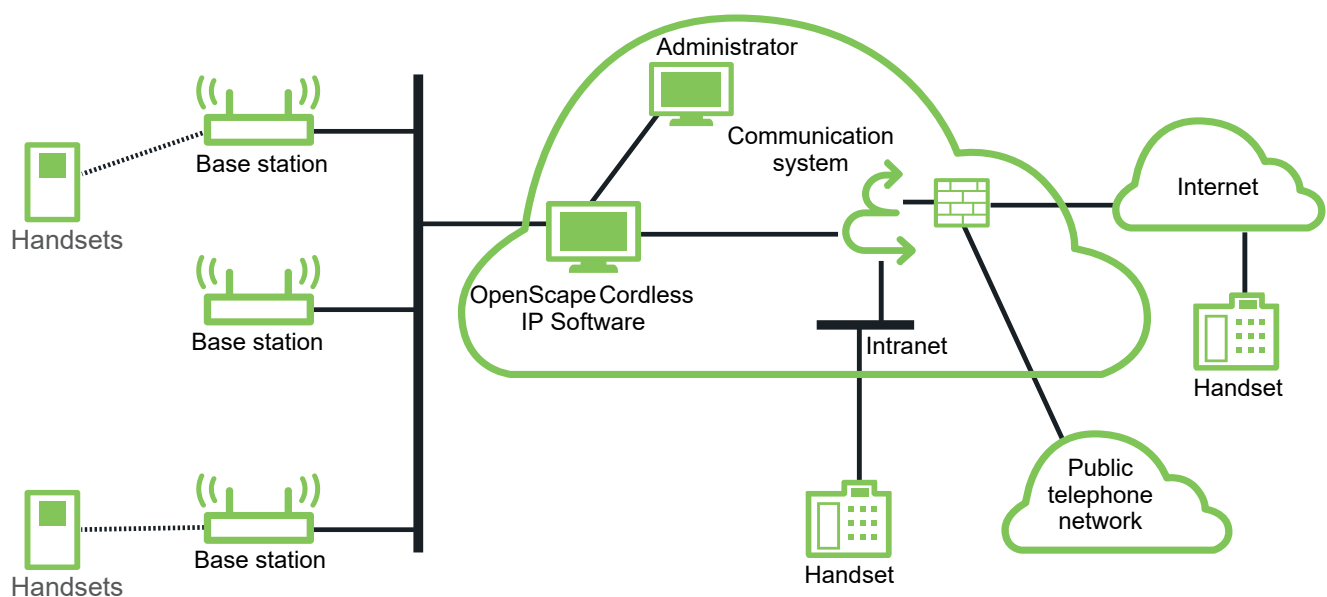
Configuration/System concept

company overlap, so that calls in the entire area of the cordless system can be seamlessly set up and made on the move (roaming and handover).

Handsets

A high degree of flexibility and mobility makes the Unify OpenScape DECT Phone S5 and OpenScape DECT Phone SL5 handsets for office environments, and the OpenStage M3 handsets for industrial environments to favorites among the cordless telephones.

The handsets offer excellent digital speech quality, a high degree of immunity to eavesdropping, and a long range (up to 50 meters indoors and up to 300 meters outdoors).

As well as low investment and operating costs, the phone provides simple user prompting in connection with the mode-dependent menu keys. This enables optimal access to the large range of comfort features.

A further advantage is the access security in the entire OpenScape Cordless IP system, where central registration of the handsets in the system restricts access by unauthorized cordless telephones.

The OpenScape Cordless IP handsets allow calls to be made in the area covered by the network.

Handsets enable the most important SIP comfort features of the communications systems to be used on the move within the site.

Detailed information on the individual handsets can be found in the data sheet for "OpenScape DECT, Handsets, Datasheet)".

DECT IP base stations

The base stations form a network of wireless cells and manage communications with the handsets. The multi-cell technology enables subscribers to move between the wireless cells with their handsets during a call.

The software of the base station contains complete DECT and IP functionality. The software does not need to be configured and administered locally for each base station but instead can be conveniently operated centrally via the OpenScape Cordless IP software.

The optimal location of the base stations for coverage of a building or of a site is determined by a radio analysis-technical measurement.

Special antennas can be used to increase the range.

The base stations can be encased to protect them from the weather.

OpenScape Cordless IP Software

The OpenScape Cordless IP software provides the interface between base stations on the one hand and the communications systems on the other.

Router and protocol converter

The software offers the router and protocol converter functions by controlling the voice connections between the communications systems and the respective base station. It also converts these into a data format which the base stations can use.

Configuration and administration

The base stations and the OpenScape Cordless IP software itself are all administered and configured using the web-based management of OpenScape Cordless IP software.

Synchronization management

In DECT systems with line-switched connection, e.g. Unify OpenScape Cordless Enterprise, the synchronization information is attained from the connection. This is not possible with the OpenScape Cordless IP system.

Accurate time synchronization is also necessary between the base stations for an interruption-free call transfer.

Synchronization via DECT (synchronization over the air)

A DECT IP base station must be within the overlapping area of the cell which this DECT IP base station forms in order to synchronize with another DECT IP base station via the DECT interface.

Synchronization via LAN

With this type of synchronization, the DECT IP base stations can be synchronized via LAN. This is based on a method similar to IEEE1588.

Technical data

System data

- *Radio interface standard: DECT (ETS 300 175), GAP (ETS 300 444)*
- *Frequency range: 1880 MHz up to 1900 MHz (Europe) 1910 MHz up to 1930 MHz (LAM) 1880 MHz up to 1895 MHz (South East Asia)*
- *Number of carriers: 10 to 12 full duplex channels*
- *Voice encoding: 32 kbit/s ADPCM*
- *CE standard (safety)*

System configuration

The OpenScape Cordless IP software runs on one of the base stations.

- *Interruption-free call transfer is possible within up to 10 base stations.*
- *Up to 20 parallel calls are possible within this group.*
- *Up to 60 Unify DECT devices can be operated.*

The OpenScape Cordless IP software runs on a dedicated base station with deactivated DECT interface.

- *Interruption-free call transfer is possible within up to 60 base stations.*
- *Up to 60 parallel calls are possible within this group.*
- *Up to 250 Unify DECT devices can be operated.*

The management of the OpenScape Cordless IP system runs on a virtual server:

- *The virtual server manages up to 100 DECT Managers. Up to 60 base stations can be operated on each DECT Manager.*
- *Up to 10 DECT Managers and their base stations can be connected to form a handover domain, i.e. uninterrupted call handover is possible between these base stations.*
- *Up to 6,000 parallel calls are possible in the overall system.*
- *Up to 20,000 Unify DECT devices can be operated.*
- *As an alternative the management can run on a dedicated base station and serve up to 4 DECT Managers (up to 240 base station and 800 DECT handsets overall)*

Features of the SIP interface

In addition to the DECT handsets' features, such as the redial list or integrated phone book, the following features are made available on these handsets by the OpenScape Cordless IP solution in connection with the communications systems:

- *Outgoing/incoming calls*
- *Number identification (CLIP)*
- *Name display (CNIP)*
- *Hold – incl. music on hold for holding subscribers*
- *Consult*
- *Toggle*
- *Forward when busy*
- *Forward when no reply or always*

- *Attended/unattended transfer*
- *Ringer tone mute for incoming calls*
- *Call reject*
- *Time and date display on idle screen*
- *Internal/external call ringer differentiation*
- *Missed call list on vacant DECT handset incl. MWI signaling*
- *Received call list*
- *Voicemail display incl. MWI signaling*
- *DTMF transmitting*
- *Integration of DECT handsets in MULAP groups*
- *Group call is possible between the DECT handset and OpenStage, i.e. both phones ring for incoming calls. When the call is accepted on one of the two phones, the other phone stops ringing.*
- *Second line incl. call waiting tone*
- *Call completion for Unify OpenScape Voice*
- *Signaling on DECT handsets in call pickup groups for OpenScape Voice*
- *Phone book options: Enterprise-wide phone books: LDAP access over the DECT handset, Group-wide phone book: Cordless-internal phone book, Private phone book: Handset-internal phone book*
- *Automated backup*
- *BSIP2 LEDs can be switched off*

SIP Survivability features for OpenScape Voice

- *Outbound proxy support*
- *DNS administration*
- *DNS SRV support*
- *Penalty box functionality*
- *SIP notify messages*

Network requirements

In addition, the following specifications between the base stations and the OpenScape Cordless IP software in the IP network must be adhered to:

- *Both of them must be part of the same Ethernet segment. Layer 3 routing over an IP router and Network Address Translation (NAT) are not supported.*
- *At least 2 priority classes in accordance with IEEE 802.1 p/q in the IP network.*
- *Use of 100 Mbit/s full duplex for all switched LAN ports.*

Otherwise, this will result in delays in the IP network and cause synchronization and voice quality problems in the DECT handsets.

Released systems and handsets

The following Unify communication systems can be connected to OpenScape Cordless IP:

- *Unify OpenScape Business from V2*
- *Unify OpenScape 4000 from V8*
- *Unify OpenScape Voice from V9*

The following Handsets are supported by Opencape Cordless IP:

- *OpenScape DECT Phone R6*
- *OpenScape DECT Phone S5*
- *OpenScape DECT Phone S6*
- *OpenScape DECT Phone SL5*
- *OpenScape DECT Phone SL6*
- *OpenStage M3 family*

Alarming. Messaging, Location with OScAR V5

- *Transfer of handset location information to the alarm server (visited and neighborhood base station incl. signal strength)*
- *DGUV support (BGR139): OpenScape Cordless IPv2R2 enables the triggering, transmission and location of deliberate and automatic alarms and is applied for the DGUV compliant protection of employees in dangerous lone worker situations with Unify OpenStage M3 Plus*

- *Alarms triggered for specific cases: Man Down, No Movement, Emergency key pressed, detached cord*
- *Supervision of handset DECT connectivity*
- *Targeted alerts and notifications to specific individual persons (users) or entire user groups through text messaging (with/without ACK confirmation) sent from OScAR*
- *Messages sent to SL6/S6/R6 DECT phones to indicate via icon (color) and ringtone about priority, e.g. Fire alarm; Technical Fail; Assault; Doctor call; Nurse call; Bed alarm, assistance*
- *Message list stored locally in the handset with delete option*

DECT IP base stations

- *Maximum number of DECT channels: 120*
- *DECT signaling in accordance with GAP/PN-CAP*

- *IP interface - Ethernet network connection: 10/100 Base T*
- *PoE class 2 in accordance with IEE802.3af*
- *Power consumption: < 4 W; PoE class 2*
- *Integrated Internet/Intranet server to access web-based management*
- *Antenna diversity support*
- *Software download/update centrally via the OpenScape cordless IP software*

For the communications system, the OpenScape Cordless IP software also provides:

- *Virtual Local Network (VLAN) support*
- *Quality of Services in the network: Layer 2 prioritization (802.1p/q), Layer 3 prioritization (ToS, DiffServ)*
- *DHCP options - DCHP active or local entry of IP addresses*

Base station indoor:

- *Housing dimensions (Length x width x depth in mm): 182.3 x 113.1 x 42.2 without antennas 226.5 x 187.3 x 42.2 with antennas*
- *Weight: approx. 0.3 kg*
- *Climate in accordance with the IEC721-3-3 class 3K3 standard*
- *Temperature range: +5 °C to +45 °C*
- *Storage temperature range: -5 °C to +45 °C (23 °F to 113 °F)*

External casing for base station:

- *Housing dimensions (Length x width x depth in mm): 296 x 256 x 90*
- *Weight: approx. 1.0 kg*
- *Climate in accordance with the IEC721-3-3 class 4K2 standard*
- *Temperature range: -25 °C to +40 °C*
- *Relative humidity when operated with outer housing: up to 95%*

Order item	Order number
OpenScape Cordles IP V2 - Base Station BSIP2	L30280-F600-A221
OpenScape Cordless IP V2 - Base	L30280-F600-A220
One-port Power over Ethernet injector	L30280-F600-A184
OpenScape Cordless IP V2 - DECT Manager license	L30280-F622-A222
Mains cable EU 2.5 m	L30251-U600-A389
Mains cable UK 2.5 m	L30251-U600-A235
Mains cable SWZ 2.5 m	L30280-Z600-F103
OpenScape Cordless IP V2 - Integrator Software License	L30280-F622-A223
External casing for base station	L30280-B600-B212
Pole mount for external casing	L30251-U600-A910
OpenScape Cordless IP V2 - Application License	L30280-F622-A224

Mitel