



SIP

Increasing security with networked solutions



Security for you

In emergency situations, fast and reliable communication can be a matter of life and death. AlphaCom E and its SIP interface provides today's most demanding customers with a flexible and reliable integrated communication system that will highly improve decision-making and response time in emergency situations.



It is midnight and you have been working late. There is no one else in the building, and you prepare yourself to leave for home. You take the lift to the car park and suddenly the lift stops between floors.

Through the STENTOFON IP intercom station inside the lift, you place an SOS call – “Help! I am caught inside the lift, please get me out!”

Within seconds, the STENTOFON intercom routes the distress call directly to the mobile telephone of the maintenance person on call who is able to answer even though he is in a building a few kilometres away – “Don't worry, I am on my way to help you!”.

After some minutes you are taken out of the lift, all thanks to the fast and high sound quality communication between the STENTOFON intercom and the mobile from the maintenance person.

SIP provides a seamless integration between the AlphaCom E intercom exchange and other VoIP subsystems such as PBXs, IP desk telephones, IP DECT telephones, PCs and PDAs. With AlphaCom E and SIP you can be sure you will be able to communicate when you really need to.

What is SIP

SIP or Session Initiation Protocol has become the de-facto standard for VoIP communication. For this reason, this protocol has been adopted by all main telecom equipment manufacturers. The SIP standard allows you to connect equipment from different manufacturers, and gives you a number of benefits such as:

- Easier to reach – regardless of the type of communication system in use
- Enable faster response – as more people are connected
- More type of communication terminals can be interconnected
- Optimized communication infrastructure by minimizing server hardware
- Improved user experience – due to the seamless integration (number plan, number and name presentation)

There is today a wide range of SIP enabled equipment in the market ranging from IP telephones, DECT telephones, WiFi telephones, telephone gateways and iPBXs.

STENTOFON AlphaCom E was the first intercom system in the world supporting SIP. The SIP interface was implemented and introduced in 2005. Over the last years AlphaCom E has been adapted and has proven interoperability with a wide range of SIP equipment.

The AlphaCom E – SIP implementations allow you to benefit from the STENTOFON products as well as the latest developments in the IP telephony industry. This makes STENTOFON AlphaCom E the most comprehensive intercom solution in the industry today. For a full list of SIP equipment verified with AlphaCom E see the Specification section.

The intercom exchange can be connected either directly to a SIP enabled telephone system or via gateways to an analogue or ISDN system.

With SIP, users from both the telephone network and the intercom exchange can call each other and calls can be transferred between the two systems. In addition SIP allows IP telephones to be connected directly to the AlphaCom E exchange, without the need of a telephone exchange.

Key Benefits of STENTOFON AlphaCom E and its SIP Interface

In today's competitive world, businesses have an increasing demand for performance. And performance in the business world means high productivity and low costs.

By using open standards such as SIP, AlphaCom E offers businesses the possibility of efficiently communicating with the right people, at the right time, and at the right place, all in a cost-effective way.

Increased productivity

The AlphaCom E enables mobile workers to work from anywhere and from any device, thus helping them manage their daily tasks more efficiently.

For instance, a car park security guard can freely move around different parking buildings while keeping full control over what is happening in every car park. Using the power of SIP, AlphaCom E integrates to mobile phones and PDAs allowing these to function as wireless intercom stations.

Roving security guards will be able to multi-task effectively by being able to attend incoming calls, control people access at the barrier and doors, communicate with people at payment machines and lifts, and broadcast messages, even when not present at their desk.

Cost Reduction

SIP enabled STENTOFON communication solutions offer cost savings by eliminating the need to purchase and install additional hardware. With AlphaCom E it is possible to connect directly to a SIP enabled telephone system, whether it is an iPBX or a Public Network.

Investment Protection

A major concern for companies, when planning the expansion of their security communication solution, is investment protection.

With AlphaCom E you can be sure that your investment will be protected as the need of replacing existing communication infrastructure is eliminated. Using the SIP interface, the seamless integration between the AlphaCom E existing infrastructure and a range of 3rd party equipment is possible.

Interoperability

With SIP, AlphaCom E can create a cohesive integrated security solution that uses different multi-vendor components such as IP telephones, IP DECT, soft phones, PDA's and PC's, or indeed any kind of telephone equipment. The integration to these components can be done directly, or through SIP trunks to an iPBX or telephone network.

This interoperability provides the possibility of building a tailored security communication system suited for each environment and each situation.

In a hospital, an airport, a building, and basically in any environment emergency situations can happen, and it is then when interoperability plays a key role.

People who need help or can provide it need to be able to take or make that "one vital call", and that call must be able to be done through any device available at the moment and from any location. In these situations the AlphaCom E ensures that the communication between those requiring help and those who can provide it will be faultless whether the user is within or outside the network coverage area.

Specification

SIP

Compliance per IETF RFC 3261
 DTMF signaling: SIP INFO
 Calling name presentation
 Calling number presentation

Call Routing

Direct dialling-in
 Two stage dialling
 Line hunting
 Prefix line selection

Audio

Narrowband audio (3.4 KHz) – G.711 A and μ law
 Wideband audio (3.4 KHz) – G.722
 Adaptive jitter buffer

Network QoS

Diffserv, TOS

Ethernet Network Interface

10/100 Mbps, Base-Tx, RJ45

IP transport

RTP/RTCP per IETF RFC 3550 and 3551

iPBX interoperability

Cisco Call Manager version 4
 Cisco Call Manager version 5
 Alcatel OmniPCX
 Nortel Succession
 Innovaphone

IP telephone interoperability

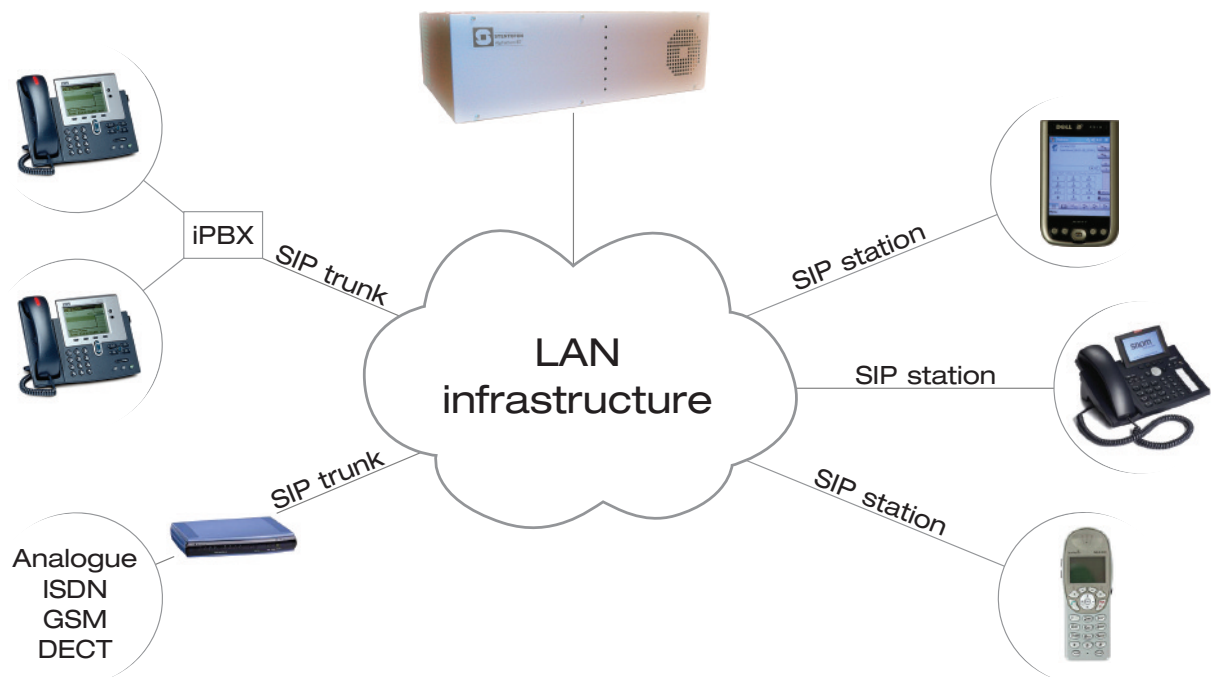
Grandstream
 SNOM
 Cisco

IP DECT interoperability

Ascom
 Polycom KIRK
 Cobs

Telephone gateways

Audiocodes MediaPack series
 Grandstream telephone adaptors



Seamless Integration with PBX



A doctor in an operation room suddenly experiences an emergency situation with a patient. The doctor needs to make a critical call to a specialist who holds important information about the patient. The specialist is not in the hospital, but at a congress in another city and he has said that he can be reached in case of emergency.

With just one press of a button, the doctor in the operation room is able to contact the specialist who is kilometers away and hold a hands-free, two-way conversation with him with superb audio quality.

In a situation like this, seconds can make the difference between life and death. Having the AlphaCom E exchange integrated to a PBX, will allow you to make external calls via the SIP gateway very fast.

Intercom users can connect with the telephone world either by direct dialing between an intercom station and a telephone, or through a call transfer in either direction.

STENTOFON AlphaCom E and PBX integration Success Story Shanghai Pudong International Airport (SPIA)

SPIA is currently the sixth busiest air freight hub and a major international gateway into China and East Asia. The airport employs STENTOFON standard VoIP protocols for audio encoding and control, and utilizes standard IP protocols for video and data transmissions, providing an area-wide network or broadcast and communication system at four key locations: the Traffic Operation Centre, the Airport Operation Centre, the Gate Wing and Gate Check In.

The system is run by four IP exchanges connecting with Cisco CallManager PBX through 4 times 16 SIP trunk lines; integration is also provided to an 800m TETRA radio interface, the public network and PA. There are over 200 IP substations in the AlphaCom E system – it is possible to see the status of the stations as icons on a Graphical User Interface.

The AlphaCom E interfaces with the following:

- PA system
- Tetra radio system
- STENTOFON IP sub-stations
- STENTOFON analogue master stations
- Cisco VoIP telephones (Registered @ AlphaCom E)
- Cisco CallManager 5.0
- Cisco VoIP telephones (Registered @ CallManager)

By fully integrating with Cisco Call Manager, the AlphaCom E exchange is able to do:

Group Calls

- Initiate group calls from a Cisco phone registered @ AlphaCom E
- Initiate group calls from a STENTOFON master station

Simplex conference

- Include a Tetra radio group in a simplex conference. The Tetra radio group shall be the default speaker in the conference
- Include a Cisco telephone registered @ AlphaCom in a simplex conference
- Include STENTOFON stations in a simplex conference

Priority

- Provide priority to Cisco phones registered @ AlphaCom E. When a high priority call is initiated to a Cisco phone in conversation, the ongoing call will be cancelled and the high priority call will be setup

Graphical user interface

- Support a graphical user interface similar to AlphaVision
- See the status of all STENTOFON stations as icons in the GUI
- See status of Cisco phones registered @ AlphaCom E in the GUI
- Setup calls from a Cisco telephone registered @ AlphaCom E to any station represented in the GUI

IP telephone Solution



A manager of one of the stores in a shopping centre has just been robbed. The thief has just left the store with a bag full of unpaid goods. She reports this incident immediately by placing a call through the IP intercom directly to the central control room.

Within seconds, the operator in the control room is able to switch the CCTV cameras and retrieve picture from every point in the stores and shopping centre. While doing this the operator has contacted the roving guards who take the call and receive a digitally recorded image of the suspect over their PDA.

The central control room informs the other stores in the shopping centre about this incident through PA and instructs them to take precautions. After some minutes one of the security guards is able to capture the thief.

Thanks to the SIP interface the AlphaCom E system is able to cost-effectively integrate the control room with a range of other subsystems (i.e. CCTV, Help points, PA, DECT phones, PDAs). This integrated security solution is ideal for small to medium sized businesses that require providing security to customers and staff in each of the sites without incurring into unnecessary expenses like a secondary PBX, as for normal daily use the intercoms in each store can be used as normal telephones.

IP telephones can be used as normal analogue phones or as intercom stations. This provides users with the benefits of having intercom features such as opening doors, alarm list, directory, push menu to call, all from their desk phone.

Zenitel offers a wide range of IP and traditionally wired intercoms. To see more of these please check our website at www.zenitel.com.

IP DECT solution



For a QA engineer in a large manufacturing plant, effective control over the production process increasingly depends on the timely communication he has with other staff working in different sections of the plant. Here the length of time taken to respond to any human or technical incident has a significant impact on overall efficiency and profitability.

As the QA engineer does his night shift and roams within the packaging section, an incident occurs with one of the technicians working in the assembling section located in another building 1km away. Through the nearest STENTOFON intercom station in the assembling section, one of the staff places a call directly to the IP DECT telephone of the engineer.

The engineer is able to take this call immediately and while on his way to assist, instruct the technician on what to do.

Thanks to the SIP interface, the AlphaCom E is able to integrate directly with IP DECT telephones without the need of a PBX. By using SIP enabled IP DECT telephone systems, a portable telephone becomes an extension of the AlphaCom E exchange, and can act in many ways similar to a physical intercom station, with calling number display, and access to group and all call features. When a person is not present at his desk, the call can be forwarded to his IP DECT telephone. This gives users seamless mobility; a key factor especially important for those who need to work while on the move.

The radio coverage functionality and cell structure of DECT systems enables users to hold a conversation without interference over larger areas.

Some of the IP DECT telephone system suppliers the AlphaCom E has been tested with are:

- ASCOM
- COBS
- Polycom KIRK

STENTOFON and IP DECT Telephones Integration Success Story Vastervik Norra Prison – Sweden

Zenitel and Swedish distributor RM TeleCom, have together delivered four STENTOFON AlphaCom E's to Vastervik Norra, an E-class prison based in the South East region of Sweden by the Baltic Sea. The AlphaCom E exchanges are interconnected via an IP network and interfaced to an IP based DECT telephone system from Swedish company COBS, to provide access control communication and communication from the cells.

The prison complex was formerly an old hospital and today comprises a range of building complexes. Housing more than 275 prisoners, the prison was converted in 2004-05 with a specification for analogue telephones in each cell. Later, in 2006, an additional building was rebuilt and Zenitel and RM TeleCom were then approached to primarily supply a door to gate IP communication system.

Phase one consisted of four AlphaCom E7 exchanges which are interconnected in an AlphaNet IP network via Cisco switches in each building. The same IP network is also used for the prison alarms and cell telephony. Approximately 30 lines have been installed into each building with up to 28 stations in each. One of the buildings contains the SIP node to the DECT telephone system using four SIP trunk lines, shortly to be expanded to eight when two further buildings are added to the system.

In terms of functionality, intercom substations at the gates and doors on the outside of the buildings, call the central guard. Using AlphaNet, the call is presented on the PC running system management software. If there is a camera at the particular gate or door that is calling, a picture will automatically appear. Within the buildings, calls from the door stations or stations in common areas, go to IP DECT telephones via the SIP trunk interface in the AlphaCom E. Having answered the call, the guard will let people in or out. Should the call not be answered within a due time of time, the call is forwarded to an IP desk telephone at the central guard.

Zenitel and RM TeleCom have continued the project, placing new exchanges and stations as new buildings become available. In total there will be around 210 stations and in one building alone, two AlphaCom E7's using 54 lines. A nearby prison will also be integrated.

Why choose STENTOFON AlphaCom E?

- High audio quality for extreme clarity of speech -18 kHz HiFi bandwidth within the system
- Interoperability with SIP
- Several layers of security – CCoIP®
- Open interfaces
- Backwards compatibility
- Shared infrastructure
- Modular architecture with local intelligence – AlphaNet
- Easy to maintain and upgrade
- Remote programming and maintenance
- Investment protection

System capacity

- Exchange capacity – 552 intercom stations per exchange
- Exchange network – 254 exchanges can be linked together; these can be other AlphaCom E exchanges, but also telephone systems
- Site capacity – virtually unlimited. Any number of stations can be linked to a remote site
- Traffic capacity – Over 60,000 calls per hour
- Up to 50 IP telephones can be connected directly to the exchange via the SIP interface

About Zenitel

We at Zenitel have chosen to operate at the cross road of two worlds - communication on the one hand, security and safety on the other. Our mission is to help the people for whom security and safety has a pre-eminent meaning. These people live and work in a world where lives are at stake. These people are our customers. In today's world, we believe that the needs of our customers are growing increasingly complex and we are ready to help them with these issues. This is a world Zenitel believes in, a world we will continue to invest in.

For more information visit the Zenitel Web site: www.zenitel.com