Next generation IP Telephony

Aastra 5000

AASTRA

Democratising full IP communication

Today the IP telephony market has reached a two-digit growth rate and has outgrown traditional solutions. The first phase of migration to Voice over IP (VoIP 1.0) was characterised by the use of mainly proprietary solutions, without major impact on existing telephony architectures.

With the rising IP network reliability and speedy development of new internet-based communication tools, we have entered a second phase - VoIP 2.0 – with solutions that are based on **open standards** and can be easily integrated into a company's information system.   System interoperability is now guaranteed, thus bringing in more flexibility in the choice and rate of information system upgrade.

It is within this context that Aastra has developed the **Aastra 5000** software, the range of **Aastra X series** gateways, as well as the **Aastra Management 7450** - its administration solution for large systems.

Aastra 5000 is accompanied by **unified communication applications.**

Unification provides time and productivity gains in the information management process, regardless of its form (mail, fax, or voice messages) and the media used (PC, fixed or cordless sets, GSM, etc.).

Presence management, single number and intelligent call routing – all these functions enable a caller to reach his or her contacts unfailingly.

Team-work tools increase and optimise information sharing by combining voice and video.
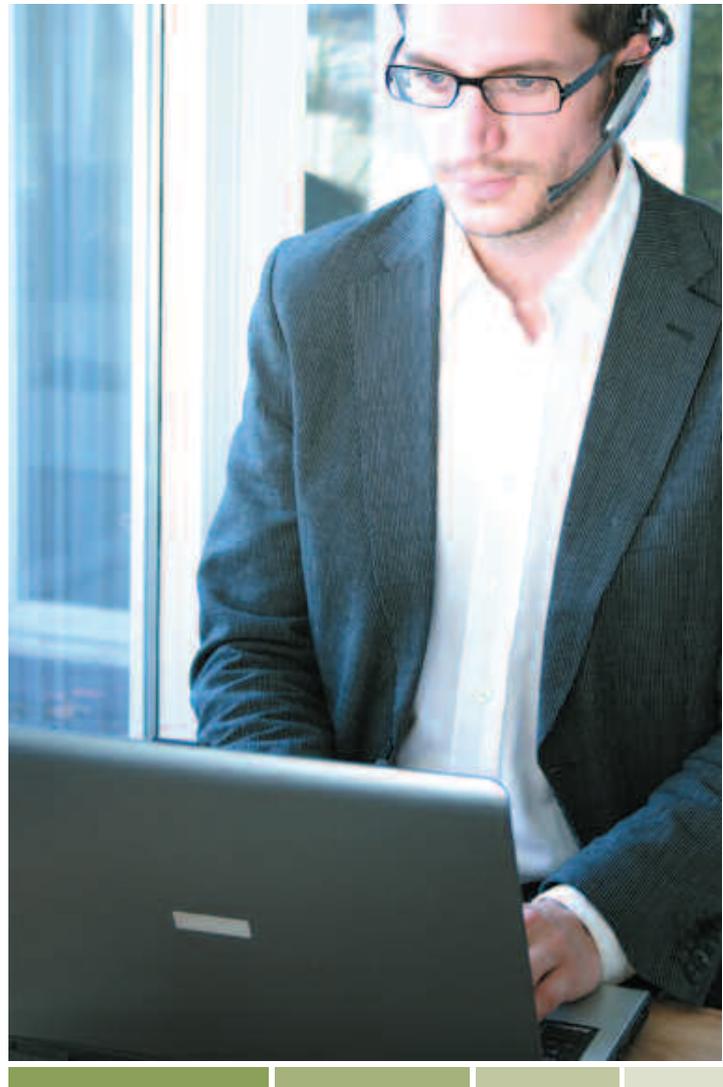
Aastra 5000

Enter the world of Full IP

Aastra 5000 is an innovative telephony over IP software application designed for **large companies** and their needs. It uses state-of-the-art technologies to improve employees' **productivity** and **performance** in their day-to-day activities, and also to offer much flexibility of deployment and integration into the information system.

This software can manage from 500 to over 150,000 subscribers and up to 2,000 networked gateways.

Aastra 5000 is available:

• in software version for standard computer servers. One server hosts up to 15,000 IP subscribers

• on a dedicated hardware platform, with Aastra X series gateways. These gateways allow the use of traditional systems, terminals or operator accesses, with modular capacities for 8 to 1,000 subscribers

Capacity and performance

Aastra 5000 has a **huge networking capacity** enabling it to manage up to **150, 000 subscribers** (15,000 per server) and **2,000 sites,** thereby offering the same level of service to all users, no matter their location.

It is also one of the most comprehensive software applications on the market, with over 500 telephony functions enhanced with a lot of mobility and team-work functions.

Richness of the user interface

Aastra offers a **complete range of terminals** compatible with the Aastra 5000 solution:

• corded terminals: IP, SIP

• mobile terminals: DECT over IP, WLAN SIP

• softphone and PC video phone
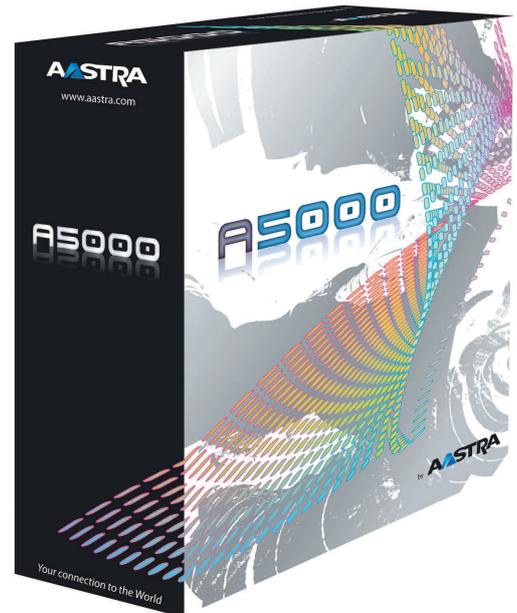
A wide range of **unified communication applications** is also offered together with Aastra 5000:

• The **Unified Communication Platform** (UCP) for voice, data and fax, includes presence management and instant messaging (chat). It is accessible via a web interface or even via GSM (voice synthesis and recognition).

• The **Telephony Web Portal** (TWP) application, including video phone, personalised call routing, CTI (communication control), screen pop-up and call recording.

• The **Aastra Communication Portal** (ACP) application, which gives access to greeting functions (operator via web interface, contact centre) and IP conference bridge functions.

Aastra 5000 capacities (per server)	
IP terminals	15,000
Simultaneous calls	2,000
Simultaneous calls on IP trunk	2,000
Calls per hour	57,000
Size of directory (in number of records)	200,000
IP terminals with CTI supervision	15,000
Number of companies (for multi-company use)	256

Aastra 5000

Enter the world of Full IP

Compatibility with market standards

Aastra 5000 is in line with the Aastra group's openness strategy. This communication solution is based on market standards and is thus becoming an **application fully integrated into the information system,** regardless of network devices, which can be used together with a company's existing application solutions.

Aastra 5000 comprises, among others:

- The **SIP user protocol,** which enables systems to be compatible with all terminal types: SIP, SIP video, DECT over IP, WiFi SIP, dual-mode GSM/WiFi, softphones.
- A **SIP Trunk** interface, which allows companies to benefit from Voice over IP operators' offers and, thus, make some savings on their communications.
- A **Linux-**based architecture, which enhances performance and the possibility to develop and integrate new software layers.

Aastra 5000 also comprises standard application interfaces - LDAP, SIP, XML, CSTA, TAPI, etc. - for incorporating **office applications** (such as Microsoft Outlook 2007 and Microsoft Office Communicator) and **business applications,** specific to certain activity sectors (healthcare, tourism, etc.).

Quality, reliability and security

Aastra 5000 offers **several security levels:**

- Authentication of IP terminals via the network (802.1x) which prevents unauthorised devices from accessing the LAN.
- Subscribers and IP terminal authentication by the A5000 software, which denies unauthorised persons access to the telephony service.
- Call encryption for critical subscribers, both on the LAN and on the WAN, to reinforce the confidentiality of exchanges, without additional hardware.

Aastra 5000 guarantees **perfect service continuity:**

- Server security is ensured through duplication (clustering) on the LAN or WAN. A second server is provided locally or on a remote site. In case of a problem, server switchover is automatic without interrupting the communication in progress.
- Service availability can also be reinforced by choosing a failure-tolerant (Stratus) server with fully duplicated physical components.
- Aastra X series gateways can work in standalone mode and provide complete local backup, also for IP terminals.

The quality of communications over IP is remarkable. In fact, Aastra 5000 allows:

- The use of various codecs (G711, G723, G729)
- The deployment of a direct voice architecture (end-to-end Voice over IP architecture)
- The marking of signal and voice flows (VLAN, 802.1P/Q, Diffserv) so that their priority can be managed on the network
- Dynamic adaptation to the network infrastructure status, with Call Admission Control functions on the most used IP links

Easy and optimised administration

System administration is via a web application that is centralised, secure and remotely accessible in order to have full control of the system while reducing operating costs.

Subscriber configuration is facilitated by synchronising the LDAP directory with an external directory such as Microsoft Active Directory. This way, subscribers are created, modified or deleted just once since synchronisation is automatic and immediate.

The supervision of Aastra 5000 and Aastra X series gateways, based on the SNMP protocol, is offered with the administration application but can also be included in a joint SNMP supervision: network, telephony, data processing.

Aastra X series

Combining power with security

The AXS, AXL and AXD gateways can manage both IP and traditional telephony systems. With this range of gateways Aastra is offering modular VoIP systems capable of adapting to all network or enterprise sizes.

Aastra X series gateways meet two types of needs:

- For networking and centralisation needs, IP call processing is centralised on Aastra 5000, while the AXS, AXL or AXD systems serve as **gateway.**
- For independent and standalone architectures, the AXS, AXL and AXD gateways are used as **IPBX.**

Available in rackable 19" format, the Aastra X series range integrates all the services that enable a company to offer its customers an efficient answering service:

- Management of incoming calls, with announcements, greeting messages, on-hold music
- Scalable voicemail system, with e-voicemail option (up to 1,000 voicemail boxes per system)
- Powerful and user-friendly interactive voice response
- Management of 5 different languages at the same time
- Duplication of power unit and CPU card (AXD)

These services are deployed thanks to the **Aastra Management Portal,** the integrated web portal.

Aastra XS

Aastra XL

Aastra XD

The AXS, AXL and AXD gateways are compatible with all Aastra terminals – proprietary IP, SIP, analogue, digital, DECT over IP, DECT, WLAN, softphones - and with commercially available SIP, SIP video and GSM-WiFi solutions.

Since they use market standard protocols such as SIP, H323, CSTA, LDAP, XML, SNMP, etc., the Aastra X series gateways can interface with all applications or solutions that respect these standards.

Capacities and mains functions

Table of capacities

	Aastra XS12	Aastra XS	Aastra XL	Aastra XD	A5000 (per server)
Subscribers	500	500	1 000	1 000	15 000
IP/SIP terminals	500	500	500	500	15 000
Analogue terminals	56	104	640	704	depending on the gateways used
Digital terminals	52	104	512	512	
Max. traditional terminals	60	112	640	704	
Number of directory records	3 000	3 000	3 000	3 000	200 000
Messaging system accesses	8	8	8	8	depending on the gateways used
Voicemail boxes	500	500	1 000	1 000	
IVR accesses	8	8	8	8	
IP channels	96	96	192	192	
DECT base stations	8	8	40	40	
IP/DECT base stations	256	256	256	256	
Analogue trunk lines	4	8	20	20	
TL	4	8	24	24	
T0 (BRI)	4	14	24	24	
T2/S2	0/1	2	6	6	

Main functions of Aastra 5000

Simple calls
- Emergency call
- Call by name
- Name transmission and display
- Number transmission and display
- Restriction of number display

Complex calls
- Call on hold, alternate
- Transfer, 3-way conference call
- All forwarding types
- Automatic callback
- Multiline
- Multi-key, buzz/status key
- Intercom, group management
- Manager / assistant filters
- Voice prompts

Presence and single number
- Telephone presence management
- Associated terminals (one number only)

Call distribution
- Attendant Console
- Advanced call distribution (ACD)
- Phone groups
- Overflow, assistance

Mobility and security
- User login
- DECT/IP or WiFi handover
- User authentication
- User rights management
- Call encryption

Applications
- Voice service interfaces (IVR, unified messaging)
- Call supervision
- Computer telephony integration (CSTA, TAPI or VTI XML)
- Hotel/hospital services, check in / check out, shared terminals

Network
- IP or TDM networking
- Least Cost Routing
- SIP, ISDN, analogue, QSIG signallings
- Close to 100 different signallings
- E161 number and IP address translation
- Homogeneous and flexible numbering plan

Quality of service
- VLAN, 802.1p/q, DiffServ prioritisation
- Call Admission Control

Service continuity
- Server, cluster duplication
- Dual homing
- Backup and overflow on ISDN
- Communication maintenance

Administration and information system
- Integrated web portal for administration
- Telephony directory in LDAP format
- Directory synchronisation on Microsoft Active Directory
- Call tickets
- Multi-company (sharing of resources)
- DHCP server for configuring IP terminals and base stations
- FTP server for updating IP terminals and base stations
- NTP server for IP terminal time setting
- SNMP MIB and traps

Aastra Management Portal

The integrated web administration solution

Aastra Management Portal is fully integrated into Aastra 5000 and Aastra X series IP communication solutions, with a view to rationalising customer investment. Aastra Management Portal facilitates IP telephony administration, with an immediate and quantifiable impact in terms of cost reduction for the company.

Thanks to the Aastra Management Portal software, the administrator has unified access to all the administration functions, from his or her usual web browser (Microsoft Internet Explorer or Mozzilla Firefox). There is no need to deploy the software on client workstations; this saves system administrators' precious time.

Aastra Management Portal has **reinforced intrinsic security:**

- interfaces secured via https
- authentication of each administrator through a login and password, and denial of access after 3 authentication errors
- access to applications according to the rights granted to each administrator

The ergonomic interface of Aastra Management Portal offers the administrator three major applications:

- **Configuration** of the different services proposed by Aastra 5000 and Aastra X series: this ergonomic interface offers a subject-based access (subscribers, system, network, call distribution, voicemail) as well as search by keyword.
- Integrated **LDAP directory management:** it enables attendants to update information such as employees' surnames, first names, e-mail addresses, etc.
- SIP, IP and digital **terminal management:** it can be used to prepare automatic update of terminal software releases and also offers a full inventory of the terminals deployed on the IP network.

Aastra Management 7450
For open and optimum network administration

Aastra Management 7450 (AM 7450) software not only meets multi-site architecture administration needs, but can also be used to manage system pools already equipped with Aastra solutions. It is extremely flexible and capable of managing very big capacity networks, which is one of the major assets of the Aastra 5000 solution.

AM 7450 is available in two formats, depending on the customer's needs:

• a software offer for integration into an enterprise server policy
• a packaged offer integrating the software on a server

Power

Aastra Management 7450 is one of the most powerful software solutions available on the market, thanks to its ability to manage several thousands of gateways and up to **150,000 users** without functional loss. With the possibility to connect **30 administrators** permanently to the AM 7450 server, this software is perfectly suited to the management of huge networks.

Security

Aastra Management 7450 runs with Linux Redhat and can be **secured on several points:**

• The hardware may be secured locally, via a Stratus server, or remotely thanks to a clustered server located on a remote site, even via a WAN.
• The data exchanged via the AM 7450 software is encrypted through a https interface.
• The software is compatible with commercially available antivirus and firewall applications.

Ergonomics

The technologies used (Microsoft .NET, html) allow an ergonomic and powerful interface to be made available to administrators.

The interface is the same, regardless of VoIP network heterogeneity (heterogeneous versions, gateways and terminals), which rationalises the investment at several levels: training, hardware to acquire/amortise, maintenance, etc.

Main functions

• Subscribers, groups, rights and keys management
• SNMP supervision and alarm management
• Aastra 5000 and Aastra X series software maintenance: backup, restore, update, patch management, inventories
• Cost management and traffic observation

Capacities

Subscribers	50,000 per multi-site / a total of 150,000
Gateways	99 per multi-site / a total of 2,000
Simultaneous administrator connections	30
Administrateurs déclarés	unlimited
Entrées dans l'annuaire LDAP	200,000

LDAP directory
A single, flexible and secure directory

One of the striking innovations is that Aastra integrates an **LDAP directory** with a capacity of 200,000 inputs.

Depending on the customer's organisational constraints and choice, this directory can be **integrated** into:

- an Aastra X series gateway
- Aastra 5000
- Aastra Management 7450
- or a remote and independent Linux server

The LDAP directory developed by Aastra offers many advantages, including configuration flexibility and adaptability to customer configuration (unlimited number of hierarchical levels, unlimited field sizes, etc.).

This directory can also be replicated for load-sharing and to guarantee service continuity in case of incidents such as hardware or software failure, IP link error, etc.

The Microsoft Active Directory connector is a major asset: the administrator enters a person's details in Active Directory and in real time Aastra's LDAP directory, Aastra Management 7450 as well as the entire IP telephony network are synchronised. The new information is immediately available to all the users.

Aastra 5000

Local authorities

The Aastra 5000 IP communication software can offer a lot of value added services to elected representatives and regional administrators, as well as to citizens.

This solution contains all the mechanisms used to **receive, inform and alert** citizens in real time, thanks to the interactive voice response, messaging, and answering groups functions.

The management and sharing of information between all the field workers at the service of local economic development are facilitated by **unified communication and team-work applications** (voice, image and video).

Itinerant users have permanent access to communication services.

Thanks to the **multi-services** features, community groups (urban communities, etc.) can federate and combine several resources or offer new services.

The optimisation of the community's communication system administration reduces the operating costs of the solution.

Healthcare sector

The Aastra 5000 solution meets perfectly the needs of the healthcare market, including the most important networks distributed over several sites.

Thanks to the **interactive voice response** function, calls are routed rapidly (request for appointment and for information about the state of a patient's health, etc.), while information is available 24/7 (opening hours, visiting hours).

Patients have **prepayment** functions and other functions enabling them to **share a terminal** with their room mates. Other features available to patients include **direct-inward** dialling (DID); call forwarding at night, choice of terminal and voicemail language.

The medical staff benefits from the flexibility and robustness of the cordless **DECT over IP or DECT** solutions. Staff members can move around while remaining reachable at any time.

The communication flow for the administrative and medical personnel and for patients can clearly be differentiated; this makes it possible to **share resources,** have personalised answering service, etc.

Finance/Banking and Insurance sector

Thanks to Aastra 5000, banks have a **large capacity** solution that offers an identical service, also for **itinerant** workers.

The interactive voice response service of Aastra 5000 allows access to information 24/7, makes it possible to contact an adviser, and register a request (banking transaction opposition, declaration of theft, etc.) and, thus, enhances **customer satisfaction.**

The protection of accesses (to the LAN, communications services, administration data, etc.) and communications (voice encryption) reinforces **system security.**

The clustered servers and automatic reconnection of IP terminals to a second site offer **maximum telephony availability** for all users, without communication interruption.

The **centralised administration** function of AM 7450 facilitates management in all fields: installation, configuration, directory synchronisation, etc.
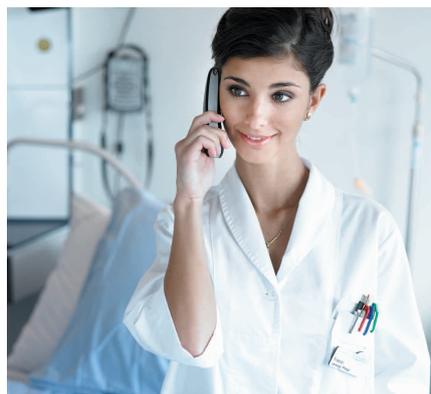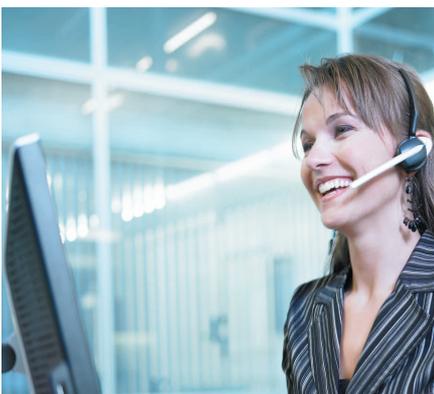
Your IP communication solution

Education/Research

Aastra 5000 has a lot of assets for the education and research sectors.

This solution offers the **same services,** no matter the network architecture: single site or large campus, with networking of remote sites. By logging on simply and securely to a workstation, each student or teacher finds his or her services, individual account, profile, etc.

Foreign students have easy access to the telephony services, thanks to the availability of **5 different languages.**

Automatic information and interactive call routing functions make it possible to **reply quickly** to students (course and programme-related information) and to teachers (technical hotline, practical information).

Each user or group has access to his or its text and voice messages in the same **unified messaging** application.

The use of Voice over IP operator accesses (IP trunks) **reduces telecom expenses.**

Tourism

The Aastra 5000 solution meets the needs of the tourism sector by laying emphasis on **quality of service** and **answering service,** while simplifying administrative operations through powerful and user-friendly tools.

The integration and management of 5 simultaneous written and verbal languages facilitates access to the telephony and voice services, regardless of the customers' nationality.

Telephone terminals allow customers to access the services offered to them, simply by pressing a button: wakeup, consultation of opening hours, practical information, weather forecasts, tourist information, etc.

Room management is facilitated during check-in / check-out operations, with room-status, charging-counter and voicemail update.

The integration of **front office** tools enhances these features for the largest organisations.

Industry

The industrial world reflects very diverse horizons and needs: security, profitability, mobility, etc.

Aastra 5000 offers integrated **security** mechanisms.
Service availability is reinforced by system redundancy.
Crises situations can be managed thanks to integration with alarm servers.

The **DECT over IP** solution can be easily integrated into existing sites, with remote power supply and base station synchronisation via radio.

Mobile DECT terminals with isolated worker function and hardened devices (ATEX) are well **suited to industrial environments.**

The open interfaces of Aastra 5000 allow the integration of telephony into business **applications and processes.**

The telephone sets can even be used to consult information (stocks, databases) or to order and control systems (opening of doors, activation of relays, etc.).