

Scopia Elite 6000 Series MCU

User Guide

Version 8.2

For Solution 8.2



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Table of Contents

Chapter 1: About the Scopia Elite MCU

About Scopia Elite 6000 Series MCU	4
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Chapter 2: Starting or Joining a Conference from an Endpoint

Starting or Joining a Videoconference with Auto-Attendant	7
Starting or Joining a Conference by Dialing to the MCU	8

Chapter 3: Moderating Videoconferences on the MCU with DTMF

Chapter 4: Personalizing your Video Layout with DTMF

Glossary of Terms for Scopia Solution

Chapter 1 | About the Scopia Elite MCU

The Scopia Elite MCU is Scopia Solution's flagship platform for high definition multi-party videoconferencing.

The MCU supports communications in the board room, at the desktop, in the home, or on the road over wireless.

About Scopia Elite 6000 Series MCU

The Scopia Elite MCU is Scopia Solution's flagship platform for high definition multi-party videoconferencing.

An MCU, or Multipoint Control Unit, connects many endpoints to a single videoconference. It typically manages the audio mixing and video layouts, adjusting the output to suit each endpoint's capabilities.

The Scopia Elite MCU harnesses revolutionary processing power for the most demanding videoconferencing applications using the latest DSP technologies. It supports dual channels of Full HD 1080p at 60 frames per second for video and content, H.264 High Profile for bandwidth efficiency, H.264 Scalable Video Coding (SVC) for high network error resiliency, and full support for many telepresence systems, bringing an uncompromised videoconferencing experience.

With the Scopia Elite MCU, each videoconference participant receives a quality experience optimized to their individual capabilities from wireless mobile devices to HD room systems and immersive telepresence systems. The Scopia Elite MCU leads in video interoperability, working with the broadest range of video systems on the market from leading UC clients to mobile devices and telepresence systems.

The Scopia Elite MCU also features a patented, distributed architecture approach known as the Virtual MCU or cascaded videoconferences, which bring unparalleled scalability to its superb videoconferencing experience.

The MCU's feature list includes:

- Revolutionary video processing power

The Scopia Elite MCU brings unmatched power and capacity in a single unit, enabling dual-channel Full HD 1080p resolution at 60 frames per second for video and content, simultaneous H.264 High Profile and H.264 SVC, and support for multi-stream telepresence.

- Dynamic resource allocation

A meeting can support a mix of SD and HD users, making most efficient use of available resources. Video and audio processing is carried out per user rather than per meeting, with resolutions ranging from QCIF to 1080p in the same meeting. Each user connects using unique, optimized audio and video settings to enjoy the best audio and video quality supported by their endpoint and network, without affecting the other participants in a conference.

- Intuitive and easy to use

Video menus make it easy to set up or enter a videoconference, and the intuitive web interface makes administration easy.

- Massive scalability

The Scopia Elite MCU's Virtual MCU enables a unique scalability in both local and distributed architectures to combine the capacity of multiple MCU devices in the same meeting. The number of supported connections depends on your license.

- Seamless interoperability

The Scopia Elite MCU is built on the solid foundation of Radvision's H.323 and SIP software, ensuring full compliance and broad-ranging interoperability with IP, ISDN, and 3G endpoints. It also enables H.323 and SIP endpoints to collaborate in the same videoconference. See [Figure 1: Endpoints in the same videoconference](#) on page 5.

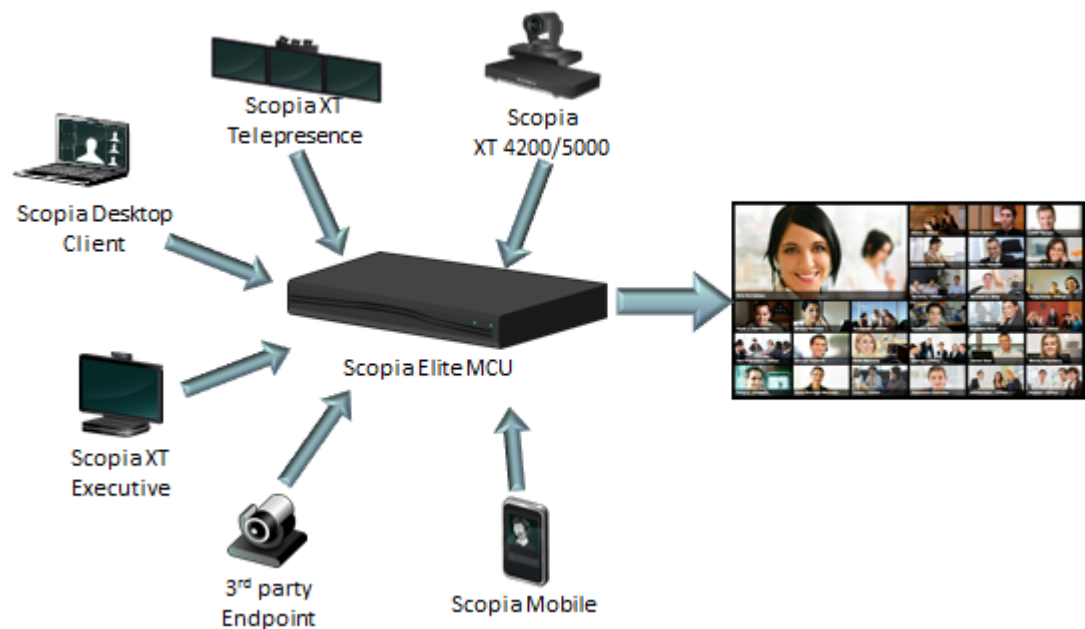


Figure 1: Endpoints in the same videoconference

The Scopia Elite MCU also easily integrates telepresence systems with regular videoconferencing systems, even within the same meeting. It is compatible with telepresence systems from Cisco, Tandberg, Polycom, and LifeSize/Logitech.

When used with Scopia Solution gateways, the deployment can even add ISDN, V.35 and other endpoints to the same meeting.

- Content sharing with SIP and H.323

The Scopia Elite MCU supports sharing presentations and other content via SIP (using the BFCP standard) and H.323 (using the H.239 standard). A user can connect to a meeting from either type of endpoint to share content such as presentations, spreadsheets, documents, and movies.

- Video quality

The Scopia Elite MCU delivers enterprise quality video and audio processing, using latest industry standards including state-of-the-art DSP hardware and software. This video quality is supported by:

- The Scopia Elite MCU supports SVC error resiliency for unmanaged networks using Temporal Scalability and Forward Error Correction (FEC).

Forward Error Correction (FEC) is a proactive method of sending redundant information in the video stream to preempt quality degradation. SVC extends the H.264 codec standard to dramatically increase error resiliency and video quality without the need for higher bandwidth.

- Frame rates can reach 60 frames per second, ensuring smooth video movement.

- A choice of 24 video layouts
- Bitrate (data speed) of up to 12 megabits per second on each stream without affecting capacity. Bitrate is the speed of data flow. Higher video resolutions require higher bitrates to ensure the video is constantly updated, thereby maintaining smooth motion.

- Security and privacy

The Scopia Elite MCU can encrypt communications with endpoints to create secure connections with H.235-based encryption for H.323 endpoints and SRTP and TLS encryption for SIP endpoints.

In addition, the Scopia Elite MCU features administrator and operator password protection for accessing the web interface. It also features optional PIN protection for joining a videoconference, and additional PIN protection for moderator control.

- Support for IP Separation

The Scopia Elite MCU enhances security within the enterprise by routing media and management traffic to two different subnets.

- Intuitive web-based management and control

You can configure both the Scopia Elite MCU and its videoconference sessions through an intuitive web interface offering easy, high-level conference control and administrative flexibility for an enhanced user experience.

- In-meeting indicators

A range of messages and icons are displayed on the endpoint during meetings as events occur. For example, participants are notified when someone joins or leaves the meeting.

- Personalized video layouts per meeting or per participant

You can choose from 24 video layouts for all participants or each participant can customize their own view. You can view up to 28 participants on your screen.

- Easy creation of logs for Customer Support

You can easily create a file containing logs and settings which you can send to Customer Support for troubleshooting.

- Recording via moderator menu

Moderators can record meetings using the Scopia Elite MCU moderator menu in deployments which include the Scopia Desktop recording option.

- In-conference control

During a videoconference, participants can use their endpoint remote control or keypad to perform actions such as mute, volume control, changing video layouts and inviting participants. These options are presented in the in-meeting menu overlaid on the video layout.

- Interactive Voice Response (IVR) messages

The Scopia Elite MCU includes pre-recorded greetings to participants and announcements as each new participant joins a meeting. You can record messages to provide custom greetings and announcements, but typically Scopia Management supplies these messages across all MCUs in the organization.

Chapter 2 | Starting or Joining a Conference from an Endpoint

You can start or join a conference either by using an auto attendant number or by dialing directly into the Scopia Elite MCU. The auto attendant number is a prefix defined by your video network administrator. You can use the auto attendant number for both H.323 and SIP endpoints.

If your device supports audio-only connections (no video), other participants see an icon at the top of the screen ([Figure 2: Visual representation of audio-only participant](#) on page 7), where the number indicates the number of audio-only participants.

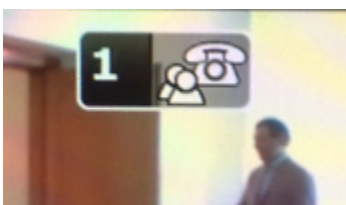


Figure 2: Visual representation of audio-only participant

Navigation

- [Starting or Joining a Videoconference with Auto-Attendant](#) on page 7
- [Starting or Joining a Conference by Dialing to the MCU](#) on page 8

Starting or Joining a Videoconference with Auto-Attendant

About this task

Auto-Attendant, also known as video IVR, offers quick access to meetings hosted on MCUs, via a set of visual menus. Participants can select menu options using standard DTMF tones (numeric keypad). Auto-Attendant works with both H.323 and SIP endpoints.

You can only access the Auto-Attendant before starting a meeting. Use the Auto-Attendant to join or create a new videoconference.

Important:

Do not confuse this DTMF menu with the in-call moderator menu ([Moderating Videoconferences on the MCU with DTMF](#) on page 10), which is only available during an ongoing meeting.

Procedure

1. Contact an administrator and verify the Auto-Attendant number. By default, the Auto-Attendant number is set to **1800**.

The Auto-Attendant number in your organization is determined by Scopia Management.

2. From the endpoint, dial the auto-attendant number, then perform one of these actions:

- Select **0** to create a new meeting.
- Select a meeting to join from the list of existing meetings.

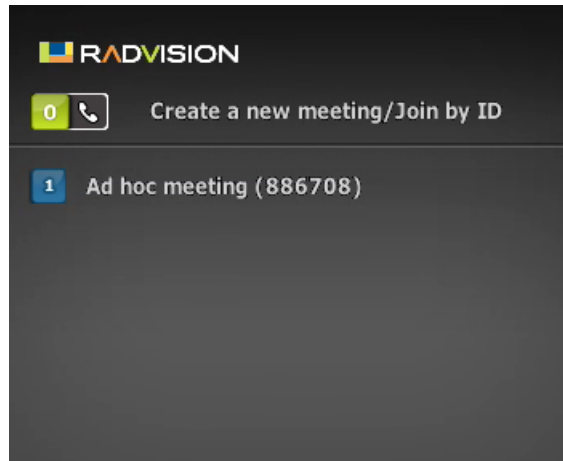


Figure 3: MCU Menu

Starting or Joining a Conference by Dialing to the MCU

About this task

You can dial directly to the MCU to start or join an ad hoc videoconference with your H.323 or SIP endpoint.

The number you dial is composed of a dial prefix to determine the type of meeting, followed by the meeting ID.

Meeting types (also known as MCU services) are meeting templates which determine the core characteristics of a meeting. For example, they determine if the meeting is audio only or audio and video, they determine the default video layout, the type of encryption, PIN protection and many other features. Meeting types are created in the MCU. You can invoke a meeting type by dialing its prefix in front of the meeting ID.

For example, dialing **711234** might consist of the following elements:

- **71** is the dial prefix signifying the meeting type.
- **1234** is the unique meeting ID.

Procedure

1. Obtain the meeting ID from the organizer of the videoconference.
2. For H.323 endpoints, enter the prefix and meeting ID directly into the endpoint.
3. For SIP endpoints, dial the meeting ID in the following format:

<meeting_ID>@<mcu.domain.com> or <meeting_ID>@<mcu.IP_address>

When the MCU accepts the call, you are either connected to the videoconference with that ID, or if it does not exist, a new one is created.

Chapter 3 | Moderating Videoconferences on the MCU with DTMF

During an ongoing MCU videoconference, you can perform moderator functions using numeric dial keys (DTMF) from your endpoint's remote control or keypad. DTMF, or touch-tone, is the method of dialing on touch-tone phones, where each number is translated and transmitted as an audio tone.

To access the moderator in-call menu, press the star key (*) during the call.

The DTMF moderator menu is for endpoints with DTMF keypads, like the Scopia XT Series or third party endpoints. The visual menu is also read aloud, enabling both audio and video endpoints to access these functions.

! Important:

The same moderator functions are available from Scopia Mobile or Scopia Desktop Client's window, so it is unnecessary to access this DTMF menu from those endpoints.

The DTMF menu is not the same as the Auto-Attendant menu ([Starting or Joining a Videoconference with Auto-Attendant](#) on page 7), which is available only before a meeting begins.

There are two versions of the DTMF moderator menu:

- As a participant who is not the moderator of the meeting, you can access a limited set of features via DTMF during a call.

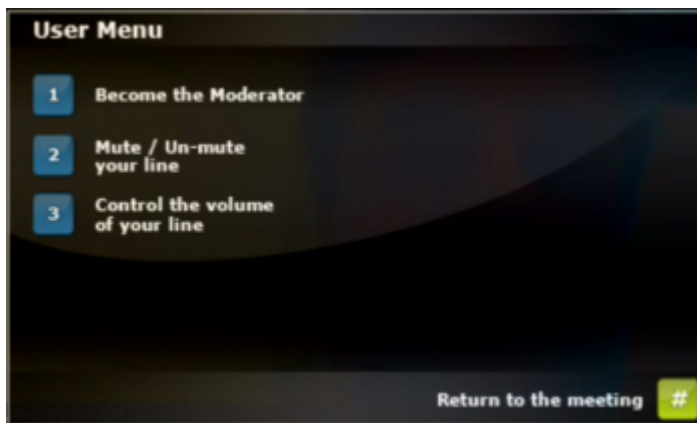


Figure 4: DTMF menu for non-moderator participants

- As a moderator, you can access the complete list of moderator functions to perform.

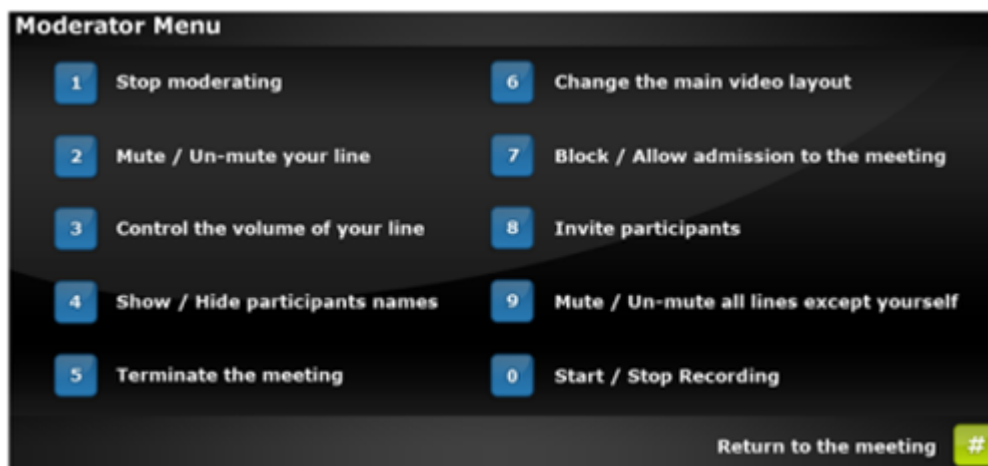


Figure 5: MCU DTMF moderator menu

You can switch between the two menus by pressing 1 to toggle between becoming the moderator or stopping to moderate the meeting.

The menu items are self-explanatory, but [Table 1: Additional in-call DTMF controls](#) on page 11 includes additional functions not shown in the menus.

Table 1: Additional in-call DTMF controls

During a meeting press * followed by:	Functionality
*	Listen to available options and display video menu
0	Start/stop recording the meeting This option only appears if your Scopia Solution deployment includes a properly configured recording server.
#	Return to the meeting

Chapter 4 | Personalizing your Video Layout with DTMF

About this task

On endpoints with a DTMF keypad, you can cycle through various layouts while participating in your videoconference. Using this method, you only change the layout for your endpoint, not other participants in the meeting.

Procedure

1. Press **0** on your endpoint remote control to activate the personal video layout mechanism.
 2. Continue to press **0** to rotate through these personal video layout options:
 - Default Meeting Layout, which is usually a dynamic layout which automatically adapts depending on the number of participants in the meeting.
 - Enlarged Main View
 - Same Sized View
 - Full screen
 - Fixed 2 Participants
 - Fixed 4 Participants
 - Fixed 6 Participants
 - Fixed 9 Participants
 3. Press **1** to add or remove your own image in the video layout.
 4. Press **2** to add or remove text overlays in the video layout.
 5. (Optional) Press **#** to automatically adjust the size of the video display to better fit your endpoint screen.
-

Glossary of Terms for Scopia Solution

1080p

See [Full HD](#) on page 17.

2CIF

2CIF describes a video resolution of 704 x 288 pixels (PAL) or 704 x 240 (NTSC). It is double the width of CIF, and is often found in CCTV products.

2SIF

2SIF describes a video resolution of 704 x 240 pixels (NTSC) or 704 x 288 (PAL). This is often adopted in IP security cameras.

4CIF

4CIF describes a video resolution of 704 x 576 pixels (PAL) or 704 x 480 (NTSC). It is four times the resolution of CIF and is most widespread as the standard analog TV resolution.

4SIF

4SIF describes a video resolution of 704 x 480 pixels (NTSC) or 704 x 576 (PAL). This is often adopted in IP security cameras.

720p

See [HD](#) on page 20.

AAC

AAC is an audio codec which compresses sound but with better results than MP3.

Alias

In H.323, an alias represents the unique name of an endpoint. Instead of dialing an IP address to reach an endpoint, you can dial an alias, and the gatekeeper resolves it to an IP address.

Auto-Attendant

Auto-Attendant, also known as video IVR, offers quick access to meetings hosted on MCUs, via a set of visual menus. Participants can select menu options using standard DTMF tones (numeric keypad). Auto-Attendant works with both H.323 and SIP endpoints.

BFCP (Binary Floor Control Protocol)

BFCP is a protocol which coordinates shared videoconference features in SIP calls, often used by one participant at a time. For example, when sharing content to others in the meeting, one participant is designated as the presenter, and is granted the floor for presenting. All endpoints must be aware that the floor was granted to that participant and react appropriately.

Bitrate

Bitrate is the speed of data flow. Higher video resolutions require higher bitrates to ensure the video is constantly updated, thereby maintaining smooth motion. If you lower the bitrate, you lower the quality of the video. In some cases, you can select a lower bitrate without noticing a significant drop in video quality; for example during a presentation or when a lecturer is speaking and there is very little motion. In video recordings, the bitrate determines the file size for each minute of recording. Bitrate is often measured in kilobits per second (kbps).

Call Control

See [Signaling](#) on page 26.

Cascaded Videoconference

A cascaded videoconference is a meeting distributed over more than one physical MCU, where a master MCU connects to one or more slave MCUs to create a single videoconference. It increases the meeting capacity by combining the resources of several MCUs. This can be especially useful for distributed deployments across several locations, reducing bandwidth usage.

CIF

CIF, or Common Intermediate Format, describes a video resolution of 352 × 288 pixels (PAL) or 352 × 240 (NTSC). This is sometimes referred to as Standard Definition (SD).

Content Slider

The Scopia Content Slider stores the data already presented in the videoconference and makes it available for participants to view during the meeting.

Continuous Presence

Continuous Presence enables viewing multiple participants of a videoconference at the same time, including the active speaker. This graphics-intensive work requires scaling and mixing the images together into one of the predefined video layouts. The range of video layouts depends on the type of media processing supported, typically located in the MCU.

Control

Control, or media control, sets up and manages the media of a call (its audio, video and data). Control messages include checking compatibility between endpoints, negotiating video and audio codecs, and other parameters like resolution, bitrate and frame rate. Control is communicated via H.245 in H.323 endpoints, or by SDP in SIP endpoints. Control occurs within the framework of an established call, after signaling.

CP

See [Continuous Presence](#) on page 15.

Dedicated Endpoint

A dedicated endpoint is a hardware endpoint for videoconferencing assigned to a single user. It is often referred to as a personal or executive endpoint, and serves as the main means of video communications for this user. For example, Scopia XT Executive. It is listed in the organization's LDAP directory as associated exclusively with this user.

Dial Plan

A dial plan defines various dial prefixes to determine the characteristics of a call. For example, dial 8 before a number for a lower bandwidth call, or 6 for an audio-only call, or 5 to route the call to a different branch.

Dial Prefix

A dial prefix is a number added to the start of a dial string to route it to the correct destination, or to determine the type of call. Dial prefixes are defined in the organization's dial plan. For example, dial 9 for an outside line, or dial 6 for an audio only call.

Distributed Deployment

A distributed deployment describes a deployment where the solution components are geographically distributed in more than one network location.

DNS Server

A DNS server is responsible for resolving domain names in your network by translating them into IP addresses.

DTMF

DTMF, or touch-tone, is the method of dialing on touch-tone phones, where each number is translated and transmitted as an audio tone.

Dual Video

Dual video is the transmitting of two video streams during a videoconference, one with the live video while the other is a shared data stream, like a presentation.

Dynamic Video Layout

The dynamic video layout is a meeting layout that switches dynamically to include the maximum number of participants it can display on the screen (up to 28). The largest image always shows the active speaker.

E.164

E.164 is an address format for dialing an endpoint with a standard telephone numeric keypad, which only has numbers 0 - 9 and the symbols: * and #.

Endpoint

An endpoint is a tool through which people can participate in a videoconference. Its display enables you to see and hear others in the meeting, while its microphone and camera enable you to be seen and heard by others. Endpoints include dedicated endpoints, like Scopia XT Executive, software endpoints like Scopia Desktop Client, mobile device endpoints like Scopia Mobile, room systems like XT Series, and telepresence systems like Scopia XT Telepresence.

Endpoint Alias

See [Alias](#) on page 13.

FEC

Forward Error Correction (FEC) is a proactive method of sending redundant information in the video stream to preempt quality degradation. FEC identifies the key frames in the video stream that should be protected by FEC. There are several variants of the FEC algorithm. The Reed-Solomon algorithm (FEC-RS) sends redundant packets per block of information, enabling the sender (like the Scopia Elite MCU)

to manage up to ten percent packet loss in the video stream with minimal impact on the smoothness and quality of the video.

FECC

Far End Camera Control (FECC) is a feature of endpoints, where the camera can be controlled remotely by another endpoint in the call.

Forward Error Correction

See [FEC](#) on page 16.

FPS

See [Frames Per Second](#) on page 17.

Frame Rate

See [Frames Per Second](#) on page 17.

Frames Per Second

Frames Per Second (fps), also known as the frame rate, is a key measure in video quality, describing the number of image updates per second. The average human eye can register up to 50 frames per second. The higher the frame rate, the smoother the video.

Full HD

Full HD, or Full High Definition, also known as 1080p, describes a video resolution of 1920 x 1080 pixels.

Full screen Video Layout

The full screen view shows one video image. Typically, it displays the remote presentation, or, if there is no presentation, it displays the other participant or a composite of the other participants.

Gatekeeper

A gatekeeper routes audio and video H.323 calls by resolving dial strings (H.323 alias or URI) into the IP address of an endpoint, and handles the initial connection of calls. Gatekeepers also implement the dial plan of an organization by routing H.323 calls depending on their dial prefixes. Scopia Management includes a built-in Scopia Gatekeeper, while ECS is a standalone gatekeeper.

Gateway

A gateway is a component in a video solution which routes information between two subnets or acts as a translator between different protocols. For example, a gateway can route data between the headquarters and a partner site, or between two protocols like the Scopia TIP Gateway, Radvision SIP Gateway, or the Scopia TIP Gateway.

GLAN

GLAN, or gigabit LAN, is the name of the network port on the Scopia XT Series. It is used on the XT Series to identify a 10/100/1000MBit ethernet port.

H.225

H.225 is part of the set of H.323 protocols. It defines the messages and procedures used by gatekeepers to set up calls.

H.235

H.235 is the protocol used to authenticate trusted H.323 endpoints and encrypt the media stream during meetings.

H.239

H.239 is a widespread protocol used with H.323 endpoints, to define the additional media channel for data sharing (like presentations) alongside the videoconference, and ensures only one presenter at a time.

H.243

H.243 is the protocol used with H.323 endpoints enabling them to remotely manage a videoconference.

H.245

H.245 is the protocol used to negotiate call parameters between endpoints, and can control a remote endpoint from your local endpoint. It is part of the H.323 set of protocols.

H.261

H.261 is an older protocol used to compress CIF and QCIF video resolutions.

H.263

H.263 is an older a protocol used to compress video. It is an enhancement to the H.261 protocol.

H.264

H.264 is a widespread protocol used with SIP and H.323 endpoints, which defines video compression. Compression algorithms include 4x4 transforms and a basic motion comparison algorithm called P-slices. There are several profiles within H.264. The default profile is the H.264 Baseline Profile, but H.264 High Profile uses more sophisticated compression techniques.

H.264 Baseline Profile

See [H.264](#) on page 19.

H.264 High Profile

H.264 High Profile is a standard for compressing video by up to 25% over the H.264 Baseline Profile, enabling high definition calls to be held over lower call speeds. It requires both sides of the transmission (sending and receiving endpoints) to support this protocol. H.264 High Profile uses compression algorithms like:

- CABAC compression (Context-Based Adaptive Binary Arithmetic Coding)
- 8x8 transforms which more effectively compress images containing areas of high correlation

These compression algorithms demand higher computation requirements, which are offered with the dedicated hardware available in Scopia Solution components. Using H.264 High Profile in videoconferencing requires that both the sender and receiver's endpoints support it. This is different from SVC which is an adaptive technology working to improve quality even when only one side supports the standard.

H.320

H.320 is a protocol for defining videoconferencing over ISDN networks.

H.323

H.323 is a widespread set of protocols governing the communication between endpoints in videoconferences and point-to-point calls. It defines the call signaling, control, media flow, and bandwidth regulation.

H.323 Alias

See [Alias](#) on page 13.

H.350

H.350 is the protocol used to enhance LDAP user databases to add video endpoint information for users and groups.

HD

A HD ready device describes its high definition resolution capabilities of 720p, a video resolution of 1280 x 720 pixels.

High Availability

High availability is a state where you ensure better service and less downtime by deploying additional servers. There are several strategies for achieving high availability, including deployment of redundant servers managed by load balancing systems.

High Definition

See [HD](#) on page 20.

High Profile

See [H.264 High Profile](#) on page 19.

HTTPS

HTTPS is the secured version of the standard web browser protocol HTTP. It secures communication between a web browser and a web server through authentication of the web site and encrypting communication between them. For example, you can use HTTPS to secure web browser access to the web interface of many Scopia Solution products.

Image Resolution

See [Resolution](#) on page 25.

kbps

Kilobits per second (kbps) is the standard unit to measure bitrate, measuring the throughput of data communication between two devices. Since this counts the number of individual bits (ones or zeros), you must divide by eight to calculate the number of kilobytes per second (KBps).

KBps

Kilobytes per second (KBps) measures the bitrate in kilobytes per second, not kilobits, by dividing the number of kilobits by eight. Bitrate is normally quoted as kilobits per second (kbps) and then converted to kilobytes per second (KBps). Bitrate measures the throughput of data communication between two devices.

LDAP

LDAP is a widespread standard database format which stores network users. The format is hierarchical, where nodes are often represented as *branch location > department > sub-department*, or *executives > managers > staff members*. The database standard is employed by most user directories including Microsoft Active Directory, IBM Sametime and others. H.350 is an extension to the LDAP standard for the videoconferencing industry.

Lecture Mode

Scopia Desktop's lecture mode allows the participant defined as the lecturer to see all the participants, while they see only the lecturer. All participants are muted except the lecturer, unless a participant asks permission to speak and is unmuted by the lecturer. This mode is tailored for distance learning, but you can also use it for other purposes like when an executive addresses employees during company-wide gatherings.

Load balancer

A load balancer groups together a set (or cluster) of servers to give them a single IP address, known as a virtual IP address. It distributes client service requests amongst a group of servers. It distributes loads according to different criteria such as bandwidth, CPU usage, or cyclic (round robin). Load balancers are also known as application delivery controllers (ADC).

Location

A location is a physical space (building) or a network (subnet) where video devices can share a single set of addresses. A distributed deployment places these components in different locations, often connected via a VPN.

Management

Management refers to the administration messages sent between components of the Scopia Solution as they manage and synchronize data between them. Management also includes front-end browser interfaces configuring server settings on the server. Management messages are usually transmitted via protocols like HTTP, SNMP, FTP or XML. For example, Scopia Management uses management messages to monitor the activities of an MCU, or when it authorizes the MCU to allow a call to proceed.

MBps

Megabytes per second (MBps) is a unit of measure for the bitrate. The bitrate is normally quoted as kilobits per second (kbps) and then converted by dividing it by eight to reach the number of kilobytes per second (KBps) and then by a further 1000 to calculate the MBps.

MCU

An MCU, or Multipoint Control Unit, connects many endpoints to a single videoconference. It typically manages the audio mixing and video layouts, adjusting the output to suit each endpoint's capabilities.

MCU service

See [Meeting Type](#) on page 22.

Media

Media refers to the live audio, video and shared data streams sent during a call. The shared data stream, like a presentation, is also known as dual video. Far end camera control (FECC) is another example of information carried on the data stream. Media is transmitted via the RTP and RTCP protocols in both SIP and H.323 calls.

Media Control

See [Control](#) on page 15.

Meeting Type

Meeting types (also known as MCU services) are meeting templates which determine the core characteristics of a meeting. For example, they determine if the meeting is audio only or audio and video, they determine the default video layout, the type of encryption, PIN protection and many other features. Meeting types are created in the MCU. You can invoke a meeting type by dialing its prefix in front of the meeting ID.

Moderator

A moderator is a participant with special rights in a videoconference, including muting the sound and video of other participants, inviting new participants, disconnecting participants, defining a meeting PIN to restrict access, determining video layouts, and closing meetings. In Scopia Desktop Client, an owner of a virtual room is the moderator when the room is protected by a PIN. Without this protection, any participant can assume moderator rights.

MTU

The MTU, or Maximum Transmission Unit, is the maximum size of data packets sent around your network. This value must remain consistent for all network components, including servers like the MCU and Scopia Desktop Server, endpoints like XT Series and other network devices like LDAP servers and network routers.

Multi-Point

A multi-point conference has more than two participants.

Multi-tenant

Service provider, or multi-tenant, deployments enable one installation to manage multiple organizations. All the organizations can reside as tenants within a single service provider deployment. For example, Scopia Management can manage a separate set of users for each organization, separate local administrators, separate bandwidth policies etc. all within a single multi-tenant installation.

NAT

A NAT, or Network Address Translation device, translates external IP addresses to internal addresses housed in a private network. This enables a collection of devices like endpoints in a private network, each with their own internal IP address, can be represented publicly by a single, unique IP address. The NAT translates between public and private addresses, enabling users to place calls between public network users and private network users.

NetSense

NetSense is a proprietary Scopia Solution technology which optimizes the video quality according to the available bandwidth to minimize packet loss. As the available bandwidth of a connection varies depending on data traffic, NetSense's sophisticated algorithm dynamically scans the video stream, and then reduces or improves the video resolution to maximize quality with the available bandwidth.

Packet Loss

Packet loss occurs when some of the data transmitted from one endpoint is not received by the other endpoint. This can be caused by narrow bandwidth connections or unreliable signal reception on wireless networks.

PaP Video Layout

The PaP (Picture and Picture) view shows two images of the same size, presented side by side.

PiP Video Layout

The PiP (Picture In Picture) view shows a video image in the main screen, with an additional smaller image overlapping in the corner. Typically, a remote presentation is displayed in the main part of the screen, and the remote video is in the small image. If the remote endpoint does not show any content, the display shows the remote video in the main part of the screen, and the local presentation in the small image.

Point-to-Point

Point-to-point is a feature where only two endpoints communicate with each other without using MCU resources.

PoP Video Layout

The PoP (Picture out Picture) view shows up to three images of different size, presented side by side. The image on the left is larger, with two smaller images on the right.

Prefix

See [Dial Prefix](#) on page 15.

Q.931

Q.931 is a telephony protocol used to start and end the connection in H.323 calls.

QCIF

QCIF, or Quarter CIF, defines a video resolution of 176 × 144 pixels (PAL) or 176 × 120 (NTSC). It is often used in older mobile handsets (3G-324M) limited by screen resolution and processing power.

Recordings

A recording of a videoconference can be played back at any time. Recordings include audio, video and shared data (if presented). In Scopia Desktop, any participant with moderator rights can record a meeting. Users can access Scopia Desktop recordings from the Scopia Desktop web portal or using a web link to the recording on the portal.

Redundancy

Redundancy is a way to deploy a network component, in which you deploy extra units as 'spares', to be used as backups in case one of the components fails.

Registrar

A SIP Registrar manages the SIP domain by requiring that all SIP devices register their IP addresses with it. For example, once a SIP endpoint registers its IP address with the Registrar, it can place or receive calls with other registered endpoints.

Resolution

Resolution, or image/video resolution, is the number of pixels which make up an image frame in the video, measured as the number of horizontal pixels x the number of vertical pixels. Increasing resolution improves video quality but typically requires higher bandwidth and more computing power. Techniques like SVC, H.264 High Profile and FEC reduce bandwidth usage by compressing the data to a smaller footprint and compensating for packet loss.

Room System

A room system is a hardware videoconferencing endpoint installed in a physical conference room. Essential features include its camera's ability to PTZ (pan, tilt, zoom) to allow maximum flexibility of camera angles enabling participants to see all those in the meeting room or just one part of the room.

RTP

RTP or Real-time Transport Protocol is a network protocol which supports video and voice transmission over IP. It underpins most videoconferencing protocols today, including H.323, SIP and the streaming control protocol known as RTSP. The secured version of RTP is SRTP.

RTCP

Real-time Control Transport Protocol, used alongside RTP for sending statistical information about the media sent over RTP.

RTSP

RTSP or Real-Time Streaming Protocol controls the delivery of streamed live or playback video over IP, with functions like pause, fast forward and reverse. While the media itself is sent via RTP, these control functions are managed by RTSP.

Sampling Rate

The sampling rate is a measure of the accuracy of the audio when it is digitized. During conversions from analog to digital sound, if you increase the frequency that audio data is collected, or "sampled", you increase the audio quality.

SBC

A Session Border Controller (SBC) is a relay device between two different networks. It can be used in firewall/NAT traversal, protocol translations and load balancing.

Scalability

Scalability describes the ability to increase the capacity of a network device by adding another identical device (one or more) to your existing deployment. In contrast, a non-scalable solution would require replacing existing components to increase capacity.

Scopia Content Slider

See [Content Slider](#) on page 14.

SD

Standard Definition (SD), is a term used to refer to video resolutions which are lower than HD. There is no consensus defining one video resolution for SD.

Service

Also known as MCU service. See [Meeting Type](#) on page 22.

SIF

SIF defines a video resolution of 352 x 240 pixels (NTSC) or 352 x 288 (PAL). This is often used in security cameras.

Signaling

Signaling, also known as call control, sets up, manages and ends a connection or call. These messages include the authorization to make the call, checking bandwidth, resolving endpoint addresses, and routing the call through different servers. Signaling is transmitted via the H.225.0/Q.931 and H.225.0/RAS protocols in H.323 calls, or by the SIP headers in SIP calls. Signaling occurs before the control aspect of call setup.

SIP

Session Initiation Protocol (SIP) is a signaling protocol for starting, managing and ending voice and video sessions over TCP, TLS or UDP. Videoconferencing endpoints typically are compatible with SIP or H.323, and in some cases (like Scopia XT Series), an endpoint can be compatible with both protocols. As a protocol, it uses fewer resources than H.323.

SIP Server

A SIP server is a network device communicating via the SIP protocol.

SIP URI

See [URI](#) on page 29.

SIP Registrar

See [Registrar](#) on page 25.

Single Sign On

Single Sign On (SSO) automatically uses your network login and password to access different enterprise systems. Using SSO, you do not need to separately login to each system or service in your organization.

Slider

See [Content Slider](#) on page 14.

SNMP

Simple Network Management Protocol (SNMP) is a protocol used to monitor network devices by sending messages and alerts to their registered SNMP server.

Software endpoint

A software endpoint turns a computer or portable device into a videoconferencing endpoint via a software application only. It uses the system's camera and microphone to send image and sound to the other participants, and displays their images on the screen. For example, Scopia Desktop Client or Scopia Mobile.

SRTP

Secure Real-time Transport Protocol (SRTP) adds security to the standard RTP protocol, which is used to send video and audio data between devices in SIP calls using TLS. It offers security via encrypting, authenticating and ensuring message integrity.

SSO

See [Single Sign On](#) on page 27.

Standard Definition

See [SD](#) on page 26.

Streaming

Streaming is a method of delivering multimedia content in one direction. Streaming recipients cannot not use a microphone or camera to communicate back to the videoconference. The content can be a live videoconference, or it can be a stored recording.

STUN

A STUN server enables you to directly dial an endpoint behind a NAT or firewall by giving that computer's public internet address.

SVC

SVC extends the H.264 codec standard to dramatically increases error resiliency and video quality without the need for higher bandwidth. It is especially effective over networks with high packet loss (like wireless networks) which deliver low quality video. It splits the video stream into layers, comprising a small base layer and then additional layers on top which enhance resolution, frame rate and quality. Each additional layer is only transmitted when bandwidth permits. This allows for a steady video transmission when available bandwidth varies, providing better quality when the bandwidth is high, and adequate quality when available bandwidth is poor.

SVGA

SVGA defines a video resolution of 800 x 600 pixels.

SQCIF

SQCIF defines a video resolution of 128 x 96 pixels.

Switched video

Switching is the process of redirecting video as-is without transcoding, so you see only one endpoint's image at a time, usually the active speaker, without any video layouts or continuous presence (CP). Using video switching increases the port capacity of the MCU by four times.

Important:

Use switched video only when all endpoints participating in the videoconference support the same resolution. If a network experiences high packet loss, switched video might not be displayed properly for all endpoints in the videoconference.

SXGA

SXGA defines a video resolution of 1280 x 1024 pixels.

Telepresence

A telepresence system like Scopia XT Telepresence combines two or more endpoints together to create a wider image, simulating the experience of participants being present in the same room. Telepresence systems always designate one of the endpoints as the primary monitor/camera/codec unit, while the remainder are defined as auxiliary or secondary endpoints. This ensures that you can issue commands via a remote control to a single codec base which leads and controls the others to work together as a single telepresence endpoint.

TLS

TLS enables network devices to communicate securely by exchanging certificates, to provide authentication of the devices and encryption of the communication between them.

Transcoding

Transcoding is the process of converting video into different sizes, resolutions or formats. This enables multiple video streams to be combined into one view, enabling continuous presence, as in a typical videoconferencing window.

UC (Unified Communications)

UC, or unified communications deployments offer solutions covering a wide range of communication channels. These include audio (voice), video, text (IM or chat), data sharing (presentations), whiteboard sharing (interactive annotations on shared data).

URI

URI is an address format to locate a device on a network. For a SIP call, the URI consists of the endpoint's name or number, followed by the SIP server domain name. For example, *<endpoint name> @<SIP server domain name>* or *user@domain_name.com*.

URI Dialing

Accessing a device via its [URI](#) on page 29.

VFU

See [Video Fast Update \(VFU\)](#) on page 30.

VGA

VGA defines a video resolution of 640 x 480 pixels.

Videoconference

A videoconference is a meeting of more than two participants with audio and video using endpoints. Professional videoconferencing systems can handle many participants in single meetings, and multiple simultaneous meetings, with a wide interoperability score to enable a wide variety of endpoints to join the same videoconference. Typically you can also share PC content, like presentations, to other participants.

Video Fast Update (VFU)

Video Fast Update (VFU) is a request for a refreshed video frame, sent when the received video is corrupted by packet loss. In response to a VFU request, the broadcasting endpoint sends a new intra-frame to serve as the baseline for the ongoing video stream.

Video Layout

A video layout is the arrangement of participant images as they appear on the monitor in a videoconference. If the meeting includes a presentation, a layout can also refer to the arrangement of the presentation image together with the meeting participants.

Video Resolution

See [Resolution](#) on page 25.

Video Switching

See [Switched video](#) on page 28.

Virtual Room

A virtual room in Scopia Desktop and Scopia Mobile offers a virtual meeting place for ad-hoc or scheduled videoconferences. An administrator can assign a virtual room to each member of the organization. Users can send invitations to each other via a web link which brings you directly into their virtual room. Virtual meeting rooms are also dialed like phone extension numbers, where a user's virtual room number is often based on that person's phone extension number. You can personalize your virtual room with PIN numbers, custom welcome slides and so on. External participants can download Scopia Desktop or Scopia Mobile free to access a registered user's virtual room and participate in a videoconference.

Waiting Room

A waiting room is a holding place for participants waiting for the host or moderator to join the meeting. While waiting, participants see a static image with the name of the owner's virtual room, with an optional audio message periodically saying the meeting will start when the host arrives.

Webcast

A webcast is a streamed live broadcast of a videoconference over the internet. A Scopia Desktop webcast becomes available when a participant in the videoconference enables the streaming feature. To invite users to the webcast, one of the participants attending the Scopia Desktop videoconference must send this information in an e-mail or an instant message:

- The link to the webcast
 - or
 - The link to the Scopia Desktop portal and the meeting ID
-

WUXGA

WUXGA defines a video resolution of 1920 x 1200 pixels.

XGA

XGA defines a Video resolution of 1024 x 768 pixels.

Zone

Gatekeepers like Scopia ECS Gatekeeper split endpoints into zones, where a group of endpoints in a zone are registered to a gatekeeper. Often a zone is assigned a dial prefix, and usually corresponds to a physical location like an organization's department or branch.

RADVISION®

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About Radvision

Radvision, an Avaya company, is a leading provider of videoconferencing and telepresence technologies over IP and wireless networks. We offer end-to-end visual communications that help businesses collaborate more efficiently. Together, Radvision and Avaya are propelling the unified communications evolution forward with unique technologies that harness the power of video, voice, and data over any network.

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