

# VIDEOCONFERENCE

## 1 Introduction

Videoconferencing is interactive remote communication between two or more participants, transmitted by voice or image. Participants see and listen to each other and can present content to everyone else in the conference from their PCs.

Videoconference is a service that allows much more. It offers a superior portfolio of endpoints - possibilities to engage in videoconferencing. Videoconference can be used via videoconferencing equipment that operates in boardrooms or offices, with desktop or laptop computers and even through tablets and smartphones. Our service offers near real-time multi-server HD video either through a common data network or over the Internet.

Our solution is based on the "cloud". This means a customer can receive high-availability service without ever having to buy or even put a server at their locations. The number of participants who can talk, see and collaborate is selected according to their current needs. Being "in the cloud", customers can later modify the number as their communication needs develop.

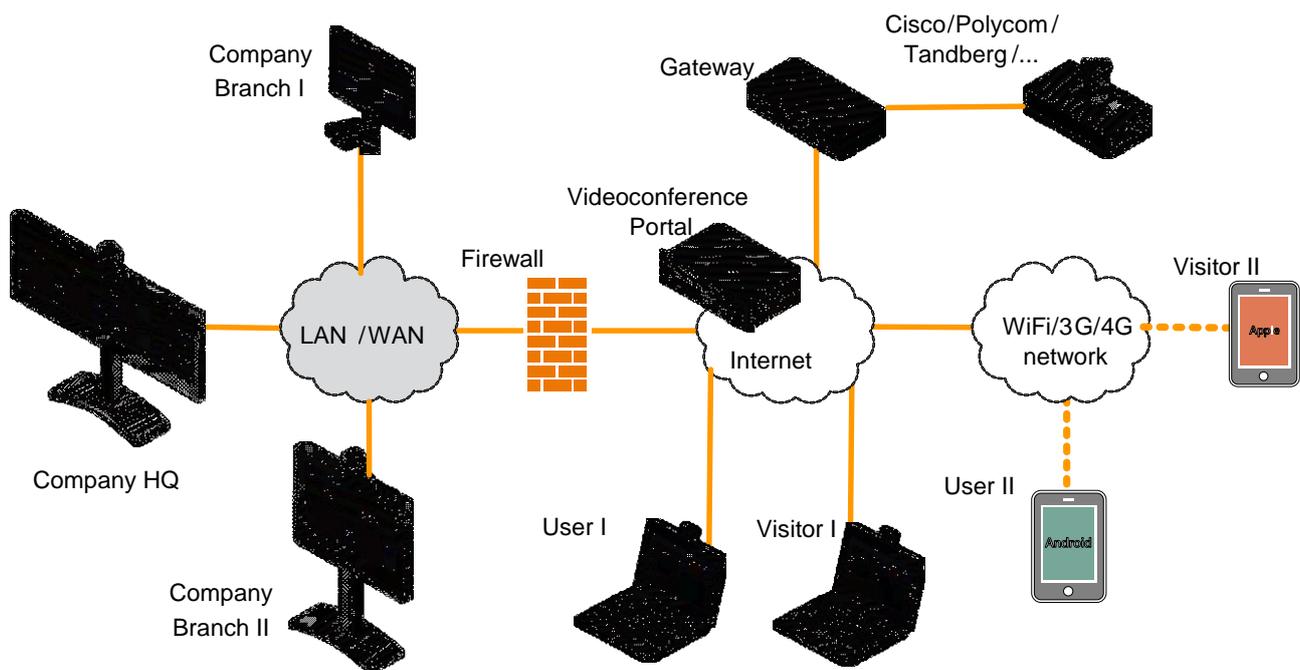


## 2 Platform

### Vidyo™ - revolutionary technology

BENESTRA Videoconference's base is the Vidyo™ platform. It reliably operates using a unique H.264 SVC codec and patented Adaptive Video Layering™. It features dynamic video optimising for each video-conference endpoint. During a call, our platform continuously monitors network quality and endpoint options, while adapting the video stream in real time to optimise performance and quality. The video stream is broken down into several layers of resolution, quality and frame rate. This results in unprecedented resistance to network error and natural HD quality video communication.

All core-infrastructure components are redundantly connected and located in BENESTRA's state-of-the-art data centre. This guarantees very high service availability.



### 3 Videoconference Service

**Services we provide include:**

- A platform that allows endpoints to communicate;
- Rental of video conferencing equipment for meeting rooms and offices;
- PC app;
- Tablet and smartphones app;
- Rental of gateways to connect other manufacturers' video conferencing equipment;
- Voice gateways to let participants engage in videoconferencing over the telephone;
- Virtual video conference rooms for everyone
- Extension for Microsoft Outlook
- and other extensions..

**Fees are charged for the following services:****For software based Users:**

- Active User
  - VidyoDesktop and VidyoWeb downloads over limit (see Fair Usage Policy below)

**For VideoRoom:**

- Video conferencing equipment rental, including accessories (devices need no Video Channel)
- Gateway rental to interface with other manufacturers' traditional video conferencing equipment.

## Terms

**Active User** - anyone in the system represented by a user name and password which participated in a videoconference at least once during the month. Users can organise video conferences that are open to other Users or Guests.

Users use to connect via:

- VidyoDesktop™ - software that allows you to use a personal desktop or laptop as a full-featured video conferencing endpoint.
- VidyoMobile™ - software that allows a smartphone or tablet to be used with either an iOS or Android operating system as a full-featured videoconferencing endpoint.

**Guest** - a special type of participant who can only be invited to a video conference. Guests cannot organise video conferences themselves. They can only be asked to join one.

- VidyoWeb™ - plug-in for web browsers

**Videoconferencing Room** - each User has his or her own virtual videoconferencing room where they can call other participants or Guests to a meeting. Maximum number of participants is 25.

**PC Accessories** - accessories that can be ordered with a service (web camera, desktop speaker/microphone, headset, etc.)

**Video Conferencing Equipment or VideoRoom** – equipment VidyoRoom™, remote control, camera, desktop speaker and microphone, camera and TV(s). Video conferencing equipment is usually installed in boardrooms or offices.

**Panorama** - "black box", remote control, camera, desktop speaker and microphone, camera and 3-9 connected televisions.

**Gateway** - a device that can be used to communicate with devices from other manufacturers.

**Voice Bridge** - a geographic telephone number that allows anyone participating from conventional or mobile phones to get through.

## 4 Endpoints

### PC Applications

This is a software application that delivers quality videoconferencing to the most ordinary work tools around - personal computers. A software client brings an HD quality image that allows you to communicate quite naturally. It is simply everything in one click, an intuitive graphical user interface controlled either by a keyboard or mouse. All the productive power of videoconferencing is put into the hands of users.

#### PC software advantages:

- Very easy to install
- Available for Windows, Macintosh and Linux\* operating systems (\*only some versions)
- Real-time monitoring of a participant's video transmission quality and network performance
- Users can set up layout of participants or shared content themselves on their own monitors.
- Dual-display (extended workspace) support, where videoconferencing participants are on one screen and shared application content is on the other
- Software includes an MS Outlook plug-in that allows video conferences to be scheduled with one click.
- Additional services: connectors to Microsoft Lync, Actice Directory integration...

PC clients are fully compatible with all other Videoconference endpoints, such as video conferencing equipment in meeting rooms, traditional gateway connected SIP and H.323 videoconferencing devices and, not in the least, smartphones and tablets.



## HD Video Conferencing Equipment

BENESTRA sees HD quality videoconferencing as a natural part of our work and our products clearly show it. Video conferencing equipment we offer as part of our service delivers you a quality HD image either through standard data networks or over the Internet.

Our video conferencing equipment offers the best price/performance ratio available on the market now. It transmits 1080p/30 fps or 720p/60 fps quality images, with the highest resistance to network errors, almost real time and at a fraction of the cost of traditional MCU architecture equipment.

Of course, all video conferencing equipment is compatible with other Videoconference endpoints (PC and mobile devices) and also traditional H.323 and SIP devices through a video gateway.

By eliminating the need for costly network upgrades or replacing your existing traditional video equipment, our video conferencing service is affordable for anyone. The service includes video conferencing equipment at a monthly charge, so you need no expensive initial investment and do not have to administer the equipment. Let our specialised team prepare you a TCO comparison.

The video conferencing equipment can be easily configured and used. Users can set up distribution of participants or shared content themselves on their own televisions. This option is available at any endpoint that is part of a video conference at one time. You no longer have to rely on what your server "shows" you, like with some traditional video conferencing systems. Each participant can change his or her preferred image layout at any time during a meeting independently of everyone else. Conference service options are very simple, intuitive and handled by remote control.

We offer 3 types of video conferencing equipment: from robust Full HD devices fitted with two 50" screen TVs to devices for small meeting rooms and offices. All information can be found in the separate "Video Conferencing Equipment" document.



## Smartphones and Tablets app

Software for the most commonly used mobile devices with iOS and Android operating systems allows almost full video conference participation, even while on the road. Like the PC software, it uses patented Adaptive Video Layering™ to provide high network error resistance. This is the most important thing to have when your device is Wi-Fi connected to the public Internet. Its intuitive user interface is quite similar to the computer version. If you have an iPhone, iPad, smartphone or tablet running on Android, you can easily confirm an invitation without having to worry about whether you will be at the PC or if the meeting room will be free.

### Smartphone and table software advantages:

- Very easy to install
- Intuitive user interface
- Up to 720p decoding and encoding and VGA quality
- Low latency and near real-time response
- Users can set up distribution of participants or shared content themselves at their own displays.
- Supports multi-touch zoom-in/zoom-out



## Gateway

For customers who have already invested in traditional MCU-based systems, we offer a gateway combining a traditional solution with modern Videoconference services. It allows you to connect to what ordinary firms were not able to have until now: traditional boardroom video conferencing equipment with participants who engage in a video conference with their own PCs, mobile devices and, not in the least, videoconferencing equipment offered by us. Our video gateway can manage to connect all Videoconference endpoints with endpoints from other suppliers using standard H.323 and SIP protocols.

Along with H.323 and SIP signalling, our gateway supports H.264 and H.263 video compression and H.239 data sharing. To meet security needs, the gateway also supports H.235 media encryption. Two models are offered: VidyoGateway and VidyoGateway XL, both described in detail in a separate document.

## Panorama

Panorama is the first affordable video conferencing solution on the market that delivers a true long-distance communication experience. This is a robust solution for up to 20 screens at 1080p resolution and 60 fps for a fraction of the price of existing telepresence solutions. A revolutionary solution that naturally is fully compatible with all Videoconference endpoints as well as traditional gateway-connected SIP and H.323 videoconferencing devices. On each screen you can see another colleague connected from a different device.

For a long time, customers were limited by too expensive videoconferencing solutions that provided a far from perfect experience.

Panorama overcomes all the limitations of traditional large, expensive videoconferencing solutions using patented Adaptive Video Layering, which dynamically optimises video at each endpoint.

### Key features

- Up to 1080p/60 frames per second for up to 9 screens
- Intuitive, easy to use interface; one click to join a conference
- HD video conferencing over the Internet or common data network
- Bandwidth necessary for HD video conferencing starting at 500 kbps on the screen

Panorama supports with tremendous flexibility a wide range of possible applications that traditional telepresence solutions cannot offer. It is up to the user and the possibilities that such space provides whether you choose a 3-screen or 9-screen version ... or something in between?

### Panorama is the ideal solution to address, for example:

- Distance learning with several experts and lecturers for remote communities
- Virtual business areas for financial services to coordinate strategies in real time across geographies
- Operations management centres for manufacturing and supply chains
- Control centres for "disaster recovery" or military operations
- Monitoring patients at hospitals from a doctor's surgery or nurse's quarters



## Voice Bridge - Telebridge

This links Videoconference with the public telephone network.

Participants who otherwise have no opportunity to connect may be present at a video conference at least over the phone. Any single, personal, virtual video conference room can be called on a conventional geographic number from any regular landline or mobile phone. Combining other BENESTRA services allows a video conference to be callable from any toll-free number inside and outside Slovakia.

## 5 Security

Safety is observed at several levels. All endpoints (video conferencing equipment, PCs, tablets) communicate during authentication with a portal through an encrypted HTTPS channel certified by an independent certification authority.

BENESTRA protects all user passwords and they are not accessible to the system administrator as well. In addition, the portal is also connected to the database via an encrypted HTTPS channel.

In order to ensure the content of your communications cannot be intercepted without your knowledge, we use AES-128 bit encryption via SRTP for all video conferencing components (audio, video and even shared content). Our equipment encrypts and decrypts each media stream that passes through it to guarantee complete communications security between two or more endpoints over the public Internet. Despite this high level of security, call quality even between all HD endpoints is not affected.

## 6 Videoconference as a Service

One of the most important features of our video conferencing is that it is provided as a Service. You do not need an investment plan; it is enough just to order the Service. It involves not only the platform itself, but also video conferencing equipment for meeting rooms, cameras and other computer accessories. While you use the Service, we take care of functionality.

Another enormous advantage is that the Service operates for you in the "cloud". Therefore, you can never run into a platform limit. As your communications needs grow, we can adjust your Videoconference Service.