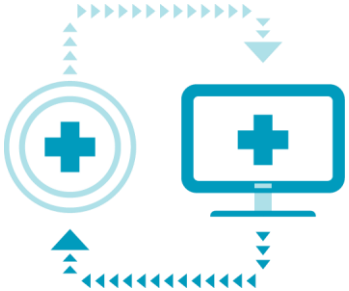
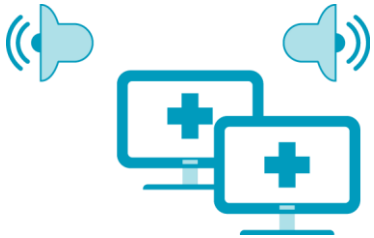
Remote collaboration tool for medical professionals

www.medvc.eu

What is medVC?

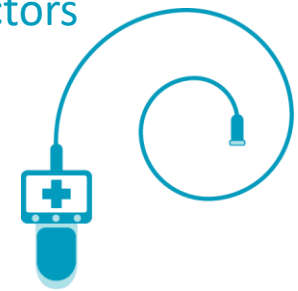
medVC





Real-time audio-video collaboration for doctors

Remote consultations and medical education



Multiple videos from medical devices

Pausing, drawing, snapshots, recording, live streaming

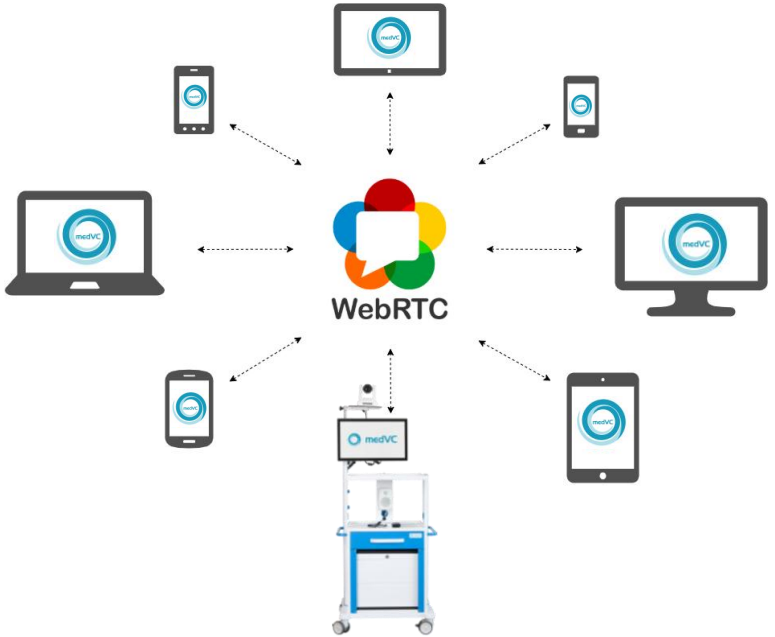
Compatibility

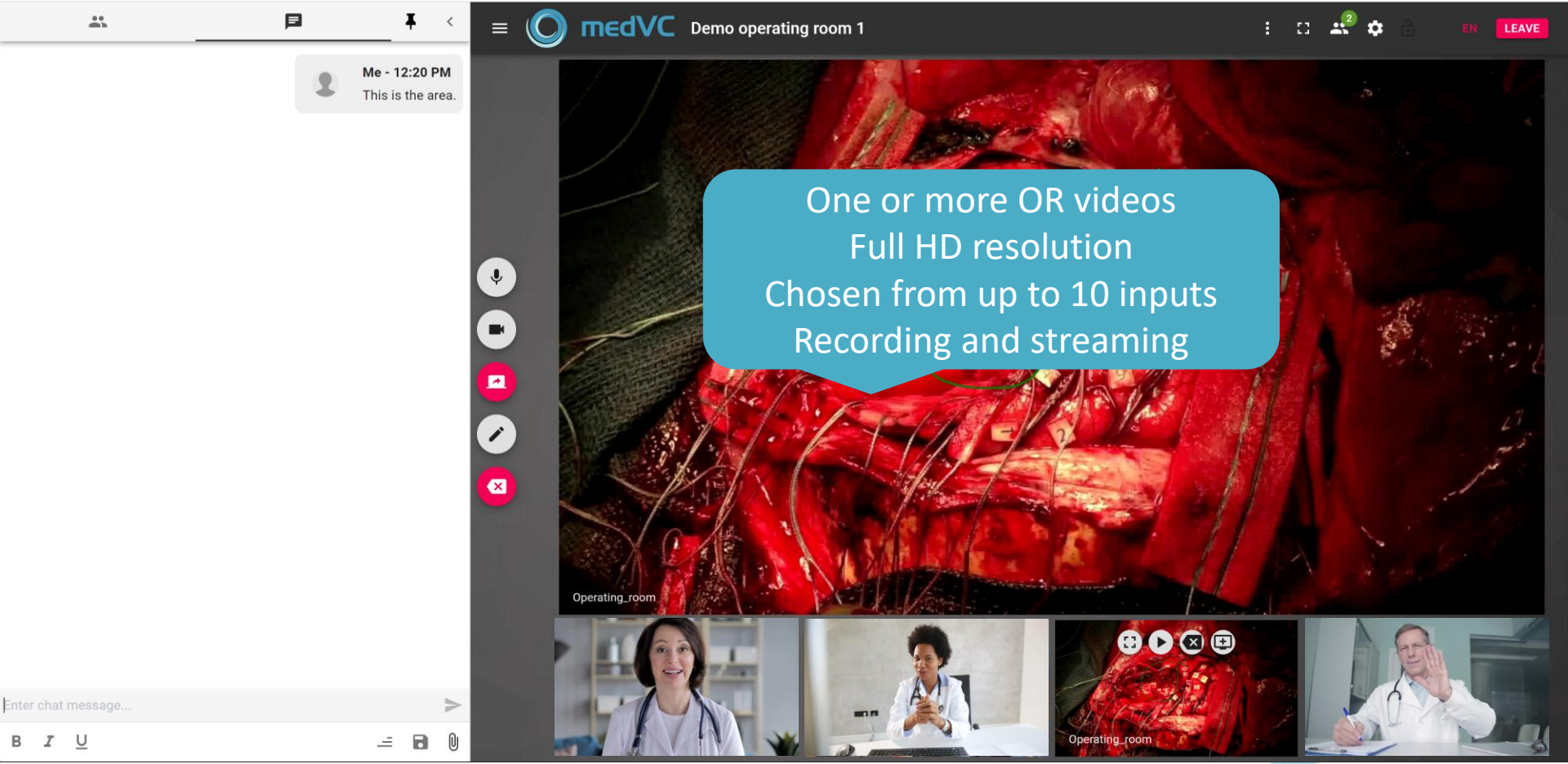
Medical cameras, microscopes, endoscopes, C-arms, surgical robots and other medical video devices

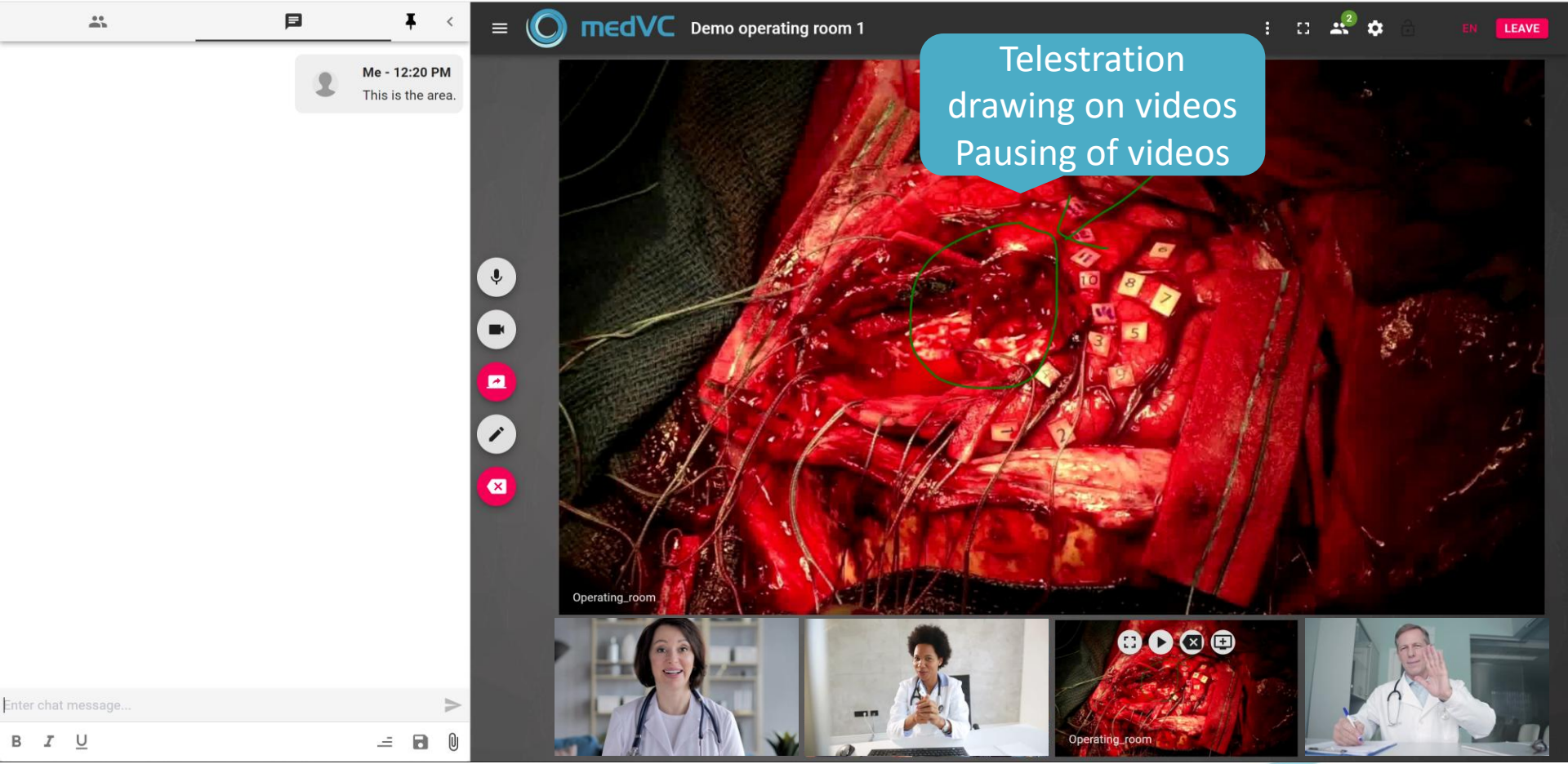
Storz, Olympus, Medtronic, Zeiss, Intuitive Surgical, Trumpf Medical, ConMed and others

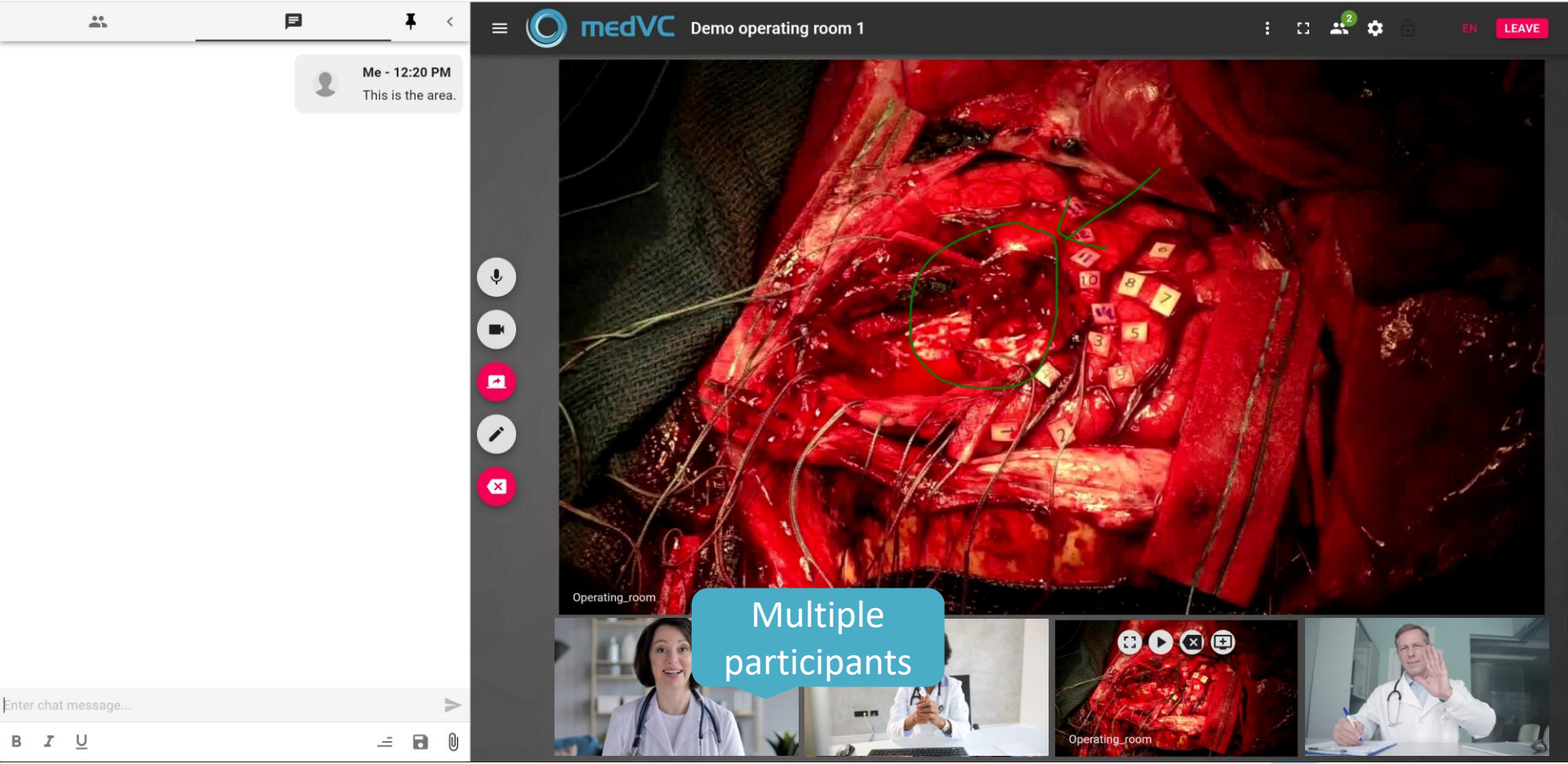
Compatibility

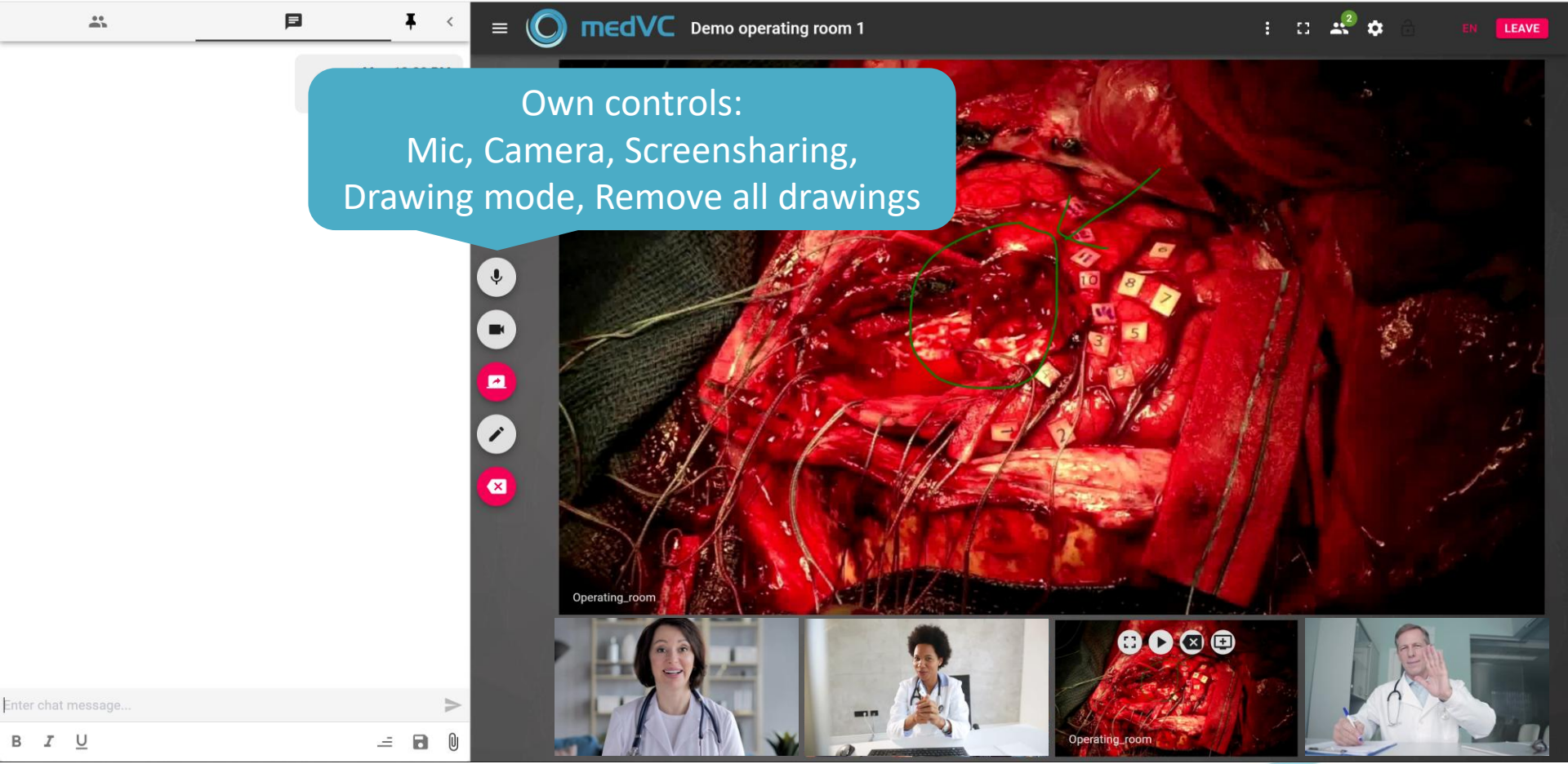
- WebRTC – any device, any system
- Dedicated OR setups
- Dedicate conference room setups
- Use your own device

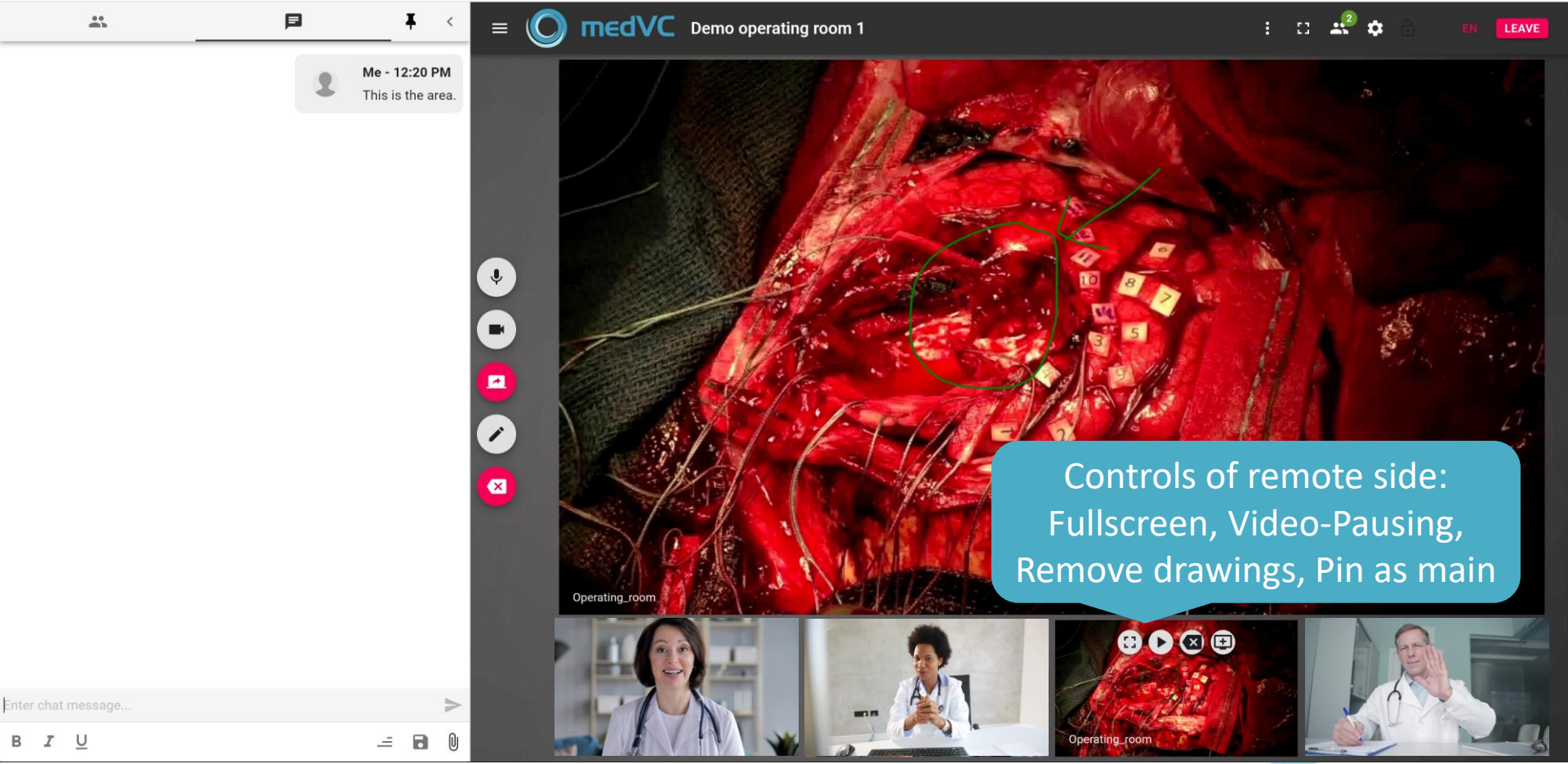


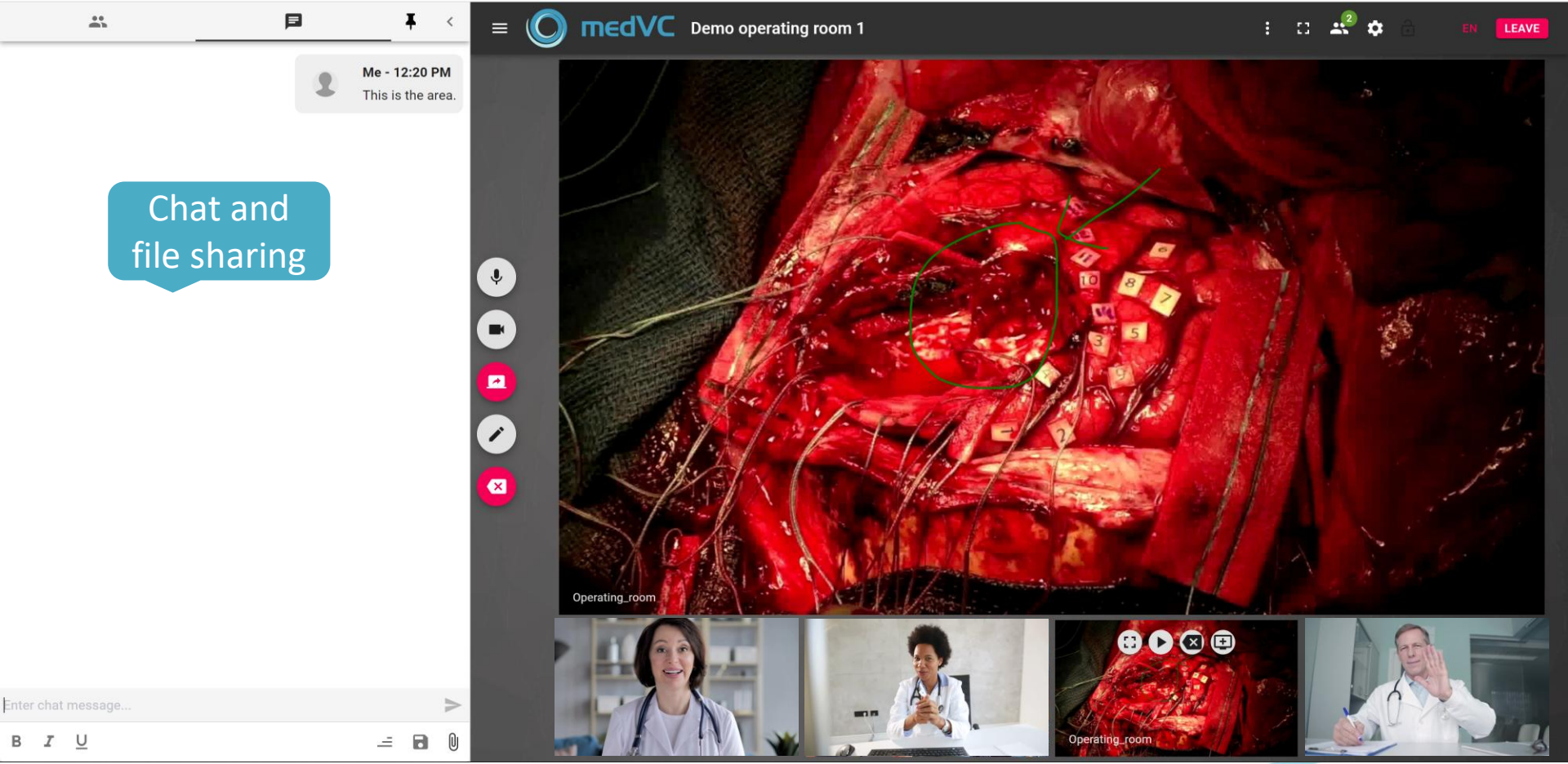

Me - 12:20 PM
This is the area.
Enter chat message...
medVC
Demo operating room 1
EN
LEAVE
One or more OR videos
Full HD resolution
Chosen from up to 10 inputs
Recording and streaming
Operating_room
Operating_room

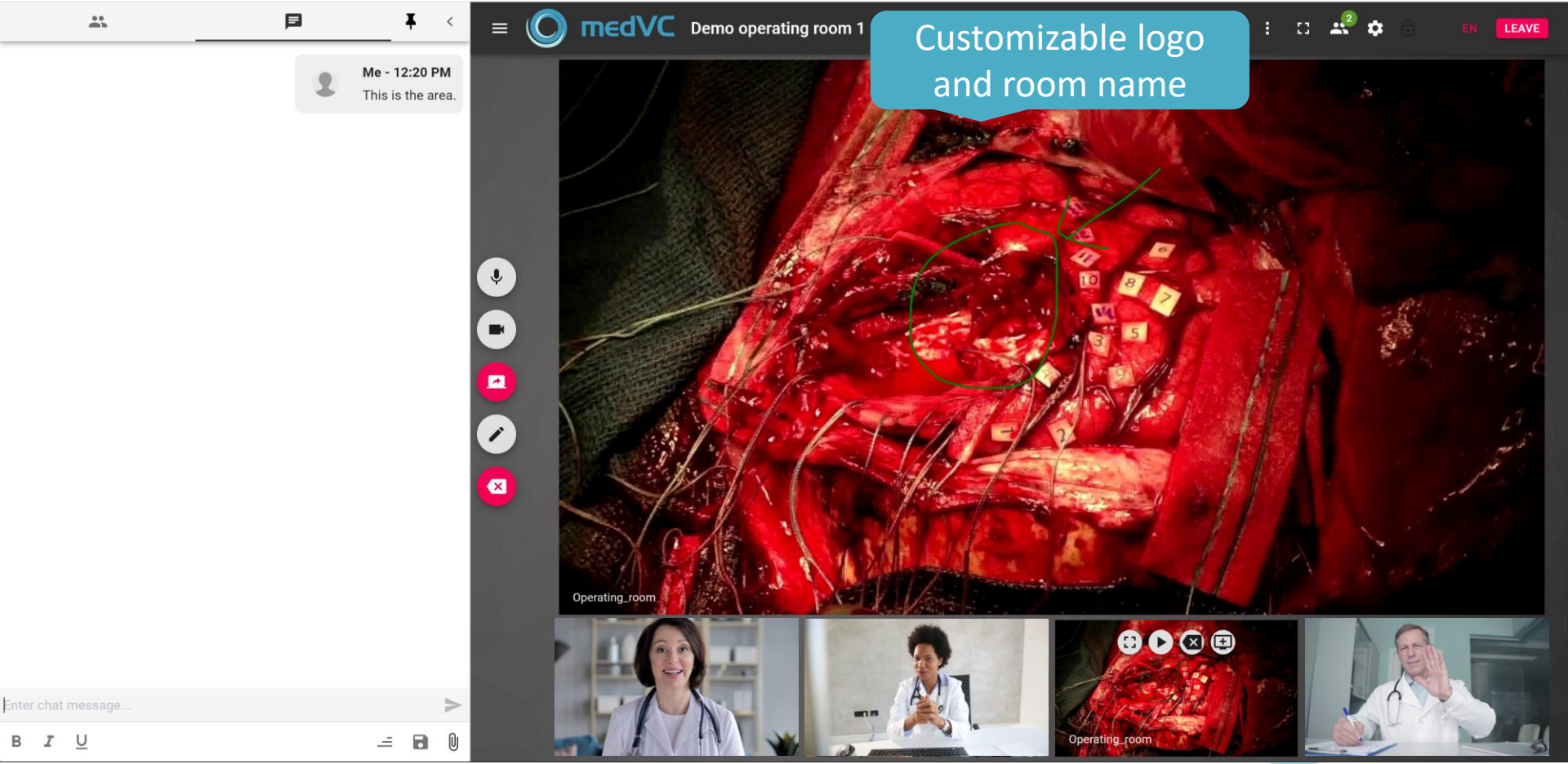

Me - 12:20 PM
This is the area.
Enter chat message...
medVC
Demo operating room 1
EN
LEAVE
Telestration
drawing on videos
Pausing of videos
Operating_room
Operating_room


Me - 12:20 PM
This is the area.
Enter chat message...
medVC
Demo operating room 1
EN
LEAVE
Operating_room
Multiple participants
Operating_room


Own controls:
Mic, Camera, Screensharing,
Drawing mode, Remove all drawings
medVC
Demo operating room 1
EN
LEAVE
Operating_room
Operating_room
Enter chat message...


Me - 12:20 PM
This is the area.
Enter chat message...
medVC
Demo operating room 1
EN
LEAVE
Operating_room
Controls of remote side:
Fullscreen, Video-Pausing,
Remove drawings, Pin as main
Operating_room


Me - 12:20 PM
This is the area.
Chat and file sharing
Enter chat message...
medVC
Demo operating room 1
EN
LEAVE
Operating_room
Operating_room


Me - 12:20 PM
This is the area.
Enter chat message...
medVC
Demo operating room 1
EN
LEAVE
Customizable logo and room name
Operating_room
Operating_room

Competition

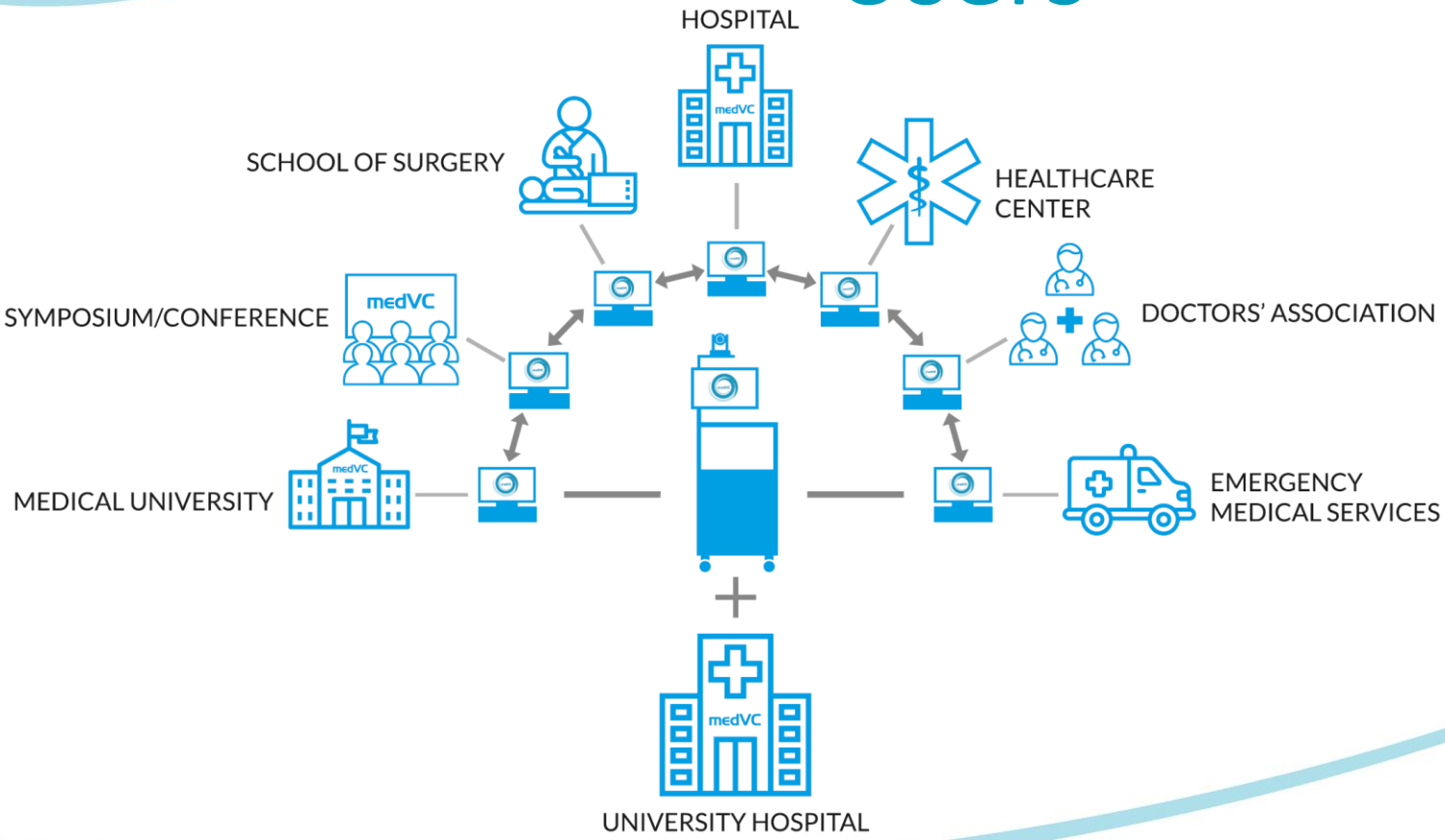
medVC	Zoom / Polycom / Microsoft Teams
High medical video quality	Lower video quality (below HD)
Multiple videos from the OR	1 video from 1 participant
Live video pausing	No pausing
Telestration - drawing on any video	Screensharing drawing only, not on medical video
Dedicated secure solution for medicine	Cloud-based consumer market solution

Competition

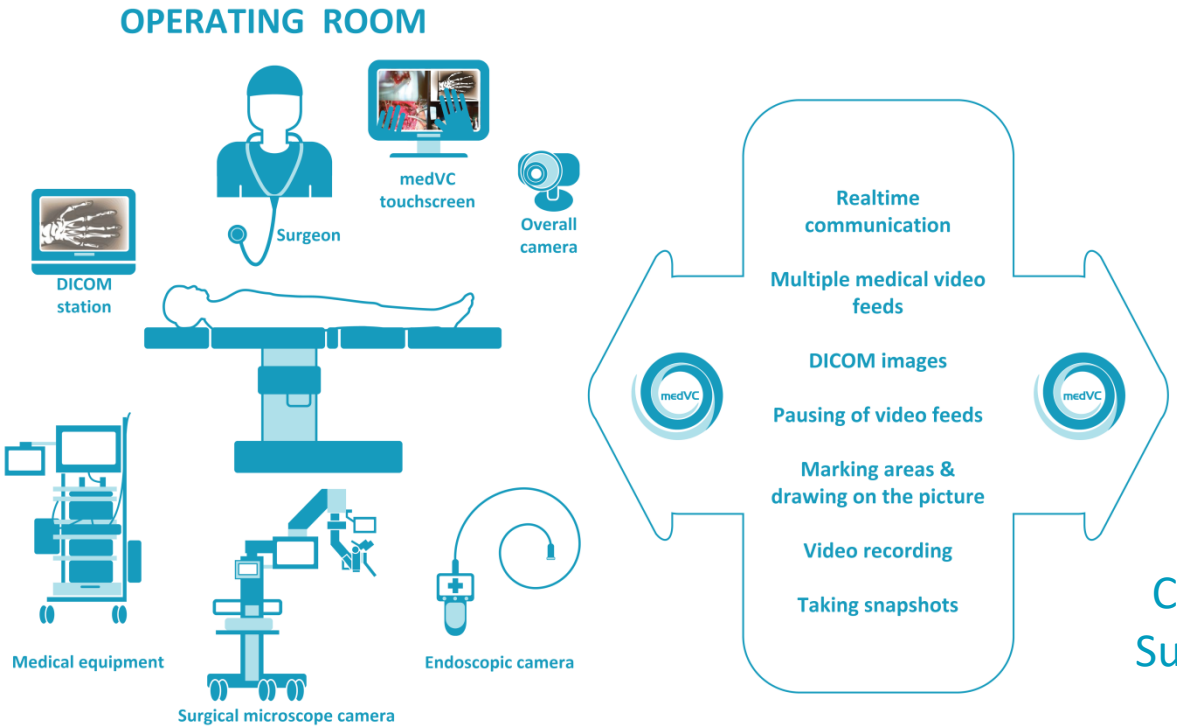
medVC	Zoom / Polycom / Microsoft Teams
Personalization of deployment: logo, name, domain	No or limited personalization
Functionality customization upon request	Of the shelf product – no customization
Secure recording with automatic upload to storage	Recording with access only using public cloud
Integrated streaming for education and events	No integrated streaming
Dedicated support	Consumer market support level

Scenarios

Users


HOSPITAL
SCHOOL OF SURGERY
HEALTHCARE CENTER
SYMPOSIUM/CONFERENCE
DOCTORS' ASSOCIATION
MEDICAL UNIVERSITY
EMERGENCY MEDICAL SERVICES
UNIVERSITY HOSPITAL

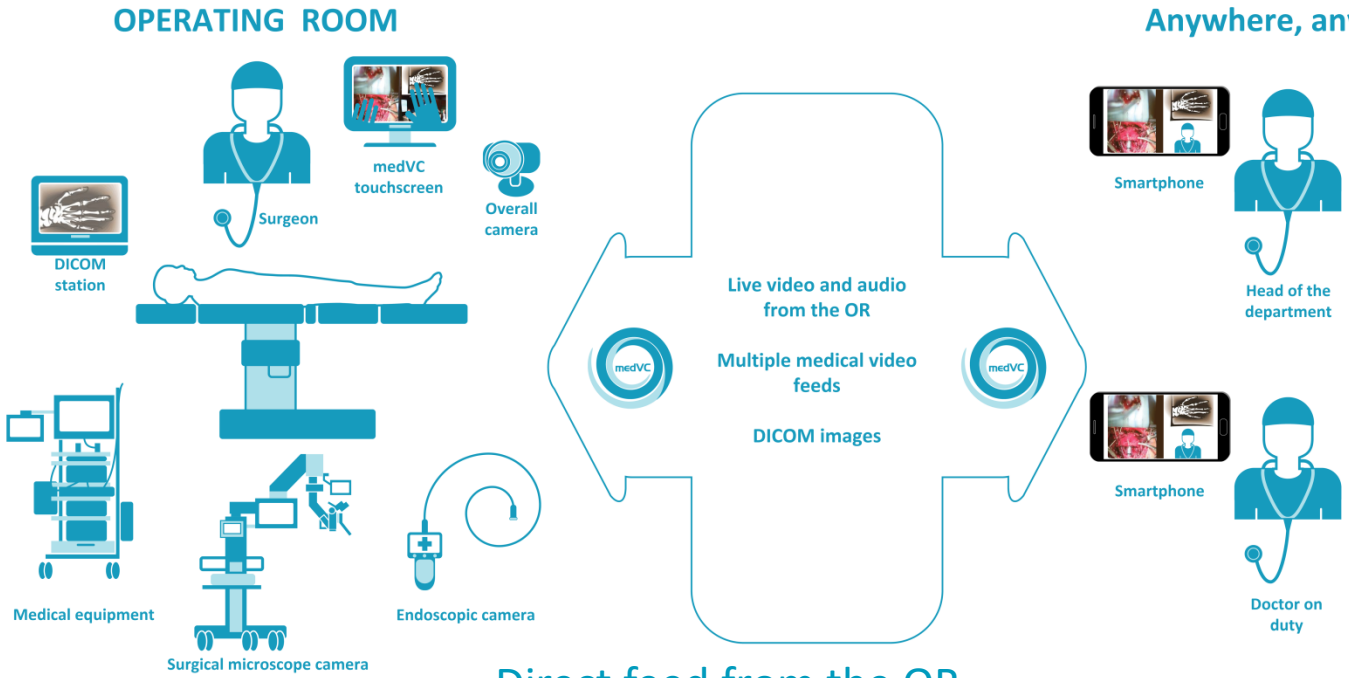
Remote supervision



Consulting from the office
Supervising young surgeons
Instant advice

www.medvc.eu

Smartphone supervision



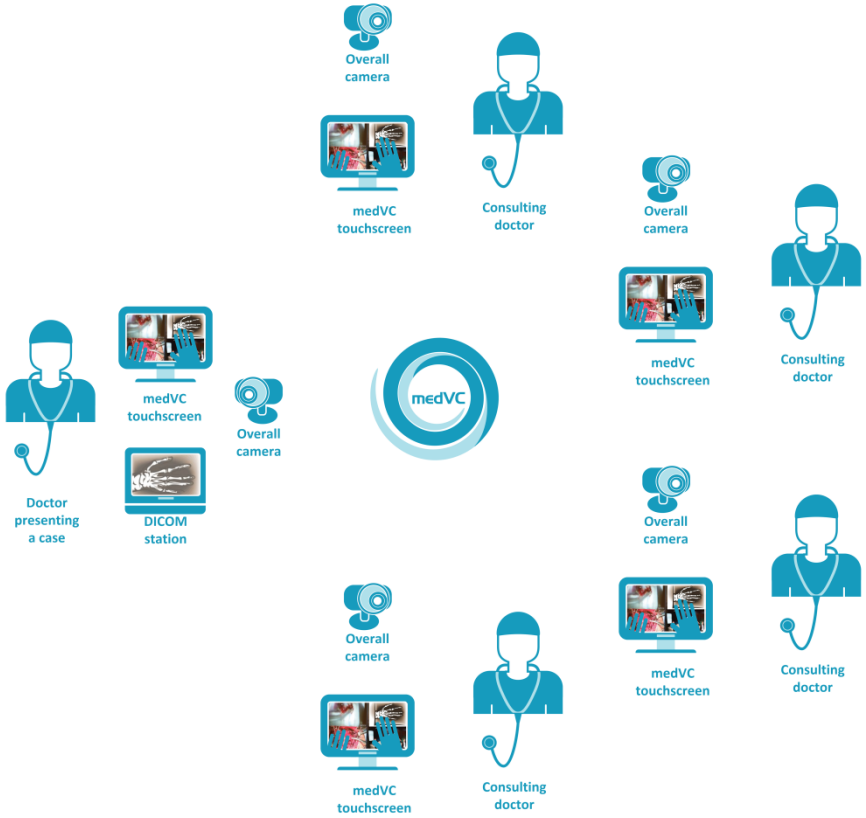
Direct feed from the OR

Supervising young surgeons

Any device - smartphone, tablet, PC

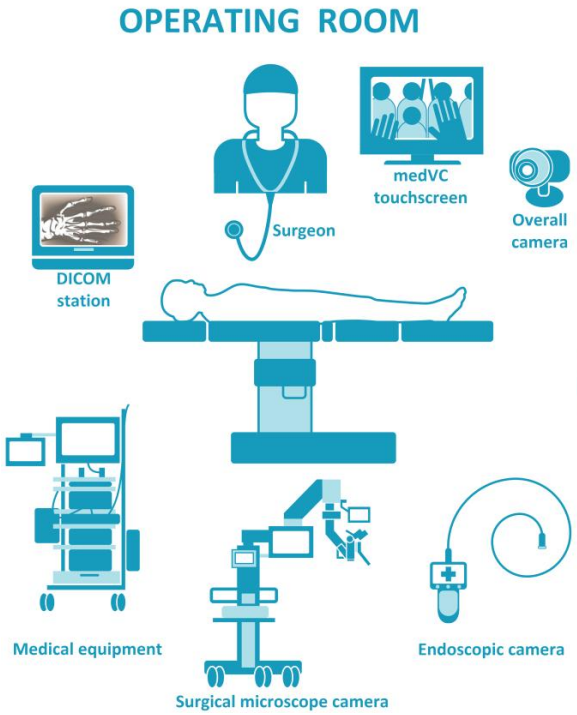
www.medvc.eu

Case conference



Discussing a difficult case
Preparing for the surgery
Multidisciplinary advice
Involving specialists from various hospitals

Medical education



Realtime communication

Multiple medical video feeds

DICOM images

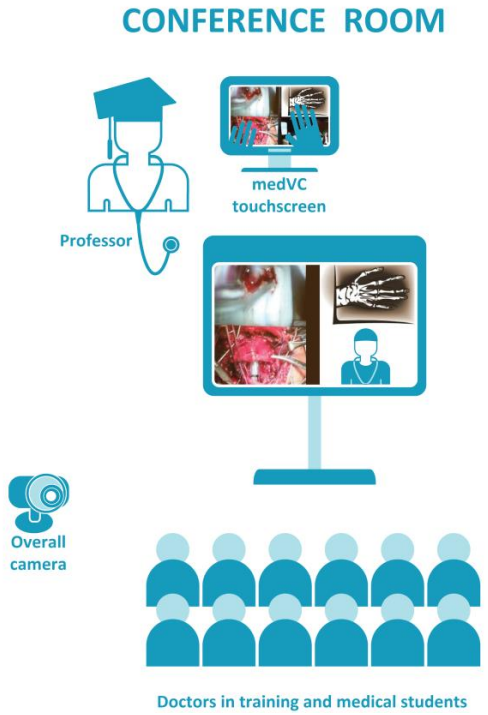
Pausing of video feeds

Marking areas & drawing on the picture

Live video streaming & recording

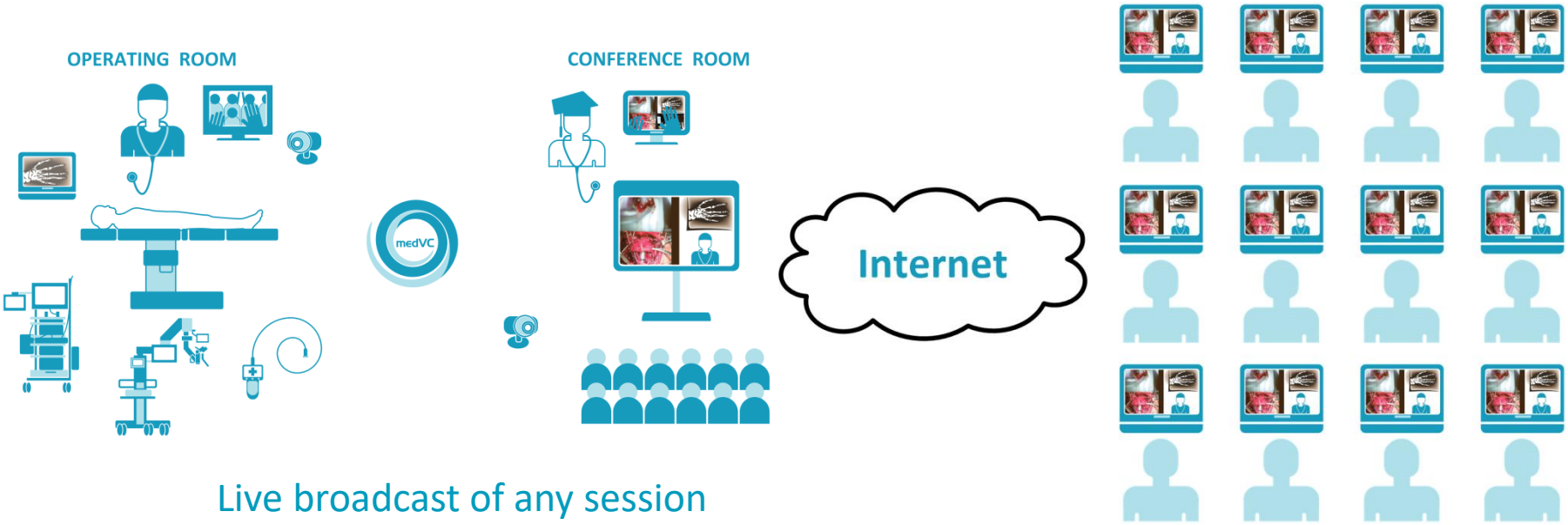
Taking snapshots

Stereoscopic 3D video



www.medvc.eu

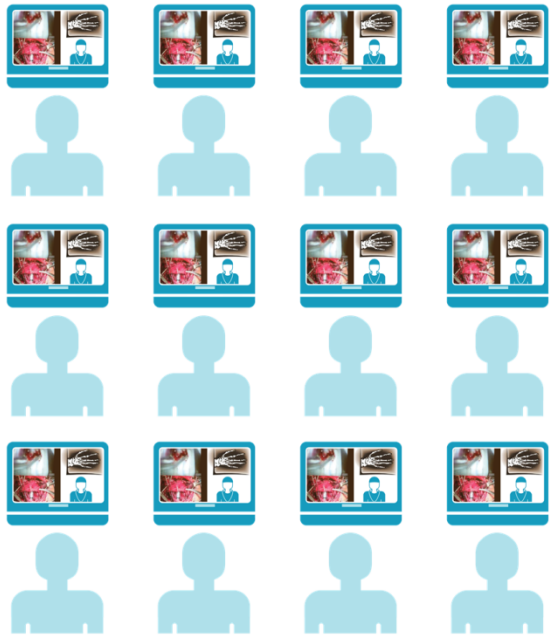
Interactive Medical University



Live broadcast of any session
Recordings published on dedicated portal
Content prepared by medical professors

Hundreds of
students at home

Event broadcasts



Thousands of viewers worldwide

Participate in medical broadcast
Show interesting surgeries
Promote your hospital

Clients

Selected Clients – Poland

- Szpital Kliniczny im. Heliodora Święcickiego w Poznaniu
- Wielospecjalistyczny Szpital Miejski im. Józefa Strusia w Poznaniu
- Ortopedyczno-Rehabilitacyjny Szpital Kliniczny im. Wiktora Degi w Poznaniu
- Uniwersytet Medyczny im. Karola Marcinkowskiego w Poznaniu
- Centrum Symulacji Medycznej w Poznaniu
- Polskie Towarzystwo Urologiczne
- Szpital Uniwersytecki w Krakowie
- Specjalistyczny Szpital Miejski w Toruniu
- Szpital Uniwersytecki nr 1 im. dr Antoniego Jurasza w Bydgoszczy
- Samodzielny Publiczny Centralny Szpital Kliniczny w Warszawie
- Wielospecjalistyczny Szpital Wojewódzki w Gorzowie Wielkopolski
- Samodzielny Publiczny Szpital Kliniczny nr 1 w Lublinie
- Mazowiecki Szpital Bródnowski w Warszawie

Selected Clients – Europe

- Centre Hospitalier Régional Universitaire de référence en Lorraine, Nancy (France)
- École de Chirurgie Nancy-Lorraine, Nancy (France)
- Hôpital Robert Schuman, Metz (France)
- San Martino – IST, Genoa (Italy)
- Assistance Publique Hopitaux de Marseille (France)
- Universitätsklinikum Essen (Germany)
- CHL Luxembourg (Luxembourg)
- Hospital de la Santa Creu i Sant Pau, Barcelona (Spain)
- Hospital Clinic, Universitat Autònoma de Barcelona (Spain)
- Leids Universitair Medisch Centrum, Leiden (The Netherlands)
- Universitätsklinikum Gießen und Marburg GmbH, Giessen (Germany)
- Facoltà di Medicina e Chirurgia dell'Università degli Studi di Cagliari (Italy)
- Krankenhaus Märkisch-Oderland, Strausberg (Germany)
- Hôpital Henri-Mondor AP-HP, Paris (France)
- Krankenhaus Waldfriede, Berlin (Germany)
- Guy's & St Thomas' Hospital London (UK)
- Vilniaus universiteto ligoninės Santaros klinikos, Vilnius (Lithuania)

Clients - World

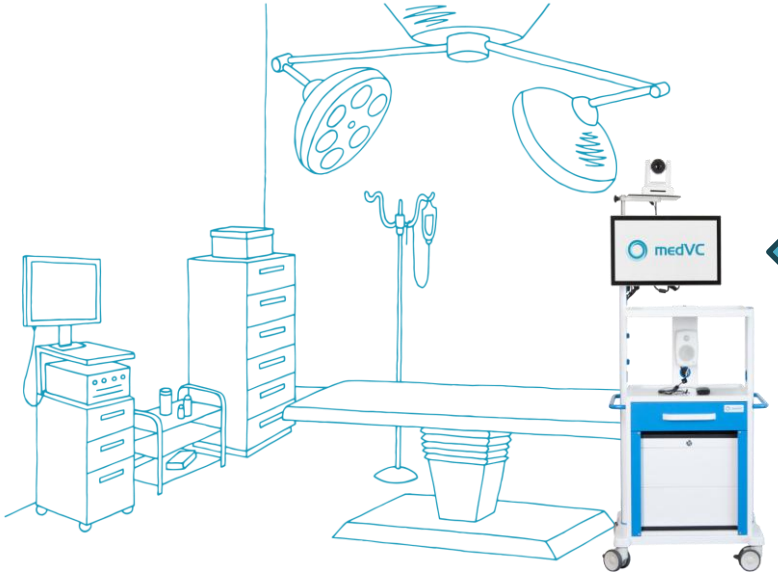
- Used in over 100 operating rooms worldwide

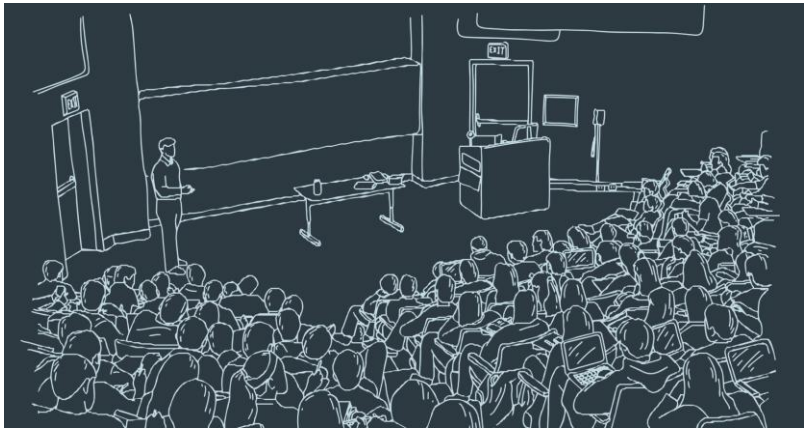
- Selected worldwide deployments
  - India
  - Nigeria
  - Pakistan
  - Panama
  - Peru
  - the Philippines

Live surgery broadcasts and conferences

www.medvc.eu

Live connection from ORs





Streaming

- medVC Terminals with built-in streaming
  - 1-click streaming
  - Self-managed
  - Suitable for daily usage and local events
  - Supports up to 500 viewers
  - Copy and paste player code for use on your own website

Streaming

- Event streaming
  - All audio-video and streaming equipment provided by medVC
  - medVC technical personnel available in the OR
  - Suitable for large events and conferences
  - Supports thousands of viewers worldwide (CDN)
  - Player can be integrated into the customer’s website, or medVC can provide a dedicated website

Interactive live surgery

- All videoconferencing, audio-video, and streaming equipment provided by medVC
- medVC technical personnel available in the OR and conference hall
- Real-time interaction between one or more ORs and the conference hall
- medVC tools available: multiple medical videos, telestration, video pausing
- Live events can also be streamed to increase reach

Integration

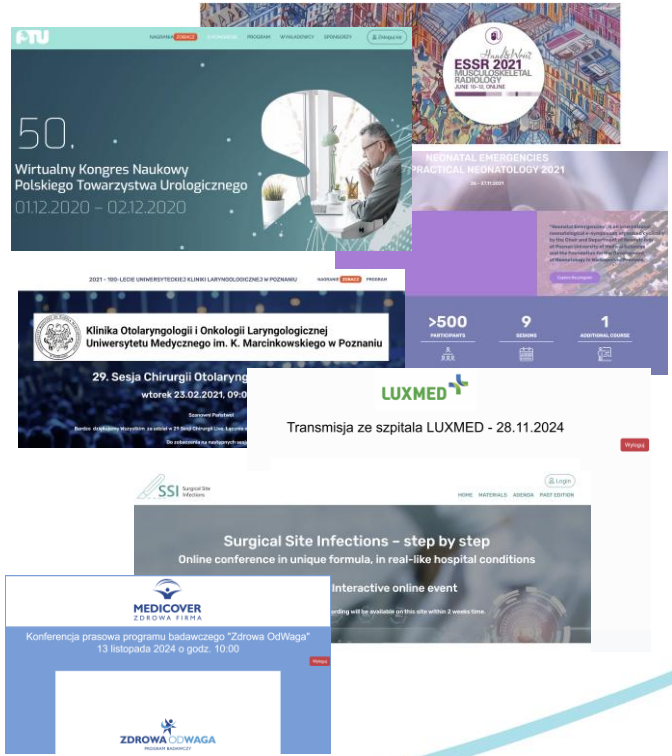
- medVC provides a holistic platform for interactive live surgery and streaming, offering all necessary components.

- Upon request, medVC can integrate with other solutions, including:
  - Videoconferencing (Zoom, Teams, Webex, and others).
  - Webinar platforms (Zoom Webinars, ClickMeeting, GoToWebinar, and others).
  - Streaming services (Vimeo, Facebook, YouTube, and others).
  - Learning Management Systems (Moodle, Canvas, Edmodo, and others).

- medVC provides seamless videoconferencing and streaming on any platform, allowing clients to continue using their existing platform without the need for changes or migration.

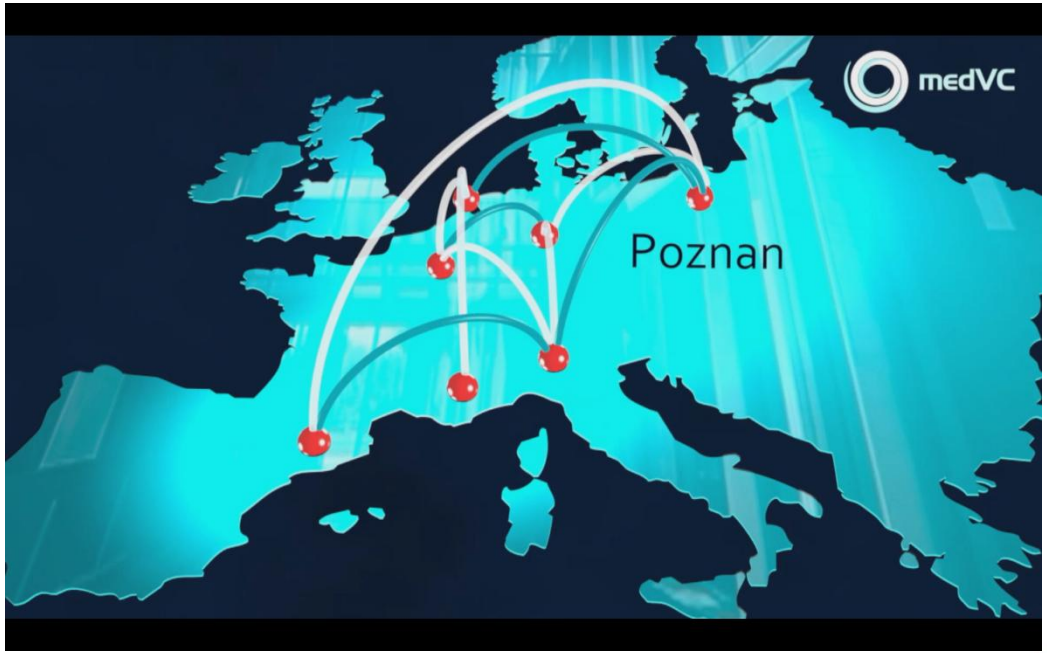
Events in numbers

- Conferences: 50+
  - In-person, hybrid, and virtual formats
  - Full conference hall setup with medVC technical crew
  - Conference portal with streaming capabilities
  - Post-production of recorded sessions
- Surgery event sites: 200+
  - All necessary equipment provided
  - medVC technical crew available in the ORs
  - Interactive connections, streaming, or recording
- Self-managed events: 500+



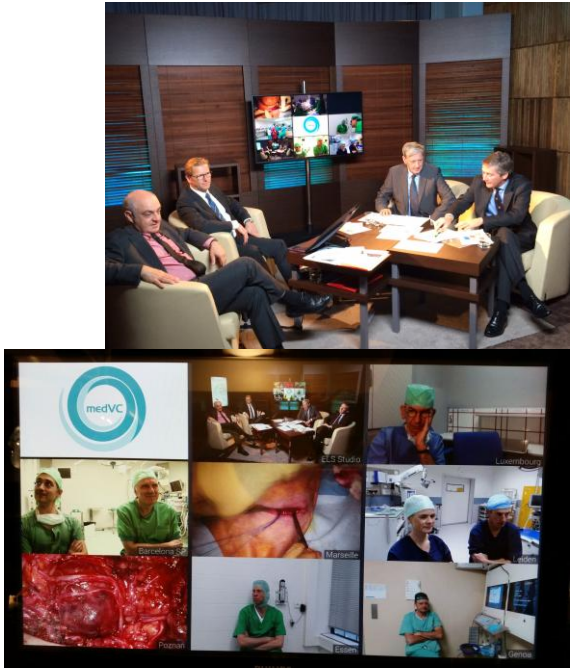
European Laryngological Live Surgery Broadcasts

Barcelona, Spain
Cagliari, Italy
Essen, Germany
Genoa, Italy
Giessen, Germany
Hamburg, Germany
Leiden, The Netherlands
London, UK
Luxembourg
Marseilles, France
Ljubljana, Slovenia
Poznań, Poland
Wrocław, Poland
https://els.livesurgery.net



9th European Laryngological Live Surgery Broadcast 2024

- 7 hours of live broadcast
- 4 surgeries performed in parallel
- Presentation of surgical highlights
- Clinics equipped with medVC
- Professional TV studio in Poznań
- Thousands of viewers from over 100 countries
- Professional post-production
- Multi-camera view
- Sponsors



medVC in action

- medVC connecting 10 European clinics during the 9th ELS broadcast 2024 – recording of a telemedical session.
  https://url.medvc.eu/els2024

- Telemedicine for the Military - MEDICS Project under the SZAFIR Program.
  https://url.medvc.eu/medics

- A video about the live surgery session in 3D between Gronau, Germany and Warsaw, Poland.
  https://url.medvc.eu/ptu3d

- A video about the ophthalmology live surgery workshop in Warsaw, Poland.
  https://url.medvc.eu/liberek

Significant Projects

NATO OTAN

WIŁ

PSNC

medVC

WOJSKOWY INSTYTUT MEDYCYNY LOTNICZEJ
Military Institute of Aviation Medicine

SYSTEM FOR MEDICAL INFORMATION MANAGEMENT AND SUPPORT OF MEDICAL EVACUATION PROCESS ON THE BATTLEFIELD

MEDICS

Telemedical integration of universities and medical faculties

Polska Szkoła Chirurgii
Polish School of Surgery
https://polskaszkolachirurgii.pl/

Nationwide telemedicine platform based on Polish ICT solutions

Ministerstwo Edukacji i Nauki

Ministerstwo Zdrowia

Technical information

medVC OR Pro

- Main unit (10 video inputs)
- Overall FullHD PTZ camera
- Medical touch-screen monitor
- Integrated audio-video devices
- Wireless headset microphone
- Loudspeaker
- Additional equipment according to needs

medVC OR Smart

- Medical all-in-one computer (4 SDI video inputs)
- Webcam overall camera
- Wireless headset microphone
- Loudspeaker
- Additional equipment according to needs

Other locations

- Use your own device
  - Device: PC, laptop, tablet, smartphone
  - OS: Windows, MacOS, Linux, Android, iOS
  - Browser: Chrome, Edge, FireFox, Safari
  - Test it yourself https://demo.or.medvc.eu/or1
- We also can provide dedicated terminals for other locations

medVC OR Integrator set

- Main unit (2 video inputs)
- Medical touch-screen monitor
- Audio device

medVC Conf setups

- Main unit (2 video inputs)
- FullHD PTZ camera
- Touch-screen monitor
- Audio device
- Handheld microphone
- Loudspeaker

medVC Office setups

- Main unit (1 video input)
- FullHD USB camera
- Touch-screen monitor
- USB speaker-phone

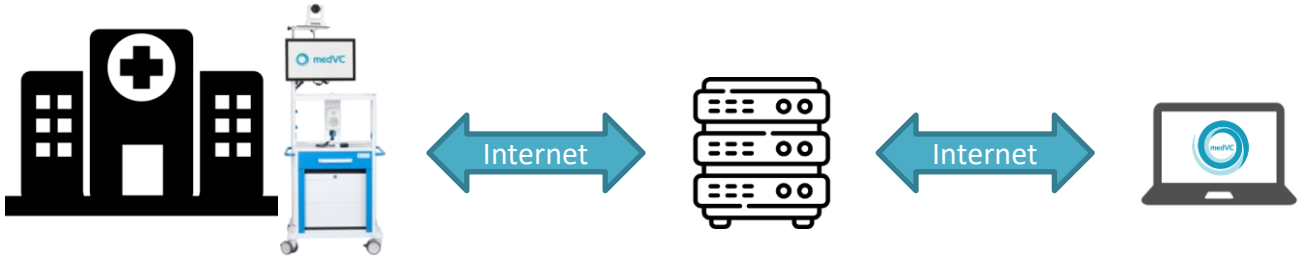
Software-only version for Operating Room Integrators

- Benefits for OR Integrators
  - Use own, trusted and established hardware providers
  - Lower costs of a deployment
  - Reach more customers by providing new functionality
  - medVC helps with the hardware specification for each deployment
  - Software installation done by medVC
  - Full support from medVC

- Benefits for customers
  - No separate system – seamless integration with the OR system
  - Single point-of-contact in case of hardware problems
  - Telemedicine functionality beyond standard videoconferencing solutions

Deployment

Cloud servers



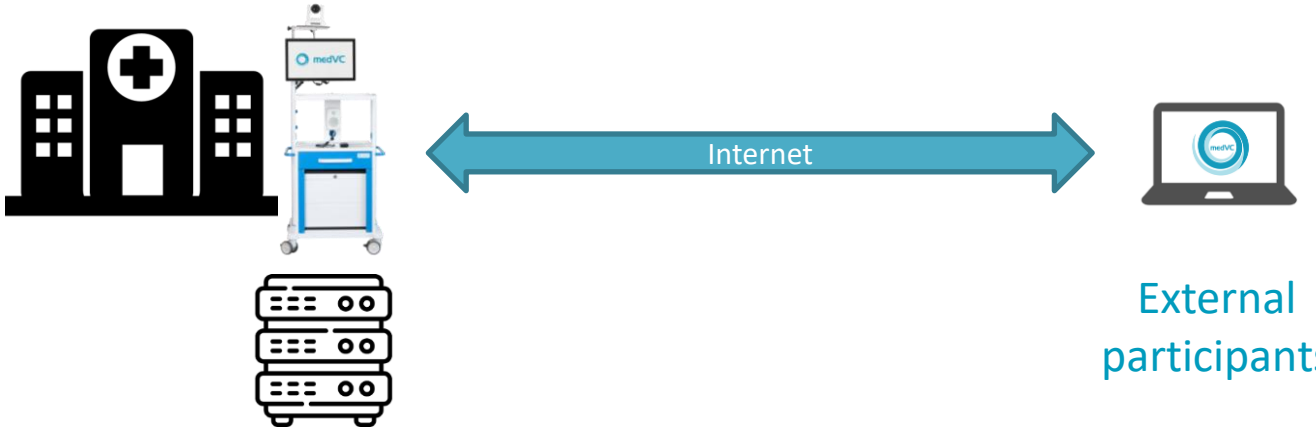
medVC Terminals in hospital

Server in an external data centre

External participants

Deployment

Servers in hospital



External participants

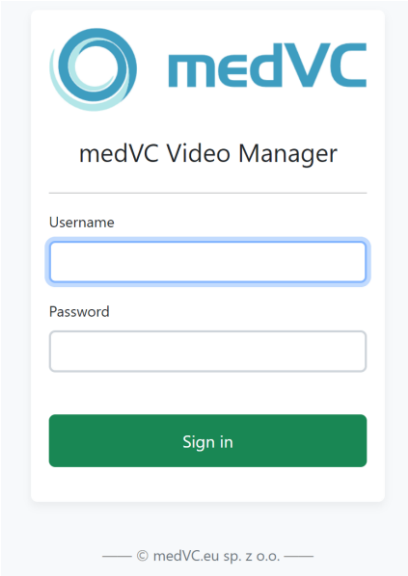
medVC Terminals and servers (public IPv4 address needed) in hospital

Recording server software

- Cloud or on-premise installation
- 4 CPU cores required per operating room
- WYSIWYG - records the layout of the operating room
- Storage requirements:
  - Local storage: at least 2×4TB in RAID 1 configuration
  - Automatic upload to video storage
- Live streaming: To a CDN endpoint
- Optional – not required for videoconferencing

Dedicated Video Manager

- Cloud or on-premise installation
- 1-click recording
- 1-click streaming
- Functionality
  - View recordings
  - Trim recordings
  - In-recording markers for easy navigation
  - Search recordings
  - Download recordings
  - Delete recordings
  - Access live streaming channels



Technical data

- Easy to use touch-screen interface (like a smartphone interface)
  Demo room: https://demo.or.medvc.eu/or1
- Connect any medical device with a video output
- Independent video streams with full quality
  - Transmission of up to 3 video streams from any of the 10 inputs
- Support for
  - 2D video
  - 3D video (e.g. from 3D endoscopes or the da Vinci robot) – additional 3D display equipment needed
- Transmission formats
  - HD 720p
  - Full HD 1080p
  - 4K
- Professional audio quality

Technical data

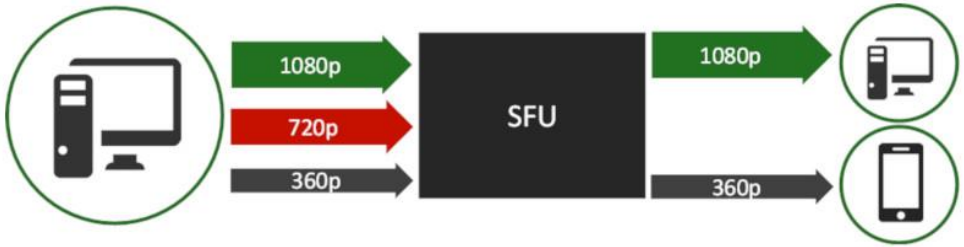
- Medical collaboration functions
  - Multiple medical videos
  - Pausing of videos
  - Drawing on videos
  - Audio-video recording and automatic upload
  - Live streaming to the Internet to any device

Technical data

- Accepted video inputs (additional scalers or converters may be needed)
  - HDMI / DVI
  - SDI (SD-SDI, HD-SDI, 3G-SDI, 6G-SDI)
  - VGA
  - Composite Video
  - Component Video
  - S-Video

Technical data

- SFU (Selective Forwarding Unit) server
  - Multisite collaboration
  - ICE-Lite support
  - DiffServ support for network prioritization
  - Simulcast and SVC support (quality adaptation)



Technical data

- Video Manager (additional option)
  - storage and access to recorded videos

- Live streaming (additional option)
  - broadcast to thousands of Internet viewers using practically any device, anywhere around the world

Security declaration

In medVC the Sensitive Personal Information is secure and cannot be known or transparently modified by other parties on the streams route.

For accessing the web-app, HTTPS must be used - what the browser uses, WebRTC uses (i.e. TLS 1.3)

Encryption is a mandatory feature of WebRTC, and is enforced on all components, including signalling mechanisms. Resultantly, all media streams sent over WebRTC are securely encrypted, enacted through standardised and well-known encryption protocols. The encryption protocol used depends on the channel type; data streams are encrypted using Datagram Transport Layer Security (DTLS) and media streams are encrypted using Secure Real-time Transport Protocol (SRTP).

Contact

contact@medvc.eu

medVC.eu sp. z o.o.