

CPMS Technical Requirements

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This document answers the following questions!

1. Am I using a modern browser when accessing CPMS ?
2. Does my browser support the CPMS video technology known as WebRTC ?
3. Am I connected to any video conferencing facility on my computer at the same time I'm trying to join a video meeting on CPMS ?
4. Which bandwidth helps me to get stable connection in video meetings onto CPMS ?
5. How can I upload large files into CPMS ?
6. What file formats can I upload into CPMS?

1 Introduction

Clinical Patient Management System known as CPMS is a secure web-based collaboration platform to support European Reference Networks in the diagnosis and treatment of rare or low prevalence complex diseases. The CPMS empowers experts and specialists to take part in multi-disciplinary cross-border virtual consultations.

2 Scope

This document is intended for IT departments in hospitals participating in European Reference Networks for Rare Diseases. This is to provide the minimum technical requirements needed to be supported in order to facilitate the use of CPMS by health professionals working at your organization.

3 Access CPMS

In order to allow health professionals benefit from CPMS, they should be able to access the URLs given below with their hospital networks via web browsers:

<https://cpms.ern-net.eu>

<https://cpms-training.ern-net.eu>

4 Browsers

Cameras and microphones have to be enabled to be accessed through the browser. For best experience, make sure you are using a supported browser. CPMS works on:

- Mozilla Firefox (latest version)
- Google Chrome (latest version)
- Internet Explorer (11.0 or later)

Note:

- When using devices with Mac Operating System, all users are requested to access the CPMS with the aforementioned browsers. Safari does NOT fully support the video conferencing technology used in the CPMS known as WebRTC.
- When using Microsoft Edge 16 and Safari, the functionality to share screen isn't yet supported.
- Users should not use private browsing modes such as 'Incognito' on Chrome whilst using the CPMS.
- Also, in your settings, turn on: JavaScript

5 Video conferencing requirements

The minimum required hardware is to have a device with camera and microphone to enable you participate actively in video meetings on CPMS. Below are other requirements that potentially can affect the uptake of CPMS to run smoothly within your organization.

WebRTC video technology incorporated into the CPMS can be tested on your machine via this link: <https://cpms-training.ern-net.eu/video-testing>

Please note the following when using video meetings:

- When using Internet Explorer, you will be requested to automatically download a Plug-in on your browser.
- For sharing screen on Google Chrome and Mozilla Firefox, users will need to enable an extension to run on the browser.

5.1 IP Address White-list

When users use Google Chrome or Mozilla Firefox, no need to any extra configurations or whitelisting any IPs when using CPMS within and outside healthcare settings.

For users of Internet Explorer 11. when using the video meeting facility in CPMS within hospital networks, the following IP address have to be whitelisted so users can benefit from the service.

Go to the following link to access the IPs to be white-listed: <https://whitelist.tokbox.com/whitelist.json>

5.2 Conflicting video applications

Please make sure that you are not using another video conferencing applications (e.g. Skype, GoToMeeting, Zoom, etc.) or similar video stream through another browser or a tab in the same browser (e.g. when recording a webinar). This may cause difficulty for your device to switch on your camera and microphone in several applications.

5.3 Network

Video conferencing uses a variable amount of bandwidth, this variation may affect the quality displayed to the user. This may result in low quality or dropped video connections if the available bandwidth falls below a reasonable threshold. The user is informed of this in as clearly as possible.

Video quality dynamically adjusts based on the strength of a user's network connectivity. This is done by the Subscriber sending feedback packets to the publisher that say "My network quality is at 'x' level. Please adjust your published video bit-rate to accommodate my current bandwidth". The faster and more stable a Subscriber's broadband connection is, the better the video quality it will request. This mechanism works well until a certain point. If a Subscriber's bandwidth drops below a certain threshold, or if a Publisher has very little bandwidth to upload video, behaviour can be unpredictable.

Ideally, it is recommended a minimum dedicated 350kb/s down per downloaded stream, as well as 350kb/s uploaded stream to maintain a stable video connection.

For various resolutions and quality combinations, the bandwidth requirements are outlined below.

- Excellent - None or imperceptible impairments in media
- Acceptable - Some impairments in media, leading to some momentary disruptions

For the given qualities and resolutions, all the following conditions must met.

Quality	Video Resolution @ FPS	Video kbps	Packet Loss
Excellent	1280x720 @ 30	> 1000	< 0.5%
Excellent	640x480 @ 30	> 600	< 0.5%
Excellent	352x288 @ 30	> 300	< 0.5%
Excellent	320x240 @ 30	>300	< 0.5%
Acceptable	1280x720 @ 30	> 350	< 3%
Acceptable	640x480 @ 30	> 250	< 3%

6 Large File Upload requirements

6.1 FTP batch upload

Using the FTP functionality may require higher technical competences that require prior experience. Please ask the IT department at your organization if you experience any difficulty in using the FTP client software.

IT departments can install FTP clients such as FileZella and WinSCP for health professionals. FTP can be very suitable in case of large file uploads. Please note that authorized health professionals, will need to set up a password to the FTP server that can be used to upload files by a third person into a particular panel when necessary.

If health professionals do not have access to medical documents and materials of interest to upload, they may request IT personnel in their organization to upload specific documents to a particular panel.

All the instructions are provided in the pop-up modal to guide users to feed the right information into the FTP client software. Below is a definitive list of file formats that can be uploaded to the CPMS. Please pay attention that the format extensions are case sensitive.

PDF	pdf					
Excel	xml	csv	xls	xlsx	xlsm	
PowerPoint	ppt		pptx		pptm	
Word	doc		docx		docm	
Open Doc	odt	ods	odp	odc	odi	
Medical Images	dcm	jpg	jpeg	bmp	tiff	png
Video	avi	flv	wmv	mov	mp4	
Sound	pcm	wav	ogg	flac	mp3	

Essentially, medical images for radiology scans and pathology specimens will be always viewed in the image viewer provided that the files are in valid content and formats. Whilst, image files such as jpg, png, and bmp will be previewed in a special modal.

6.2 IHE option for Integration

CPMS is capable of exchanging documents with other Health Information Systems using specific profiles. If your institution can participate in connecting to external IHE systems, then please contact CPMS support desk for further details SANTE-ERN-CPMS-ITSUPPORT@ec.europa.eu