Viseur AI PACS User Manual

(Version V1.0)

1. General information

This user`s manual describes **Viseur AI** functionalities and operation with **Viseur AI**.
Seeking to ensure patient safety, software should be used by intended use. You should therefore ensure that you are thoroughly familiar with the user manual before setting up and using **Viseur AI** for the first time.
Viseur AI is dedicated only to show ePHI (Electronic protected health information) contained in study file. **Viseur AI** does not replace medical professionals and could be used only as an additional tool. No special facilities or special training of the medical software **Viseur AI** users are required.
Please note that medical images quality, sharpness, accuracy and other parameters, relevant to the users, directly depends on the technical capabilities of medical device, which is generating medical images, on the monitor and printer technical capabilities.
Viseur AI is a software – picture archiving and communication system – intended to display, process, read, report, communicate, distribute, store and archive medical data which are available as DICOM or/ and non-DICOM data, including mammographic images and bio signals. Viseur AI converts case related non-image documents, archives them as DICOM data and serves as a vendor neutral archive. Viseur AI supports the medical professionals in diagnosis.

INTENDED USE FOR ALL COUNTRIES
Viseur AI is a software intended to aid in diagnosis by visualization various medical images, video and signals, measuring data in DICOM images and management DICOM images, when the patient is not in life- threatening state of health, time is not critical for medical decision and no major therapeutic interventions are required. **Indications for use:** Viseur AI is a software intended to aid in diagnosis by visualization various medical images, video and signals, measuring data in DICOM images and management DICOM images, when the patient is not in life-threatening state of health, time is not critical for medical decision and no major therapeuticinterventions are required. Contraindications: None. **Work environment:** The device is provided for the professional user. Viseur AI is intended for medical professionals and is provided to use in professional environments dedicated for medical diagnosis. Device is dedicated for continuous work.

WARNING! Mobile device display is intended for informational purposes only, not for diagnostic purposes.

WARNING! Software usage not by intended use may cause patient death, potential injury or serious health impairment, requiring professional medical intervention.

CAUTION! Consider country specific regulations regarding monitors and their maintenance.

Types of use: Viseur AI is intended for multiple patient multiple use.

Viseur AI Catalogue number: VAI.RPO

R stands for Radiology Module

P stands for Pathology Module

O stands for Oncology Module,

Any products containing one of these modules is in the scope of the Instruction Manual

Known limitations:

- Viseur AI viewing functionalities may be blocked by browser security if launched in iFrame.

Risk and Benefit: Using Viseur AI by its intended use does not cause risk, which could influence patient health status or health changes, but facilitate work of medical professionals, provide a better opportunity for accurate diagnosis.
Clinical data are collected, stored and managed as described below:

- By implementing post market clinical follow-up studies
- By analyzing results of collected preclinical data;
- By implementing competitor analysis and literature analysis;
- By managing risk;
- By managing complaints and problems;
- By collection vigilance system data;
- By implementing biomedical research.

Viseur AI is continually tested. All critical issues are corrected immediately and users are informed about software functionality limitations and risks.
In case of Viseur AI bugs please immediately contact to Viseur AI PACS support at this email: info@viseur.ai

2. Personal data security breach

In case of personal data breach (including but not limited to cybersecurity breach) please immediately (but not laterthan during 24 hours) inform medical software Manufacturer Viseur AI by using below mentioned contacts:

Viseur AI PACS Data Protection Officer (contacts of Data Protection Officer are public available https://viseur.ai/).

Name, Surname: Serkan SÖKMEN
Tel. +90 (545) 471 29 59
Mail: serkan@viseur.ai

3. Serious incidents reporting

Any serious incident that has occurred in relation to the device should be reported to the manufacturer (via email: info@viseur.ai) and the competent authority of the Member MOH in which the user and/or patient is established.

4. Availability of documentation

Electronic version of Viseur AI User Manual in English is free available on the Viseur AI website https://viseur.ai/ as well as access to the supporting software versions. User Manual could be opened in a browser or saved in pdf format and downloaded to Your computer.

5. Questions

Please visit out F.A.Q. in Viseur AI PACS webpage for answers to frequently asked questions or problems.

WARNING! In the event of malfunction of the device or changes in its performance that may affect safety, contact to manufacturer.

CAUTION! Incorrectly installed software could cause inconvenience to medical professionals using the software and disruption of the medical professional activities.

If you have any questions or comments regarding Viseur AI functionalities or this user`s manual, please contact Viseur AI PACS Customer support: info@viseur.ai

6. Explanation of symbols used

During Viseur AI usage please pay attention to important information, related to patient safety, which is warningabout software functions, whose implementation errors may pose a risk to patient health.
The symbols in this User Manual are intended to alert user about possible errors in the software or its use. Pleaseread the information carefully as you see the symbols described below.

WARNING! This indicates a hazardous situation which may cause patient death, potential injury or serious health impairment, requiring professional medical intervention.

CAUTION! This indicates a hazardous situation which may cause minor potential injury, not requiring professional medical intervention, or simply cause inconvenience to medical professionals using software withoutaffecting patient health status or health changes.

NOTE! Information, hints and advice for a better understanding of the instructions to be observed in the operation of the instrument.

Additional Symbols:

	Country of manufacture		Release date
MD	Medical device class		Distributor
UDI	Unique device identifier		

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 End-users contact information	 Fit to screen
 Success message sign	 Original resolution
 Information message sign	 Zoom selection
 Warning message sign	 Pan
 Error message sign	 Align Left
 Checkbox	 Align Right
 Search	 Align Center
 Export	 Align and Lock to the Left
 Forward	 Align and Lock to Right
 Display icon	 Channel
 Ascending/Descending	 Scroll
 System menu	 Magnifying glass
 Language menu	 Digital Extraction
 Notifications menu	 Assemblage
 Patient history	 Reverse
 Windowing	 Choice of color palette
 Histogram	 Show DICOM overlay
 Histogram scale	 Zoom
 Synchronize windowing	 Fit to screen

	Original resolution		Assemblage
	Zoom selection		Delete the selected montage image
	Pan		Save assembly
	Align Left		Panel
	Align Right		Order
	Align Center		Multi-image/burst
	Align and Lock to the Left		Reset
	Align and Lock to Right		MPR (multiplane reconstruction)
	Channel		Show/Hide Axes
	Scroll		Move axes to the center
	Magnifying glass		MPR layout with 3D image
	Digital Extraction		MPR layout for three 2D images
	Show 3D MPR image		Reference line
	Show 2D MPR image		Crosshair
	Change the display order in the MPR layout;3D change image to CPR image		Rotate
	Convoluted Planar Reconstruction Line		Rotate right
	Spin		Rotate left
	Auto Forward or Backward		Horizontal flip

	Flip vertically		Progression of tibial tuberosity
	DICOM (US site)		Cardiothoracic rate
	Connecting shifted series		Text annotations
	Automatic connection		Zone in interest, Closed polygon
	Manual connection		Driving
	Distance connection		Spine Labeling
	Synchronization operations		Spine Angle
	Measure		Flexible poly
	Line		Pen
	Angle		Ok
	Area		Flat feet
	Volume		Gonyometers
	Height Difference		TT-TG Distance
	Ellips		Time-Intensity Curve
	Rectangle		Calibration line
	Velocity Time Integral (VTI)		Show Angles
	Cobb Angle		Ruler
	Tibial Plateau Angle		Horizontal Line
	Norberg Angle		Continuous measurement
	Verbal Heart Scale		Density

	Delete all or selected metrics		Show 4D slider
	Save annotation		Server tool
	Key objects		Server agent. Fade line
	Share files via the DICOM Library		Server agent. Fade arrow
	Live sharing		Server agent. Draw
	Copy live share link		Full screen
	Information Labels		Theme
	Fusion		Small
	Cinema mode		Front loading series
	Series		Print
	Series		Suspended Protocol (HP)
	CAD markings		HP snapshot saving feature enabled
	CAD regions		HP snapshot saved
	Mass sign		Viewing an HP snapshot
	Calcification sign		Apply the previous Hanging protocol
	Plug-ins		Implement the forthcoming Hanging Protocol
	4D vehicles		Show next comparison study
	Create a 4D series; Virtual Series Thumbnail Icon		Measurement

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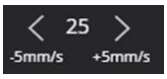
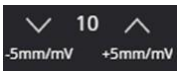
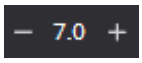
	QT scores		Edit a report template, segment it
	HR		Delete a report template, segment it
	QRS Axis		Download
	Filter		Burn a disc
	Change Horizontal scale (mm/second)		Copy measurement
	Change vertical scale (mm per mV)		Paste measurement
	ECG view slider		Stop copying and pasting measurements
	Duraklat		Copy the viewport contents to the clipboard
	Play		Copy the original image to the clipboard
	Previous Example		Save the image field content as a secondary capture DICOM
	Next Example		Copy the measurement values to the clipboard
	Frame rate in multiframe		Segmentation
	Stop playback		Segmentation tool Bounding Box
	Volume on		Segmentation Smart Paint
	Mute		2B Sınırlayıcı Kutu segmenti oluşturma
	All reported and unreported studies		Create a 2D Bounding Box segment
	Not Reported Work, Generate Report		Create a Free Drawing & Smart Paint segment
	Reported work, Open/Edit Report		Duplicate segment
	Paste into report		Finding the Segments

	Show/Hide Segment		Edit
	Group by / Ungroup by Series		To start recording
	Change color		Take a snapshot while recording
	Click to edit		Delete Complete image or video
	Click Send Target to Background		Expand the patient record
	Hover over to select		Close work
	Delete segment stroke		Open in CURRENT STUDY not saved (not converted to DICOM format) study Window for further modification
	Contour		Open the previously saved (converted to DICOM format) study in the DICOM VIEWER window
	Interpolation		Transfer the study to a local or external drive
	Paintbrush		Transmit the study to the hospital DICOM archive (7.1.2 Requires setting up the remote DICOM archive in the network settings)
	Paintbrush with Reference Pixel		New study on the list, not reviewed
	Fill Color		The study is not stored in the hospital DICOM archive
	Filler Paint Brush		Read the DICOM archive in the hidden hospital
	Smooth Edges		Read and Inform Patient
	Segment measurement		Assign a shortcut
	Copy the Value to the clipboard in CSV format		Try to run the task again
	Copy all annotation metrics as CSV		Stop working task
	Save segments		Undo a task
	Undo last action		Delete task Delete source profile

	Send DICOM C-ECHO and verify the basic connection with the DICOM protocol		Download the playlist file in VLC media player format
	Enable source profile - view video input source Stream window in the app Include at startup		Send Target PACS functions
	Update or change source profile settings		Attach files
	Install new from all Active Resources		Add folder
	Add a new resource profile		Remove file
	Can copy the full streaming address		Expansion to the serial level
	Notes and attachments		

Warnings regarding residual risks

No	Hazard	Warning/ Caution
1	Illegal access / Vulnerability of e- PHI (electronic personal health information)	**CAUTION!** Running Viseur AI software on shared user's account can lead to unauthorised access to patient's medical data. **CAUTION!** Incorrectly installed software could cause inconvenience to medical professionals using the software and disruption of the medical professional activities. **CAUTION!** Please notice, that closing the program without Log Off (using browser window close'x' button) is not safe and may lead to unauthorized access to medical data. **CAUTION!** The system does not anonymize the content of shared images and entered message.You take responsibility for sensitive data in shared information. **CAUTION!** The system grants to the guests the access to all the studies, that are opened in host's Viewer window when starting live sharing, and these studies will be displayed in the thumbnail panel of the guests' Viewer window. Opening or closing the studies, while sharing is on, is not supported.
2	Inadequate filtration process	**CAUTION!** Be aware, that access to the storages may be restricted by the user rights. The storages list contains only the storages, that are granted for the user. Searching is performed only in the granted storages, if the **All storages** option is selected. **CAUTION!** Be aware, that access to the storages may be restricted by the user rights. If searchfor patient studies is configured in all storages, searching is performed in the storages, that are granted for the user

No	Hazard	Warning/ Caution
3	Incorrect configuration	**CAUTION!** Depending on application configuration, in case of corrupted frame the system mayeither show warning, or ignore the corrupted frame and show the last not corrupted frame instead. Contact your system administrator for system configuration. **CAUTION!** Do not activate multiple profiles for the same video input source. For e.g. added camera to profile A and the same camera to profile B and enabled both of them, to be active in VS application. In this situation, just profile A will start and profile B will fail, because input signalwill be busy. It is possible to have A and B profiles active at the same time, if card allows this (for example, play input signal via windows direct show and other via capture card interface, if this exist). However, it does not make any sense to have 2 the same signals recording and it can cause unstable input stream recording process. **CAUTION!** The system shows warning before launching the import of the DICOM files from theexternal source, if the DICOMDIR file with the directory content is not present in the source media.
4	Component/ function is missing	**CAUTION!** Export, and Forward functionality may be disabled. Contact the system administratorto verify the configuration, if export or forward is missing. **CAUTION!** Annotations functionality may be disabled. Contact the system administrator to verifythe configuration, if annotation functionality is missing.
5	Software	**CAUTION**! In the U.S., for primary image diagnosis in Mammography only uncompressed or non-lossy compressed images must be used. **WARNING!** In the event of malfunction of the device or changes in its performance that may affect safety, contact to manufacturer. **CAUTION!** The integrating hospital system may have and use different patient ID from differentsources for the same patient. Be cautious and note that patient studies history from the particularsource will not be accessible from the Viewer, if you do not initially open at least one study with each different patient ID. **CAUTION!** You cannot change the size of particular image that is opened as one of multi images.If the viewport size is changed, the size of multi images is automatically adjusted. **CAUTION!** Note, that Viseur AI cannot guarantee that the manual series linking displays the images of the same patient and at the corresponding position. **CAUTION!** Until not saved, the created, deleted or edited segments are held in program temporary storage and will be lost, if closing the Viewer or closing the study, that has segmentations with unsaved changes. **CAUTION!** System tries to achieve the requested fps when playing multi-frame. If achieving therequested fps is not possible due to hardware or software limits, some frames may be skipped

No	Hazard	Warning/ Caution

6	Software Usage Problem	and not displayed to the user while playing. To see all frames, reduce the fps or use instance byinstance navigation. **CAUTION!** The size limits for one attachment file and one-time upload package, that are definedin system configuration, cannot be exceeded. **WARNING!** Software usage not by intended use may cause patient death, potential injury orserious health impairment, requiring professional medical intervention. **WARNING!** Mobile device display is intended for informational purposes only, not for diagnosticpurposes. **CAUTION!** Consider country-specific regulations regarding monitors and their maintenance. **CAUTION!** When connecting pedal and keyboard, review SNAPSHOT or PLAY/STOP KEYsettings and try to avoid pressing configured keys. **CAUTION!** Please make sure Windows Firewall, Antivirus or other software do not block Viseur AI SendToPACS communication. It is recommended to turn off all blocking services inthe Configuration and testing phase, to be sure that software will not be blocked. Also, it is important to make sure PACS server is not blocking DICOM communication by checking whetherthe communication is allowed in both sides – Viseur AI SendToPACS PC and Receiving PC.
7	Image display error or no display/display delay	**CAUTION!** Use the patient's name, dates, anatomical direction and other information, which isdisplayed in the viewport labels, to ensure that you are viewing the right image. **CAUTION!** Be cautious and ensure, that you are viewing the right place, if working with a zoomedimage.
8	Measurements inaccurate	**WARNING!** Viseur AI cannot guarantee the accuracy of calibration data received from the modality. Note, that Viseur AI cannot guarantee that the manual calibration which is performedby users is done accurately. **WARNING!** The accuracy of the measurements is affected by the calibration status of the monitor. Monitor calibration ensures that tones that are lighter than black are displayed clearly separately from true black, and tones that are darker than white are clearly distinguished from true white. How to calibrate the monitors is described in the software installation instructions, which are provided separately in this user guide **WARNING!** Note, that measuring functions in Viseur AI is approximate.
9	Incorrect information: data missing/ corrupted / mixed / missread (including labeling data, if applicable)	**CAUTION!** Be cautious and verify the content before saving annotation. All the measurements and text annotation, including the zoomed outside of the currently viewed area, are saved and shared with other users viewing the study. **CAUTION!** Be aware that system automatically opens the annotation after saving, as well as maintains the active measurement and text objects, that overlap with opened annotation.

Short product description

Viseur AI is a HTML based package for PACS server which is designed to aid professionals in every day's decision-making process, connecting all the medical data into a unified and fast performing network. Viseur AI ensures a fast and reliable way to search, present and analyze the medical data (images and video files) on various devices: computers, smart phones, tablets and so forth. Intuitive user interface, simple, but very powerful software controllable by touchscreen Medical Panel PC. Storing locally more than 125 hours of HD videos and up to 100.000of still images.
Viseur AI covers: radiology, cardiology, oncology, gastroenterology and many other fields of medical application. It seamlessly integrates with various medical imaging devices, such as: ultrasound (US), magnetic resonance (MRI), positron emission tomography (PET), computed tomography (CT), endoscopy (ES), mammography (MG), digital radiography (DR), Pathology (WSI), computed radiography (CR), ophthalmology, and so forth.
Core Viseur AI uses are:

- Replacement of hard copies, e.g. film archives, paper documents, etc.
- Remote access. Viseur AI provides a possibility to be mobile and work from any place in the world wherethe Internet is accessible. More than one person can access and view medical records at one time. Such functionality speeds up the collaboration among the professionals. So, that a doctor in the hospital and a doctor that is in the different location may view the medical data and discuss about it simultaneously. The patient's medical history, various studies and images are found much faster comparing to the conventionalpaper-based methods.
- Multiplanar and 3D reconstruction from series of images 3D perspective together with views in reconstructedplanes enables viewing the region of interest from several perspectives and allows more accurate and fasterdiagnostic.
- Viseur AI can be used as a standalone WEB Viewer or integrated into PacsOne PACS, dcm4chee Archive,Conquest PACS, ClearCanvas PACS systems. Moreover, Viseur AI can be adapted to client's PACS system and easily integrated into RIS/HIS workflow.
- Viseur AI has multiple functions such as search of studies, viewing, analyzing, saving, exporting, forwarding images and videos, etc.
- High-quality video recording into DICOM by using MPEG2 and MPEG-4 AVC/H.264 compression.
- Record/take multiple low and high (full HD) quality video/snapshots during the surgery or other procedures.
- Live stream video during the procedure.
- Record, stream, play video and take snapshots at the same time.
- Record video/take images from multiple connected devices (special video card needed).
- Flexible patient data assignment: selecting already existing patient, manually entering the patient details orselecting from hospital DICOM worklist server.
- Possibility to start a new study recording, while other video/snapshots is in progress for saving to DICOM orsending to DICOM archive.
- Review medical images/video during the surgery or other procedures.
- Trim the recorded video.
- Recorded studies can be stored locally, sent to the hospital DICOM archive (PACS) or exported to other storage devices.

- View saved images/videos with integrated DICOM Viewer.
- Image to DICOM feature. Convert BMP, PNG, TIF, JPG, SVS images and send to PACS.
- Video to DICOM feature. Convert AVI, MPG, MPEG, WMV, MOV, MP4, H264, MKV, FLV video files and send to PACS.
- Possibility to update patient information in DICOM files before sending to PACS.
- Possibility to add additional information field (additional custom DICOM tag) to image
- Possibility to configure only Worklist usage for Non-DICOM studies.
- Possibility to configure Institution name (tag (0008,0080)) and Station name (tag (0008,1010)) and use it in DICOM files.
- Possibility to set files filter (set custom file extension in application.properties file).
- Detailed information about files to be converted: image preview, image info view, DICOM info and DICOM tags view, DICOM pixel data extraction.
- Archive file's support. Automatically extract archive: ZIP. Supports 7z, ISO archives, but requires install 7-Zip software.
- Automatic DICOM files recognition (exclude DICOMDIR and unknown files).
- Supported patient information: patient ID, full patient name (alphabetic, ideographic and phonetic), birthdate and sex.
- Supported study information: study UID, study ID, date, time, accession number, description, series number, modality and character set.
- Possibility to specify character encoding: supported all extended character sets defined in the DICOM standard.
- Allows append existing study with new files (select study and patient information from scanned DICOM files).
- Supports Modality Worklist Information (C-FIND), Query/Retrieve Information, Verification (Echo).
- Support Drag and Drop interface.
- Querying patient information from HIS using external API (HTTP request).
- Possibility to initiate actions from other app by using REST API: Modality Worklist search, non-DICOM convert to DICOM, send to PACS.
- Windows explorer context menu (right mouse button) support.
- File conversion and forward process logs.
- Supporting Enterprise license.

Features of Viseur AI software:

- Multi language support (EN,TR);

- System administration via WEB interface;
- User identification by username and password, user rights;
- Ability to save image viewing settings;
- Secure data transfer (SSL support);
- Ability to open more than one study at a time;
- Image transformation (rotate, flip, align, pan, scale)
- Image inversion;
- Intensity (density of the point) measurement;
- Changing the Level/Window values;
- Measurements: Line, Reference line, Angle, Area, Volume, Cobb angle, Velocity time integral (VTI), Heartcardiothoracic ratio (CTR);
- Tools for localization of the images in intersecting planes;
- Multiplanar reconstruction (MPR);
- Additional data for image support (annotation and key object);
- ECG support (Tools: Beats per minute (bpm), time (s), millivolts (mV), QT points, heart rate (HR), QRS axis);
- Reports for study;
- Hanging protocols.

Product customization

Customizing the Viseur AI software allows providing the required set of functionalities to the system user:
Viseur AI Viewing functionalities;

- Viseur AI Video viewing and converting functionalities;
- Viseur AI PACS functionalities;
- Viseur AI SendToPACS functionalities.

System appearance, and availability of tools may be also customized by changing the settings. See the detail functionalities description and description of Settings in annexes of this document.

Product labeling

The information about the product is provided to the system user in the About window:

- Contacts of product distributor.

- Licensing information: organization that owns the license of current product installation, and dates, until the current license is valid and will receive updates.
- Product information: product name, product version, release date.
- Unique Device Identifier.
- Contacts of product manufacturer.
- Warning regarding not using mobile display for diagnostic of mammographic images.
- Explanation of safety signs.
- Certification bodies designated agents contacts are available in REP (representatives)

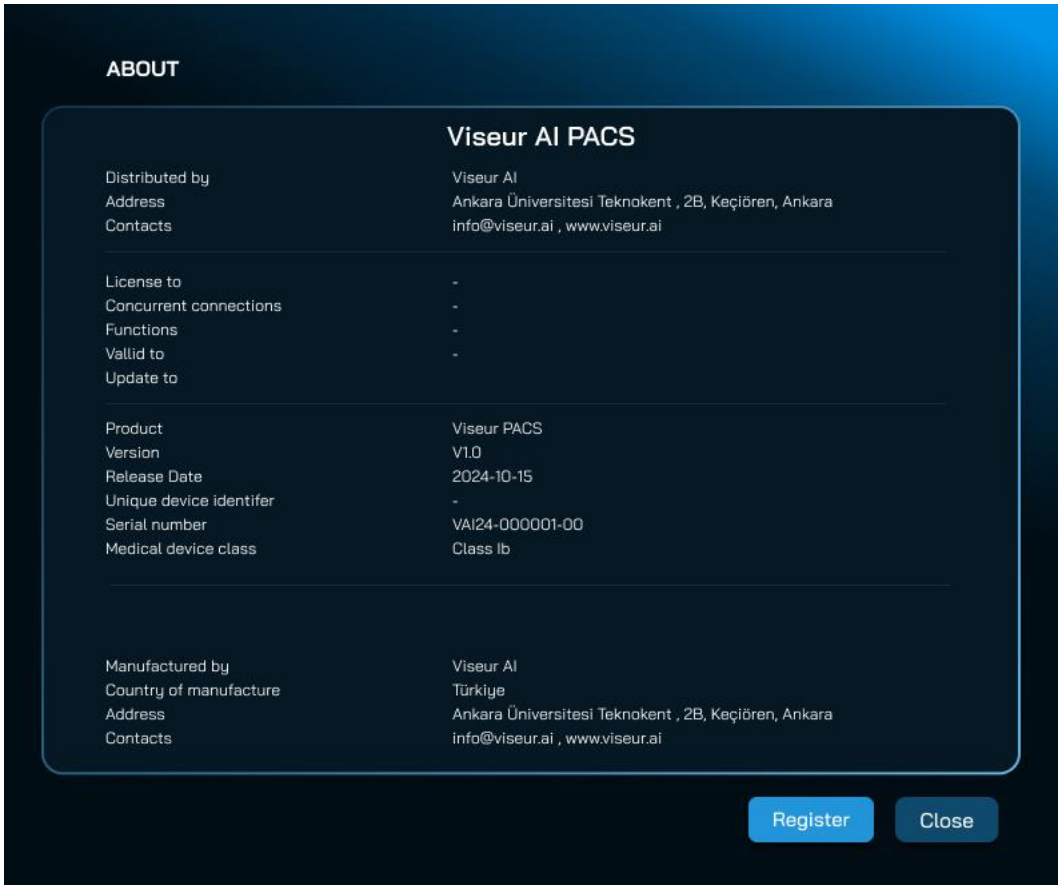


Figure 1 Product labeling

See the detail description of About window and how to access it in annex of the particular functionalities.

License agreement and registration

NOTE! License registration is required for legal software use.
The access to the Software License Agreement (EULA) and license registration is provided to the end user in thesystem. To register the license or license update, the user should do the following:

- apply for the license and receive the valid license number from system administrator or system provider,
- read the Software License Agreement and agree with it,
- enter the license information and register license.

See the detail description of license registration steps in annexes of this document.

NOTE! The internet connection and access to license server should be ensured for successful license registration.

Access to user documentation

The user manual user is available in Viseur AI under the Help menu. See the detail description how to access Help menu in annexes of this document.

Product installation
Viseur AI viewing functionalities minimal hardwarerequirements
Server-side

Viseur AI software is intended to be installed on PCs, servers or other hardware systems. Minimal hardware requirements as well as OS and other supporting software requirements for Viseur AI viewing functionalities arelisted below:

Parameter	Minimal Requirements
CPU*	Intel® Core™ i5, 4 Core, 2.00 GHz
RAM	8+ GB Additional RAM memory must be reserved for OS, Database, PACS and/orother services if installed in the same machine.
Storage space	1 GB of available hard-disk space for installation; + minimum 2 days of accessible study amount. For better performance preparation cache service can be used: additional free space required for local archive and image caching (see cache management description). Storage disk performance (used for caching) directly affects image open speed (SDD, RAM or HI speed disk storage recommended).
Network Bandwidth	100+ Mbit/s
Operating system	Windows Server 2019, Windows Server 2022, Windows 10, Windows 11 (64 bit only) and above, Debian 12, Ubuntu 22.04 LTS, CentOS 7.9-2009, Fedora 39

*Minimal hardware requirements depend on number of concurrent users:

Concurrent Connections	CPU cores	RAM
1 connection	4 cores	8 GB
2 connections	4 cores	8 GB
5 connections	4 cores	8 GB
10 connections	4 cores	12 GB
20 connections	6 cores	16 GB
30 connections	8 cores	32 GB
60 connections	16 cores	32 GB
60+ connections	+1 core per 10connections	+1 GB per 5 connections

⚠ **NOTE!** Minimal hardware requirements depend on number of concurrent users, workload and image types. It is recommended to allocate 20-80% more resources for unusual work load or specific data types.

The requirements for Viseur AI server, detail instructions, how to install Viseur AI and verify the Viseur AI functioning after system installation or restart, are provided in Install Manual.
Current section provides the requirements for user workplace and instructions for verifying, that the user can accessViseur AI functionalities from his workplace.

Client-side

The table describes the requirements for computer, that uses Viseur AI viewing functionalities from remoteViseur AI server through the internet:

Parameter	Minimal Requirements
Desktop Web	
CPU	Intel® Core™ i3 4 core CPU or better
RAM*	8+ GB, 256+ MB of video memory
Storage space	10+ GB
Network Bandwidth	100+ Mbit/s
Web Browsers	Chrome 123+, Firefox 124+, Microsoft Edge 123+, Safari 17+
Mobile device iOS Web	
RAM*	2+ GB
Storage space	2+ GB
Network Bandwidth	100+ Mbit/s
Web Browsers	Safari 17+, Chrome 123+
Mobile device Android Web	
RAM*	2+ GB
Storage space	2+ GB
Network Bandwidth	100+ Mbit/s
Web Browsers	Chrome 123+, Firefox 124+

For CT, MRI, PET-CT client side MPR/MIP rendering:

- 64bit CPU and 64bit operating system;
- Graphic board with >=1 GB video memory (hardware acceleration is enabled on the browser);
- 12 GB of RAM to open more than 800 images;
- 16 GB of RAM to open more than 1500 images;
- 24 GB of RAM to open more than 3000 images (cardiac or functional imaging, MGTomosynthesis).

For MG Mammography:

- 64bit CPU and 64bit operating system;
- Graphic board with >=1 GB video memory (hardware acceleration is enabled on the browser);
- 16 GB of RAM.

For MG Tomosynthesis:

- 64bit CPU and 64bit operating system;
- Graphic board with >=1 GB video memory (hardware acceleration is enabled on the browser);
- 16 GB of RAM.

Depending on the total amount of RAM on user's workstation, the browser is allowed to allocate the restricted amount of memory, and therefore Viseur AI application may load not more than 16 GBytes of data. Due to these limitations, browser may run out of memory, if the user loads several large computed tomography, mammographyor tomosynthesis studies.

⚠ **NOTE!** Hardware acceleration should be enabled in web browser for better performance.

⚠ **NOTE!** Mozilla Firefox browser has certain memory limitations: MIST MPR functionality will fail on series where uncompressed DICOM data is larger than 2 GB.

⚠ **NOTE!** Viseur AI enables users to view all data stored with a bit depth of up to 16 bits per color channel. However, it displays 8 bits per color channel at a time due to web browser limitations (maximum display of 256 values per color channel). You can utilize the Window leveling tool to explore the entire data range within the images.

⚠ **NOTE!** The Viseur AI viewing functionalities server system requirements are detailed in the Install Manualof the Viseur AI viewing functionalities.

Minimal Viseur AI video viewing and convertingfunctionalities hardware requirements

The table describes the requirements for computer with locally installed Viseur AI video viewing and converting functionalities:

Parameter	Minimal Requirements
CPU	Intel® Core™ i5 or i7 When using FHD streaming, recording and playing at the same time:
KOÇ*	4 threads, 4 GHz or 8 threads, 1.8 GHZ.
RAM	8+ GB
Storage space	Storage disk 500 GB (Storage disk speed directly affects applicationperformance) depends on usage workflow, can be >=256 GB, ~7 days requires 56 GB
Network Bandwidth	100+ Mbit/s
Operating system	Windows 10, Windows 11
Screen resolution	1920x1080 pixels (lower resolution not supported)

Hazırlayan
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Onaylayan
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NOTE! We recommend upgrade PC or reduce video quality, if it does no match minimal requirements for recording, playing and streaming at the same time.
If you faced with such a problem, please contact Viseur AI PACS Customer support – e-mail info@viseur.ai and we will help you resolve it.

Minimal SendToPACS functionalities hardwarerequirements

The table describes the requirements for computer with locally installed SendToPACS functionalities:

Parameter	Requirements
CPU	1 GHz or faster with support for PAE, NX, and SSE2
RAM	1+ GB
Storage space	1+ GB
Operating system	Windows 10, Windows 11

Minimal PACS functionalities hardwarerequirements
Server-side

Parameter	Requirements
CPU	Intel® Core™ i5, 4 Core, 2.00 GHz
RAM	8+ GB
Storage space	20 GB available hard-disk space for installation; PACS storage calculator for data: https://dicomlibrary.com/dicom/pacs-storage-calculator/ 0.5 % from calculated storage data for DB storage.
Network Bandwidth	100+ Mbit/s
Operating system	Windows Server 2022 Windows 11 Debian 12, Ubuntu 22.04 LTS, CentOS 7.9-2009, Fedora 39
Database	MySQL Server 8.0

Client-side

The same requirements as Viseur AI Viewer functionality (excluding mobile).

Installation verification

After installing the software or upgrading the version, the administrator must check against the Verification Checklist defined in the install manual.
The section below provides short check list for verifying, that the user can access Viseur AI functionalities fromhis workplace, view studies and use Viseur AI tools, required for daily operations.
Users who do not have administrator rights (e.g. doctors, nurses, technicians, etc.) must monitor the notificationsand warnings provided by the system and inform the system administrator about them.
In the event of an increase in system notifications, the system administrator must review the system logs and re-evaluate the performance of the system against the Verification Checklist defined in the installation manual.

Viseur AI viewing functionalities

To verify the Viseur AI viewing functionalities, perform the following steps:

- Open study in Viseur AI
- Use your usual way to connect to Viseur AI service and open the Viseur AI Viewing functionalities: execute the known valid study open URL, or login with your credentials and select the study in Viseur AI search window.
- If you usually are working with studies from several network storages, try opening studies from all the used network places.
- Check, that study is correctly opened: thumbnails are displayed instead of exclamation marks, the chosen images opens as well.
- Check the Viewer toolbar for the opened image: make sure, that you usually used tools are displayed in common place and accessible.
- Verify the working of functions and tools, that are critical to you daily operations (like measuring, patient history, zoom, pan).

Viseur AI Video viewing functionalities

To verify the Viseur AI Video viewing and converting functionalities, perform the following steps:

- Use your usual way to connect to Viseur AI and open Viseur AI Video viewing functionalities: execute theapp, video source should be connected to PC;
- Check the video signal in view window. If no singal is displayed, try to refresh signal, otherwise check the chapter „Recording settings“ in Annex II Viseur AI video viewing and converting functionalities;
- Try to create a new patient, or Try to select patient from worklist – if worklist is available, check configuration chapter „Selecting patient from DICOM modality worklist“ in Annex II Viseur AI video viewing and converting functionalities;
- After patient is created or selected from worklist try to record video. If having problem, check chapter „Recording settings“ in Annex II Viseur AI video viewing and converting functionalities, otherwise contactsystem administrator or info@viseur.ai .

Viseur AI PACS functionalities

To verify the Viseur AI PACS functionalities, perform the following steps:

- Use your usual way to connect to Viseur AI service and open the Viseur AI PACS functionalities.
- Find the study in the way you’re regularly are using:
  - Use unread studies page;
  - Browse the patients list and open the patient’s studies list;
  - Open search page, enter search criteria and find the study.

- Open the series page for the selected study.
- Check, if you are able to perform functions, you are regulary using. The functions to think about:
  - Export studies;
  - Import studies;
  - Modify studies content.

Viseur AI SentToPacs functionalities

To verify Viseur AI SentToPACS functionalities, perform the following steps:

- Test non-DICOM file image converting and sending workflow:
  - Add one or more files to the files list. Use all the file types you regularly are working with;
  - Enter the DICOM info for non-DICOM files;
  - Select DICOM device;
  - Initiate converting and sending;
  - Check, that files are converted to DICOM and sent to the device, using the Viseur AI PACS functionalities or Viseur AI viewing functionalities.
- Repeat the non-DICOM file image sending workflow with all the DICOM devices you are regularly using.
- Test patient search in the Worklist workflow, if you are using these functions:
  - Select search in the non-DICOM files info window,
  - Enter or modify the search criteria to search specific patient. For testing purpose, use least specific criteria to see all patients available, like check ALL Modalities checkbox, uncheck Date checkbox, or search only by date;
  - select Worklist device from drop down list;
  - Press “Search” button to search in the Worklist server database;
  - Select the patient from the results list, and press “OK” to close Patient Search window. Check, if the selected patient`s data is inserted into corresponding Patient and Study information fields of the NON-DICOM files info window.
- Repeat the patient search in the Worklist workflow with all the Worklist devices you are regularly using.

IT security measures

The “Security considerations” section in the Install Manuals of the particular Viseur AI functionalities provides detail recommendations, how to install and configure the Viseur AI Viewing functionalities functionalities, Viseur AI Video viewing and converting functionalities, Viseur AI PACS functionalities, and Viseur AI SendToPACS functionalities in order to ensure the system security.
Current section describes actions, that should be taken by Viseur AI user, in order to secure his workplace and user’s account against unauthorized access:

- It is highly recommended to run Viseur AI only from the devices and accounts, that are authorized for theuser

by company's security policy. Company's security policy should ensure:

- that work network and user's workplace is secure – servers and workplaces (computers, mobile devices) have latest OS version with latest security patches,
- that user's workplace is free of viruses - required antivirus software is installed and run regularly,
- that no extra peripheral devices are connected to the user's workspace except the necessary for work,
- that company's network is protected with firewalls (Wi-Fi with strong passwords, limited access protocols) and other protection means,
- all portable devices used for work (tablets, phones, notebooks) should be with strong passwords, encrypted storage and able to connected only to work environment thru secure network,
- portable Devices must be physically locked or otherwise appropriately secured by its user/custodian when left unattended.

⚠ **CAUTION!** Running Viseur AI software on shared user's account can lead to unauthorized access to patient's medical data.

- It is recommended to use the browser, that is authorized according company's security policy, and is compatible with Viseur AI software:
  - If company's security policy does not give recommendation for browser, we would recommend considering the Google Chrome or Mozilla Firefox as the most secure browser alternatives in the market at the moment while is up to date with latest security patches.
  - Browser should be configured to clear all data when closed, to prevent the data leak from work spacedata traces.
- The authentication is required for Viseur AI software. However, the authentication ways may vary. If youare using login and password authentication, keep the password safe from unauthorized access:
  - (if mobile devices used at work tool) before entering URL check that device connected to secure and exactly that network which was provided by system administrators;
  - before entering user name and password, check that URL address is correct and secure (https);
  - before entering user name and password, check the network connected;
  - don't use short and simple passwords (6-10 symbols minimum). If system administrator didn't give you secure password, ask for it;
  - do not expose the password to other persons;
  - do not allow the browser to save the password;
  - if you forgot your password, got the wrong password messages, or there is a chance that password can be compromised, stolen or publicly accessible, contact your system administrator to change the password as soon as possible.
- Use Viseur AI shutdown function, after finishing your work.
- Use Viseur AI log off function, after finishing your work and before closing browser window. Closing the program without Log Off (using browser window close 'x' button) is not safe and may lead to unauthorized access to medical data. It is recommended after log out of Viseur AI to close browser completely, not onlytab,

but all browser window in order to clear browser data in memory.

⚠ **NOTE!** Note for user, that share the computer and user's account. Viseur AI is designed with "zero footprint" concept, meaning that no patient data is left on a client machine: after the end user logs out from Viseur AI, its cache does not contain any server responses with patient data. However, there are known browser's security bugs, that allows to extract potentially sensitive data from browser's memory cache after the user logs out and doesn't close the entire browser application. Therefore, it is recommended to also close the entire browser (not just a particular tab or one of the windows) after logout.

- Contact your system administrator as soon as possible in case of unusual, malicious and suspiciousbehavior of software:
    - if there are any suspicions that work station can be compromised (computer miss behaving, have malware or popping random windows out of nowhere, being slower than usually), accessed by unknown person directly/remotely or stolen;
    - if there is network with similar name or devices connecting to wrong network;
    - if connection to Viseur AI looks insecure or address mismatch the one, that was given to you byyour system administrator;
    - if some strange text messages, studies or links started to appear in Viseur AI viewer, buttons and shortcuts opens suspicious pages;
    - if Viseur AI viewer not opens, returns errors like "Page not found" or "Unable to connect", or loading time increased significantly;
    - if portable work devices (phones, tablets, laptops) were stolen;
    - if portable work devices (phones, tablets, laptops) left unattended and have chance that devices security can be breached.
- In case of loss of the mobile device, the administrator must be informed immediately in order to completely remove the user's access to patient data and prevent them from being made public.

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