medDream

HTML 5
ZERO-FOOTPRINT DICOM VIEWER

FDA K162011 CLEARED

CE 2460 Class IIa certified

Softneta

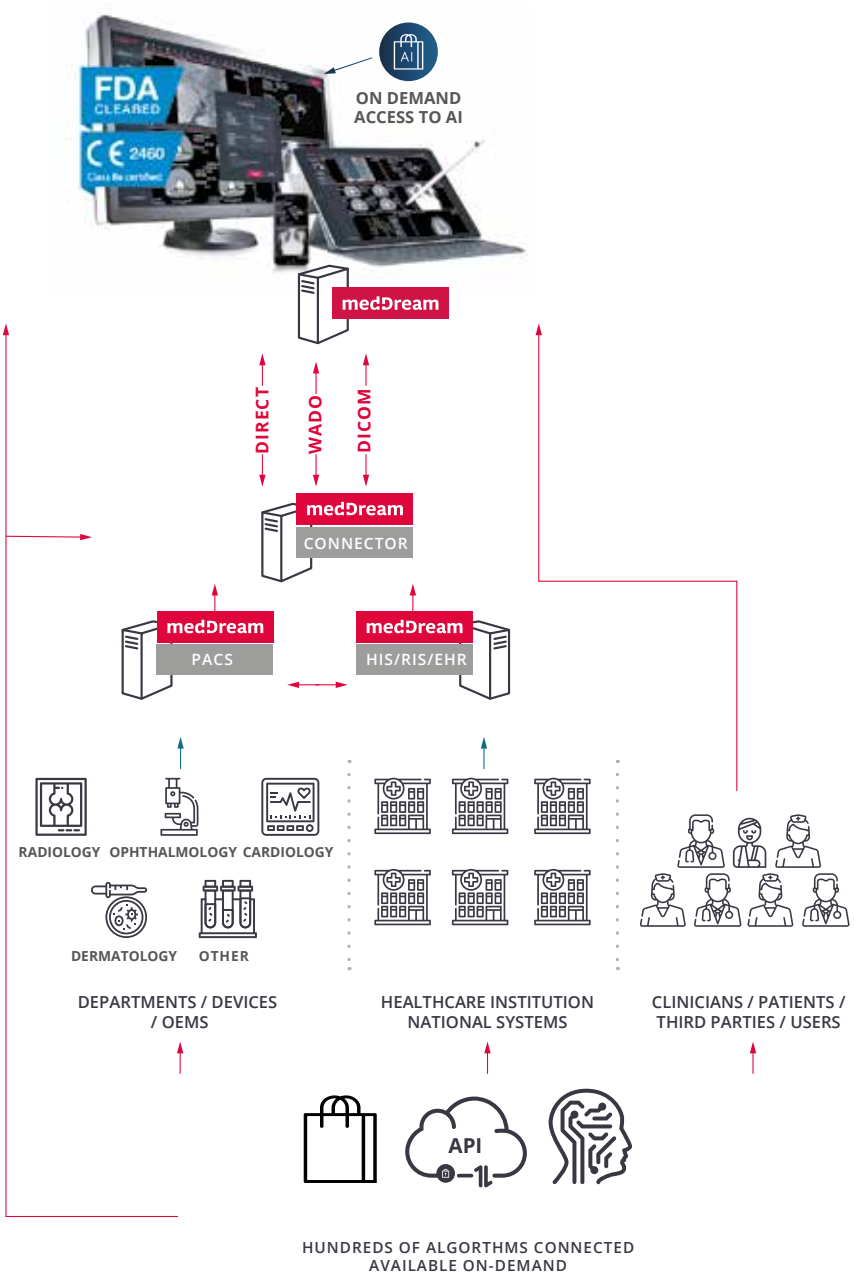

medDream
BE BRAVE AND STEP INTO
THE FUTURE

INTENDED USE

MedDream is a web based DICOM Viewer for PACS server that is aimed to **make diagnosis, view, archive** and **transmit** the medical images. MedDream DICOM Viewer is designed to aid medical professionals in every day's decision making process, connecting all the medical data into one unified and fast performing network.

MedDream ensures prompt and reliable way to **search, view**, **analyze** and **diagnose** medical images, signals and video files from anywhere and on any devices: computers, tablets and smart phones.

MEDICAL IMAGING. ACCESS & INTELLIGENCE



medDream VIEWER

VISUALIZATION AND INTERACTION

- Modern last-gen HTML5 thin client
- Streaming technology / WebGL rendering
- FDA and CE certified

Radiology, Cardiology, Ophthalmology, others
#vendor-neutral, #zero-footprint, #web-based, #client-side-rendering, #multi-language #bandwidth-independent

ACCESS FROM ANYWHERE AND ANY DEVICE

medDream CONNECT

IMAGING DATA INTEROPERABILITY

- Connectivity between different HIS / RIS / EMR and e-health systems
- Scalable access for wide spectrum of medical professionals
- Supporting all infrastructures and bandwidths
- Custom integration plan with standard products
- Open-source friendly

WORKING ON EXISTING INFRASTRUCTURE AND BANDWIDTH

medDream INTELLIGENCE

OPEN PLATFORM TO AI

- Connect, support and interact with third-party algorithms / machines
- Algorithm-to-human and human-to-algorithm coupled communication
- Access to AI to MedDream user base via established infrastructure
- Direct and on-demand benefits of AI to users of MedDream

FUNCTIONALITY EXTENDED BY INTERACTION WITH AI

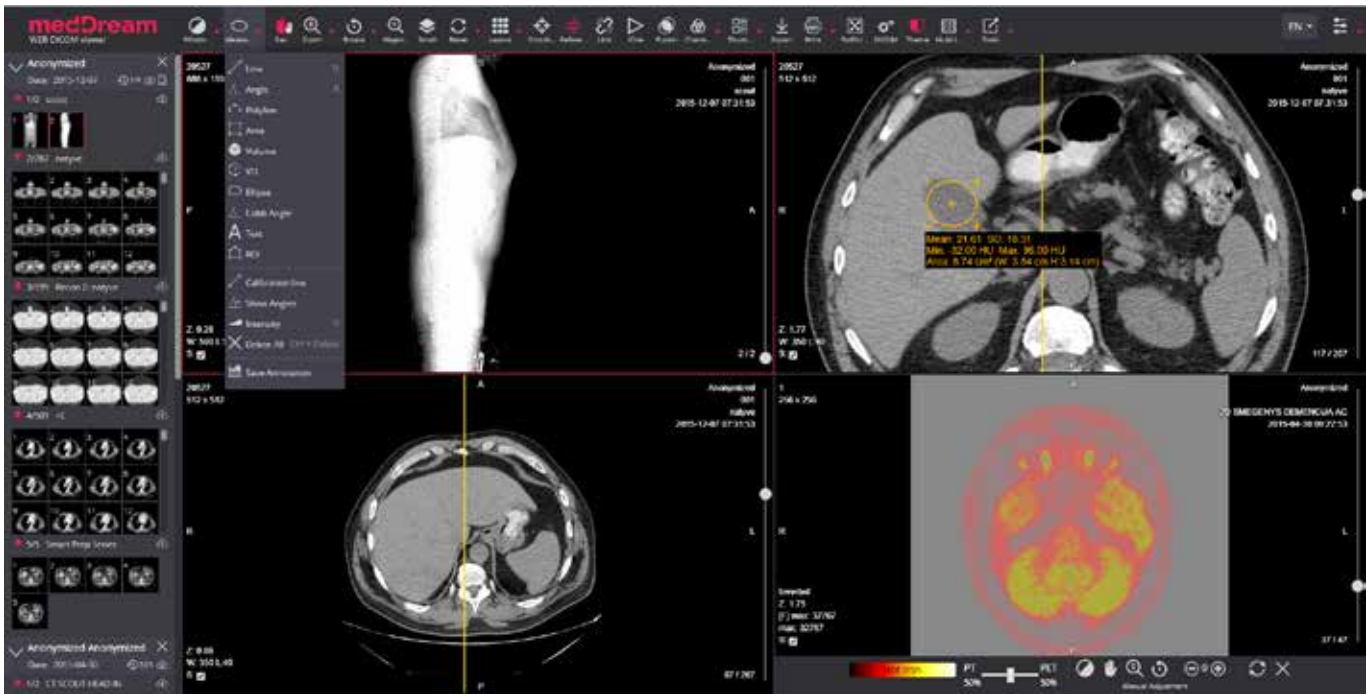
HIGHLIGHTS

MedDream DICOM Viewer is **FDA cleared for diagnostic use** and **CE class IIa certified** medical device that can be used for review purposes or even primary diagnosis. Viewer is designed to make **the images available across the hospital**, even present images to the customers of the institution.

RADIOLOGY AND GENERAL FEATURES

MedDream DICOM Viewer has a rich radiology tool set, which includes **regular tools** such as: zoom, pan, windowing, magnifier, measuring and **advanced tools**:

- Line. Draw and measure the length of a line;
- Angle. Draw and measure an angle;
- Polyline. Draw and measure the length of a polyline;
- Area. Mark area of interest with a polyline and measure its area;
- Volume. Measure a volume on a 2D image. The 2D area that way is spun over a selected axis to form a 3D shape and a volume of such shape is measured.
- Ellipse. Draw and measure the Ellipse, which calculates standard deviation and mean values in Hounsfield units also;
- Cobb angle. Draw and measure Cobb angle;
- Text. Annotations. Possibility to save and display annotations and to view, write, edit or delete it's text.
- ROI. Mark and store ROI for study instance;
- Calibration line. Change the scale of measurement;
- Show angles. Show all angles between intersecting lines;
- Intensity. Measure Hounsfield units at a specific point of a CT study;
- Reference lines. Display of reference lines (Scout Lines);
- Cine. Cine playback of multi - frame sequences with video seeking support;
- Tracking of image orientation, when manipulating the study with the transformation tools;
- Simultaneous playback of up - to 12 DICOM instances;
- Comfortable bar of series preview with thumbnails;
- Create and store Key Objects.



MedDream provides possibility to select and apply VOI LUT: non-linear transformation stored by medical modality.

Fusion. PET-CT Fusion allows to combine the series of PET and CT types, thus linking the sites of radioactive drug concentrations with the anatomical patient structure;

MPR. Multi - planar reconstruction with auto rotate Coronal or Sagittal projections;

Crosshair. Represents the intersecting planes of the selected point on the main study.

Supporting functions:

Possibility to print an active image;

Forward several studies at once and simply find devices while forwarding;

Export multiple studies;

Possibility to anonymize and share studies (via DICOM Library);

Possibility to create a report for a study;

Support for SR and PDF modalities.

Usage simplification:

- possibility to assign favorite actions to the mouse buttons;
- right mouse button context meniu.

Rebranding:

- product rebranding with custom license;
- Themes. Possibility to change theme color with one click.

3D OPTION

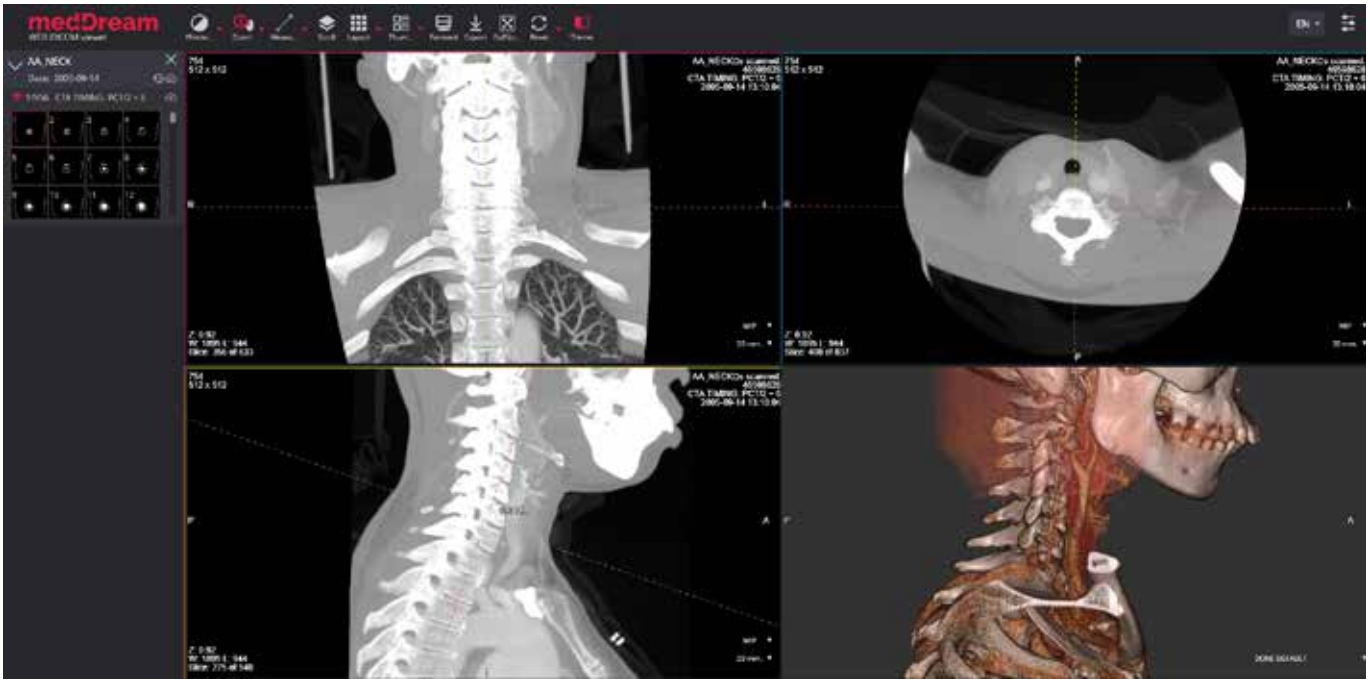
MedDream 3D module simplifies reconstruction technique for three-dimensional visual representations of two-dimensional image slices. The technology offers many different alternate views of the original data using various 3D reconstruction techniques such as MPR and MIP. MedDream 3D option has **standard tools** as: pan, zoom, rotation rendering settings presets and **advanced tools:**

3D features:

- Volume rendering from a single CT or MR dataset.

MIP/MPR features:

- Double Oblique;
- MPR (Multi Planar Reconstruction) with Thick Slab;
- MIP (Maximum Intensity Projection);
- MinIP (Minimum Intensity Projection);
- AIP (Average Intensity Projection);
- Measurement tools: length, angle and intensity value.



ECG AND ULTRASOUND

MedDream DICOM Viewer provides not only **standard image manipulation tools**, but also a way to **read, manipulate** and **interpret** electrocardiography (ECG) data.

ECG manipulation tools are all presented in an innovative zoom model which allows to zoom, measure and quantify the ECG data:

- Area calculation indicating beats per minute, time, millivolt (mV, s, bpm);
- QT interval - the RR interval is calculated as well as QT and the QTc (based on Bazett's formula);
- Measure heart rate (HR) and compare its interval variance over the ECG;
- Measure the QRS electrical heart axis;
- Velocity Time Integral (VTI) measurement on ultrasound studies that can quantify the trace of the Doppler flow profile;
- Review ultrasound (US) machine generated report;
- Comparison of 2 or more ECGs by normalizing and then overlaying them on one another;
- Up to 12 ECG`s may be opened at once.

Supported ECG devices	Mortara, custo med, SCHILLER The Art of Diagnostics, GE	or other 12 lead DICOM ECG (Little Endian) or devices that in conjunction with a gateway can provide such data.

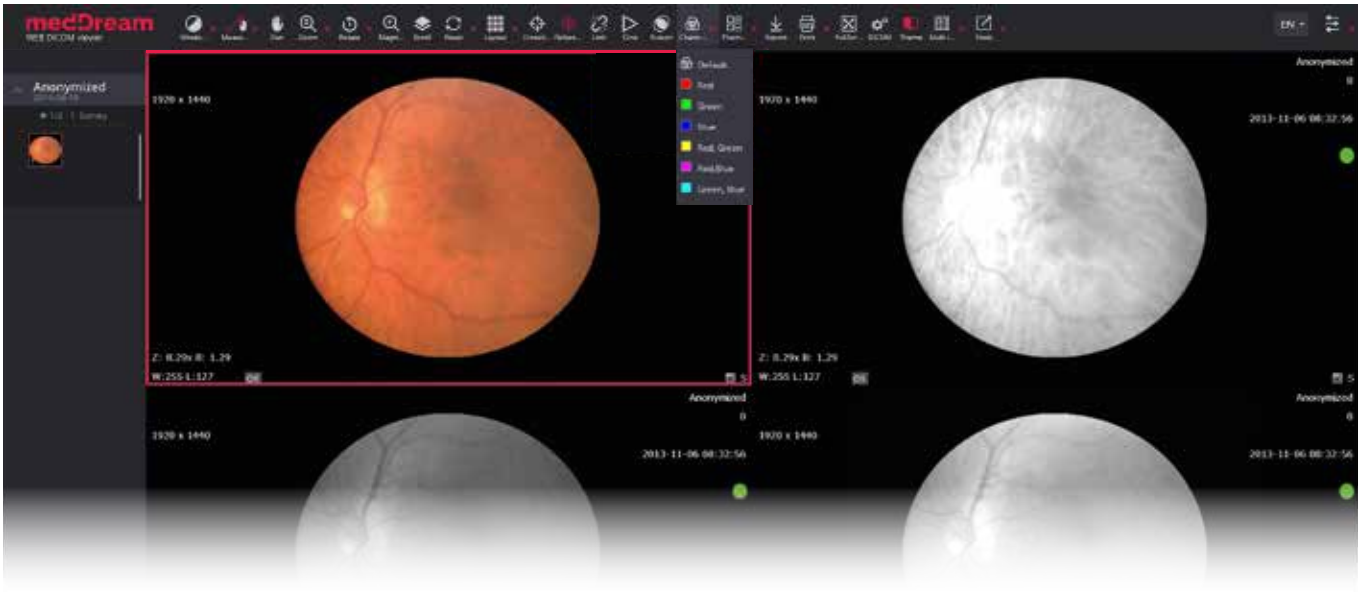
Other parties logotypes, which ownerships belongs to: Mortara Instrument, custo med GmbH, SCHILLER AG, GE Healthcare are not authorized by, sponsored by, or associated with the MedDream trademark owner.

MedDream can be used **to measure a volume on a 2D image** by using the Simpson's approximation rule, the 2D area that way is spun over a selected axis **to form a 3D shape** and a volume of such shape is measured. This technique allows to do **volume measurements of a heart** in a 2D Computed Radiography image.

MedDream supports measurement of Velocity Time Integral on ultrasound (US) studies that can quantify the trace of the Doppler flow profile.

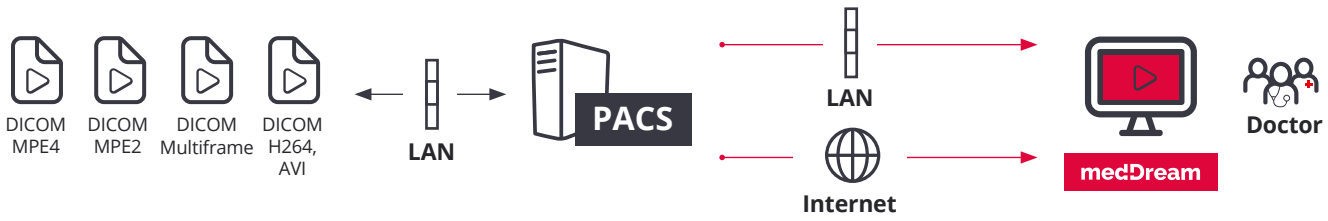
OPHTHALMOLOGY

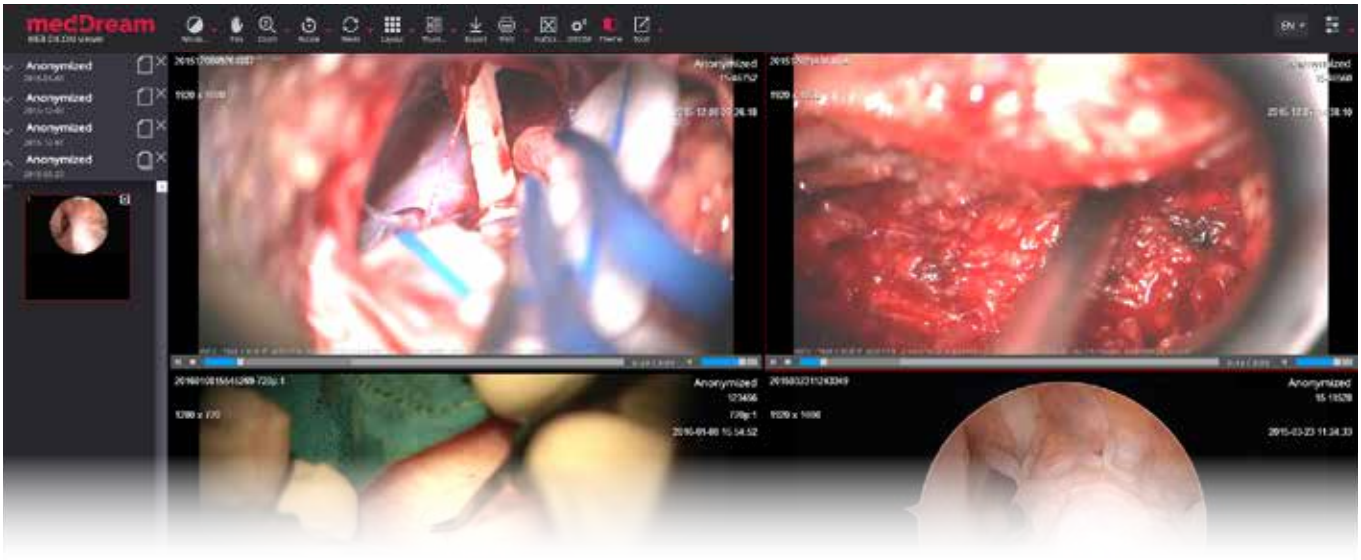
For ophthalmology or other visual spectrum images MedDream proposes a tool to digitally apply **monochromatic filters** for the primary colors as well as secondary **to enhance the visual contrast** of anatomical details.



VIDEO SUPPORT / FORMATS

For search, review and analyze medical videos from ophthalmology devices, microscopes, endoscopes, surgical video cameras, arthroscopes, echoscopes and other medical video sources. Video module is integrated into MedDream DICOM Viewer that allows to use PACS as medical video archive.





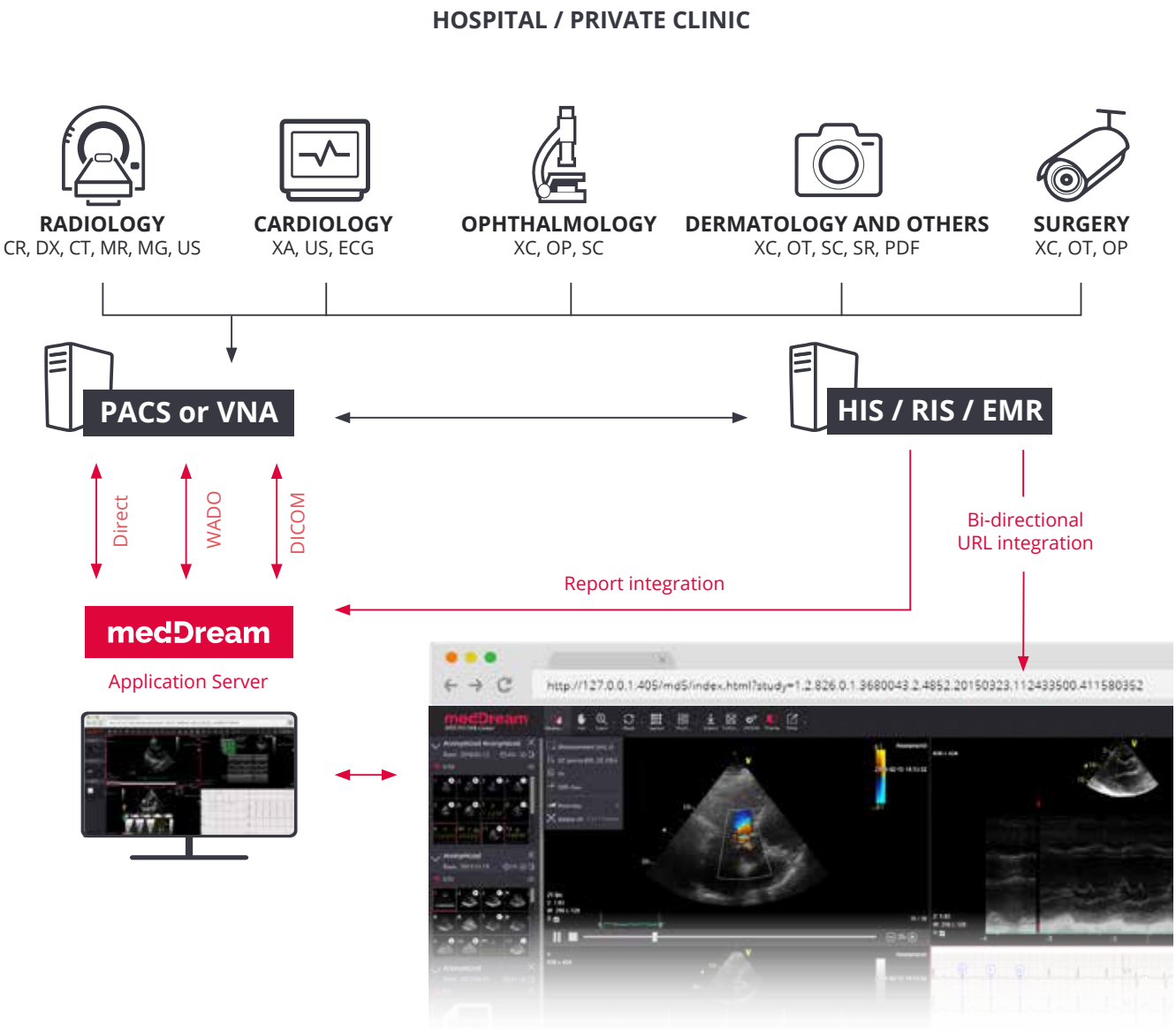
SYSTEM OVERVIEW

MedDream DICOM Viewer consist of a Viewer component which runs in a browser and does not require **any installation** on the client device and a MedDream Application server which handles **the communication with the hospital systems** (HIS / RIS / PACS and any other EMR) and does image preparation for streaming to the MedDream DICOM Viewer.

MedDream is using **flexible** and **open integration interface** for connecting to HIS and / or EMR systems primarily based on URL calls, thus allowing it to be integrated in **any medical application**.

MedDream Application server connectivity to the PACS can be achieved over the **following methods:**

- DICOM Q / R on Study Level
- WADO Restful Services
- Direct Access to the File System and Database.



Any changes done in the PACS will always be reflected when opening the study in MedDream DICOM Viewer. As changes made in the Viewer: **adding annotations and measurements**, will be stored back in the PACS in a DICOM conform way. In standard installations MedDream does not do intermittent storage of the images.

There are multiple ways for MedDream to make the created **reports of radiological studies available** in the browser, as standard this is done through HL7 or DICOM **Structured Report**, but other custom tailored ways are also available on a project specific basis.

MedDream supports all commonly used DICOM SOP classes for viewing. These are also constantly expanded in our software release cycles with **a new version.**

ADVANTAGES

Access from anywhere and any devices:

- **Universal Enterprise Viewer (cross department data support)**
- **Web technology**
- **Responsive design (desktop and mobile device support)**
- **Simple to use, simple GUI**
- **One View for all data**
- **Support all types of studies**

Working on existing infrastructure and bandwidth:

- **Vendor neutral viewer**
- **Cost effective certified solution**
- **Flexible Licensing model**
- **Online DEMO. Try before Buy**
- **Open source friendly solution**
- **Client side rendering and streaming**
- **Cross Platform**
- **Ready for National system**
- **Ready for Cloud**
- **Multi PACS support**

Extended functionality:

- **Integrations, API friendly**
- **Custom GUI**
- **Rebranding**
- **Custom development**
- **Configurable links to external systems**

ACCESS CONTROL

For image distribution within the hospital auditing standard user name and **password protection** is typically enough. In order to have finer access control MedDream typically **relies on a higher authority system** (e.g. HIS or EMR) which grants access to specific cases.

For **image distribution outside the hospital** a patient portal or a referring physician portal to authenticate and authorise access is required, MedDream can be integrated to such portals easily.

MedDream supports Lightweight Directory Access Protocol (LDAP), HTTPS Security integration as well as Single Sign-On (SSO) through **security tokens** to allow **fast** and **flexible usage** of the system for the physicians. Proprietary ways of integration to user management and access control systems is available on project specific basis.

INSTALLATION AND HARDWARE REQUIREMENTS

The following describes a typical process how a MedDream **gets installed** in your institution.

Initial requirements
gathering for a specific Customer

Software installation
in Customer infrastructure
(up to 5 days)

Trial period
with limited demo or trial license
(45 days)

Purchase
decision

Integration
to HIS / RIS / EHR
(if needed)

License
installation

Support
by e-mail and updates

Depending on each specific installation preliminary Hardware sizing information might slightly vary based on the modalities being used in the institution. **Minimum Hardware requirements** for the MedDream Application Server:

Systems of up to	10 concurrent users	50 concurrent users	100 concurrent users
CPU/vCPU	4 Cores	8 Cores	16 Cores
CPU arithmetic performance	30 GOPS* per core	30 GOPS* per core	30 GOPS* per core
RAM	8GB+	16GB+	32GB+
Storage size	Minimum 100GB or 350GB if used with caching	Minimum 250GB or 1,5TB if used with caching	Minimum 500GB or 3TB if used with caching
Storage performance	RAID providing minimum 280 IOPS**	Minimum 280 IOPS**	Minimum 280 IOPS**

*Giga operations per second.
**Input / Output operations per second.

ABOUT SOFTNETA

SOFTNETA is an innovative IT company, that provides software based, **specialized Medical Imaging** and communication solutions to **improve the quality** of healthcare.

10+ years experience in: DICOM viewing, telemedicine, digitalization, video solutions for healthcare and PACS servers as well as integration with HIS / RIS systems.

CERTIFICATIONS

medDream

FDA K162011 510(k) CLEARED

CE 2460 Class IIa certified

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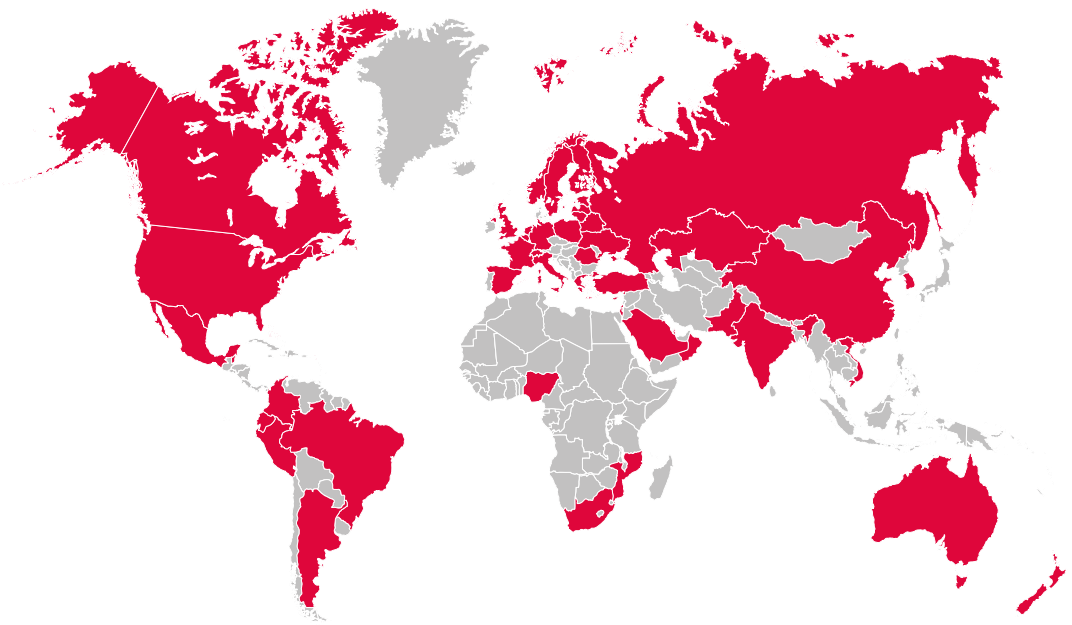
ISO 13485
ISO 14971
MDD 93/42/EEC
IEC 62304
IEC 62366-1

CUSTOMER MAP



Server Installations
530

Workstation Installations
1100

Countries
44

DICOM Library
Studies Shared
401k

SALES CONTACTS

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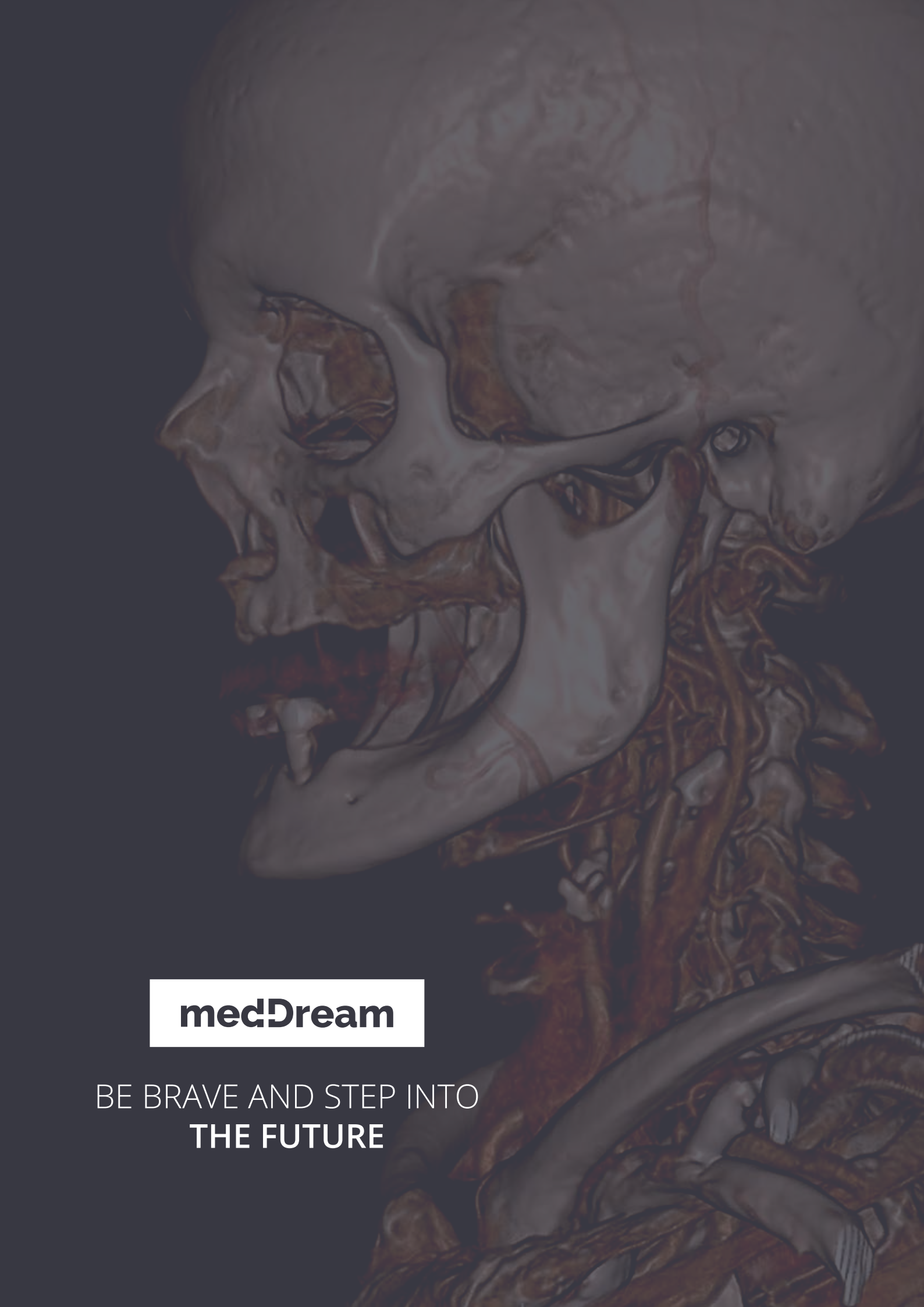
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