



# WEB

THIN CLIENT PACS FOR STORAGE,  
ARCHIVING AND TELERADIOLOGY

# YOUR CENPACS, YOUR FREEDOM.





# THE CAREFREE, ALL-INCLUSIVE CENPACS

**CENPACS is a complete, easy-to-use and affordable PACS for storing, distributing and viewing of medical imaging studies and reports.**

As a complete solution, CENPACS consists of several applications in one package:

**DICOM Server:** This application enables communication between the modalities and the archive server. It is essential for image storage, query/retrieve, forwarding, printing, as well as importing and exporting any kind of DICOM object.

**Vendor Neutral Archive:** CENPACS can store up to 500 million images in a single database and includes hierarchical archive support for short-term and long-term archives. When used in combination with iQ-ROUTER PRO, the archive is even more flexible and customisable. A second CENPACS server can automatically be synchronised to ensure up-to-date disaster recovery options.

**Web Server for an unlimited number of users:** This server allows the secure web-based distribution of any medical image and report to an unlimited number of web users, combined with efficient user management and strict authentication procedures.



**Optional Add-ons:**  
There are several add-ons available for CENPACS which serve different medical image viewing or interfacing needs.

**iQ-4VIEW** - diagnostic zero-footprint reading at high speed for virtually any browser, operating system and device (smartphone, tablet, desktop computer)

**iQ-X** - diagnostic web viewer for reading and processing of DICOM images using Internet Explorer®

**iQ-3DVIEW** - zero-footprint tool for web-based 3D visualization of CT and MRI series

**WEB2GO** - mobile viewer for basic web-based viewing of radiology images on any tablet or smartphone

**IQ-WEBX WADO** - Interface to seamlessly integrate CENPACS with virtually any medical information system

**Licensing:** Depending on the user's needs, CENPACS allows for a variety of configurations. Options are available depending on the number of DICOM nodes that will be connected. Packages include 2, 5, 10, 20 or even an unlimited number of DICOM nodes (Application Entities).

### **Special CENPACS Features:**

**Easy Search Features:** Thanks to the innovative EasyWEB feature, physicians maintain an overview of all studies. They can easily search and filter the database individually to quickly find desired studies. Images and documents (PDF or Structured Reports) can easily be attached to a study and shared with referring physicians or colleagues.

**Web-Based Administration:** Configuration, maintenance tasks and quality monitoring of the system can be handled via a web browser with no need to be directly in front of the server.

**Web-Based Reporting:** With the optional iQ-X reporting module or with iQ-4VIEW's integrated report editor, physicians can create DICOM Structured Reports online from anywhere in the world.

**Highest Level of Privacy:** CENPACS is a HIPAA compliant system. Referring physicians may log in to review only their own cases while the chief radiologist can be granted access to the entire patient database. Imaging data can also be shared among physicians, while staying compliant with strict privacy regulations.

**Patient Reconciliation:** All stored studies can be verified with a DICOM WORKLIST and with optional HL7 messages. Study data can be automatically corrected in an IHE compatible protocol to ensure that consistent image data is stored in the archive.

**Web-Based DICOM Print:** Images can be printed from the web client to a remote DICOM imager.

**Email Alert Notification:** Once a new study or report is ready for viewing, the referring physician can automatically be alerted via email or text message which includes a link to the image. (This feature uses a 3rd party mail2SMS gateway service with possible additional costs).

**Referring Physician Portal:** Imaging centers can offer referring physicians access to their own cases so that they can view them anytime and anywhere without requiring additional software.

## **THE SOLUTION CAN BE SO SIMPLE**



# CENPACS SCREENSHOTS

**IQ-WEBX** User Administration | Configuration | Email | Journal | Home | EasyWEB | Thread Studies | Browse | Search | DICOM AI | HL7 Application | Auto Route | Job Status | Modality | Logout

Worklist | Tools | Profile | Help

Check All | Refresh | Delete | Print | Export | Show | Download | Email PDFs | Mark Study As Read | Show Filter

PATIENT NAME	SEX	BIRTHDATE	AGE	PATIENT ID	DATE / TIME	RECEIVED ON	ACC NO	REF PHYSICIAN	DESCRIPTION	READ PHYSICIAN	SOURCE AC	MODALITY
Patien81	F	1954-06-30	55	1229315	2008-09-30 16:15:05	2009-11-17 14:10:03	RAD-2008-092174	42C - MK II	CT.CT - Angiogramien.CTA Aorta gesamt.mehrphasig mit Lv. KM	DR. MARTINA PAETZEL	IQSERVER_WS11	CT
Patien80	F	1966-12-27	43	1117731	2009-01-16 19:23:08	2009-11-17 14:09:43	RAD-2009-015746	Notfallambulanz / JNA	CT.Kombiuntersuchungen.Traumaspirale	DR. HEIKE SEIDEL	IQSERVER_WS11	CT
Patien79	M	1948-08-21	61	1041533	2008-07-25 10:04:50	2009-11-17 14:09:26	RAD-2008-039883	Hochschulambulanz HämATOLOGIE / Onkologie - MK I	CT.Darstellung.Kombiuntersuchungen.Thorax	DR. HEIKE SEIDEL	IQSERVER_WS11	CT
Patien78	M	1982-12-05	27	60110766	2008-03-22 06:21:28	2009-11-17 14:08:53	RAD-2008-024616	Notfallambulanz / JNA	CT.Kombiuntersuchungen.Traumaspirale	DR. TIMO BOBERG	IQSERVER_WS11	CT
Patien77	F	1939-11-13	70	1102427	2008-07-04 08:15:23	2009-11-17 14:08:53	RAD-2008-029875	43B - MK I	CT.Darstellung.Kombiuntersuchungen.Thorax	DR. HEIKE SEIDEL	IQSERVER_WS11	CT
Patien76	M	1944-04-25	65	60034492	2008-07-28 10:57:36	2009-11-17 14:08:16	RAD-2008-046777	39SU - Neurologie	CT.Darstellung.Kombiuntersuchungen.Thorax	DR. S.MASIMAKOU KAPISIMAKOU	IQSERVER_WS11	CT
Patien75	M	1964-11-03	45	60049394	2008-09-05 09:00:33	2009-11-17 14:07:50	RAD-2008-074999	Notfallambulanz / JNA	CT.Kombiuntersuchungen.Traumaspirale	DR. THOMAS ECKEY	IQSERVER_WS11	CT
Patien74	M	1959-09-28	50	1114320	2008-09-19 17:42:29	2009-11-17 14:07:39	RAD-2008-085252	Notfallambulanz / JNA	CT.CT - Angiogramien.CTA Aorta gesamt	DR. JULIA KLUETER	IQSERVER_WS11	CT
Patien73	M	1946-09-09	63	0002899719	2008-09-25 15:26:04	2009-11-17 14:03:16	RAD-2008-080908	41CK - MK II	CT.CT - Angiogramien.CTA Aorta gesamt.mehrphasig mit Lv. KM	DR. JULIA KLUETER	IQSERVER_WS11	CT
Patien72	M	1968-11-01	41	1191023	2008-05-21 10:43:07	2009-11-17 14:02:47	RAD-2008-014487	Notfallambulanz / JNA	CT.Darstellung.Kombiuntersuchungen.Thorax	DR. J. WUERFEL	IQSERVER_WS11	CT
Patien71	M	1968-02-07	42	60024853	2008-07-03 16:06:38	2009-11-17 14:02:20	RAD-2008-029534	46A - Neurochirurgie	CT.Darstellung.Kombiuntersuchungen.Thorax	DR. HEIKE SEIDEL	IQSERVER_WS11	CT
Patien70	F	1952-09-07	57	60056913	2008-09-29 19:00:05	2009-11-17 14:01:54	RAD-2008-091461	Notfallambulanz / JNA	CT.CT - Angiogramien.CTA Aorta gesamt	DR. HEIKE SEIDEL	IQSERVER_WS11	CT
Patien69	M	1969-07-15	40	1428607	2008-02-27 20:25:04	2009-11-17 14:01:30	RAD-2008-039882	Notfallambulanz / JNA	CT.Kombiuntersuchungen.Traumaspirale	DR. HEIKE SEIDEL	IQSERVER_WS11	CT
Patien68	F	1951-12-06	58	1032561	2008-08-07 10:40:41	2009-11-17 13:59:54	RAD-2008-053989	Hochschulambulanz HämATOLOGIE / Onkologie -	CT.Darstellung.Kombiuntersuchungen.Thorax	DR. JENS WUERFEL	IQSERVER_WS11	CT
Patien67	M	1952-09-21	57	1125295	2008-07-04 08:36:14	2009-11-17 13:59:29	RAD-2008-029701	41B - MK I	CT.Darstellung.Kombiuntersuchungen.Thorax	S. KAPISIMAKOU	IQSERVER_WS11	CT
Patien66	M	1954-10-07	55	60014814	2008-05-22 16:30:09	2009-11-17 13:59:02	RAD-2008-015378	Notfallambulanz / JNA	CT.Darstellung.Kombiuntersuchungen.Thorax	T. BOBERG	IQSERVER_WS11	CT
Patien65	M	1989-04-22	20	60052325	2008-09-14 20:17:18	2009-11-17 13:58:30	RAD-2008-081247	Notfallambulanz / JNA	CT.Kombiuntersuchungen.Traumaspirale	DR. JENS WUERFEL	IQSERVER_WS11	CT
Patien64	M	1971-02-28	39	1414766	2008-08-27 22:30:30	2009-11-17 13:57:59	RAD-2008-069500	Notfallambulanz / JNA	CT.Kombiuntersuchungen.Traumaspirale	DR. HEIKE SEIDEL	IQSERVER_WS11	CT

**A** The CENPACS EasyWEB page provides quick and easy access to all studies for reading, requesting, and referring physicians.

**IQ-WEBX** Home | EasyWEB | Thread Studies | Browse | Search | Job Status | Tools | Profile | Help | Logout

Worklist | Tools | Profile | Help

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Q-WEBX 4.2.2

**B** Users may annotate images or studies with individual texts, keywords, or attached documents to create teaching cases within the PACS.

**IQ-WEBX** User Administration | Configuration | Email | Journal | Home | EasyWEB | Thread Studies | Browse | Search | DICOM AI | HL7 Application | Auto Route | Job Status | Modality | Logout

Worklist | Tools | Profile | Help

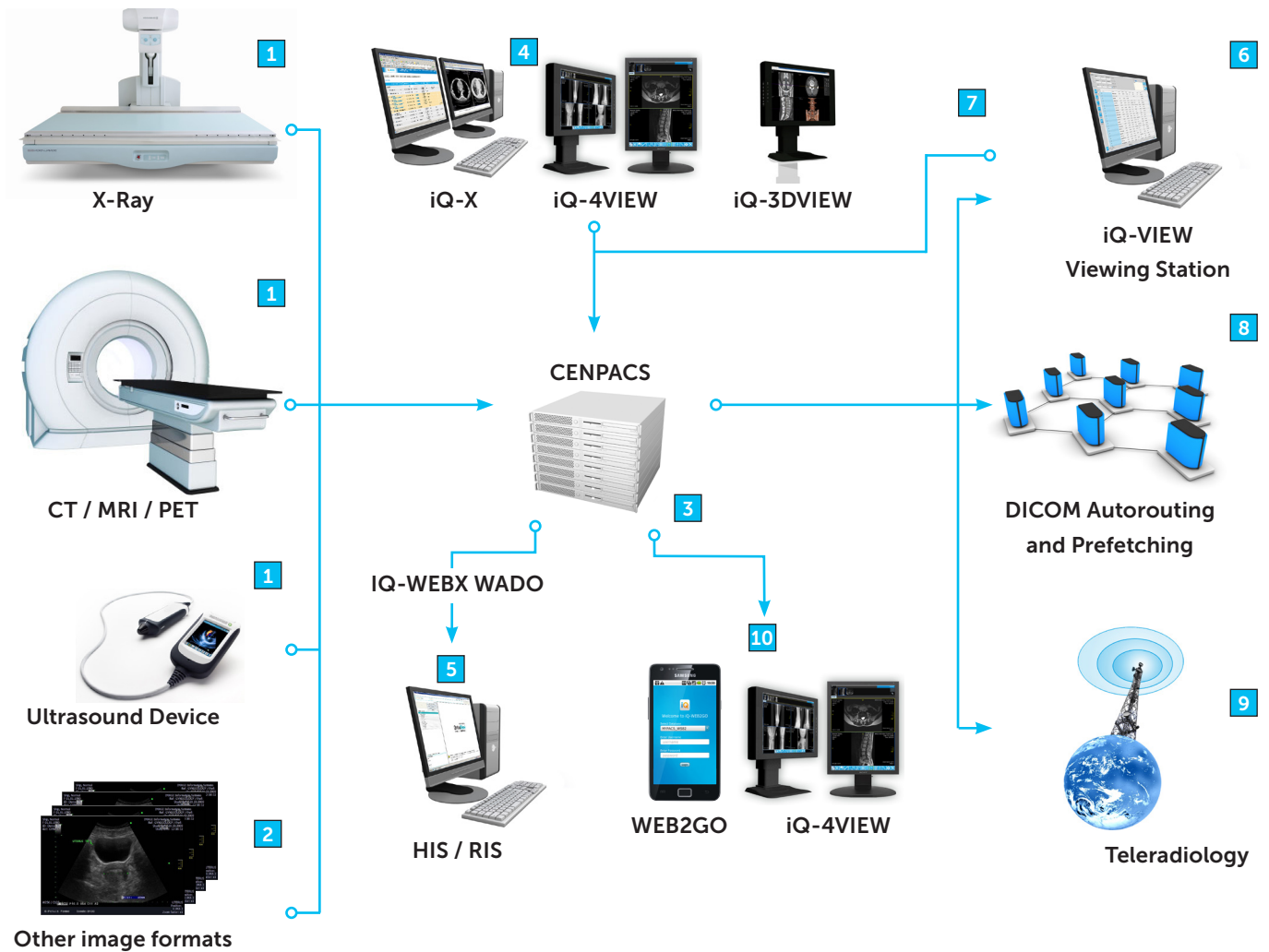
Today's Activities | Yesterday's Activities | This Week's Activities | This Month's Activities | Last Month's Activities | All Activities

There are 324 events logged. Previous Next Evaluate Displaying 1-24 of 324 events

DATE	USERNAME	OPERATION	LEVEL	UID	DETAILS
2010-04-01 10:41:38	root	show	study	1.2.826.0.1.3680043.1.208.13270496645670709686720102013334738	Patient Name: Foetus, Bobby Study ID: 1 Study Description: 3D US
2010-04-01 10:42:28	root	View	Patient	Demo	Patient Name: Foetus, Bobby
2010-04-01 10:44:44	root	show	study	1.2.826.0.1.3680043.1.208.13270496645670709686720102013334738	Patient Name: Foetus, Bobby Study ID: 1 Study Description: 3D US
2010-04-04 12:32:46	image	show	study	1.3.12.2.1107.5.8.3.485257.836649.80675153.2005022109080132	Patient Name: Proton, Ocoso Study ID: 290276 Study Description: THORAX
2010-04-04 12:33:41	image	show	study	1.3.12.2.1107.5.8.3.485257.836649.80675153.2005022109080132	Patient Name: Proton, Ocoso Study ID: 290276 Study Description: THORAX
2010-04-04 12:36:43	image	show	study	1.3.12.2.1107.5.8.3.485257.836649.80675153.2005022109080132	Patient Name: Proton, Ocoso Study ID: 290276 Study Description: THORAX
2010-04-04 12:37:19	image	show	study	1.3.12.2.1107.5.8.3.485257.836649.80675153.2005022109080132	Patient Name: Proton, Ocoso Study ID: 290276 Study Description: THORAX
2010-04-04 12:38:09	image	show	study	1.3.12.2.1107.5.8.3.485257.836649.80675153.2005022109080132	Patient Name: Proton, Ocoso Study ID: 290276 Study Description: THORAX
2010-04-04 12:38:32	image	show	study	1.3.12.2.1107.5.8.3.485257.836649.80675153.2005022109080132	Patient Name: Proton, Ocoso Study ID: 290276 Study Description: THORAX
2010-04-04 13:04:23	image	show	study	1.2.840.113619.6.95.31.0.3.4.1.2037.13.576487	Patient Name: Carabellar, Atrophy Study ID: 1 Study Description: HEAD
2010-04-04 13:06:22	image	show	study	1.2.40.0.13.0.11.9346.2.2009023648.29854.20090204199999	Patient Name: Breast, China Study ID: 29854.2009020419 Study Description: BREAST
2010-04-05 23:49:49	image	Show	Study	1.3.12.2.1107.5.8.3.485257.836649.80675153.2005022109080132	Patient Name: Proton, Ocoso Study ID: 290276 Study Description: THORAX
2010-04-06 04:48:19	image	show	study	1.2.40.0.13.0.11.9346.2.2009023648.29854.20090204199999	Patient Name: Breast, China Study ID: 29854.2009020419 Study Description: THORAX
2010-04-06 13:31:17	image	show	study	1.3.12.2.1107.5.8.3.485257.836649.80675153.2005022109080132	Patient Name: Shunt, Hilda Study Description: Abdomen
2010-04-06 13:33:05	image	show	study	1.3.12.2.1107.5.8.3.485257.836649.80675153.2005022109080132	Patient Name: Shunt, Hilda Study Description: Abdomen
2010-04-06 13:34:39	image	View	Patient	181205	Patient Name: Demoo09
2010-04-06 13:35:10	image	View	Patient	Demoo09	Patient Name: Proton, Ocoso
2010-04-06 13:36:07	image	View	Patient	Demoo18	Patient Name: Mucos, Marcus
2010-04-06 13:37:00	image	View	Patient	Demoo03	Patient Name: Breast, China
2010-04-06 13:38:00	image	View	Patient	Demoo09	Patient Name: Proton, Ocoso
2010-04-07 09:50:01	root	View	Patient	Demoo05	Patient Name: Lick, David, John
2010-04-07 09:59:33	root	View	Patient	Demoo102	Patient Name: Bishop, Albert, Barry
2010-04-07 09:59:40	root	View	Patient	1229315	Patient Name: Patient81,

**C** CENPACS logs system activities in compliance with HIPAA regulations.

# CENPACS WORKFLOW



**1** CENPACS is typically connected to all DICOM modalities in an imaging network, such as X-Ray, PET/CT/MRI and Ultrasound.

**2** CENPACS supports a wide variety of image formats which are specified in the respective DICOM Conformance Statement.

**3** As a vendor neutral archiving system, CENPACS serves as the core of an imaging network, offering advanced features such as automatic patient reconciliation when paired with any hospital information system via a worklist or HL7 messaging.

**4** The optional viewers iQ-4VIEW, iQ-X and iQ-3DVIEW allow medical images to be viewed in diagnostic quality.

**5** iQ-4VIEW and iQ-X can be seamlessly integrated with virtually any medical information system using the optional IQWEBX WADO interface.

**6** Reading stations, such as iQ-VIEW, can be connected directly to CENPACS using DICOM communication.

**7** Structured Reports can be created using iQ-VIEW or the integrated iQ-4VIEW and iQ-X viewers. Reports obtained from hospital information systems can be received via the optional IQ-WEBX REPORT CONVERTER module.

**8** The intelligent autorouting

feature forwards studies based on predefined criteria to any DICOM compliant station. Even prefetching previous studies for the same patient can be included, if desired.

**9** Efficient teleradiology connections are achieved by built-in data compression algorithms, allowing iQ-4VIEW and iQ-X users fast access to images and return of reports.

**10** The optional WEB2GO module facilitates radiology viewing via mobile devices for fast and easy access to medical images from anywhere.

# CENPACS FEATURES\*

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## SERVER

- Server instance monitoring
- **Enhanced server statistics (e.g. studies received from DICOM nodes or institutions per period) (NEW!)**
- Automatic patient reconciliation via worklist or HL7
- Complete 64 bit architecture for high-performance scalability

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## COMMUNICATION

- DICOM PRINT and DICOM WORKLIST clients
- Rule-based auto-forwarding of data sets
- Emergency management with priority routing
- Restricted forwarding to user-selected AE titles
- Enhanced auto-routing due to advanced scheduling options
- HL7 interface (optional)
- WADO (web access to DICOM objects) (optional)
- Email notification when new study has arrived
- Sends images as JPEG via email

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## WEB

- Unlimited number of users and concurrent users by default
- Access portal for referring physicians and patients\*\*
- Automatic browser detection in the EasyWEB page
- Can open studies in iQ-VIEW from EasyWEB page
- Displays all color/grayscale images and structured reports
- Web-based query of external DICOM archives
- Web-based transfer of images to DICOM destinations
- Attach files and notes to images or studies
- **Web-based DICOM MPEG video management (NEW!)**
- **Additional Coercion rule trigger by defined DICOM tags (e.g. institution name, involved physician, modality) (NEW!)**
- Supported character sets (only one character set at a time):
  - GB18030 Simplified Chinese, ISO 2022 IR 149 (Korean), ISO 2022 IR 13 (Japanese JIS X 0201), ISO 2022 IR 87 (Japanese JIS X 0208), ISO 2022 IR 159 (Japanese JIS X 0212), ISO\_IR 192 (Unicode), ISO\_IR 100 (Latin Alphabet Part 1), ISO\_IR 101 (Latin Alphabet Part 2), ISO\_IR 109 (Latin Alphabet Part 3), ISO\_IR 110 (Latin Alphabet Part 4), ISO\_IR 144 (Russian), ISO\_IR 127 (Arab), ISO\_IR 126 (Greek), ISO\_IR 138 (Hebrew Logical Order), ISO\_IR 148 (Latin Alphabet Part 5)

\* Detailed information on CENPACS's system requirements is available in the CENPACS Administration Guide or the Hardware Purchasing Guide.

\*\* Subject to properly filled DICOM data

\*\*\* Depending on hardware and database system used

# CENPACS FEATURES

## IMPORT/EXPORT

- Web-based import of any DICOM media
- DICOM export function

## DATABASE

- 64 bit MySQL
- Automatic synchronization with other DICOM servers
- Configurable overflow management (high water/low water, study date, custom settings)
- Stores up to 500 million images\*\*\*

## DATA AND USER MANAGEMENT & SECURITY

- **User login credential synchronisation from active directory via LDAP (NEW!)**
- 16 different privilege settings for each user/group
- User access control
- Enhanced user rights management (e.g. multiple user access filter, user assignment based on AE title)
- Definition of password complexity rules
- User blocking after more than 5 failed login attempts (2 hours)

## CYBER SECURITY

- **Effective protection against cyber attacks by**
  - **Enhanced email functionality (transmission via SSL/TLS protocol) (NEW!)**
  - **Update of the web server components (NEW!)**
  - **Support of MySQL 5.7 (NEW!)**

## LANGUAGE

- English, German, Russian, Spanish (included by default), other languages upon request

## LICENSING

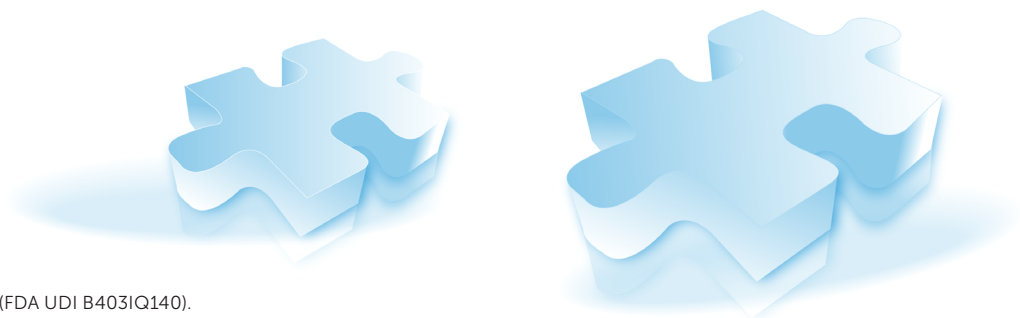
- Available for 2, 5, 10, 15, 20 or an unlimited number of DICOM nodes

## COMPATIBILITY

- CENPACS 6.6.2 is compatible and available in one setup with:
  - iQ-4VIEW 2.1
  - iQ-X 2.2
  - WEB2GO 1.2
  - IQ-WEBX WADO 3.2

## CERTIFICATION

- CE 0482 and FDA 510 (k)\*



\* IQ-WEB is a component of iQ-SYSTEM PACS 1.4 (FDA UDI B403IQ140).

# ***IQ-WEBX*** REPORT CONVERTER

The optional IQ-WEBX REPORT CONVERTER module uses a state-of-the-art algorithm to automatically convert and transmit DICOM Structured Reports and HL7 text reports between information systems and CENPACS.

## **GENERAL**

- Compatible with virtually any HL7 compliant EMR, HIS, RIS or practice management system
- Supports Latin-1 ext. A character set

## **INPUT**

- Receives HL7 ORU^R01 messages (see HL7 conformance statement for IQ-WEBX REPORT CONVERTER)
- Queries for incoming DICOM Structured Report (see DICOM conformance statement)
- Supports one report per message

## **OUTPUT**

- Sends DICOM Structured Report to CENPACS (PACS)
- Sends HL7 ORU^R01 to any HL7 compatible Information System (HIS / RIS / EMR)
- Sends HL7 ACK messages to acknowledge the report has been received

## OUR PRODUCTS FOR YOUR IMAGING NEEDS

**CENPACS** Full featured, reliable and affordable PACS  
**MED-TAB™** Superior portable image analysis



# ***CenQuip***®

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