

3Dnet™ Medical

RIS · PACS · Advanced Visualization · Teleradiology · Patient Portal

BIOTRONICS3D

MANAGED SERVICES



3Dnet Medical delivers the functionality of PACS, VNA, RIS, Diagnostic Visualisation and reporting as distinct subscription packages from the Microsoft Azure Cloud platform, thus providing security, redundancy, reliability and scalability.

ADVANCED VISUALIZATION



Our zero-footprint client displays images in full diagnostic quality, with advanced rendering such as MPR, MIP and VRT, from any Internet browser and on any operating system. Our mobile portal provides easy access to images and reports for physicians and patients on any mobile devices .

SYSTEMS INTEROPERABILITY



The 3Dnet Gateway, a proprietary software node, can be configured to connect with multiple DICOM & HL7 systems. Regardless of vendor or physical location, these systems can be integrated using IHE profiles and consolidated all together in order to facilitate an automated workflow.

ONLINE COLLABORATION



No software clients, the whole patient record and images are available online, securely, on a dynamically scalable infrastructure, which accommodates any number of users. This makes 3Dnet the perfect environment for multi-disciplinary teams to collaborate and deliver the highest quality of patient care.



All-in-one cloud platform for radiology

3Dnet™ Medical is a state-of-the-art, cloud-computing solution for medical imaging, which covers the full radiology workflow, from exam scheduling and patient registration to image archiving, advanced visualization, teleradiology, reporting and image distribution. Using 3Dnet, physicians can store, share, analyze and visualize medical images and collaborate with colleagues online. 3Dnet enables healthcare professionals to access their work at anytime and any place using a zero-footprint viewer, free of the previous necessity to restrict themselves to isolated workstations. By combining server-side rendering and progressive streaming, 3Dnet delivers unprecedented visualization performance of large data sets even over low Internet bandwidths.



Biotronics3D at the heart of innovation

We strive to innovate medical imaging by creating a global company driven by a different technology and business models for the healthcare professionals. We empower our customers to work with an alternative method, which is free from obsolete, traditional methods used in our industry. We provide cutting edge technologies to improve healthcare by better extracting diagnostic data and transforming it into usable information across the healthcare enterprise.

WORKFLOW - ORIENTED

Patient scheduling and registration

- Search for patients by name, address or DoB.
- Add new patient or modify patient information.
- Assign the appointment to a clinic and to a modality.
- Select the procedure type, add exam preparation.
- Enter insurance and billing details.
- Calendar for easy visualization of appointments.
- Delete or cancel an appointment (reason-based).
- Worklists - possibility to filter by exam status or clinic.
- Add the referral physician name and referral date.
- Attach documents by direct scanning or upload.
- Interactive chat notes for sharing useful information.

Patient Name	Patient ID	Date of Birth	Status	Procedure	Clinic	Registration Time	Scanner	Scan	Patient Address (Street)
PIRA, Pepe	U-000000319	12/12/1912	Confirmed	XRay Chest	Swiss	26/10/2018 16:57	Swiss X-Ray	CR	1
CLOONEY, George (M)	U-000000326	12/12/1912	Confirmed	CT Head	Madrid	31/10/2018 12:52	Madrid CT	CT	1
MESSI, Lionel (M)	U-000000283	12/02/1985	Notified	MRI Body	Madrid	31/10/2018 12:52	Madrid MRI	MR	BARCELONA STREET
CLOONEY, George (M)	U-000000326	12/12/1912	Notified	MRI Body	Madrid	31/10/2018 12:53	Madrid MRI	MR	1
FRENCHINI, Roberto (M)	U-000000274	12/12/1913	Notified	MRI Brain	Madrid	02/10/2018 15:35	Madrid MRI	MR	21232123
BECKHAM, David (M)	U-000000328	12/12/1912	Notified	MRI Brain	Madrid	02/10/2018 15:35	Madrid MRI	MR	football road
TRAVOLTA, John (M)	U-000000328	12/12/1912	Notified	MRI Knee	Madrid	31/10/2018 13:04	Madrid MRI	MR	hollywood lane
TAMMTHO, Quentin	U-000000332	12/12/1912	Notified	MRI Brain	Barcelona	13/11/2018 14:22	Barcelona MRI	MR	antoni
SPINER, Peter (M)	U-000000280	20/09/1972	Notified	CT Chest	Madrid	20/11/2018 16:32	Madrid CT	CT	35 Chest North Road
TSANTINIS, Queens	U-000000332	12/12/1912	Notified	MRI Breast	Barcelona	03/12/2018 16:45	Barcelona MRI	MR	antoni
ALI, Muhammad	U-000000277	12/12/1916	Confirmed	MRI Breast	Barcelona	29/11/2018 18:04	Barcelona MRI	MR	1
FRANCIS, Pope	U-000000315	12/12/1912	Confirmed	MRI Brain	Barcelona	29/11/2018 16:18	Barcelona MRI	MR	a
HOUSE, Bailey	U-000000334	12/12/1912	Notified	MRI Knee	Barcelona	29/11/2018 16:18	Barcelona MRI	MR	house street 1
ROGAN, Jan	U-000000321	12/12/1912	Notified	MRI Brain	Barcelona	29/11/2018 19:04	Barcelona MRI	MR	1
BECKHAM, David (M)	U-000000329	12/12/1912	Checked In	MRI Chest	Barcelona	29/11/2018 19:04	Barcelona MRI	MR	football road
ZEDANE, Zinedine (M)	U-000000307	12/12/1912	In Progress	MRI Cardiac	Barcelona	29/11/2018 19:04	Barcelona MRI	MR	football road
MESSI, Lionel (M)	U-000000280	12/02/1985	Notified	MRI Brain	Barcelona	29/11/2018 19:05	Barcelona MRI	MR	BARCELONA STREET
WHATEVER, Mark	U-000000326	12/12/1912	Notified	MRI Knee	Barcelona	03/12/2018 16:57	Barcelona MRI	MR	123
FORD, Harrison	U-000000337	12/12/1912	Notified	MRI Knee	Barcelona	03/12/2018 18:15	Barcelona MRI	MR	123
RODEN, Buddy	U-000000012	01/01/1973	Notified	MRI Spine	Madrid	21/12/2018 12:57	Madrid MRI	MR	Main St
TRAVOLTA, John (M)	U-000000328	12/12/1912	Notified	CT Body	Madrid	16/12/2018 17:32	Madrid CT	CT	hollywood lane
KIDGEE, Aed Aedh	U-000000343	12/12/1912	Notified	CT Body	Madrid	26/11/2018 12:48	Madrid CT	CT	1

RIS worklist with appointments in different states.

Monday 10th	Tuesday 11th	Wednesday 12th	Thursday 13th	Friday 14th	Saturday 15th	Sunday 16th

Calendar showing CT appointments for a week.

Technologist

- Studies worklists for quick search or patient selection.
- Filter worklists by examination status or by clinic.
- Start Examination and Complete Examination buttons.
- Exam statuses: new, arrived, completed, reported.
- Enter and track materials and radiation dose.
- Modify patient details, add or modify procedure.
- Share info with radiologists via interactive chat notes.

Reporting radiologist

- Easy access to patient history, referral letter, priors.
- User-specific and global worklists.
- Comprehensive set of image processing tools.
- Integrated text editor and Voice Recognition.
- Report templates; add images to report.
- Interactive chat notes attached to exams.

Referring physician

- Zero-footprint web portal for referring doctors.
- Automatic and manual assignment of studies.
- Physician-specific worklists to filter the patients.
- Easy access to reports, images and visualization tools.
- Runs on desktop computers and mobile devices.

Management reports

- Pre-defined and custom made activity reports.
- Receive feeds related to user and modality activity.



Zero-footprint portal for patients

- Access to images, reports and personal health data.
- Available on desktop computers and mobile devices.
- Works with any operating system and any browser.
- DICOM viewer natively integrated within the portal.
- Measurements: ruler, angle, Cob angle, circle.
- Notifications if new images or reports are available.
- Timeline shows all the past and future medical events.
- Create event in Timeline: hospitalization, blood test.
- Function to edit or delete an event from the Timeline.
- Upload DICOM study creates new event in Timeline.
- Download full DICOM study to the local device.
- Share time-limited access to specialist doctors.
- Easy integration with other systems via HL7/DICOM.

PATIENT - CENTRIC

Advanced teleradiology module

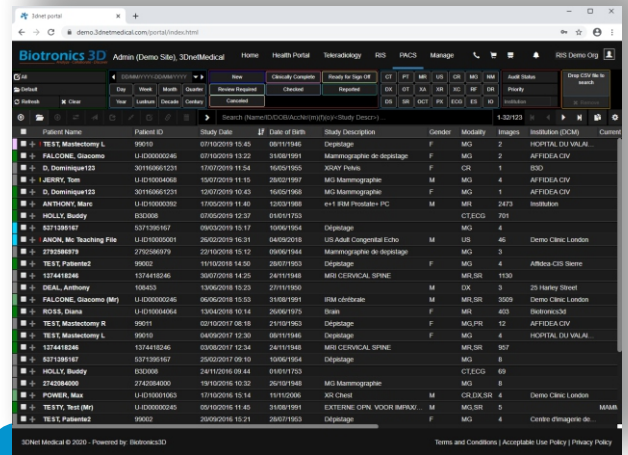
- Secure platform to connect teleradiology Provider and Client.
- Manual or automatic assignment of exams with radiologists.
- Use sub-specialities to assign orders to reporting physicians.
- Show the availability and the workload of a radiologist.
- Tool to manually define a Priority: Routine, Urgent, Critical.
- Define the Time to Report (TTR) for each type of priority.
- Automatic rules to apply Time to Report (TTR) to an exam.
- Filter orders displayed in the worklist by Priority and Modality.
- Worklists for unassigned, pending or reported examinations.
- Tool to fetch the study and priors if it was not sent from PACS.
- Display the clinical reason for the exam (e.g. referral letter).
- Built-in HTML5 reporting module with text editor and VR.
- Zero-footprint viewer with advanced post-processing tools.
- Send PDF reports back to the Client using HL7 or DICOM.
- Monitor the number of studies assigned to a telerad Provider.
- Monitor % of reports delivered on time, late or average TAT. (Turnaround Time)



ADVANCED VISUALIZATION

PACS workflow manager

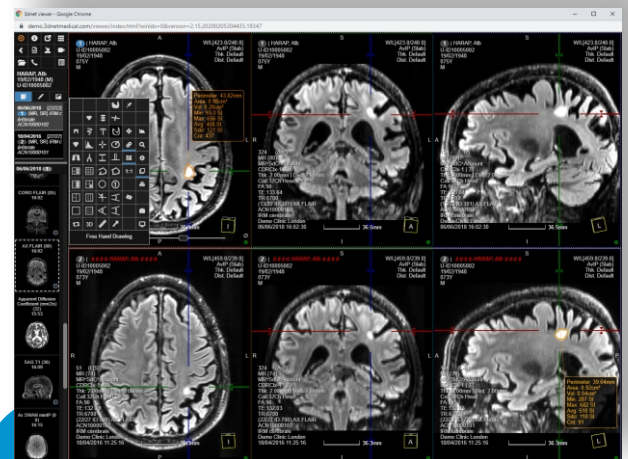
- Worklist filtering and sorting for quick patient finding.
- Assign studies with radiologists (manual and automatic).
- User defined worklists, e.g. with exams for academia.
- Separate studies in folders with user permission rules.
- Add searchable #hash-tags to studies and to images.
- Suspend study view with the possibility to save the state.
- Editor for hanging protocols integrated in the viewer.
- Attach documents or movies to a study (PDF, JPEG, AVI).
- Export images as DICOM, JPEG, BMP or PNG.
- Snapshot tool to create key reference images.
- Pre-configured and customizable viewing layouts.
- Import DICOM study from CD/DVD, USB sticks, etc.
- Export examination together with DICOM viewer.
- Share study link via email.
- Tools to merge patients, split study and delete study.



PACS workflow manager

2D image processing

- Display full quality image or lossless compressed versions.
- Window width/window level with default pre-sets.
- 90 degrees and free image rotation.
- Horizontal and vertical flip.
- Interactive zoom, fit-to-window, 1:1, magnifying glass.
- Measurements and annotations.
- Hounsfield units inspection, including ROI densities.
- CINE display with speed and direction controls.
- Cross-reference lines and synchronous scrolling.
- 3D localization on axial, sagittal and coronal views.
- Vertebra labeling.



Brain MRI: white lesion associated with multiple sclerosis. Comparative analysis between the current and prior study.

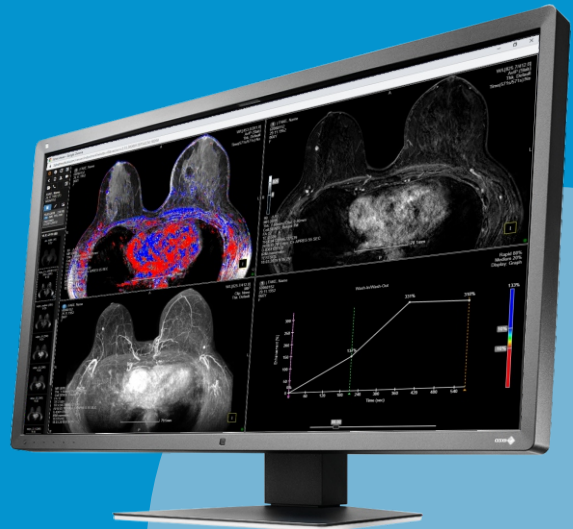
3D image processing

- Double-oblique, interactive multiplanar reformats (MPR).
- Create reformatted series along radial or planar directions.
- Maximum intensity projection (MIP, MinIP, AvIP)
- Sliding slab MIP with user configurable thickness.
- Volume rendering (VR) with pre-defined transfer functions.
- Free sculpting and clipping tools for VR and MIP.



Brain and neck CT scan showing occlusion of the posterior cerebral artery.

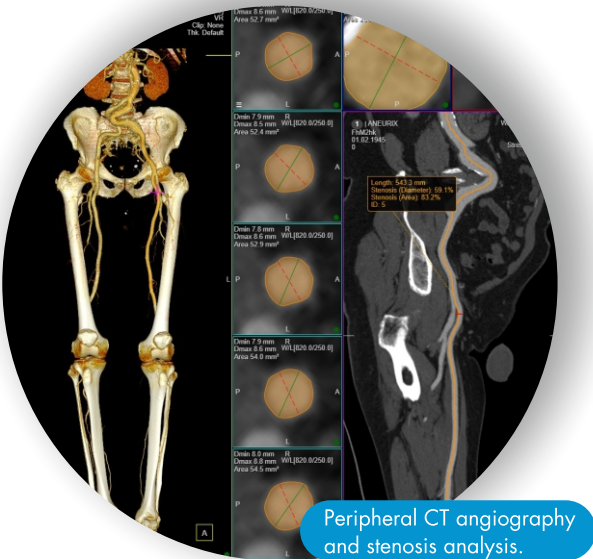
CLINICAL APPLICATIONS



Breast MRI scan: kinetic analysis of the enhancement patterns.

Breast DCE-MRI

Visualization of the dynamic sequences with baseline subtraction. 3D MIP rendering of the subtracted volume. Breast lesion/tumor segmentation and kinetic analysis. Voxel-based display of the contrast agent enhancement curve and parametric color maps.



Peripheral CT angiography and stenosis analysis.

CT Vascular

Centerline extraction and segmentation of blood vessels. Stretched and straight CPR views of the vessel. Automatic bone and table removal. Display of vessel cross sectional diameters. Stenosis analysis.

CT Colonoscopy

Automatic centerline extraction and segmentation of the colon. Endoluminal fly-thru and simultaneous display of prone and supine acquisitions. Polyp measurement tools. Record videoclips and generate colonoscopy reports.

CT Calcium Scoring

Segmentation of the coronary vessels and full quantitative scoring: volume, Agatston calcium score, max HU, Av HU and plaque data.

CT Lung

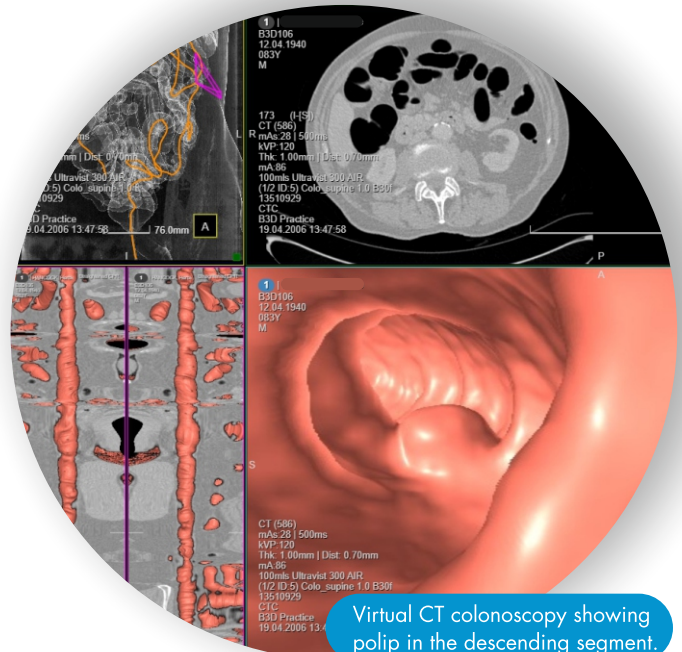
Volumetric segmentation of pulmonary nodules. Automatic measurements of HU, volume, area and diameters. Side-by-side comparison of current vs. prior study showing nodule doubling time.

PET-CT

Automatic PET and CT image registration. Lesion segmentation and SUV calculation. Customizable view layouts, including MPR and 3D MIP.

CT Dental

Fast generation of curvilinear reformats by marking points along the arch of the jaw. Generation of 3D VR, panoramic and paraxial views. Distance, angle and ROI measurement tools. Nerve tracking.



Virtual CT colonoscopy showing polip in the descending segment.

Proprietary Notice and Disclaimer

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Certifications

Biotronics3D products are CE certified as medical device class IIA and are fully compliant with the GDPR regulations.



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