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ITEA 3 is a EUREKA strategic ICT cluster programme

Exploitable Results by Third Parties

ITEA 2 13031 BENEFIT

Project details

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Name: QFR		
Input(s):	Main feature(s)	Output(s):
2 X-ray image sequences after injection of contrast medium	▪ Automated 3D reconstruction of the coronary vessel ▪ QFR values along entire analyzed vessel segment according to 3 different flow velocity models	Quantitative Flow Ratio (QFR) measure to indicate if treatment of a lesion is needed
Unique Selling Proposition(s):	▪ Innovative acquisition guide to determine optimal viewing angles ▪ Suitable for online use, during PCI procedure ▪ Accurate 3D reconstruction and calculation of the QFR in real-time ▪ No need for adenosine and / or pressure wire	
Integration constraint(s):	▪ Direct DICOM connection to X-ray system required ▪ Interaction with user cannot be done table side	
Intended user(s):	Cardiac X-ray system integrators	
Provider:	Medis medical imaging systems bv	
Contact point:	Bob Goedhart, bgoedhart@medis.nl	
Condition(s) for reuse:	Commercially licensed	

Name: BIDS (brain imaging data structure)		
Input(s):	Main feature(s)	Output(s):
▪ fMRI data ▪ Anatomical brain data	▪ BIDS guarantees a standard format ▪ Makes it easier for researchers to reproduce results ▪ Software using BIDS can be shipped in Docker containers, not necessary for users to perform complicated installations.	▪ Brain activity maps

Unique Selling Proposition(s):	New standardized data format for neuroimaging, facilitates reproducible results and using different softwares through Docker containers.
Integration constraint(s):	
Intended user(s):	▪ Psychologists ▪ fMRI researchers
Provider:	Linköping University
Contact point:	Anders Eklund <anders.eklund@liu.se>
Condition(s) for reuse:	*Available as part of the open source software BROCCOLI, available under GNU GPL 3* *https://github.com/wanderine/BROCCOLI* *For information about BIDS, and other softwares supporting BIDS, see* *http://bids.neuroimaging.io* *https://github.com/BIDS-Apps*

Name: CT Liver Registration		
Input(s):	Main feature(s)	Output(s):
▪ Diagnostic CT ▪ Interventional CT	Alignment of diagnostic- and interventional CT images of the liver	▪ Transformation field and transformed diagnostic CT that spatially matches the interventional CT ▪

Unique Selling Proposition(s):	▪ Non-rigid registration, with a unique and thorough validation ▪ Permits the visualization of a target lesion in a non-contrast-enhanced CT scan
Integration constraint(s):	None (runs as stand-alone software on various platforms)
Intended user(s):	(Clinical) researchers, medical imaging companies
Provider:	Erasmus MC
Contact point:	Theo van Walsum <t.vanwalsum@erasmusmc.nl>
Condition(s) for reuse:	*Software is open-source, distributed under Apache 2.0 license. Configuration and parameter settings are available from scientific publication.*

Name: MRI-based Liver lesion characterization		
Input(s):	Main feature(s)	Output(s):
Sequence(s) of MRI images of liver lesions	Motion corrected comparison of liver lesions over time and classification of lesion type	Motion corrected sequences and lesion characterization

Unique Selling Proposition(s):	▪ Automatic motion correction of full 4D MRI time series simultaneously ▪ Characterization of liver lesions and type classification for diagnosis support
Integration constraint(s):	▪ Available for various operating systems ▪ Multiple image formats ▪ Stand-alone package
Intended user(s):	▪ Medical imaging researcher ▪ Radiologist
Provider:	University Medical Center Utrecht
Contact point:	Max Viergever <m.viergever@umcutrecht.nl>
Condition(s) for reuse:	▪ *The motion correction software is open source under an OSI-approved license (elastix.isi.uu.nl).*

Name: OrganAtRisk segmentation		
Input(s):	Main feature(s)	Output(s):
▪ T1W MRI image of the brain ▪ Tumor segmentation	Recognition of essential brain structures which should be spared during radiation therapy	Segmented volume indicating Organs at Risk during radiotherapy

Unique Selling Proposition(s):	▪ Robust for MRI images from different scanner vendors ▪ Fast (< 5 minutes) segmentation algorithm
Integration constraint(s):	▪ C or C++ API is provided for integration ▪ Command line tool (Windows and Linux) is available ▪ T1W MRI image should be 3D and have a voxel size <= 1mm3
Intended user(s):	Medical system integrators
Provider:	Quantib
Contact point:	▪ Ronald van ‘t Klooster <r.vantklooster@quantib.com>
Condition(s) for reuse:	Licensing or research partnership

Name: Needle Positioning Device		
Input(s):	Main feature(s)	Output(s):
DICOM CT or Cone Beam CT volumes	Plans optimal needle path to a lesion and puts needle holder in proper position	Accurate direction guidance for needle insertion

Unique Selling Proposition(s):	The systems allows a first time right procedure while positioning a needle inside a tumor (for biopsy or ablation) based on 3d images (e.g. CT). Compared with the free hand technique, which is a complex, and time-consuming procedure, this results in a more efficient (shorter) and effective (more accurate) treatment.
Integration constraint(s):	One limitation of the system is that the fiducials that are used to identify the location of the system with respect to the tumor on the images, should be in the field of view of the scanner. By using a CT-scanner, this will not be a problem since there is a wide field of view. However, some C-arms do have a more narrow field of view, which makes it sometimes challenging to capture the fiducials in the same image as the tumor.
Intended user(s):	▪ Interventional radiologists ▪ Surgeons ▪ medical system integrators
Provider:	DEMCON Medical Robotics
Contact point:	Benno Lansdorp, Benno.lansdorp@demcon.nl
Condition(s) for reuse:	*Patent (PCT) pending*

Name: TAVIguide		
Input(s):	Main feature(s)	Output(s):
Cardiac CT DICOM volume	Analysis of optimal aortic valve type, size and position for implantation to treat a leaking valve	Report on optimal valve implantation

Unique Selling Proposition(s):	Use engineering simulations during TAVI planning to select the optimal procedure for a specific patient (i.e. the procedure that minimizes the risk or the severity of complications)
Integration constraint(s):	Simulations need to be performed remotely (e.g. on the cloud) therefore (patient) data need to exit the hospital and simulation results need to enter the hospital. The data transfer should happen via internet.
Intended user(s):	Cardiologists, medical imaging companies, medical device companies (e.g. TAVI manufacturers)
Provider:	FEops
Contact point:	Matthieu De Beule <matthieu.debeule@feops.com>
Condition(s) for reuse:	To be determined