DISPERSE

Electronics for spatially distributed sensors and transducers arrays

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PENTA Project Number 16012

D4.3 – Guidelines for MR staff on how to optimise workflow with respect to medical implant imaging

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Description: ***(max 5 lines)***	This document describes the demonstrator that was set up to demonstrate optimal MRI workflow for patients with implants, including acoustic monitoring.

Nature:	**DOCUMENT**		
Dissemination Level:	**PU**	Public	**X**
	PP	Restricted to other programme participants	
	RE	Restricted to a group specified by the consortium	
	CO	Confidential, only for members of the consortium	

DOCUMENT HISTORY

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V1.0	24/01/2020	Approved by PMT after clerical changes	Submitted	PENTA Office

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Executive Summary

This document describes the new workflow for MR imaging that was implemented at UZ Leuven to prevent loss of resources when scanning patients with medical implants as per deliverable 4.3 of the DISPERSE project.

1 Patient Workflow

Whenever a patient is prescribed a MR examination, an appointment is made by the MRI secretary. When the patient presents himself, he is asked to fill out a questionnaire that is reviewed by a technologist. When the patient has no implants or MRI-safe implants only, the patient is scanned. However, when the patient has implants that are MRI-conditional or MRI-unsafe, the patient is sent home without a scan while a valuable time slot on the scanner is lost.

To prevent such loss of resources, UZ Leuven implemented a new workflow for MR examinations. This new workflow involves two questionnaires. The first one is completed by the referring physician before planning an exam date, meaning that a physicist can check a patient's implants beforehand. If the patient has no implants or implants that are MR-safe or MR-conditional, the patient's examination is planned on the optimal MR system with specified conditions. When the patient's implants are deemed MR-unsafe, the patient is rerouted to another imaging modality. This early drop-out prevents loss of resources. The second questionnaire is filled in by the patient right before the examination, which is then compared to the first questionnaire by a technologist. This double-check increases the safety of the patient.

This new workflow can be seen in Figure 2, and is used by default in UZ Leuven. The workflow was also printed on 5mm forex boards and hung in several rooms inside the hospital, as seen in Figure 1.

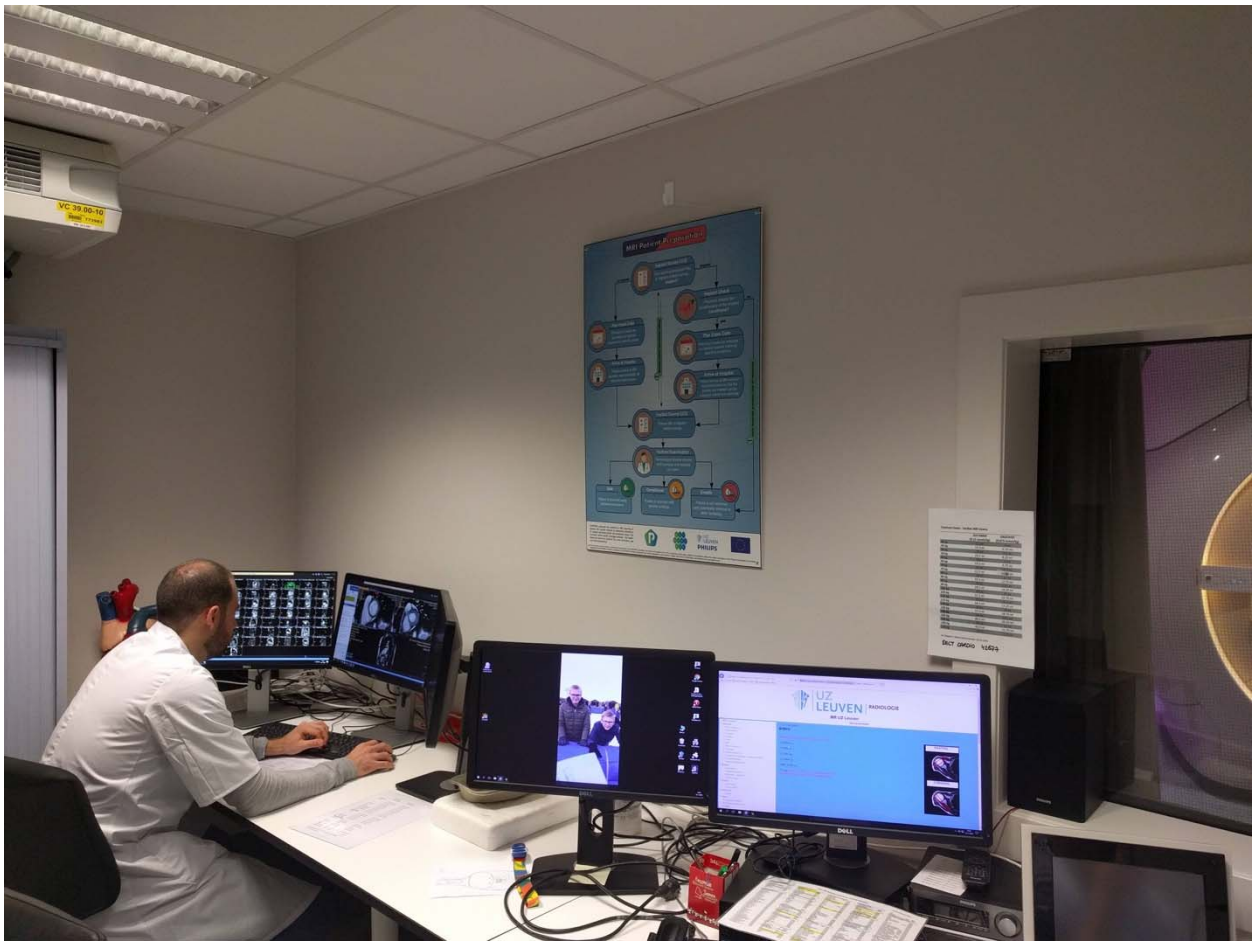

Figure 1: New workflow inside the control room of a MR scanner.

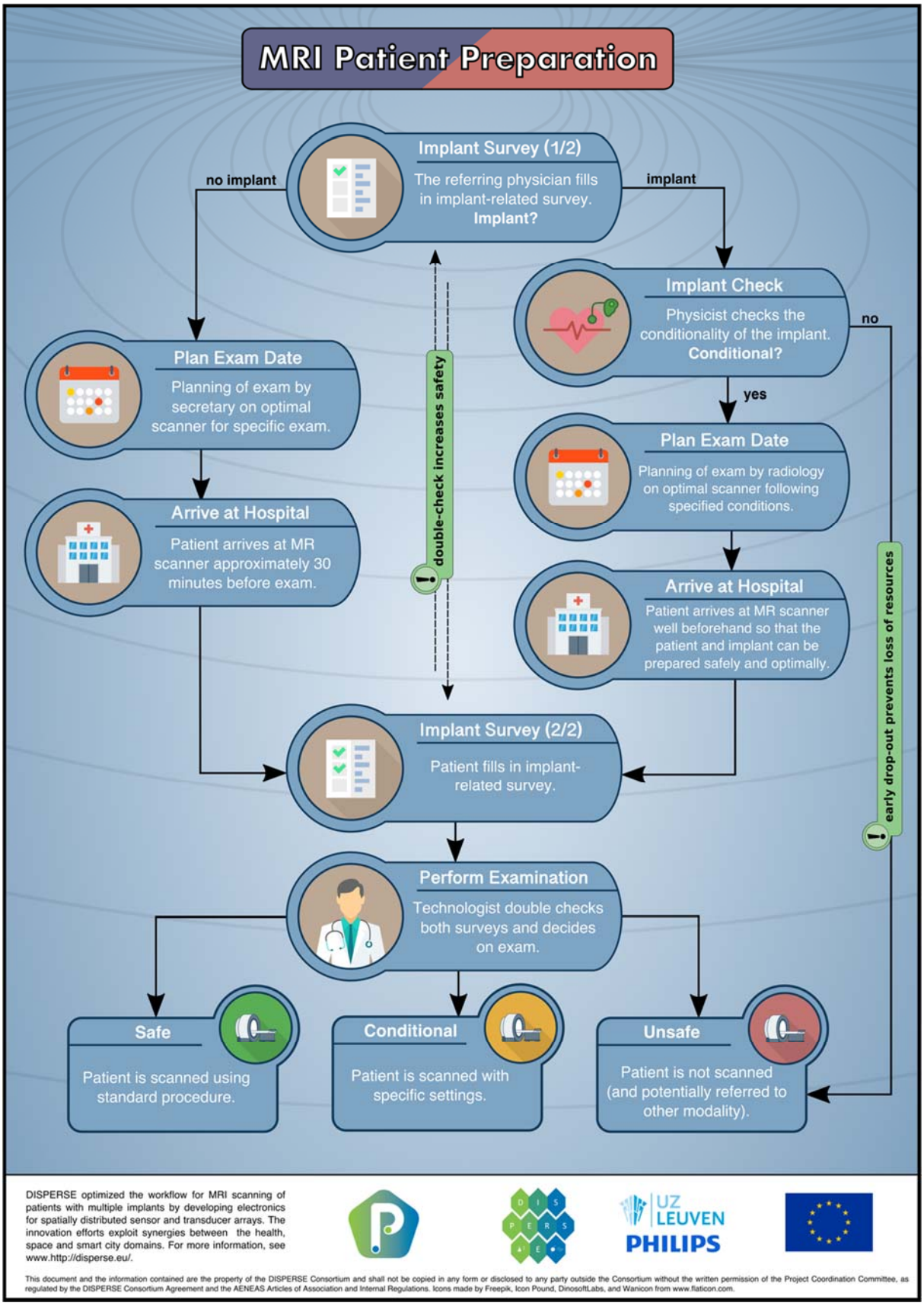

Figure 2: New workflow that prevents loss of resources through early drop-out while a double check increases safety.