Detecting abnormal septal motion by combining spatial and electrical information from endocardial mapping data in CRT candidates

O. Camara-Rey¹,², S. Oeltze³, M. De Craene¹,², R. Sebastian¹,², E. Silva⁴, D. Tamborero⁴, L. Mont⁴, M. Sitges⁴, B.H. Bijnens¹,²,⁵, A.F. Frangi¹,²,⁵

¹ Center for Computational Imaging and Simulation Technologies in Biomedicine (CISTIB), Universitat Pompeu Fabra, Barcelona, Spain
² Networking Biomedical Research Center on Bioengineering, Biomaterials and Nanomedicine (CIBER-BBN), Barcelona, Spain
³ Institute of Simulation and Graphics, Otto-von-Guericke University, Magdeburg, Germany
⁴ Cardiology Department, Thorax Clinic Institute, Hospital Clinic, Institut d’Investigacions Biomèdiques August Pi i Sunyer, University of Barcelona, Spain
⁵ Institució Catalana de Recerca i Estudis Avançats (ICREA), Barcelona, Spain

RESULTS
• 10 patients showing heart failure
• Candidates for CRT according to standard criteria
• B: baseline; F: 6 months follow-up

CONCLUSIONS
• First time CARTO data is used for cardiac motion analysis in CRT patients
• Recognition of fast events (e.g. septal flash) due to high acquisition rate

ACKNOWLEDGMENTS
This research has been partially funded by the Industrial and Technological Development Centre (CDTI) under the CENIT Programme (CDETAM project) and the European Community’s Seventh Framework Programme (FP7/2007-2013) under grant agreement n. 224455 (euHeart project). Dr. O. Camara and R. Sebastian acknowledge grant support from the Spanish Ministry of Research and Innovation, under a Ramón y Cajal and Juan de la Cierva Research Fellowship respectively.