IMAGX RESEARCH GROUP

The iMagX Research Group gathers researchers from UCL ICTEAM's Image and Signal Processing group, from UCL MIRO centre of molecular imaging, radiotherapy, and oncology, and from IBA (Ion Beam Applications S.A.). Created in January 2011, the iMagX Research Group develops innovative hardware and software tools based on advanced imaging and dose measurement techniques to improve proton therapy and radiotherapy cancer treatment.

Research axes & expertise

The iMagX Research Group focuses on the design of tools to enable accurate patient positioning and treatment simulation and monitoring. Tools designed and implemented within the group include: gantry mounted CB-CT system; Monte Carlo dose engines; automatic image registration algorithms; mobile tumour tracking; Prompt Gamma camera and implanted diodes to assess dose given. All developments are integrated within an ergonomically designed software platform. The platform was designed to allow researchers to do quick prototyping of their tools. Future iMagX developments are expected to widen the proton therapy indication spectrum to new challenging types of cancers, typically in moving organs such as lung and liver.

Application fields

- Patient positioning in proton and radiotherapy
- Proton treatment simulation and monitoring
- Flexible medical imaging software platform

Major projects/partnerships/collaborations

- iMagX was created to fulfil the goals of two regional R&D projects: Invivo/IGT (R.W.1017266) and IVDGPT (R.W. 1217662) both co-funded by UCL, IBA, and the Walloon Region DGO6.
- iMagX has research collaborations with the Université de Lyon-Créatis Lab (France) and the Massachusetts General Hospital (USA).
- The proton therapy centres of the University of Florida (USA), the University of Pennsylvania (USA), the Institut Curie (France) and ProCure (USA) are testers of the solutions developed within the projects.

Key figures

- The current iMagX project started in January 2011 and are scheduled up to mid-2015.
- 23 UCL researchers are involved in the projects along with 8 IBA physicists and engineers.
- iMagX has a 17.5 M€ budget, co-funded by UCL, IBA, and the Walloon Region.

Contact

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