
From PRaVDA to OPTIma: next generation proton imaging system.

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Abstract

Following the award of a £3.2m (3.7m euros), we will be developing a new system, building upon PRaVDA, that will be installed in the Research room at the NHS Christie Proton Beam Therapy Centre, Manchester. It is intended that this system will be a national facility for the academic and clinical evaluation of proton CT and other imaging techniques. It will be designed to meet the advantages and challenges of current scanning pencil beam delivery systems. Our aims include:

- Develop optimum and personalised treatment plans (theoretical) – determine what reductions in range uncertainties are possible
- Complex phantoms – enhance reconstruction and provide calibration of phantoms CT/ X-ray for wider community library
- Combine proton CT with other imaging modalities to provide better clinical data
- Examine relative stopping power with other beam parameters – scattering and straggling
- Investigate how could be used for treatment monitoring

*Speaker

- Though the Research Room has fixed horizontal nozzle design to function on 360° gantry.

Though we are only in the early stages of this work, this short presentation will outline our approach, goals and foreseen challenges.