

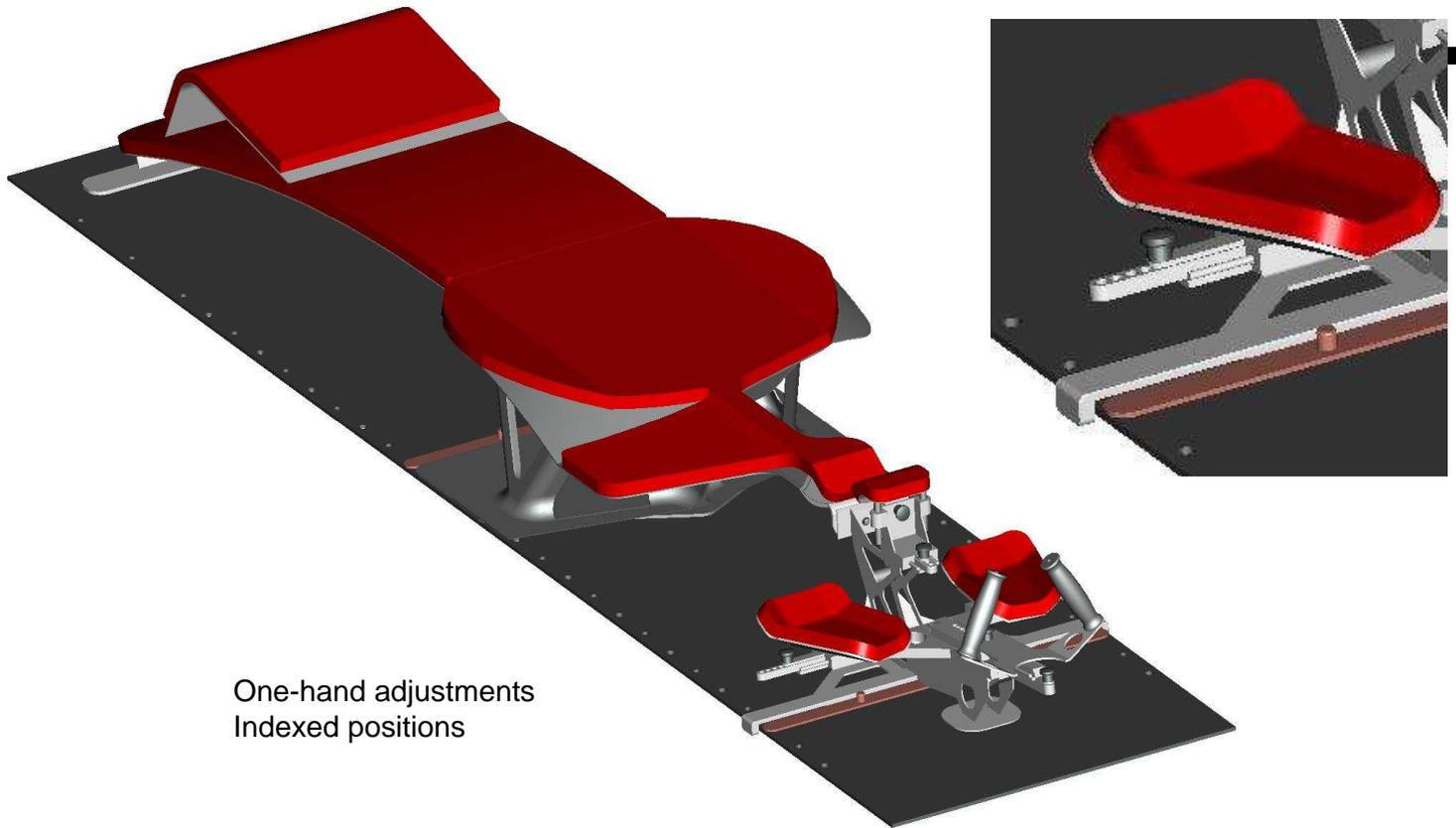
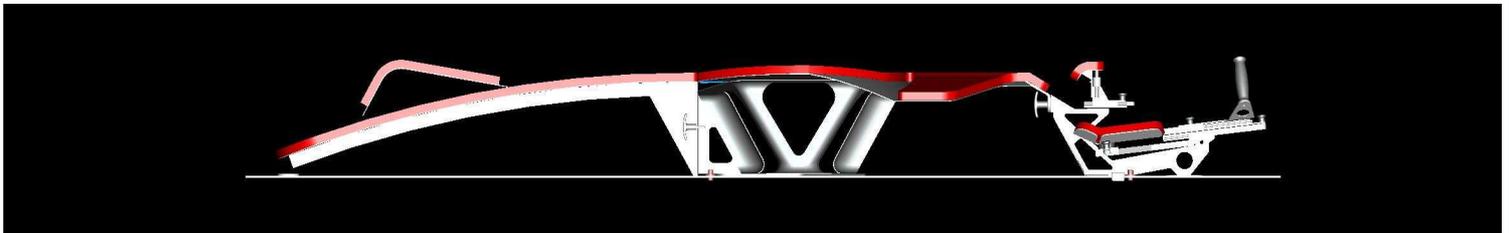
Development of an immobilisation device for treatment of patients after breast conserving surgery for mammary carcinoma.

P.A. Coucke¹, M. Wonner¹, L. Jánváry¹, P. Vavassis², A. Broens¹, W. de Neve³, Johan Berte⁴, E. Lenaerts¹

Department of Radiotherapy University Hospital Liège (1), Department of Radiotherapy Hospital Maisonneuve Rosemont Montréal-Qc Canada (2), Department of Radiotherapy University Hospital Ghent (3), Aériane SA (4),

Purpose: To develop an immobilisation device for prone positioning for breast irradiation. The basic requirements for the device are: rapid and accurate patient (re)positioning, compatibility with modern imaging devices and easy to handle by the treating technologists.

Material and methods: We used the anthropometric data from Dreyfuss to define the basic characteristics of the system in order to match the 2.5-97.5 percentile of the population for all support elements (arm, head, abdomen and legs). The “open” space corresponding to the region of interest to be treated (thorax/breast) was enlarged to allow more degrees of freedom for beam angulations (inclusive non-coplanar beam orientations). The size of the immobilisation device and the patient contour according to the anthropometric data were taken into account so that the whole set-up matches the bore size of the computed tomography scanner (82 cm). The support for the contra lateral breast was designed to optimize patient’s comfort and to move away the non treated breast from the irradiation fields.



One-hand adjustments
Indexed positions

Conclusion: The device will now be used prospectively in a trial to compare the prone versus supine positioning. We will define and report the impact of prone versus supine positioning on vector displacement of boost area, compare the dosimetry using our Pinnacle® treatment planning both with 3D conformal radiotherapy as well as IMRT, both with or without considering respiratory movement (Protocol B70720084765): endpoints are homogeneity index, conformity index, mean heart diameter within tangential fields and V30, V5-V15-V20 lung.