

European Crew Personal Active Dosimeters (EuCPAD)

Part1: Review on existing devices (M. Luszik-Bhadra)

Part2: Numerical simulations (S. Rollet)

Part3: Draft design (G. Reitz)

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A feasibility study was set up by ESA to select an appropriate radiation detector system which could serve as “European Crew Personal Active Dosimeters” (EuCPAD). The study comprises reviews and analysis on commercial and scientific radiation systems already in use on Earth and in space. In course of this review, data on existing active personal dosimeters as used on earth are updated to include newest information on high energy responses and experience with their performance at workplaces. Some new technologies which are still under research are presented as well. Further on the numerical simulation of radiation effects is carried out for selected active detector systems. Particle, energy and incidence response are calculated for different particles using Monte Carlo transport codes such as FLUKA, GEANT4 and PHITS. These investigations have provided the conceptual bases for the selection of the most appropriate detector system. A preliminary concept of the EuCPAD finalizes the presentation.