1. (normative)  
   Mission radiation environment specification – DRD
   1. DRD identification
      1. Requirement identification and source document

This DRD is called from ECSS-Q-ST-60-15, requirements 5.1a, 5.2a, and 5.3a.

* + 1. Purpose and objective

The purpose of mission environment specification is to document in a single place the particle fluxes (shielded and unshielded), the TID and TNID versus shielding dose curves, and the LET spectra.

* 1. Expected Response
     1. Contents

Mission definition

Mission orbit, duration, and, possibly, launch date shall be documented.

TID and TNID environment

High energy electrons and protons spacecraft incident fluence versus energy spectra shall be presented with figures and tables.

1. High energy electrons and protons can be trapped and solar.

Total dose curve in Silicon versus Aluminium shield thickness for a solid sphere geometry shall be presented with figure and table.

1. Aluminium shield thickness can vary between 10 µm and 100 mm).

Total non-ionizing dose curves for Silicon and GaAs materials versus Aluminium shield thickness for a solid sphere geometry shall be presented with figure and table.

1. Aluminium shield thickness can vary between 10 µm and 100 mm).

SEE environment

GCR fluxes versus LET spectrum calculated for a given Aluminium shield thickness (e.g. 1 g/cm2) shall be presented with figure and table.

Solar particle event ion fluxes versus LET spectrum for a given Aluminium shield thickness (e.g. 1 g/cm2) shall be presented with figure and table.

Trapped and solar protons fluxes versus energy spectra shall be presented with figures and tables.

* + 1. Special remarks

None.