

ECSS-Q-ST-70-06C: Status and Possible Way-Forward

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07/12/2023

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ECSS-Q-ST-70-06C
31 July 2008



Space product assurance

Particle and UV radiation testing for
space materials

ECSS Secretariat
ESA-ESTEC
Requirements & Standards Division
Noordwijk, The Netherlands

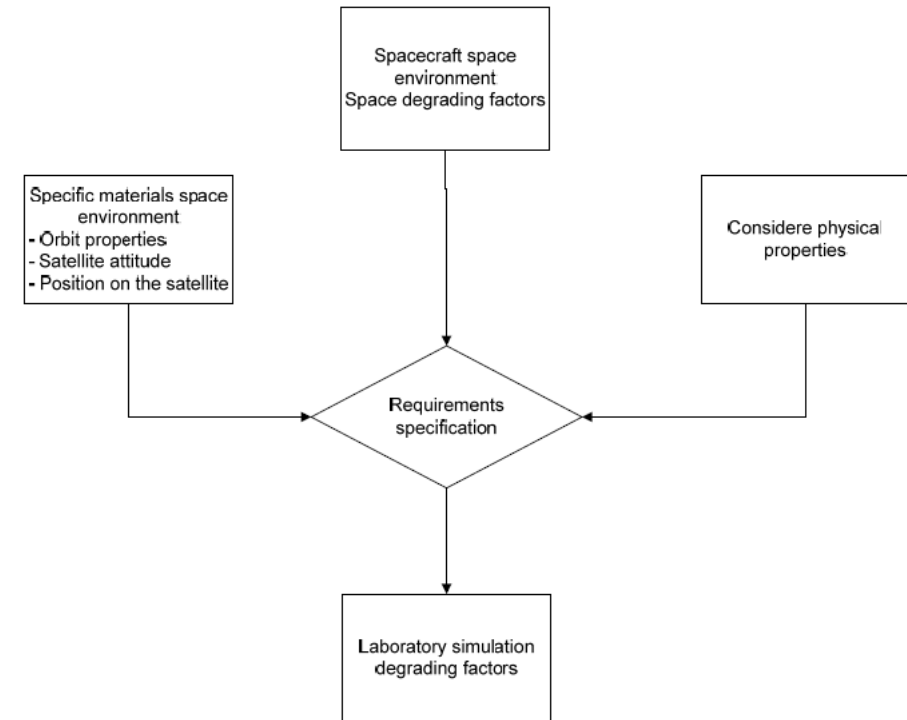
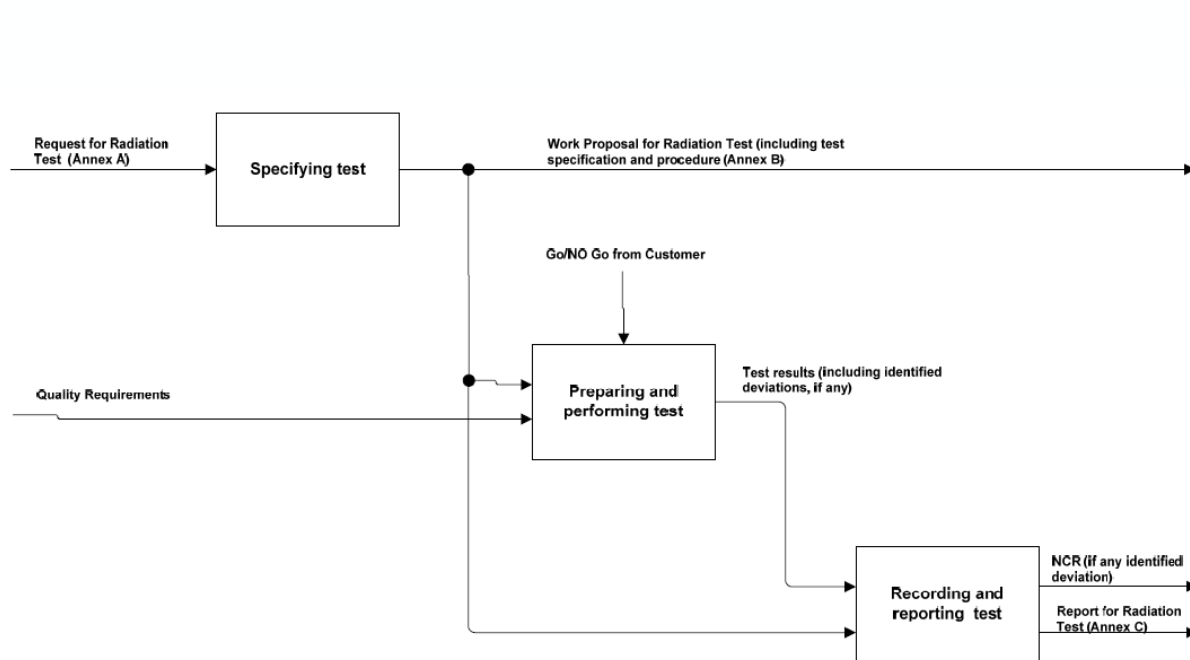
The role of this Standard is to establish **a baseline for the testing specification.**

This Standard defines the procedures for electromagnetic radiation and charged particles testing of spacecraft materials.

These materials include for instance thermal control materials, windows, coatings, and structural materials.

The procedures include simulation of the environment and the properties to be verified.

This Standard excludes electronic components.



- The Standard is describing a process between a Customer and a Supplier

- The standard is only qualitative, with generic requirements
- A lot of indications are provided through Notes, which are not normative
- The simulation of the space environment is required but the process not specified
- A lot of freedom is allowed

- **EEE Components:**

- ECSS-E-ST-10-12C (and ECSS-E-HB-10-12C)

“Methods for the calculation of radiation received and its effects, and a policy for design margins”

The standard aims to implement a space system engineering process that ensures (...) **use of common methods in evaluation of radiation effects.**

- ESCC 22900

“Total Dose Steady-State Irradiation Test Method”

Provide quantitative requirements on dose rates, temperature, maximum time between test and characterization, ...

- **Photovoltaic assemblies and components:**

- ECSS-E-ST-20-08C

Clearly defines UV and particles irradiation test parameters for the various items of the photovoltaic assemblies (bare cells, coverglasses, ...)

Open Discussion

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