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System hardening and real space applications

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Abstract:

This talk describes the suitable protection at architecture and system level against the effects of radiation on electronic components and digital systems. After the description of the general architecture of a space avionics system, the potential solutions for each type of units constituting an on-board computer are presented through the example of real space applications: avionics bus, links, memory units, and – the main part – processing units i.e. fault-tolerant architectures.

Short Bio:

Michel PIGNOL was born in Clermont-Ferrand, France, in January 1960. He received an Engineering degree in Electronics from Polytech' Clermont-Ferrand, France, in 1983 and a Ph.D. in Electronics from the Blaise Pascal University of Clermont-Ferrand, France, in 1986. He worked for SAGEM, Eragny, France, where he was in charge of military and space embedded computers for 5 years. He has been working for CNES, the French Space Agency, since 1990 where he has been in charge of R&D studies and program developments on on-board data computers and high speed links. He is author of several corporate patents concerning fault-tolerant architectures well suited to space applications, memory protections and very high speed data links. He is involved in standardisation working groups, Program Committees for international conferences / journals, and international schools.

Organizers:

