

**X2000 Avionics Industry Briefing**  
Focus

**Moderator: Klein**

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Breakout

**GOMAC Special Session on Europa Orbiter Radiation Hardened Avionics Development**

Europa Orbiter is a mission to investigate the likelihood of liquid water beneath an ice crust. Due to its close proximity to Jupiter and its strong magnetic field, the radiation requirements for Europa Orbiter are immense, 1 Mrad behind 100 mils of aluminum.

To respond to this requirement, Europa Orbiter has been pursuing a radiation hardened avionics package. A part of this system is based upon the PowerPC 750 computer, and the associated interface and memory developments. To render this design rad hard requires the use of the new Honeywell HX3000 foundry for the necessary digital ASIC.

A radiation hardened power subsystem is also under development. The power subsystem is a unique implementation of rad hard mixed signal ASICs. Utilizing various Honeywell digital foundry lines as appropriate for each ASIC development, the size and mass of the power subsystem has been dramatically cut while increasing its overall functionality and fault tolerance. This is the first utilization of a rad hard digital line for high power implementation.

The GOMAC special session will focus on the issues and status of this development. Subsessions on the Mission and Spacecraft will be presented to set the requirements for the Avionics development.