

A series of Spacecraft Network Workshops is planned to develop a standardized spacecraft interconnect protocol suite suitable for a broad range of advanced missions and platforms.

Future spacecraft requirements in subsystem interconnect are growing by orders of magnitude. In the past 5 years, we have seen the industry go from 1553 at 1Mb/s to SpaceWire at 250Mb/s to Time Triggered GbEthernet at 1Gb/s. Over the next 5-10 years, requirements are expected to grow to 10Gb/s and beyond to support high data rate instruments and onboard sensor data processing. New systems paradigms, including plug and play architectures and vehicle de-mate/re-mate, will require extending interconnect capabilities and reliability levels well beyond those available in current technologies.

AFRL, in collaboration with NASA, is contemplating the development of an advanced intra-spacecraft interconnect standard to meet these needs. An organizing committee, comprising representatives from USAF, NASA, NRO and other agencies whose interest is space, has been formed to provide overall coordination and to act as a ratifying body for the anticipated standard(s). The workshops will focus on technical work and are expected to be attended by representatives from stakeholders in government, industry, and academia. Attendance is limited to US persons as ITAR sensitive information may be discussed. Participation by all interested parties is encouraged, but contributing organizations are expected to fund both attendance at workshops and the work required to support this effort. There will be no funding provided by USAF, NASA or other participating governmental agencies.

The first workshop, to be held in conjunction with GOMAC-Tech11 <http://www.gomactech.net/> March 21-24 in Orlando, FL, will focus on requirements development. This workshop will set the stage for future workshops on interconnect standards, protocol suites, physical layer hardware, establishment of a standards path, and verification procedures. Registration at GOMAC-TEC is required to attend. This kick-off workshop will be open to all GOMACTech attendees, but those interested in presenting proposed requirements for future spacecraft interconnects should contact the organizers (contact information below). It is anticipated that the workshop will accommodate no more than six half-hour presentations, so early reservation of a presentation time slot is encouraged. The workshop is expected to produce two primary products:

1. A preliminary requirements set
2. The initial Requirements Committee membership list

Subsequent work by the requirements committee will establish the requirements specification and will lead to the formation of the various standards committees.

It is expected that specifications and standards will be published by the AIAA with potential follow on adoption by other standards organizations including CCSDS.

Interested parties should contact:

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