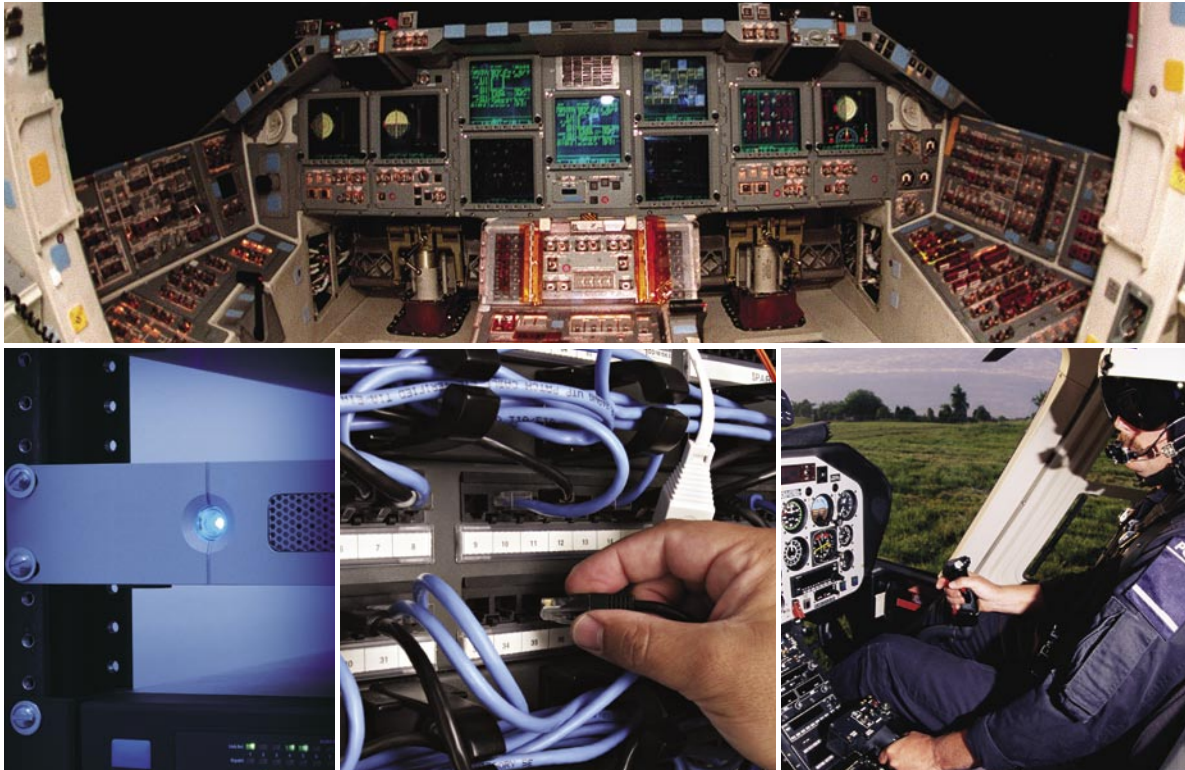




Harris Corporation Evaluating SpaceWire Router for Its Own Space Applications



Through a new Space Act Agreement (SAA), NASA Goddard Space Flight Center is providing support to Harris Corporation to help the company's researchers understand how Goddard's SpaceWire link and switch ("router") operates and the requirements for integrating it into the company's electronics. Once Harris gains familiarity with the router, the company will integrate the technology into its own aerospace electronics, specifically its Space Programmable Modem, enabling the connection of various digital technologies for communication in space.

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Benefits of Technology Transfer

- Harris will benefit by absorbing knowledge and skill with the SpaceWire standard and router, positioning itself to be able to respond to future market needs for SpaceWire-based communication devices.
- NASA will benefit through reimbursement for researchers' time supporting Harris's efforts, demonstrating the value of SpaceWire technology to the broader aerospace industry.
- NASA also may benefit from the future potential availability of additional SpaceWire-based devices that may enhance NASA missions.
- While SpaceWire-based components remain limited, as more companies like Harris embrace the standard, availability and competition will increase, benefiting the aerospace industry as a whole.

tech transfer success

On the Record

“The more companies building electronics with SpaceWire, the better the competitive environment for the aerospace industry, and for the future of the SpaceWire standard itself.” – *Ted Mecum, NASA Goddard Innovative Partnerships Program Office*

“Anytime a company reimburses us to help them absorb a technology, they demonstrate great commitment to it. Technology transfer efforts like this help us provide support to those companies, which in turn can help us expand the reach of the technology itself.” – *Glenn Rakow, innovator, NASA Goddard*

“Harris is interested in using SpaceWire on a vast range of future programs, and the technology’s acceptance in the industry makes it an obvious choice. With NASA’s help, we are integrating SpaceWire into our Space Programmable Modem in as little as six months—a feat which would have taken much longer without NASA’s support. In addition, the IPP Office was a great help in working out the details of the agreement. The entire process took only two months, and the IPP Office worked to ensure that all the parties were in line with the resulting agreement, and they were responsive to our request for status about the process.” – *Fenton McDonald, Advanced Program Engineer, Harris Corporation*

About Harris Corporation

Harris is an international communications and information technology company serving government and commercial markets in more than 150 countries. Headquartered in Melbourne, Florida, the company’s 14,000 employees, including more than 6,000 engineers and scientists, serve government, radio frequency, broadcast, and microwave communications markets.

Technology Origins

The SpaceWire specification is a set of serial links that describe a network fabric used to move information defined in packets. Specific to Goddard’s SpaceWire design, the link and switch (“router”) is a unique implementation that enables avionics computers to communicate seamlessly at varying data rates (2 Mbps to more than 200 Mbps), minimizing interconnects. The communication allows resources to be distributed and provides for redundancy across spaceflight applications.

Developed in beta form in 2000, the protocol standard was released in January 2003 and was first implemented at NASA in 2004 on the SWIFT mission, a gamma ray burst-alert telescope.

The Transfer Process

In October 2005, Harris was looking for a high-rate communication bus capable of integrating the company’s Space Programmable Modem into a variety of space electronics. The company’s researchers were familiar with Goddard’s Glenn Rakow as the primary expert on SpaceWire in the U.S. The company contacted Rakow to begin discussions toward an agreement that would help Harris better understand the technology and its potential for their designs. Goddard’s Innovative Partnerships Program Office assisted with agreement discussions, managing the final arrangements and logistics to arrive at a reimbursable SAA that would benefit the company and NASA.

Looking Ahead

As part of the agreement, Goddard will provide Harris researchers assistance in understanding and evaluating the SpaceWire router. Based on positive outcomes of the evaluation, the company expects to integrate the protocol into its Space Programmable Modem within a six-month timeframe. Harris then will evaluate potential commercial opportunities for this and other possible devices within NASA and the larger aerospace industry.

For More Information

If you would like additional information about Goddard’s technology transfer opportunities, please contact:

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