



Innovative Partnerships Program

Telemetry Acquisition System

Objective

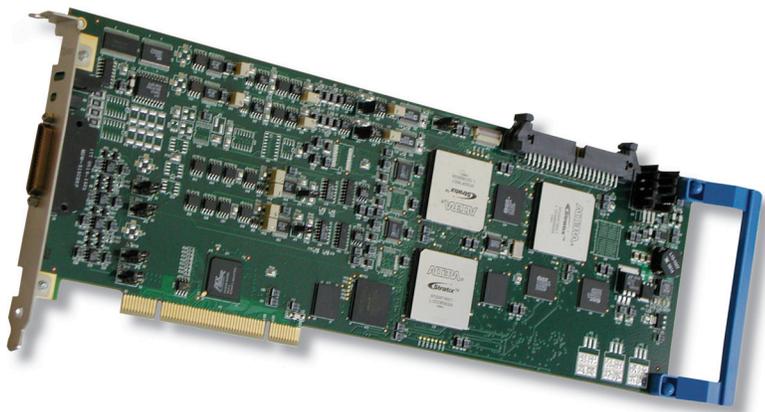
NASA Kennedy Space Center (KSC) recently partnered with Ulyssix Technologies, Inc., under a NASA Space Act Agreement. The Space Act Agreement was with KSC's Communications and Telemetry Branch under the Launch Services Program and was for the redesign of a telemetry acquisition system. The agreement between NASA and Ulyssix allowed the partners to share resources and to further the development of Ulyssix's pulse code modulation (PCM) processor board, the TarsusPCM, used by KSC for Space Shuttle and rocket launches. Under this agreement, Ulyssix also worked with Dryden Flight Research Center, which utilizes the TarsusPCM capabilities for aeronautical testing involving drone aircraft. The partnership gave NASA and Ulyssix the ability to make the product perform for some very custom NASA applications that helped Ulyssix market the TarsusPCM product for other aeronautical and aerospace applications.

Success Highlight

- The redesign of the telemetry acquisition system was successfully completed.
- The technology is used for Space Shuttle and rocket launches.
- Military and aerospace companies have benefited and developed technology together with NASA.
- The emerging commercial aerospace industry can benefit from the technology.

Advantages

Ulyssix's technology not only supports Space Shuttle launches, but their equipment also helps to propel this particular research forward. The company's hardware helped to bridge the gap between the Space Shuttle and Constellation. As more aerospace companies incorporate the TarsusPCM into their efforts, it seems likely that the Ulyssix technology will provide a bridge to future commercial aerospace endeavors as well.



NASA SUCCESSES

The Technology

Ulyssix's highly versatile TarsusPCM processing boards can perform a range of data acquisition and telemetry processing functions, allowing it to bit synchronize (recover the speed of data transmission), frame synchronize (group the ones and zeros), and de-commutate binary code telemetry data (separate the frame block into individual words that correspond to measured values). In simple terms, the technology translates the data into understandable measurements to be fed into display systems for engineer analysis. The TarsusPCM is also outfitted with a full PCM simulator that allows engineers to run tests using past data.

Commercial Applications

The company's Tarsus line provides support to a host of military and aerospace applications. Eglin Air Force Base has employed Linux code created under the NASA Space Act Agreement to use the TarsusPCM card for remote-controlled drone testing. Pratt & Whitney and Embraer S.A. are utilizing Ulyssix TarsusPCM hardware for jet engine and airplane testing and development. ATK Space Systems incorporated the company's technology into the ground-support equipment for the satellites it built for NASA's Time History of Events and Macroscale Interactions during Substorms—otherwise known as THEMIS—mission to study the activities of Earth's magnetosphere that lead to spectacular events like the northern lights.

Contacts

The commercial success of the TarsusPCM is the result of NASA's technology transfer program under the Innovative Partnerships Program. This program seeks to stimulate commercial use of NASA-developed technologies. If your company is interested in learning more about the NASA technology transfer process, please contact:

NASA Point of Contact:

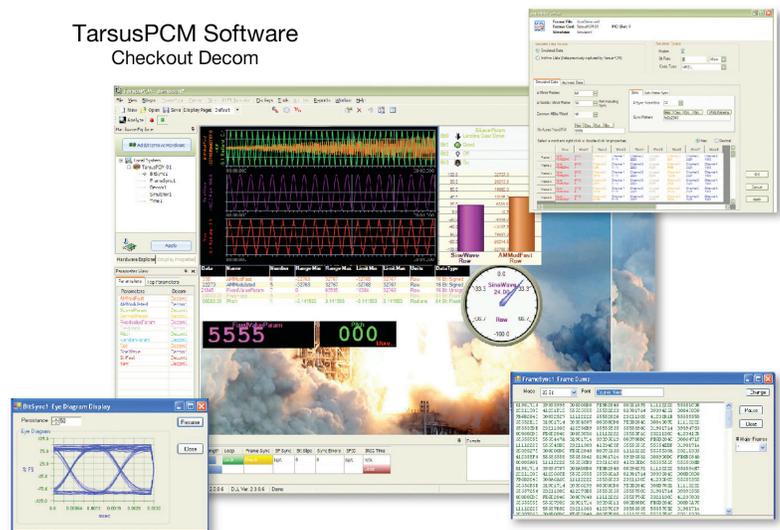
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TarsusPCM Software
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