

## UEI, NASA WSS & MIL-STD 1553

### WORKING TOGETHER TO FIND SOLUTIONS

The [International Space Station \(ISS\)](#) has a complex water system designed to store and create clean water for its residents, capable of storing as much as 530 gallons of water at any given time. NASA's ISS upgraded to a new **Water Storage System (WSS)** and is equipped with state-of-the-art technology. WSS improves the resupply/waste water management and iodinated water storage capabilities of the ISS. When designing the new WSS, NASA needed a way to manage communications, control and monitoring systems within the WSS for simplified management. Securing the right [data acquisition and control hardware](#) for this task was critical to maximizing the potential of the new WSS.



(May 29, 2019) NASA astronaut Nick Hague assembles and installs the Water Storage System inside the U.S. Destiny laboratory module.

### THE IMMEDIATE CHALLENGES

- 1 NASA needed a system solution designed for long-term use. System to communicate with a variety of different I/O, sensor formats and driven by [MIL-STD 1553 protocols](#), while taking up a minimal amount of physical space, since space aboard the ISS is limited.
- 2 Hardware needed to be [rugged](#) enough to handle the journey to space, which would involve extremely high pressure and vibration during launch and speeds up to 22,000 miles per hour during the six hour flight to the ISS.

### UEI'S PATHWAY TO SUCCESS FOR NASA

- A [DNA-PPC9 7-Slot PowerDNA Cube](#) chassis in conjunction with [MIL-STD 1553 compatible I/O boards](#), plus analog, digital, thermocouple, RTD/resistance and serial, to support communication between the components of the WSS and ensure continuous functionality.
- The [PPC9 7-Slot Cube](#) is compact, measuring just 4"x 4.1"x 6.6", and also rugged, capable of handling up to 5g Vibration, 100g Shock, and temperatures ranging from -40 to 85 degrees Celsius. UEI's [MIL-STD 1553 board](#) has all the functionality required to ensure smooth, successful WSS operations.

## END RESULT UEI'S RUGGED, RELIABLE, AND FLEXIBLE SYSTEM SOLUTION FOR NASA HELPED ENSURE THE SMOOTH AND EFFICIENT OPERATION OF THE NEW WSS.

**[WIN]** UEI's [10 Year Availability Guarantee](#) helps minimize obsolescence concerns, making it easy for NASA to acquire replacement parts and compatible I/O and accessories far into the future.

**[WIN]** UEI hardware is robust enough to handle the right mix of boards to control various WSS components and work with [MIL-STD 1553](#) data bus for communication and control.

**[WIN]** The WSS helps maximize water storage and reuse aboard the ISS, helping lower the ISS's dependency.

### ASK US HOW UEI CAN DO THE SAME FOR YOUR COMPANY!

