

# High Speed NAS for a Wide-Area Persistent Surveillance Pod

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## Challenge

- High data throughput and storage
- Accelerated program schedule
- SWaP-constrained application

## Solution

- High-speed network attached storage (NAS)
- Quick delivery of lab testing units
- Low profile, conduction and air cooled NAS

## Results

- High data throughput solution
- Tight program schedule met
- SWaP-optimized solution

## Challenge

The collection of sensor data on long-range airborne missions is of vital importance to warfighters. In recent years, through the advancement of military technology, these intelligence, surveillance, and reconnaissance (ISR) missions have been able to collect more data, for longer periods of time. Many long-range missions are now performed using unmanned aerial vehicles (UAV). These UAVs are often compact, and operate for extended durations while collecting massive amounts of data through an attached pod of sensors. The pod enables wide-area persistent surveillance through a broader field of view than previously accessible.

A large aerospace systems integrator that manufactures wide-area persistent surveillance systems was challenged with finding a network attached storage solution to meet their demanding requirements. Because the sensor pod collected such large amounts of data at high speeds, the solution needed a high capacity storage system with a high data throughput rate. The solution also needed to be compact and low power enough to fit in the existing space in the pod. As well, the integrator also had a strict program deadline and needed a quick integration solution.

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HSR40 CC - Network Attached  
Storage for Deployable Applications

## Solution

Curtiss-Wright's [HSR40](#) network attached storage system was chosen as the solution for the systems integrator's wide-area persistent surveillance application. The device met the large data throughput and storage requirements by providing over 6 GB per second of throughput and 64 TB of removable storage. The HSR40 utilizes superfast high-density non-volatile memory express (NVMe) solid state drives (SSD) to support high data throughput, and each removable memory blade (RMB) has 32 TB capacity. The HSR40 has the ability to record in different configurations: recording directly to each drive, using RAID 0, or using RAID 5/6 which gave the customer data protection against data loss with the presence of a backup drive.

Even with the HSR40 collecting massive amounts of data, it is still a size, weight, and power (SWaP) optimized solution meeting the customer's requirements for the already existing space. Weighing only 28 pounds and with dimensions of 3.88 x 21.17 x 10.5 inches, the HSR40's power consumption is +28 VDC (MIL-STD 704E) and 350W with 2 RMBs.

The customer adhered to a strict program schedule that required the HSR40 solution to be delivered promptly. Because of this, Curtiss-Wright provided the customer with a short-term lab solution, the HSR40 air-cooled version, allowing them to test the solution before deployment. The long-term solution, the deployable HSR40 conduction-cooled version would be delivered at a later date.

## Results

The HSR40 was able to meet program requirements with its ability to collect and store large amounts of data while fitting in a SWaP-constrained platform. Curtiss-Wright was able to provide necessary development capabilities to the customer by quickly delivering lab units for testing to stay on program schedule. The customer invested in non-recurring engineering (NRE) to configure the HSR40 to fit into the existing mounting tray. Phase one of the project included the development and delivery of three of the air-cooled devices. Phase two is for the conduction-cooled version to be delivered in Q2 2019.