# Axellio SensorXpress
Reliable RF Data Recording and Distribution at any Speed

Intelligence, surveillance, and reconnaissance (ISR) and Electronic Warfare (EW) sensors are being stretched to collect more data to provide better Spectrum Situational Awareness. As the instantaneous bandwidth of next-generation receivers continues to expand, the amount of collected Radio Frequency (RF) data has grown to levels these systems cannot reliably store, distribute, and analyze in a timely manner.

Axellio®, building on its 20 years' experience in high-speed, high-volume storage systems, developed SensorXpress™ to maximize the capabilities and extend the useful life of your existing RF infrastructure:

- A software-based RF data recording and distribution solution
- Simultaneously ingests, stores, and distributes RF data from 1 Gbps to 100s of Gbps, adjustable to your mission.
- Frequency and protocol-agnostic for data ingestion, recording, and distribution, including raw I/Q or VITA49
- Multiple analysis streams for simultaneous real-time and on-demand analysis, individually configured for content and speed
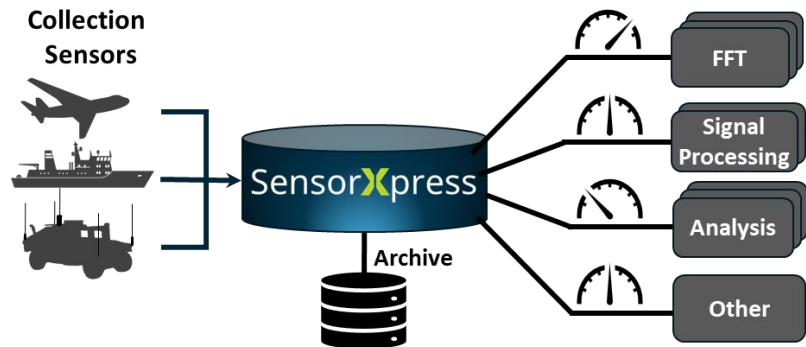
SIGINT, ELINT, & EW Operations – High Cost and High Demand

Operations collecting RF data are challenged with capturing wider bandwidths in increasingly dense signal environments and demanding longer time-on-target missions:
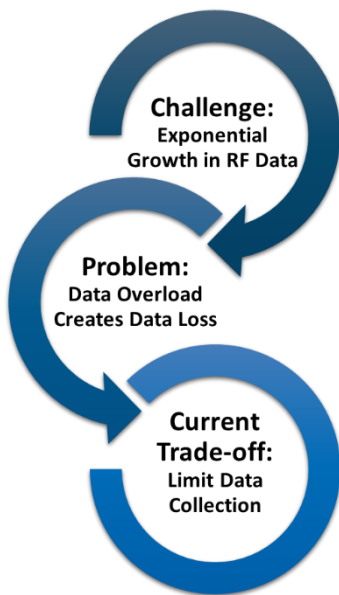
- RF sensors and collection systems are creating exponential growth in RF data speeds, volume, and velocity.

- Capturing and analyzing at these speeds can result in the loss of valuable data due to:
  - Insufficient storage performance to keep up with those high data rates,
  - Overloading signal processing applications analyzing the data.

- Today's compromise to compensate for the lack of performance typically limits the bandwidth or time collected to match either the storage or analysis capabilities and often requires offline analysis, delaying critical insights.

As a result, Signals of Interest can be missed, and vital information could be lost forever. However, adding higher performance processing infrastructure, especially at the tactical edge, can be expensive and complex. Scaling analysis in cloud environments is often not feasible as the mission's network connectivity is often too slow or not reliable enough.

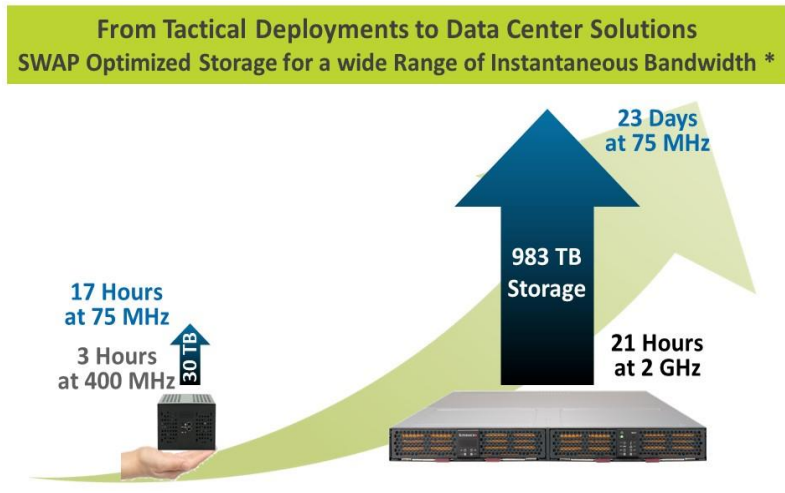## SensorXpress - Innovative RF Data Storage and Distribution

Axellio® SensorXpress™ provides a high-intake solution to capture, store, and distribute high-speed RF data in an extremely small footprint to optimize your existing collections and analysis infrastructure:

- ✓ Recording longer at wider bandwidths from more sensors
- ✓ Distributing at rates your analysis applications can safely consume
- ✓ Recording and distributing simultaneously and continuously without looping

Not Your Typical Wideband Recorder

SensorXpress streams data simultaneously on and off disk - at the highest speed and density in the industry:

- **High-speed capture and distribution in real-time and on-demand**
  From 1 Gbps to 100s of Gbps, depending on mission requirements
- **For any time-series data**
  Spectrum, sensor, analysis application, and hardware agnostic
- **No-loss data capture**
  For high quality results from multiple sensors
- **Controlled, and repeatable data distribution**
  To multiple applications from multiple sensors for larger RF data volumes
- **Customizable, high-density Size, Weight, and Power (SWaP) form factors**
  From mobile operations to static data center deployments on commercial-off-the-shelf (COTS) hardware.

From Tactical Deployments to Data Center Solutions
SWAP Optimized Storage for a wide Range of Instantaneous Bandwidth *

23 Days at 75 MHz

983 TB Storage

21 Hours at 2 GHz

17 Hours at 75 MHz

3 Hours at 400 MHz

30 TB

Customizable to Your Mission Environment

SensorXpress is a scalable software application that integrates with many standard operating systems on either custom or COTS hardware to meet your mission specific requirements:

Embedded Software

Small Formfactor PCs or Laptops

SensorXpress

Virtual Application

Large COTS Servers
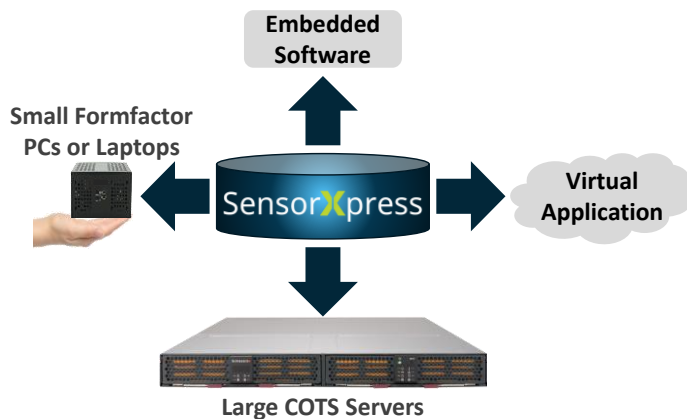
- As embedded software, it allows for onboard analysis directly on your sensor platform for compact form factors in aerial or mobile platforms
- As a virtual appliance for private, government, or public cloud deployments
- In small, sometimes rugged processing platforms for front-line tactical deployments
- On COTS servers for performance and scalability in large data centers or forward operating basis

If not directly embedded with either the sensor or analysis platform, SensorXpress connects with your systems using standard software APIs utilizing wired or wireless fixed and tactical communication networks as required.

* Assumes 32 Bits Data per Sample for 120 Million Samples per Second (MSPS) for 75 MHz, 640 MSPS for 400 MHz, 3,200 MSPS for 2 GHz