

## Axellio Xpress Platform™

### Accelerate into the Data Fast Lane Using Axellio's XpressWay

As technology has improved over the last 50 years, data capture and data management/monitoring have moved from a “nice to have” to become part of your critical operations. This is because time series data, and the actionable intelligence that can be distilled from that data, are now vital components of intelligence analysis, cybersecurity, troubleshooting, performance, and compliance systems.

Unfortunately, many organizations consider data monitoring to be complex and expensive, even for cybersecurity. Some reasons for this include:

- The speed of the data can be too fast and overloads analysis tools
- The volume of the data can be too much and can't be processed in a timely manner
- The person who created and understood the data analysis plan has left the organization, and everything is now forgotten
- Or, the plan was never really understood because of the complex nature of data these days, especially time series data

In the end, many organizations that capture data never really take the time to understand it and gather the necessary insights that they could, and should, from that data.

Some examples of problems that can arise from this course of action (or non-action) for packet data include:

- Missed security threats
- Network performance problems
- Network outages
- Data breaches
- And missed opportunities to get an advantage over the competition

Some examples of problems that can arise from this course of action (or non-action) for RF data include:

- Missed adversary threats
- Sensor and analysis tool overload
- Congested signal intelligence data paths for forward deployed locations
- And missed opportunities to get an advantage over the adversary

The Axellio Xpress Platform™ is uniquely positioned to help address many of these data analysis concerns with support for high capacity read and write capability and high bandwidth storage. Let's look at the Xpress Platform in further detail.

## The Axellio Xpress Platform

The unique and patented architecture of the Axellio Xpress Platform enables it to simultaneously read, write and store data at extremely high speeds of 200 Gbps and higher. As all military branches, service providers and enterprises grapple with data overload, they need solutions that allow them to ingest the data, manipulate it, store it for later playback/recall, and distribute data subsets to the right tools for analysis. The Axellio Xpress

Platform is the only solution on the market that delivers these capabilities in a hardware agnostic solution for simultaneous packet and RF data sources.

At the core of the Axellio Xpress Platform is a pure software-based engine that can scale from enterprise networks to industrial-grade service provider networks to military networks. The Xpress Platform is essentially a network intelligence platform and can run in continuous, always-on environments. It can also interface, ingest, and process data from multiple, simultaneously transmitting data sources — whether that data comes from network taps or military data sensors in the field.

The Xpress Platform also includes the core data manipulation features that you would expect so that the data can be properly managed. What differentiates the Xpress Platform is that these functions can be done at incredibly high speeds. This includes data deduplication, data filtering, and data buffering. Data deduplication and data filtering allow users to remove extraneous data that is not interesting. For military, enterprise and service provider environments, this reduces network bandwidth requirements. The main result for military networks is less congestion (especially in forward deployed locations where bandwidth is at a premium) and more data throughput. For enterprise and service provider networks, the main benefit is cost savings (due to lower bandwidth requirements).

The Xpress Platform also provides the ability to buffer data. This allows users to control traffic rates to all analysis applications and still see all the data you need to, especially when it comes to security risks. Another benefit of buffering is that you can potentially reduce analysis tool licensing costs. This is because you don't have to license to the peak data rate now, you can license to a lower rate and use the buffering capability from Axellio to efficiently manage traffic growth.

Since the core platform is pure software, it is extensible and flexible enough to support many data solutions. (and provides the benefits that you would expect from a software platform). Figure 1 provides an overview of the platform and the solutions that sit on top of it.

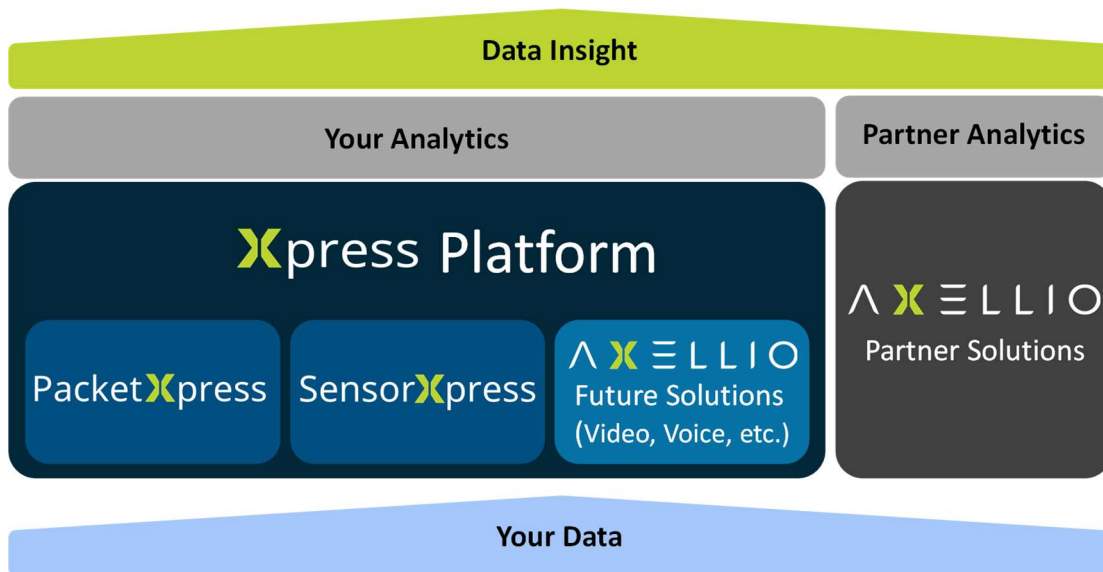


Figure 1: Axellio Xpress Platform

As Figure 1 indicates, the Xpress Platform ingests data, manipulates that data as required, and then passes that data on to a specific solution for processing. Currently, there are two formal solutions: PacketXpress® which processes packet data and SensorXpress™ which processes radio frequency (RF) data. The platform is extensible enough to allow for new future data sources both from Axellio and Axellio’s technology partners. This allows the Xpress Platform to be adapted more rapidly to create the kinds of solutions that market needs and wants when the market needs them.

Finally, analytic solutions enable Axellio customers to turn data into useful, actionable information. The data collected can be presented in two different venues: either directly in the native Axellio interface or through a third-party system like a Security Information and Event Management (SIEM) or data visualization system.

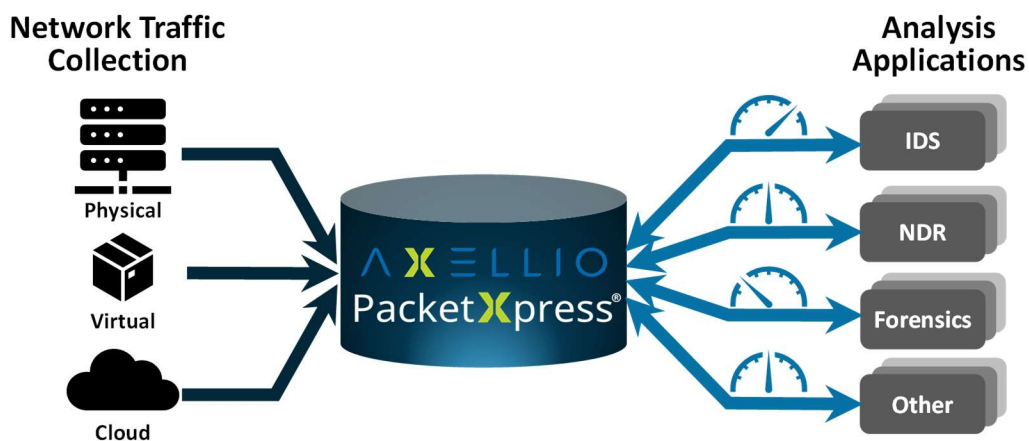
### Xpress-enabled Solutions

Multiple different data processing solutions can run on top of the Axellio Xpress Platform. Some examples of data that can be processed include packet, RF, voice, video, and log files. Here are a couple examples of Axellio solutions:

#### Packet Data

Axellio’s PacketXpress is a network intelligence platform designed to capture, store, analyze, and distribute all network traffic in an extremely small footprint at over 200 Gbps with no data loss. This unique, patented design increases performance and accuracy by avoiding overload situations and the resulting blind spots for real-time analysis. For historical forensic analysis, as well as mitigation validation, PacketXpress also replays any pre-and post-event packet data at any speed for in-depth analysis.

PacketXpress is scalable and extensible from mobile deployments to multi-rack datacenter and distributed solutions. It complements any existing security analysis infrastructure, making any network analysis application more resilient while reducing licensing costs.

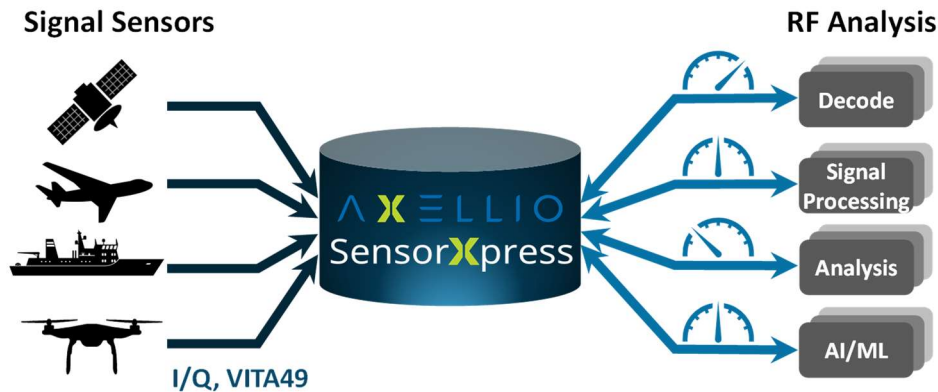


**Figure 2:** PacketXpress – High-speed network packet data capture, storage, distribution, control, and analysis solution

Power up your packet data network monitoring and network security activities with the best solution on the market. More information is available in the [PacketXpress Solution Brief](#).

## RF Data

The SensorXpress solution is designed for the reliable capture and distribution of RF data at extremely high speeds while maximizing storage and minimizing hardware and processing requirements. This is a NextGen RF data ingestion, storage, and distribution solution. Instead of feeding the collected signals from hardware sensors and receivers directly into the signal analysis, decode, or processing systems, SensorXpress can buffer the data between the sensor and RF analysis tools by capturing and storing the RF data. Simultaneously, SensorXpress can distribute the RF data at controlled rates and contents specific to each analysis system, avoiding system overload.



**Figure 3:** SensorXpress – High-speed RF data capture, storage, distribution, and control solution

SensorXpress provides a flexible architecture with speed at its core, allowing Axellio to quickly add new capabilities to meet any use case that utilizes time-series data. More information is available in the [SensorXpress Solution Brief](#).

Other solutions are currently being developed to capture and process voice, video, log files, and streaming data. As the core Xpress Platform does not change, these additional time series data types are relatively easy to add. Contact Axellio if you would like a briefing on these solutions.

## Analytics and Open API

One of the most powerful pieces of any monitoring and diagnostic system involves the display of pertinent data and information. You obviously need to capture the right types of data but after you have that data, what do you do with it? You need an interface that can present the information you want, in the format that you want. The analytics component also needs to keep up with today's faster data rates.

The Xpress Platform offers users two choices – the native Axellio interface or use of a 3<sup>rd</sup> party analytic platform. Let's look at each option further.

### Axellio Native Analytics Interface

The Xpress Platform offers a native analytics interface that encompasses a dashboard of useful monitoring data including system utilization, capture data rate, system I/O, etc. The dashboard is customizable and configurable and uses a "set and forget" setup for the fully contextual database. Once the dashboard is configured, you can come back over and over for periodic monitoring.

### 3<sup>rd</sup> Party Analytics System and Open API

The final important feature of the Axellio Xpress Platform is support for an Open API interface. This functionality allows you to integrate the Xpress Platform with other industry standard solutions or to create your own analytics solution by exporting data through the API.

When it comes to integration to other solutions, the Xpress Platform supports many APIs. Examples include Wireshark, Snort, and Security Onion. Using Security Onion as an example, PCAP files from the Axellio Xpress Platform can be sent northbound from the platform to a Security Onion instance using the API interface. Since Security Onion readily understand PCAP files, it can then process the files to present data results and insights to the user. The Xpress Platform supports more than packet data. Metadata can also be exported by using protocols like NetFlow.

### About Axellio

Axellio provides extreme high-performance, scalable, compact, economical, and simultaneous time-series data ingest, storage, and distribution solutions for the defense and intelligence community at speeds exceeding 100 Gbps. Axellio's PacketXpress platform focuses on network traffic packet capture, distribution, and analysis for cybersecurity monitoring and forensic analysis, and is operationally deployed with the US Army worldwide. For intelligence, surveillance, and reconnaissance (ISR) applications, Axellio's SensorXpress offers ingestion and storage of RF data from sensors and distributes it to analysis applications simultaneously at rates exceeding 100 Gbps.

### Contact Us

Find out how SensorXpress can make a difference for your application:

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