



ASPIRE Software Framework

PnP Innovations' ASPIRE software framework facilitates data interoperability between components of a plug-and-play system – both software and hardware. Core components of the ASPIRE architecture facilitate the discovery and setup of ASIMs on sub-networks like SpaceWire, the registration of those components, and the brokering of data exchange between components via queries.

NOTABLE FEATURES INCLUDE:

- The ability to install pluggable transports to support a range of data exchange mechanisms.
- Support of pluggable data protocols, even on the same networked system.
- Emphasis on efficiency to provide rapid processing and minimized code footprint.
- Abstraction of platform-specific issues using a POSIX-compliant Payload Abstraction Layer (PAL).
- Compatibility with the MSDTS toolchain for integrated testing against simulation.
- Supported on Windows, Linux, and VxWorks Operating Systems
- A rich Application Programming Interface (API) that provides the application developer with a toolbox of macros that make authoring enduring, data-centric code easy.
- Support of multiple “data domains” so that interactions between components resident on the same physical network can be controlled. As an example, an “operational” domain can exist side-by-side with a “diagnostic” domain while a “simulation” domain is used to maintain state synchronization between test support infrastructure tools. “Crossover” of specified messages between domains can be configured to bridge information if necessary (to dynamically federate two assets, for example).
- A Rich Query capability providing a powerful capability for an application to express desired sources of data and then manage those results using their metadata descriptions.
- A Data Centric Streams class to fully abstract the management of multiple similar data sources from the application writer, gaining the benefits of application-level fault tolerance without custom coding.

