

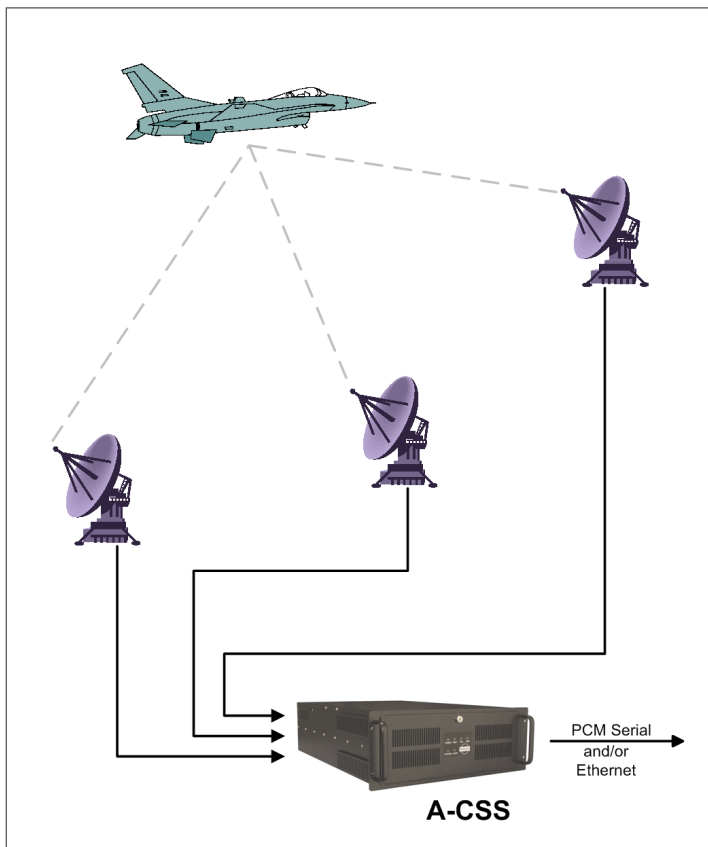
- *Experience several order of magnitude improvement in data quality compared to individual sources*
- *Seamlessly combine multiple sources with varying data quality without missing a single bit*
- *Automatically correct time-skew and align data sources*

The NetAcquire Advanced Correlating Source Selector (A-CSS™) makes it easier than ever to gather high quality telemetry. A-CSS correlates and combines data to eliminate bit errors in real-time, merging multiple sources to produce the best possible output stream without losing data. A-CSS leverages redundancy and quality estimates to choose bits for output that are most likely to be correct.

The ability to correct for time skew between data sources avoids gaps and duplication at the output when data from multiple sources is combined. For example, if data from one source arrives at the A-CSS input channel ahead or behind the same data arriving from other sources, A-CSS uses correlation techniques to compensate for time skew. No data is lost or duplicated; A-CSS delivers reliable data every time.

Benchmark tests of the NetAcquire A-CSS have established several orders of magnitude improvement in bit error rate over any individual input data source in a typical range environment. The A-CSS maximizes the information content extracted from each incoming data stream using advanced signal processing algorithms implemented in both FPGA hardware and high-performance software. The processing algorithms include configurable, data-specific optimizations. For example, if the data is not encrypted and has a frame sync pattern, the structure of the framed data is leveraged to further improve output data quality and to implement additional data integrity checking.

The NetAcquire A-CSS supports correlating a mix of telemetry inputs, some arriving via the network as Telemetry over IP (TMoIP) and some entering as serial PCM channels. This capability offers an incremental approach to IP-enabling a test range where the data sources are migrated to the network over time. The A-CSS can output data to wired PCM channels, transmit it over the network using TMoIP, or further process the data locally.



## Features

- Leverages source redundancy and quality estimates for bit-level voting
- Time skew correction between data sources
- Deep correlation buffers supporting up to 10,000 milliseconds of time skew
- Detection of input channel bit errors
- Optimizations for unencrypted and encrypted data
- Optionally uses advanced data quality information including receiver-provided Data Quality Metric (DQM/DQE)
- Up to 32 input channels per output
- Serial and TMoIP inputs/outputs, or a mix
- Summary of real-time data quality with included mission report
- Option to use signal-to-noise information obtained from a Clear Sync Bit Synchronizer
- Real-time operating system for lowest processing latency
- Operating modes for many different environments
- Interactive display of all source signal data quality metrics, including (if applicable) DQM or signal-to-noise ratio
- Reconfigurable COTS-based solution

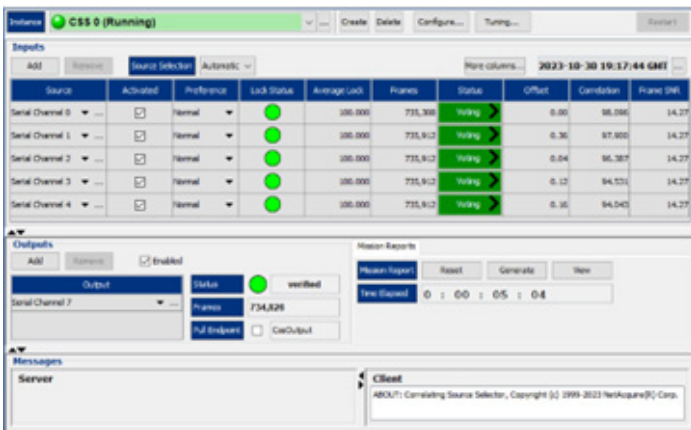
## Flexibility

Configuration and monitoring of the NetAcquire A-CSS can be done remotely via a standard network connection to any authorized PC or workstation using NetAcquire MissionView™. You can control your system from anywhere.

NetAcquire A-CSS provides the ability to select from different modes of operation, such as framed, blocked (unframed), and encrypted mode.

When combined with the NetAcquire Clear Sync™ bit synchronizer, the NetAcquire A-CSS can extract actual signal-to-noise information from each source and use this data quality metric to further enhance the best source selection processing.

Each NetAcquire A-CSS system is built on the advanced NetAcquire Serial I/O (SIO) architecture and every system offers NetAcquire SIO telemetry functions. Ordering options include decommutation, network communications, data recording, IRIG, data reformatting, publish/subscribe, simulation, and time synchronization.



A-CSS User Interface

## Advanced Analysis and Reporting

During operation NetAcquire A-CSS tracks many data quality and performance parameters. These statistics can be viewed at any time as a mission report. The mission report summarizes input/output data and source selection characteristics; it also provides a powerful tool for optimizing external range assets for maximum data quality.

## Encrypted Support

The NetAcquire A-CSS can automatically use RF receiver Data Quality Metric (DQM) or Clear Sync data bit synchronizers to obtain data quality information over either a traditional PCM connection or a TMoIP connection.

In addition, the A-CSS supports an industry-unique mode of operation that permits source selection (including the challenging two-channel case) of encrypted data without requiring any changes to existing bit synchronizer hardware.

## Specifications

PCM Data Rate	Up to 50 Mbps
PCM Encoding	NRZ-L/M/S, Biphas-L/M/S, and IRIG 106 randomization
PCM Channels	4 to 32 channels
TMoIP Channels	Unlimited
Bit Synchronization	Supported with NetAcquire Clear Sync
Operating Modes	Framed Blocked (best option for DQM) Encrypted
Quality Metrics	Frame lock, DQM, bit error rate, correlation lock, bit sync lock, SNR, Viterbi data quality, operator override, and custom weightings
Majority Vote	Automatically engaged when sufficient sources are available, weighted voting for DQM
Best Source Groups	Up to 16 groups
Channels per Group	1 to 32 channels per group
Data Correlation	Up to 10 seconds of delay supported between channels
Voting	Voting by bit or frame, based on operating mode
Encryption Support	Configurable to operate with either encrypted or unencrypted data

## Solutions that Fit

NetAcquire Corporation specializes in real-time distributed systems. We can configure NetAcquire solutions that are customized to your network, input/output, and processing needs.



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