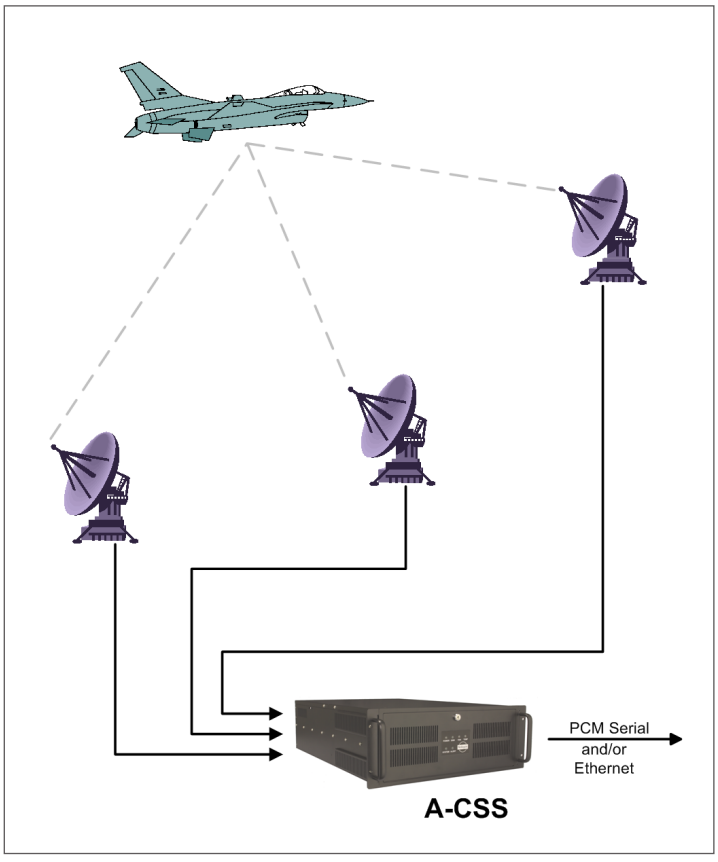
NetAcquire® Correlating Source Selector™

New! Now with Encrypted DQM Support!

- ***Seamlessly switch between data sources without missing a single bit***
- ***Automatically correct time-skew and align data sources***
- ***Experience a 500x improvement in data quaility compared to individual sources***

The NetAcquire Advanced Correlating Source Selector (A-CSS™) makes it easier than ever to gather high quality telemetry. In addition to selecting the best signal source from among multiple sources, the A-CSS uses a data fusion engine to time correlate and combine data to eliminate bit errors in real-time. The A-CSS will switch from one source to another source without losing data, unlike other selectors, which can drop critical data when switching between sources.

The ability to correct for time skew between data sources is an important feature of the NetAcquire A-CSS. For example, if one channel provides data to the A-CSS ahead or behind the same data arriving from another channel, the A-CSS measures the time offset and automatically corrects for the time alignment mismatch. No data is lost or duplicated when the sources are combined and switched; the A-CSS delivers reliable data every time.



Combining/Improving Several Data Sources

Independent benchmark tests of the NetAcquire A-CSS have established a factor of **500 times 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 in high-performance software. This processing includes configurable, data-specific optimizations. For example, if the data is unencrypted 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 also supports correlating telemetry inputs that arrive via network connections. This first in the industry capability enables correlation of mixed data sets containing both PCM and Ethernet delivered data streams. This capability supports the incremental approach to IP-enabling a test range where the data sources are migrated to network IP transports over time. Output of correlated best data outputs in both PCM and network formats are standard features of the A-CSS.

Features

- Switching from one source to another source while never missing a single frame
- Time skew correction between data sources
- Output data that is better than any individual input source
- Very deep correlation buffers supporting up to 10,000 milliseconds of time skew
- Detection of input channel bit errors anywhere in the frame
- Optimizations for unencrypted and encrypted data
- Option to use signal-to-noise information obtained from a Clear Sync Bit Synchronizer
- Real-time operating system for minimum processing latency
- Operating modes for many different environments
- Support for optionally using advanced data quality information including receiver DQM (Data Quality Metric), CRC or checksum information, and other upstream metrics
- Summary of real-time data quality with included mission report
- Interactive display of all source signal data quality metrics, including (if applicable) DQM or signal-to-noise ratio
- Flexibility to view data from any browser
- Up to 32 input channels per output
- Serial input, network input, or a mix of inputs
- Serial output, network output, or a mix of outputs
- Reconfigurable COTS-based solution

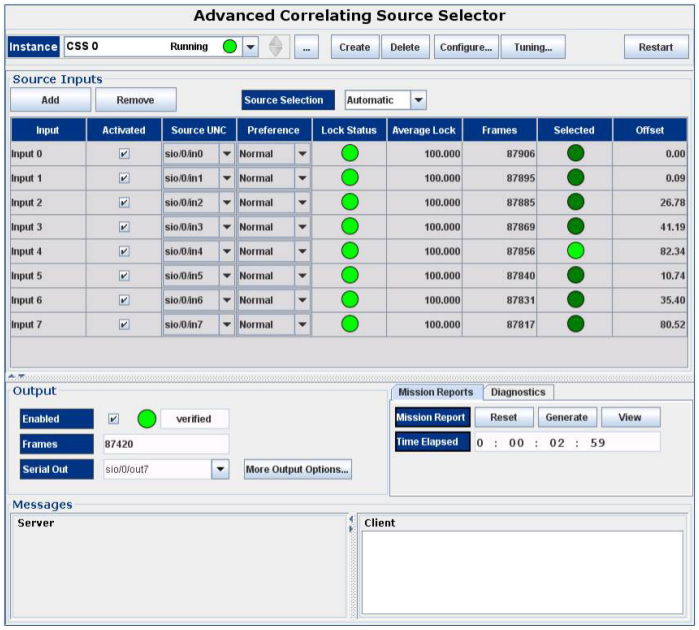
Flexibility

Configuration and monitoring of the NetAcquire A-CSS can be done remotely via a standard network connection to any authorized PC or workstation. No PC software is required, only a common Web browser. You can control your system from anywhere.

NetAcquire A-CSS provides the ability to select from different modes of operation, such as encrypted mode, frame lock monitoring, preference-based priority switching, and highest average frame lock over time.

When combined with the NetAcquire Clear Sync™ bit sychronizer, 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 SIO architecture. This means every system offers NetAcquire SIO telemetry functions. Ordering options can 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. Mission reporting supports automatic start and stop at the beginning and end of each mission. (see http://www.netacquire.com/mission_report.htm).

Encrypted Support

The NetAcquire A-CSS can automatically use RF receiver Data Quality Metric (DQM) or Clear Sync remote data bit synchronizers to obtain remote data quality information over either a traditional PCM connection or a network 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	0 to 10, 20, 30, 40 Mbps (ordering option)
PCM Encoding	NRZ-L/M/S, Biphase-L/M/S, and IRIG 106 randomization
PCM Input Channels	4 to 32 channels (ordering option)
PCM Output Channels	4 to 32 channels (ordering option)
Network Input Channels	Number of channels unlimited
Network Output Channels	Number of channels unlimited
Bit Synchronization	Supported with NetAcquire Clear Sync
Operating Modes	Frame sync lock, DQM, bit error rate, correlation lock, bit sync lock, SNR, Viterbi data quality, CRC, operator override, and custom modes
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
Data Switching	Gap-free switching of correlated sources
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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