

# NetAcquire® Correlating Source Selector™

NetAcquire®

Source Selection  
and Processing

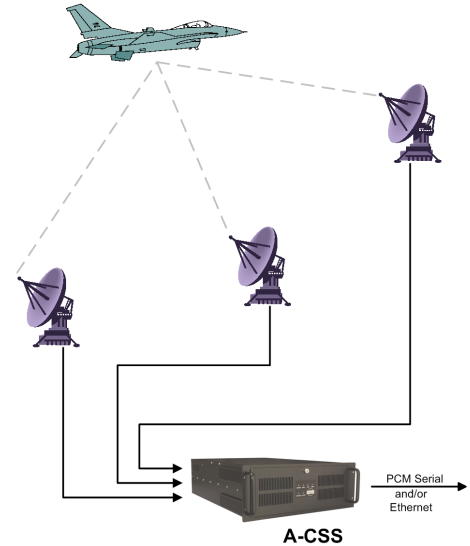
## Applications

The NetAcquire Advanced Correlating Source Selector (A-CSS™) makes it **easier than ever** to gather signal streams that are accurate and high quality. In addition to selecting the best signal source from among multiple sources, the NetAcquire A-CSS uses a data fusion engine to time correlate and combine data to eliminate bit errors in real-time. The NetAcquire A-CSS will switch from one source to another source without losing frames of data, unlike other selectors, which can drop many frames 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 the 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. Thus, no data is lost or duplicated when the sources are combined and switched. The A-CSS gives you **reliable data every time**.

With its advanced algorithms and over 3 billion operations/second of real-time processing capability, independent benchmark tests of the NetAcquire A-CSS have established a factor of **200 times improvement** in bit error rate over any individual input data source!

The 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.



## Flexibility

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

NetAcquire Advanced CSS also gives you the ability to select from different modes of operation, such as frame lock monitoring, preference based priority switching and highest average frame lock over time.

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

Each A-CSS system is built on top of the advanced NetAcquire SIO architecture. This means that every system offers NetAcquire SIO telemetry functions depending on ordering options, these can include decommutation, network communications, data archiving, CCSDS, IRIG, data reformatting, publish/subscribe, simulation, and time synchronization.

## Advanced Analysis and Reporting

NetAcquire A-CSS tracks many data quality and performance parameters during operation, and these statistics can be viewed at any time as a mission report. The mission report summarizes input/output data and source selection characteristics, and also provides a powerful tool for optimizing external range assets for maximum data quality (see [http://www.netacquire.com/mission\\_report.htm](http://www.netacquire.com/mission_report.htm)). Mission reporting supports automatic start and stop at the beginning and end of each mission.

The screenshot shows the NetAcquire Advanced Correlating Source Selector web interface. It includes a 'CSS Selection' section with a dropdown for 'Instance' (CSS 0) and buttons for 'Create', 'Delete', 'Configuration', and 'Restart'. Below is the 'Source Inputs' section with a table of inputs and their status.

Input	Activated	Source I/MC	Preference	Lock Status	Average Lock	Frames	Selected	Offset
Input 0	<input checked="" type="checkbox"/>	sio 0/in0	Normal	<span style="color: green;">●</span>	100.000	19200	<span style="color: green;">●</span>	-10
Input 1	<input checked="" type="checkbox"/>	sio 0/in1	Normal	<span style="color: green;">●</span>	100.000	19200	<span style="color: green;">●</span>	-4
Input 2	<input checked="" type="checkbox"/>	sio 0/in2	Normal	<span style="color: green;">●</span>	100.000	19200	<span style="color: green;">●</span>	-5
Input 3	<input checked="" type="checkbox"/>	sio 0/in3	Normal	<span style="color: green;">●</span>	100.000	19200	<span style="color: green;">●</span>	0
Input 4	<input checked="" type="checkbox"/>	sio 0/in4	Normal	<span style="color: green;">●</span>	100.000	19200	<span style="color: green;">●</span>	-6
Input 5	<input checked="" type="checkbox"/>	dfe/20/test	Normal	<span style="color: grey;">●</span>	0.000	0	<span style="color: grey;">●</span>	n/a

The 'Output' section shows 'Activated' and 'Enabled' checkboxes, 'Selection Method' set to 'Automatic', 'Serial Output' set to 'sio 0/out7', and 'Frames' at 19166. The 'Mission Report' section includes buttons for 'Mission Report', 'Reset', 'Generate', and 'View', and a 'Time Elapsed' field showing '0 00 00 08'.

## Features

- Switch from one source to another while never missing a single frame
- Time skew correction between data sources
- Output data that is **better** than any individual input source
- Detection of input channel bit errors anywhere in the frame
- Real-time operating system for minimum processing latency

- Many different operating modes to choose from
- Summary of real-time data quality with included mission report
- View data from any browser
- Up to 30 Mbps data source rate
- 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