TRACK **RECEIVE** RECORD PROCESS

BSS

Best Source Selector

Select The Best Telemetry Source, in Real Time

TELEMETRY GROUND SOLUTIONS

CORTEX

Safran Data Systems Best Source Selector (BSS) is the perfect tool to **select the best Telemetry source received from multiple antennas tracking the same airframe, carried through different medias, in real time.**

BSS automates selection of the best TM stream **from up to 16 sources, or more,** using signal quality criteria and other metrics. BSS extensive capabilities in paths alignment & delay compensation makes the best source selection possible **whatever are the locations of the antennas, and cope with any range** infrastructure.
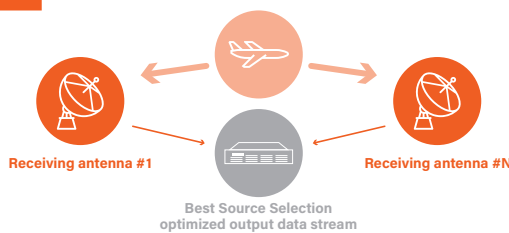
Launch Vehicle Telemetry

Missile Testing

Fixed & Rotary Wing

Receiving antenna #1

Receiving antenna #N

Best Source Selection optimized output data stream

ANY INPUT SIGNAL
- Analog (Video), PCM (Data & Clock), Ethernet (IRIG106 Chapter 10 or IRIG218-20)
- 4 up to 16 inputs

MULTIPLE SELECTION CRITERIA
Selection based on analog signal quality, majority vote, frame synchronization, DQE/DQM...

DQE/DQM – IRIG 106-17
Selection of the best source based on DQE/DQM information inserted by the TM receiver in the Data or on Ethernet - TM receiver agnostic

ANY OUTPUT SIGNAL
Data output on multiple PCM (Data & Clock, TTL or RS422) and on Ethernet according to IRIG 106 Chapter 10 or IRIG 218-20

EASY INTEGRATION
- 2U or 4U rackable chassis
- Local user friendly GUI on 4U version (embedded screen & keyboard)
- Remote (client/server)

MISSION CRITICAL
- Redundant power supply for safe operation
- Design based on Safran Data Systems Cortex experience

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TELEMETRY GROUND SOLUTIONS
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BSS AVAILABLE VERSIONS

BSS available versions .... up to 16 physical inputs
.... up to 16 Ethernet inputs
......................any mix of physical and Ethernet inputs, up to 16 streams

BLOCK RECONFIGURATION

Number of blocks .... Up to 4 BSS groups, with 100%
configurable input allocation

INPUT INTERFACES

Digital .... 4 to 16 channels, TTL / RS422 data + clk
.... 50 / 75 /1 K Ohms selectable, BNC
Analog ....4 to 16 baseband 10 Vpp, 50 Ohms, BNC
Ethernet...................Two 1GbE ports for IRIG106 Ch10 UDP, IRIG218-20
....and remote Monitoring & Control

OUTPUT INTERFACES

Digital .... 4 to 16 assignable channels, TTL / RS422 data + clk
....50 / 75 /1 K Ohms selectable, 50 Ohms, BNC
Ethernet..Same as inputs

BIT SYNCHRONIZERS

Number of inputs .... 4 to 16
Input codes ....NRZ-L/M/S ; BP-L/M/S ; DM-M/S ; RNRZ-L ; RZ
Output codes .... NRZ-L/M/S ; BP-L/M/S ; DM-M/S ; RNRZ-L ; RZ
Bit rate... 1 kbps to 40 Mbps
Loop Bandwidth .... 0.1% ; 0.3% ; 1.0% ; 3.0%
BER ....Within 1.0dB of theory
Allowed non transitions................................. 256 bits @0.1%
Acquisition time .... 50 bits @ 3%

PATH ALIGNMENTS

Dynamic alignment .... Up to 65535 samples latency absorption
.... corresponding to >600km distance difference
....between paths at 30 Mbps
Static alignment .... Up to 1 second latency absorption
Compliant to data path traveling through communication satellite
The synchronizations are performed by correlation algorithm
Synchronization compliant with data encryption

ADDITIONAL FEATURES

Eye diagram display on GUI
Bit Error Rate measurement, viewer and recorder
Internal test generator (PN sequence signal)
DQE / viewer (with corresponding option)
Quick look realtime data viewer

DATA SELECTION

Selection of Best Source through:
– Signal quality given by the Bit Synchronizers (based on Eb/No)
– Signal quality given by the Frame Synchronizers
– Bit by bit majority vote from the different inputs
– Signal quality provided by the receivers through DQE/DQM (option)
– Signal quality provided through IRIG106 chapter 10 or IRIG218-20
  interface (option)
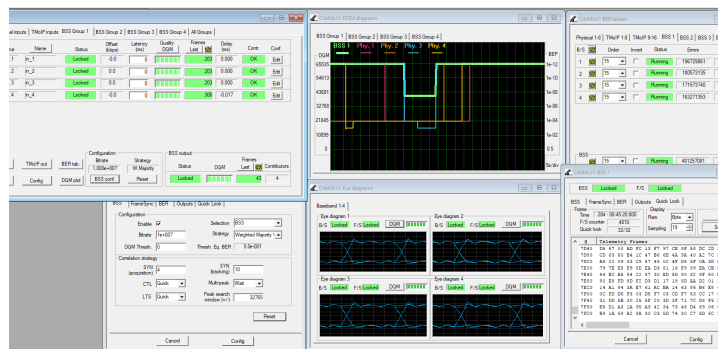– Signal quality from RTR XL and RTR eX, through TCP-IP data polling

USER INTERFACE

**Intuitive Graphical User Interface for input and output control as
well as status monitoring (signal presence, lock, eye diagram,
BER, delay…)**
Local control through an integrated screen and keyboard on 4U
Remote control through a remote Computer (TCP/IP)
Local control through an external KVM on 2U

BSS CAPABILITIES AT A GLANCE

4,8,12 or 16 inputs
**Any mix of bit sync input, Data & Clock input and Ethernet input
through IRIG 106 Ch10 or IRIG 218-20**
– In option: 4, 8 or 16 Ethernet inputs through IRIG 218-20 with mix of
  physical and Ethernet streams in operation
Data Quality Metrics computation from bit sync or frame sync
– In option: DQE/DQM input through Data & Clock or through IRIG106
  Chapter 10 or IRIG218-20 Ethernet interface
– In option: data quality TCP/IP polling from older Cortex RTR
  generations that do no have DGE/DQM capability
Automatic dynamic delay adjustment
Selection of best source based on quality or majority vote
4,8,12 or 16 Data & Clock output pairs,
– In option: Data output on Ethernet according to IRIG 106 Ch10
  or IRIG218-20

> **SYNCHRO. PROCESSING**   > **PATHS ALIGNMENT**   > **DATA SELECTION**

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