

MAG_BSS

BEST SOURCE SELECTION MODULE



DESCRIPTION

The MAG-BSS is a Magali software add-on dedicated to the build of a best source from several telemetry signals. It analyses the quality of each stream in real time and extracts the best of each. Decision is made on baseband signal characteristics and on telemetry data frame contents. The quality factors used for the treatment are user customizable and the number of sources is infinite. Best source selection is also available on recorded data.

KEY FEATURES

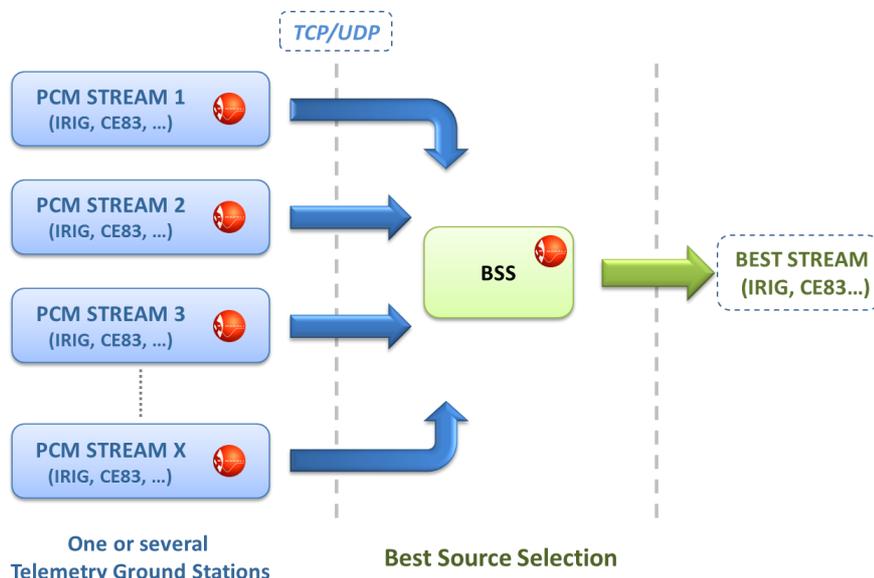
- Builds the best source from several input streams
- Automatic or manual selection
- Real time or post processing treatment
- User customizable quality factors
- Magali Software
- Hardware independent

The Magali BSS integrates:

- **BSS transmitter:** this transmission module is dedicated to emission of a telemetry frame in a raw format as provided by acquisition system. The transmission is done thru Ethernet independently from data type :IRIG, CE83, CCSDS or any other PCM format.
- **BSS receiver :** this module receives data from several transmitters and analyses the signal quality. It builds the best source and eventually applies necessary software de-commutation (IRIG, CE83, CCSDS ...).
- **Human machine interface:** its function is to visualize the quality criteria and monitor the BSS process in real time.

The best source selection treatment can be performed in real time but also after flight from recording data. BSS Magali technology is adaptable to the need of the installations, for example :

- One multi streams Magali station integrating BSS,
- Several Magali stations, each receiving one telemetry stream, one performing the BSS functions,
- Several Magali stations, one dedicated to BSS treatment, the others receiving telemetry streams
- ...



Quality factors

The BSS receiver selects best source from a set of user defined quality factors:

- **NET:** Network connection quality.
- **Constant:** A constant value in the frame. If the value is not correct, an error is set.
- **Counter/Down counter:** a counter is extracted in the frame (up or down).
- **SFID:** an error is set if a continuity error is detected.
- **CRC:** a CRC is computed at each frame and compared to embedded CRC (last position in the frame).
- **MFQ:** minor Frame Quality computed from several parameters:
 - Synchro word error (if IRIG frame tolerance is active)
 - Bit slip on synchro word
 - SFID error returned by Telemetry card
- **LOCK:** Software “hole” detection, computed from frame rate and frame parameters
- **PARITY:** Parity errors count on each frame (ratio compared to cycle length)
- **Reed Solomon:** Reed Solomon errors count on each frame

It is possible to setup a coefficient to give more or less influence to each quality criteria.

Below BSS selection on three telemetry streams :

The screenshot shows a software interface for BSS selection. At the top left, a box labeled 'Best Source' has an arrow pointing to the 'S0' radio button. At the top right, a box labeled 'Quality factors' has an arrow pointing to the header row of a table. At the bottom right, a box labeled 'Computed quality' has an arrow pointing to the 'MOY' column of the table. The table has a 'Manual BSS' checkbox and the following columns: CTO, MFQ, LCK, FID, and MOY. Source S0 is selected and has a green status indicator, while S1 and S2 are unselected and have yellow status indicators.

<input type="checkbox"/> Manual BSS				CTO	MFQ	LCK	FID	MOY
<input checked="" type="radio"/>	S0	●	CVT 00061760	07/15/2013 (196) 12:03:55,455945	0.00	0.00	0.00	0.00
<input type="radio"/>	S1	●	CVT 00043200	07/15/2013 (196) 12:03:55,452816	1.00	0.50	0.00	0.37
<input type="radio"/>	S2	●	CVT 00000000	00/00/0000 (000) 00:00:00,000000

*Specifications are subject to change.
Please, verify the latest specifications
prior order.*

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