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Search and Rescue Mission Office

NASA status for Beacon Manufacturer's Workshop

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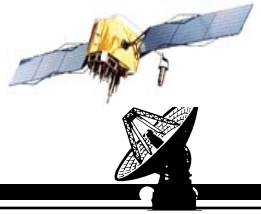
Topics



- SARLAB
- NOAA N prime testing
- DASS
- Beacon spec work
- Beacon testing

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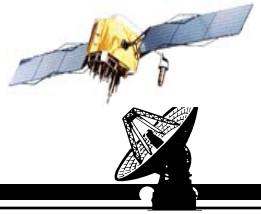
SARLab



- SARLAB is the facility that replaced the old SEDL satellite test site and also houses the DASS Proof of Concept ground station.
- NASA has a maintenance contract for the LUTS and Spirent GPS Simulator
- NASA installed 406 receive capability on nearby col tower for calibration, antenna pattern measuring purposes

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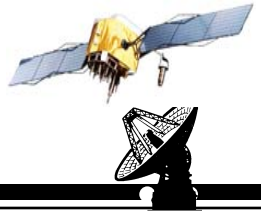
NOAA N prime (N19) Testing



- **Sarlab is completing this week the post launch testing of the NOAA Nprime spacecraft (also known as N19)**
- **GOES-O post launch testing set to commence in June**

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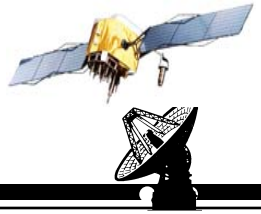
DASS Status



- Nine DASS repeater equipped GPS satellites in orbit – no change from last year
- Work continuing with Air Force to get DASS on Block . Currently on Block 3C, but need to get to Block 3B to avoid a gap in coverage
- Proof of Concept Ground Station
  - Vendor is finishing documentation-looking at contract closeout this summer
- Beacon Coding study
  - NASA funding TSI to look at using CCSDS specified convolutional and Reed –Solomon coding schemes. Simulation results did not show any improvement over existing BCH coding. Reason probably has to do with code's suitability for small blocks.

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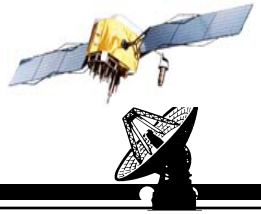
Beacon spec Work



- **Beacon Spec revision activities**
  - **RTCM SC-110 PLB spec work**
    - **New navigation section for PLB spec out for committee approval**
    - **EPIRB spec revision in progress**
  - **Cospas-Sarsat T001/T007**
    - **T001 RULE CHANGE - Encoding locations independently approved by C/S Council in Oct 2008- rules to take place in Oct 2010 although manufacturers can elect to use new rules now**
    - **NASA/RTCM developed T007 test scripts (for the new rules) approved by C/S Council in Oct 2008**
    - **NASA/RTCM developed JC-23 paper to clarify location encoding issues discovered during last year's test script development work**
    - **When to round**
    - **Multiple answers in T007 test scripts**

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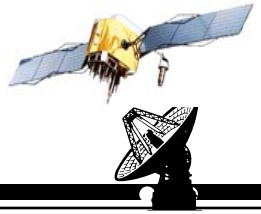
Beacon Bit Rate Tolerance Tests



- **Bit rate issue began as a C/S JC-21 action item**
- **Goal to verify whether restricting beacon bit rate tolerance to ±0.1% or ±0.25% vice current ±1% will show improvements in detection rates at low C/No's**
- **In April 2009 ran tests using SARLab, NOAA and TSI GEOLUTS and a beacon simulator transmitting through GOES-12 of various beacon bit rates from 396 to 404 bps and C/No's from 37 to 20. Data being analyzed**
- **Developing MATLab method to measure bit rate variations within a burst - took data during April 2009 tests. Work is looking at optimizing measurement window.**