



Corrupted States in L0-1 V8

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Overview

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Problem

- Klaus Bramstedt found that for certain Level 1b files his tools gave wrong results or crashed
- Further investigation by him showed that the information in the state ADS was not always consistent with the data, e.g.
 - number of geolocations
 - amount of data attached to the product for a state
- The total number of concerned states is 4555 in 4140 orbits
- Additionally some Limb states are truncated (219 states in 184 orbits)

IMF/SERCO Investigation

- The issue was confirmed by Gabriele Brizzi
- Further investigation showed the following:
 - The underlying issue is apparently corrupt/missing data packages for states already in Level 0
 - The current version of the processor does not filter all of these out, if enough data is there to calculate, e.g. geolocation
 - Some tools still work with the present Level 1b
 - Some calibrations that need the complete state could be of less quality or wrong
 - scial1c skips these states, but the produced Level 1c shows inconsistent ADS information
 - Level 2 processing is not affected in those cases where the corrupted state is at the beginning of the orbit, these states are ignored

Conclusion

- Some tools are severely affected by the inconsistent Level 1b product
- The calibration might be of lesser quality for the incomplete states
- ⇒ the original plan to rescue some data in L1b is not viable with the current version of the processor (8.01)
- (Note: The expectation was that only a few 100 states were incomplete, not a few thousand)
- A patch that prevents writing incomplete states into L1b is already implemented

Further Planning

- SERCO-IDEAS collects all state differences and sends them to IMF:
 - states that occur in L1b V7 but not in L1b V8.01
 - states that occur in L1b V8.01 but not in L1b V7
- IMF analyses the list and classifies the anomalies (i.e. are additional patches needed?)
- After that a schedule is defined (including the impact on V9 implementation)
- A new version 8.02 will be generated and the concerned orbits will be reprocessed
- Processing of 5000 will take a few days and will be done @DPAC