Joint Polar Satellite System 1 (J1) is the next generation spacecraft that is planned to be launched in 2017. This will carry the advanced versions of the instruments that are on board of Suomi National Polar-orbiting Partnership (S-NPP) satellite. S-NPP was launched on October 29, 2011. Currently the Raw Data Records (RDRs) from S-NPP instruments are processed in the operational system interface Data Processing Segment (IDPS) developed by Raytheon and the same system will be used to process data from J1. ADL is the test system that mimics IDPS and is used for testing, troubleshooting and integrating algorithm updates. We, the STAR Algorithm Integration Team (AIT) members use ADL for science code transition to operations. In this poster we discuss the eight step process that we use for testing and troubleshooting the algorithms in ADL and the four step quality check method that we use to verify the test results and check for the algorithm accuracy and product accuracy before we submit the change request package to Data Products Engineering Services (DPES). A few examples are discussed.

**Testing and Troubleshooting Steps**

1. Get ADL Version from Raytheon Configuration Management (CM) system
2. Put these versions in STAR AIT Common CM system giving this a distinct name to differentiate from other baselines
3. Create a Test Stream out of the above Main Integration Streams
4. Work with the Test Stream creating future Emulation Scenarios
5. Commit these changes to CM so that other developers can use and test the algorithms in their emulation scenario.
6. Find out the Golden Day (special days for specific events) of interest from the science team member
7. Organize all the needed input files for this test date
8. Build ADL and Run the Executables to generate Product Data

**Results and Discussion: CrIS SDR Example**

ADL is an effective tool for analyzing changes in the science algorithms, whether we’re improving the algorithm science or correcting and tweaking the existing software. The CrIS SDR algorithm is currently being enhanced to support the reading of full resolution J1 RDR data and produce a full resolution SDR. Both the short-wave infrared (SWIR) and mid-wave infrared (MWIR) bands will have additional channels whereas the long-wave infrared channels will be unchanged and the new algorithm will read and process the data. The STAR Algorithm Integration Team (AIT) conducted tests in the ADL framework and provided results to the science team for evaluation.

**Conclusions**

ADL can be used as an effective tool in algorithm testing and integration for J1 algorithms.

Following a step by step testing and integration process minimizes the risks associated with the science transition to operations.

Quality check methods help in catching oversights and better understanding of the algorithms and products.

**References**
