

SEISS LZSS De- Commutation Tool

Design Document



25 February 2020



LZSS De-Commuation Tool



- LZSS Tool
 - Reads Level-0 NetCDF Files Obtained From LZSS
 - Strips Header, Performs Error Checking
 - Data Corruption, Missing Packets, etc.
 - Reads Back Data Through ATC EGSE Software For Review / Display
 - Creates Output Files For Import Into Downstream Tools
- Developer: Ben Brown
- Usage:
 - Create input for all downstream ATC Tools
- Planned Updates: none
- Known Bugs: none
- Documentation found in SEISS-D-OT060-1





Tool Overview

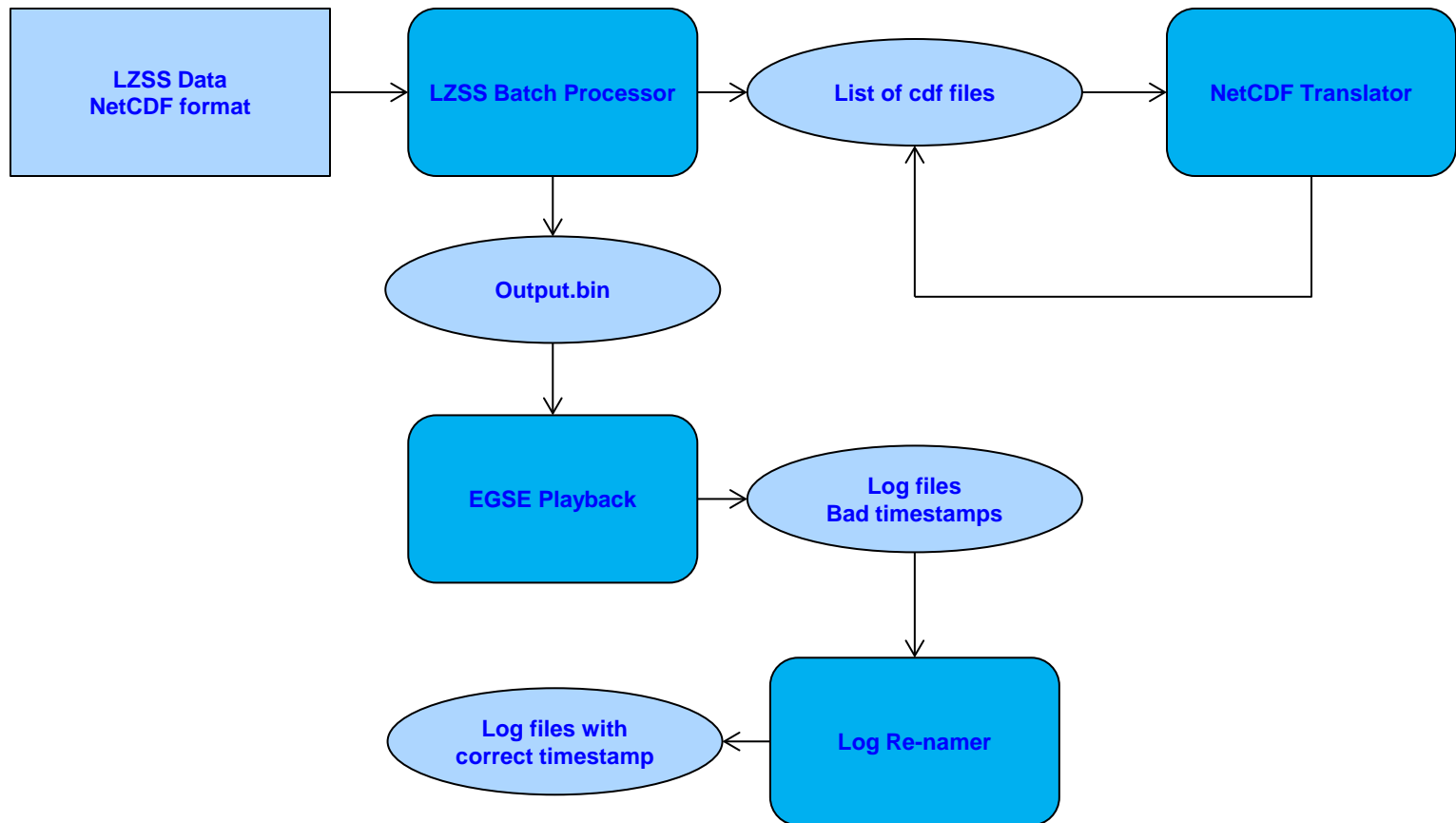


- Language
 - Python 3.8.1, c++
- Inputs
 - LZSS files in NetCDF format
- Output
 - .log Files for all SEISS Units
- Operating Modes:
 - GUI for precise control of what time frame to process
 - Batch Processing Mode to recursively process many files





Data Flow of LZSS Processing Tool





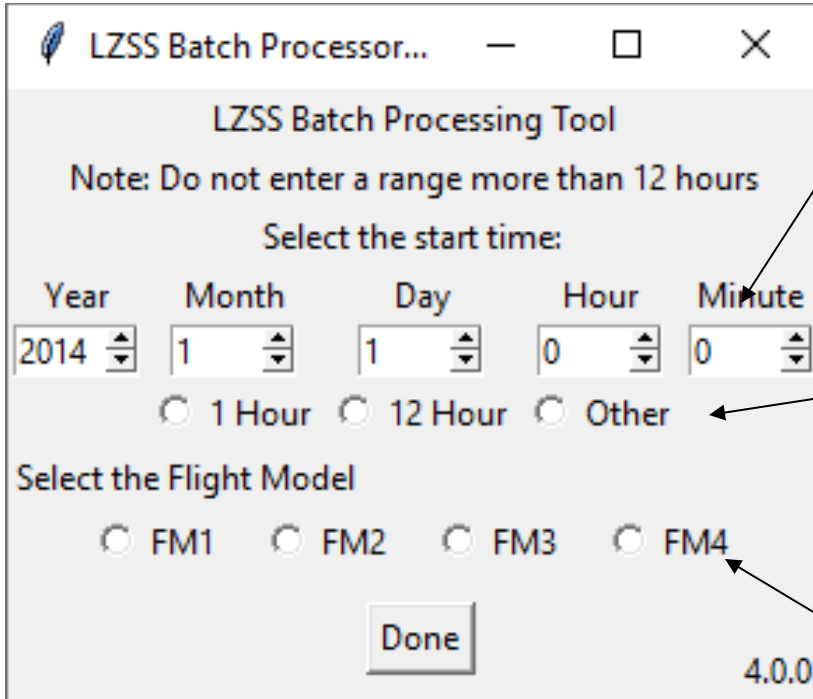
Code Structure



- User input start and end times
- Searched all files for times that match start and end times
- Process all files through the NetCDF_Translator
 - Saves individual files to /bin_output
- Take all the bin files that were created and concatenates them into a new file
 - Saved in /output
- This output file is fed into the EGSE playback



LZSS Processor



The screenshot shows the 'LZSS Batch Processor...' window. It has a title bar with a feather icon, the text 'LZSS Batch Processor...', and standard window controls. The main area is titled 'LZSS Batch Processing Tool' and contains a note: 'Note: Do not enter a range more than 12 hours'. Below the note is the section 'Select the start time:' with five scroll boxes for Year (2014), Month (1), Day (1), Hour (0), and Minute (0). Underneath these are three radio buttons: '1 Hour', '12 Hour', and 'Other'. The 'Other' radio button is selected. Below the radio buttons is the section 'Select the Flight Model' with four radio buttons: 'FM1', 'FM2', 'FM3', and 'FM4'. The 'FM4' radio button is selected. At the bottom center is a 'Done' button, and at the bottom right is the version number '4.0.0'.

- Use scroll boxes to set the start time of files to process
- Use the radio buttons below to select duration of files to process
- Use radio buttons to select which flight model to process



LZSS Processor Batch Mode

- Use Case:
 - This is to recursively process multiple days of data for storage.
 - The tool process 12 hours of data at a time, starting at a start time defined by the setup file, and runs until there is no data left to process
- Interface:
 - Command Line Only
- Input:
 - NetCDF L0 files
 - Lzss_tool_setup.json
 - This file contains that datetime of the last run batch of files. This is so the tool knows where to pick up the next time it is executed
- Output:
 - 12 hour long .log files for all SEISS Units.

