Telemetry Data Utilities and Manipulation

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What is Telemetry Data?

- **Data recorded from satellites, missiles, or aircraft**
- **Data could be video data, codes for sensor data, analog sensor data, or pure digital data.**
- **There are many data formats, but one government standard is called IRIG 106, which uses files called:**

Chapter 10 Files

- **Stores Data in Sequential Packets based on the source they come from and the data type they are**

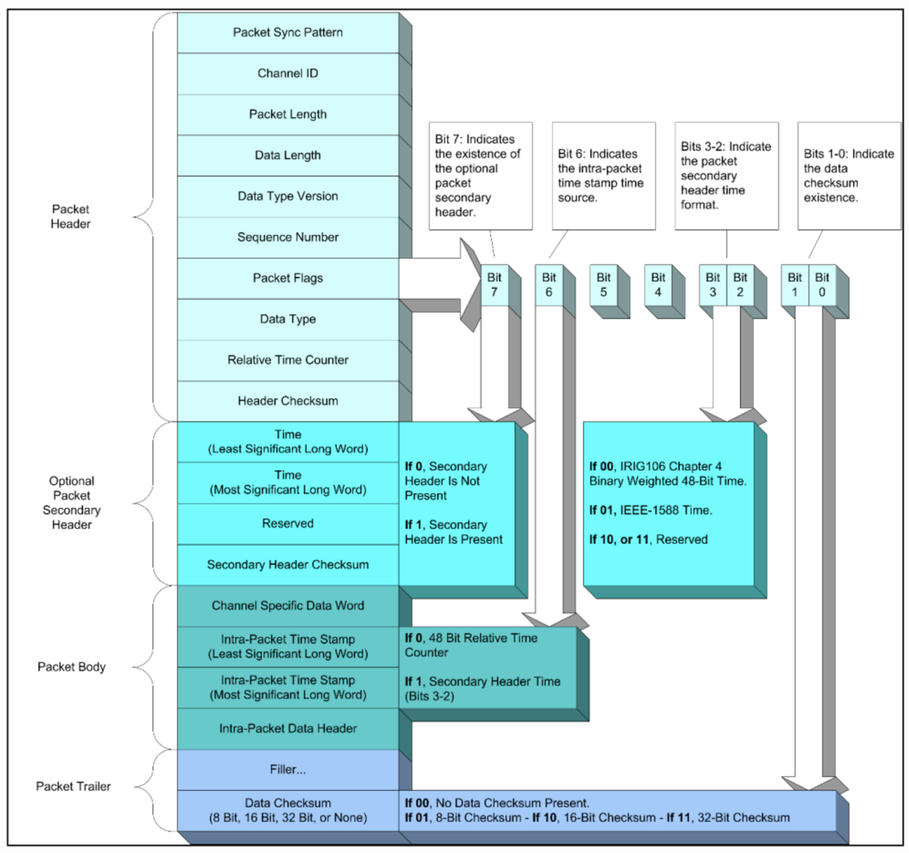


Figure 1. Adapted from IRIG Standard 106-17 Chapter 11 (Range Commanders Council, 2017)

Future Projects:

- **Chapter 7 data: a packed data type that stores all data types as digital data. It can be used in Chapter 10 Files**

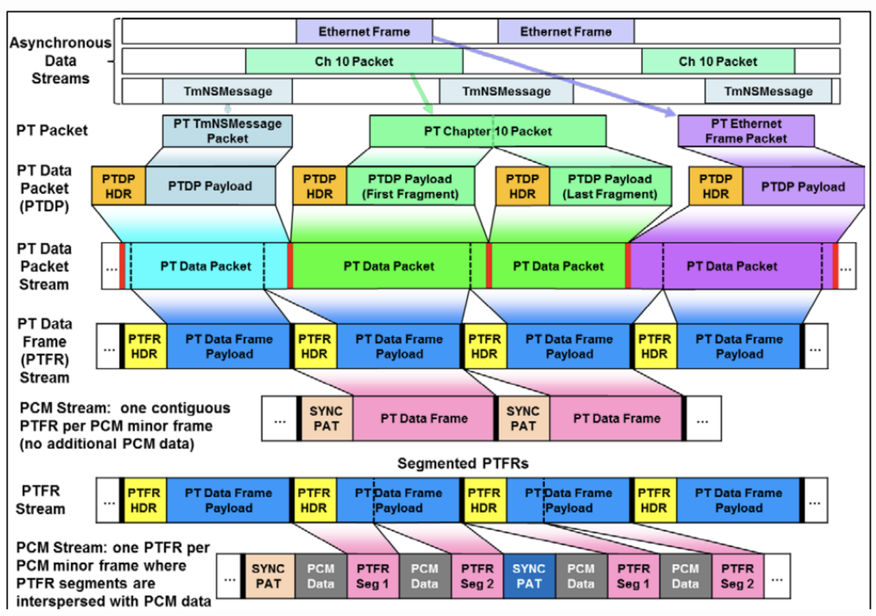
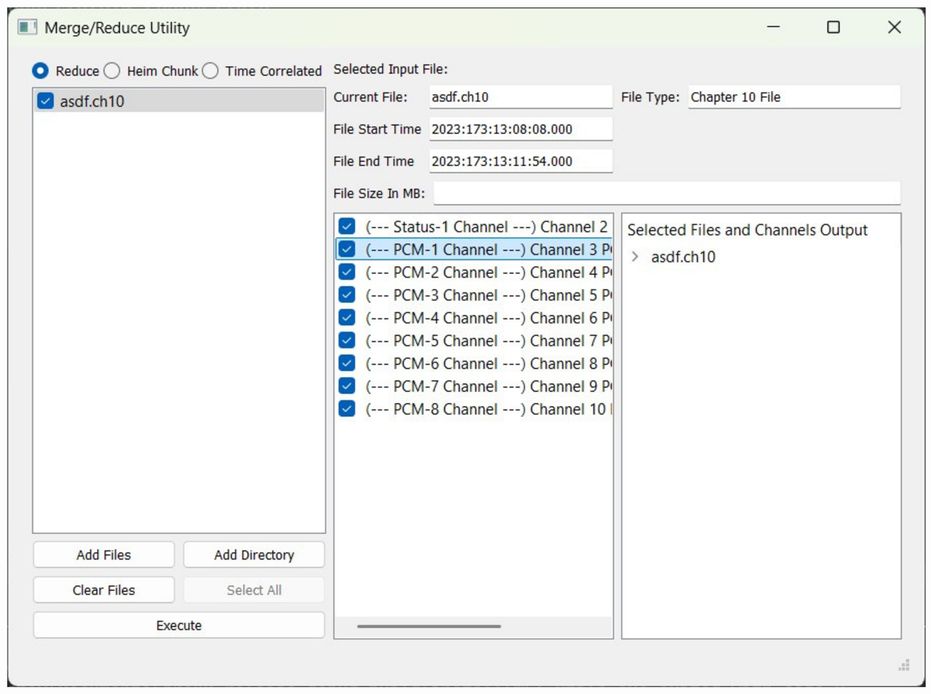


Figure 3. Adapted from IRIG Standard 106-17 Chapter 7 (Range Commanders Council, 2017)

What did I do? (Overall)

- **Ported older utilities to a new utility hub for continual support**
- **Made a utility that merges and modifies Chapter 10 files to create one file representing multiple recordings,**
- **Added config support to allow utilities to be launched from scripts**




```
;Sample cofig file for the Utilties

;[Merge]
;Directory          C:\Users\MHaralanov\Documents\sample_Ch10_files\
;Name               configMergeWithTimeStop.ch10
;SourceDirectory        C:\Users\MHaralanov\Documents\sample_Ch10_files\Martin\
;Source             "Chapter10_File2.ch10"
;Source             "Chapter10_File1.ch10"
;StartTime          2023:199:16:09:30.000
;StopTime           2023:199:16:09:50.000
```

Figure 2. User interface of “Merge Utility” that I developed (Top), config support (bottom)

What did I do? (Daily)

- **I developed in C++, with a little C porting done from older utilities.**
- **Development was a mix of UI design in Qt, and low level data manipulation for the utility backend.**
- **Version control is important for tracking code changes, we used Git and Bitbucket for this.**
- **The workflow looked something like:**

Site Information:

Wideband Systems Inc,
11900 Bournefield Way STE 120, Silver Spring, MD 20904
Supervisor: Jim Brown
Mission: Designing and manufacturing recorders and peripheral recording
Goals: add customer demanded functionality to recorders

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