

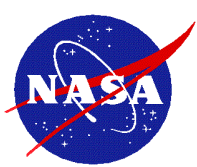


Dealing with Processing

Chapter 10 Files from Multiple Vendors

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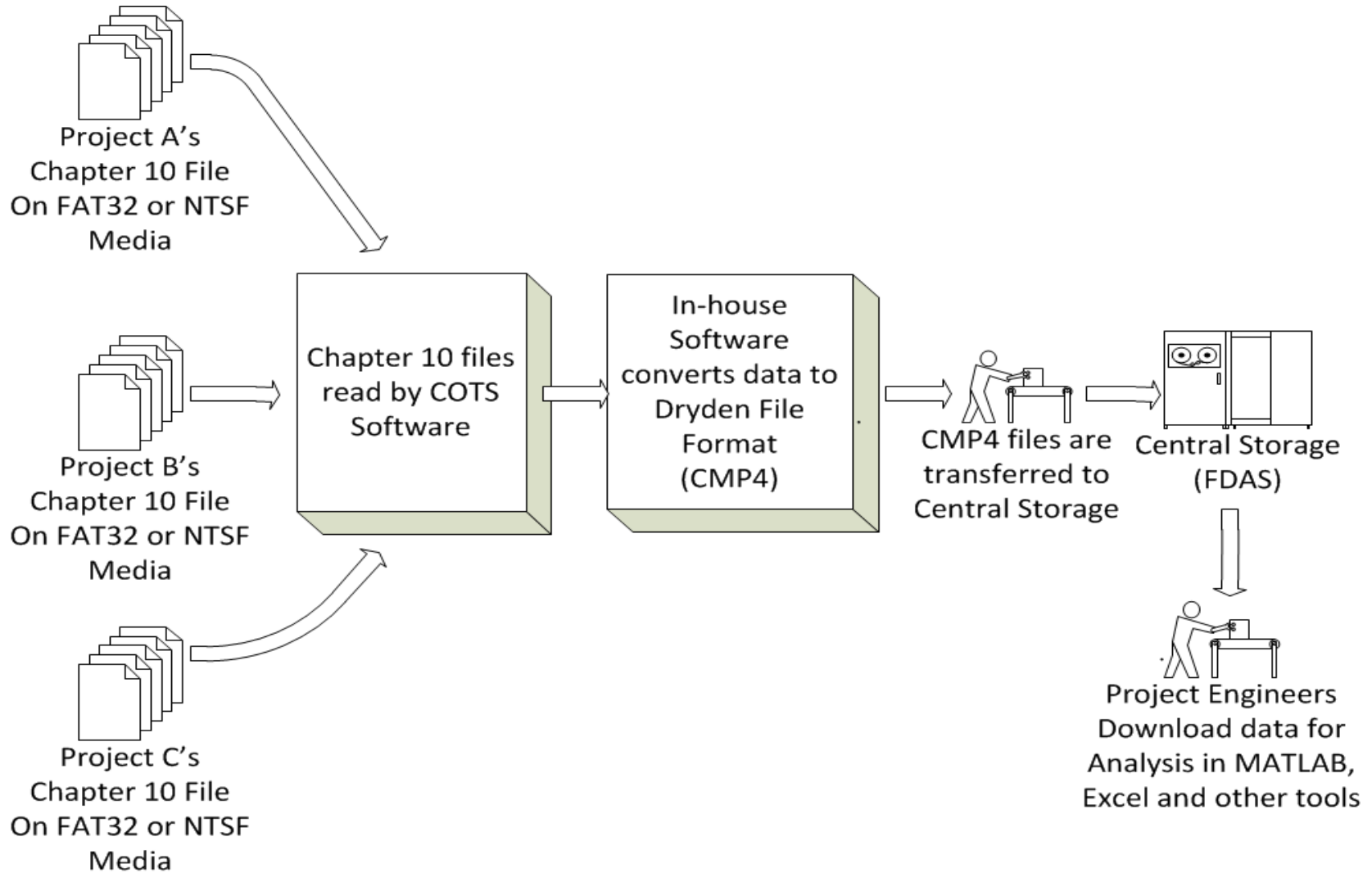
Agenda

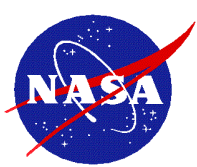


- NASA Dryden's Post-Flight Processing Environment
- Chapter 10, a Common File Format?
- Organizational Considerations
- Managing the Files
- Problems in Processing the Data
- Coming to the Realization
- Delivering the Data
- *Chapter 10 Tools* Application



NASA Dryden's Post-Flight Processing Environment

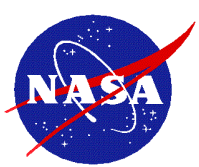




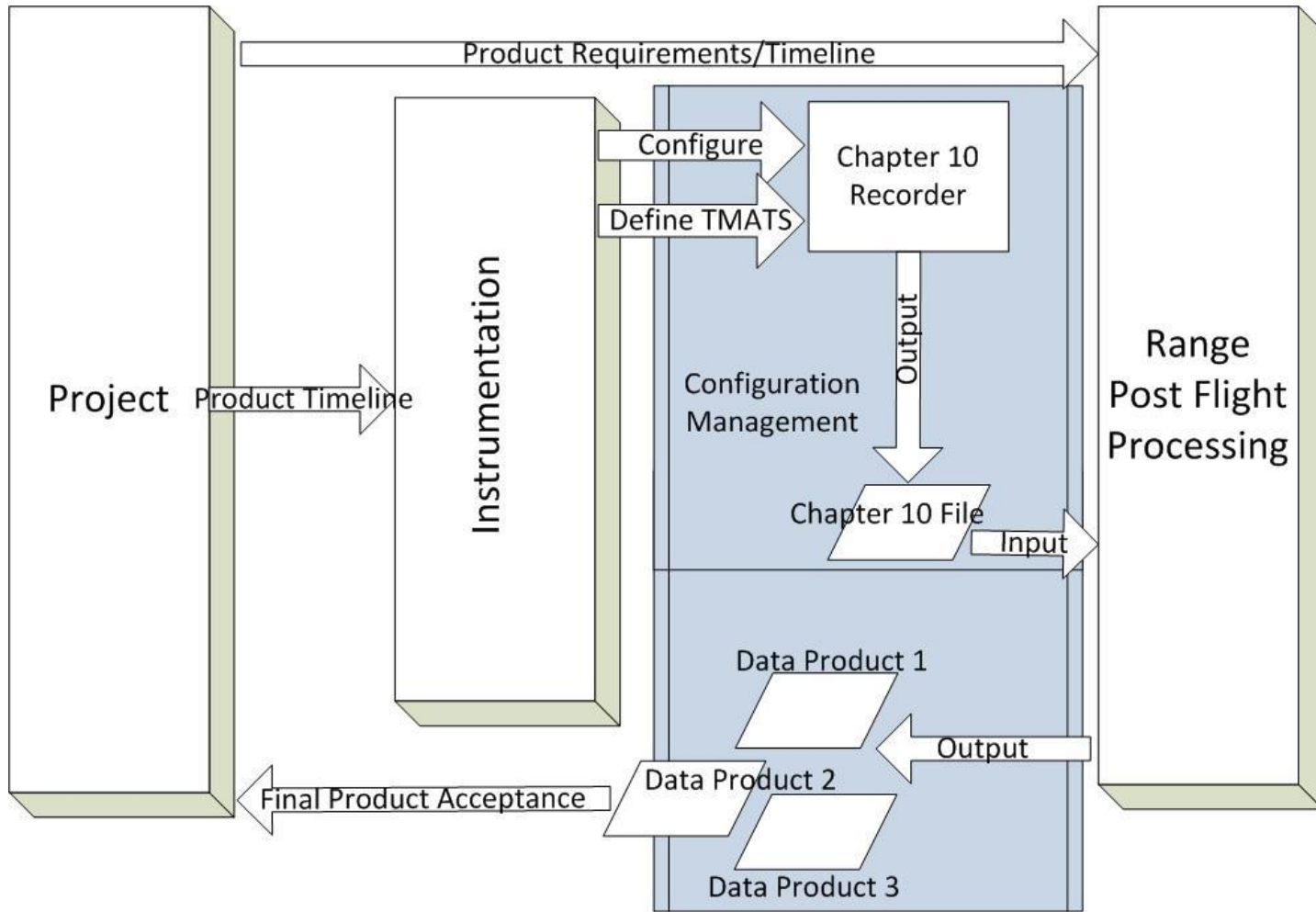
Chapter 10 - A Common File Format?

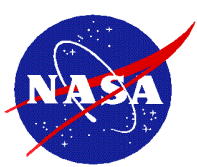


- Inter-range operations pushed for a standardized method of recording flight data digitally.
- The Inter-Range Instrumentation Group (IRIG) developed a common file structure (Chapter 10) leveraging off existing standards and specifications.
- The IRIG Chapter 10 standard evolved to address issues that arose in early versions of the specification (2005, 2007, and 2009).
- Flight recorder vendors adopted the standard early.
- Flight recorder vendors promoted the idea of “vendor independence “ because of a standard file format.



Organizational Considerations



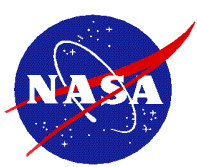


Managing the Files



Establish a file transfer process

- Identify the media
- Identify the file system of media
- Identify all of the information that you need to process and manage the files
 - Project Name
 - Request Date
 - Test Vehicle
 - Mission Date
 - Required by Date
 - TMATS File (Setup Definition)
 - Recorder information (Manufacturer, models, serial number, firmware version)
 - Chapter 10 version - 05, 07, or 09
 - Channel & Data Type
 - Data Products (DVD, CD, Disk, Network Storage)
 - File Type (CSV, Chapter 10, MPEG, WMV...)
 - Data Product Identification and Management



Problems in Processing the Data



- The commercial software used to read the Chapter 10 files is unable to process the files

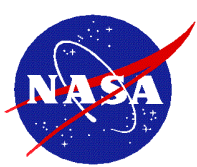
The software identifies an error and stops processing

- Verify error condition through third party validator
- Validator does/doesn't verify error

The software stops processing with no error identified

- Try to identify the error through third party validator
- Validator does/doesn't verify error

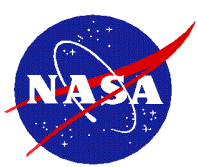
- Real errors and differences in interpretation
 - Time
 - TMATS
 - Structure



Coming to the Realization...



- Each vendor has, at the very minimum, a slightly different implementation of Chapter 10
- Further, one's ability to process the data is constrained to the implementation of the software that is used to process the Chapter 10 files
 - What does the software think is an error?
 - Need to identify the cause
 - How does the application handle the error?
 - Errors in Application?
- Final realization, one does not need a correct Chapter 10 file, one needs a Chapter 10 file that the processing application thinks is correct.

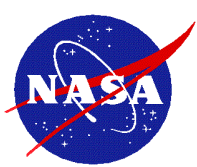


Delivering the Data, the Only Thing That Matters



Regardless of the cause, the Project wants the data

- Find a solution
 - How can I make this work?
 - Quick and ugly: manually edit the file
 - Are there alternatives for processing the data?
 - Different application and work flow
- Create a solution
 - Many roads to get to the same destination
 - Work with your current vendor
 - Standardize on a single vendor solution
 - Create it yourself
 - *WATR's Chapter 10 Tools Application*



Chapter 10 Tools Application



- Development started at the end of 2010
- Summer 2011 - Release 1
- Capabilities
 - Chapter 10 file structure validation
 - Chapter 10 packet validation
 - TMATS viewer/editor
 - Packet viewer/editor
 - Error detection (TMATS, PCM)
 - User specified automatic detection/correction (time)
 - Some automatic detection/correction (headers and trailers)
 - Create a Chapter 10 file we can process.