### Dropped Frame Characterization

#### Background

All dropped “frames” (aka dropped “lines” for this ADD), need to be accounted for during Ingest System (IS) processing and Product Generation System (PGS) processing.

Dropped frames are typically expected to occur onboard the spacecraft. The instrument will create a CRC value at the end of each video line. Once the data is on the ground, ingest will perform a CRC check on these values. Any check failure will result in the dropped frame being filled with zeros, and the setting of the CRC flag to fail in the OLI line header dataset.

Dropped frame conditions may also occur if a file within a given interval is missing. Such intervals will be archived for later processing. If or when selected, the interval may be broken up into two “sub-intervals” or the data may be filled to complete the interval.  In the latter case, ingest will flag these all these frames as zero filled in the OLI line header dataset.

This algorithm will check the Line Header data in the ancillary file for all intervals and output any dropped frames to a Labeled Mask (LM) aka Artifact Mask (AM) and database.

Note, while this algorithm describes all necessary parameters and functionality required for processing, no prototype code will be developed or delivered by the algorithm developer. Instead, coding will be performed by software developers based upon finalized detailed knowledge of the ancillary data file content and structure.

#### Dependencies

None

#### Input

|  |  |  |  |
| --- | --- | --- | --- |
|  **Descriptions** | **Level** | **Source** | **Type** |
|  |  |  |  |
| Line Header data  | interval | Ancillary Data File  |  |

#### Output

|  |  |  |  |
| --- | --- | --- | --- |
| **Descriptions** | **Level** | **Target** | **Type** |
| Dropped Frames  | Nband x Nframe  | AM  | Int |
| # of Dropped Frames  | Nband x NFrame | Db | Int |

#### Options

None.

#### Prototype Code

None.

#### Procedure

1. Read the interval ancillary data file and extract the LineHeader Dataset
2. Verify CRC check and line fill information from the Line Status field.

{

For (band=0,band=9,band++)

Num\_filllines = 0 ; /\*line counter initialization\*/

Int Linearray[9,Num\_fillines] ; /\* array containing CRC check\*/

Int Filltotal[9]; /\*array containing # of dropped frames per band\*/

{

 For (line = 0, line=intervalsize, line++)

 {

If (bit8 == 1) ; /\*CRC check successful\*/

 {

 If (bit2 == 1) ; /\*line has fill\*/

 Linearray[band,line] = 1

 num\_filllines[band] = num\_fillines+1

 }

 Else

 Printf(“CRC check unsuccessful’)

 }

 Filltotal[band] = num\_fillines;

 }

1. Output linearray and flag each corresponding AM value
2. Output Fill total to DB for trending

**Reference**

1. “L0r DFCB Landsat 8 Operational Land Imager (OLI) Swath Data Format Control Book (DFCB) -Version 1.0m,” Jan 2009