

# DM Header Service

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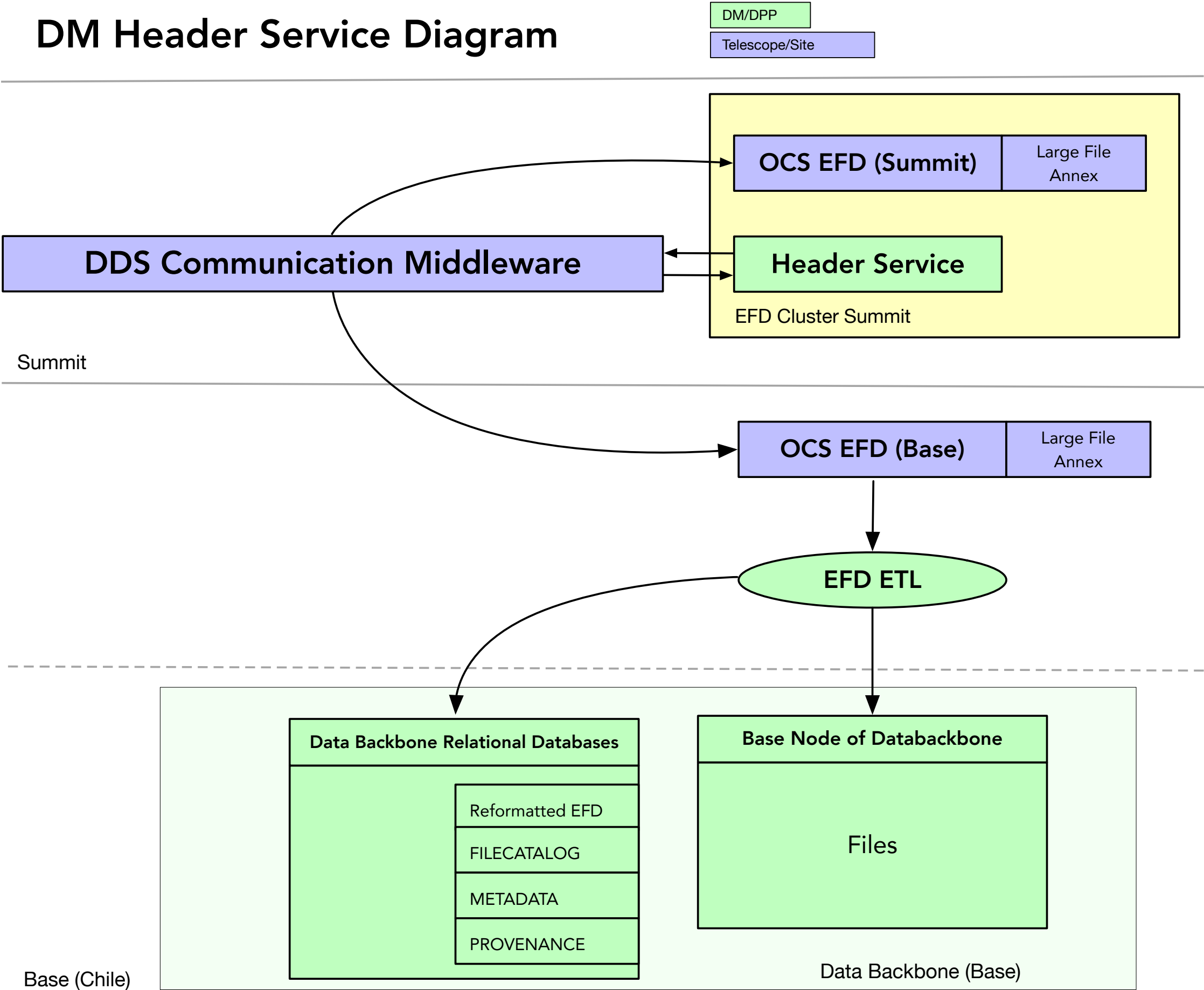
LSST 2017 Project and Community Workshop

# DM Header Service

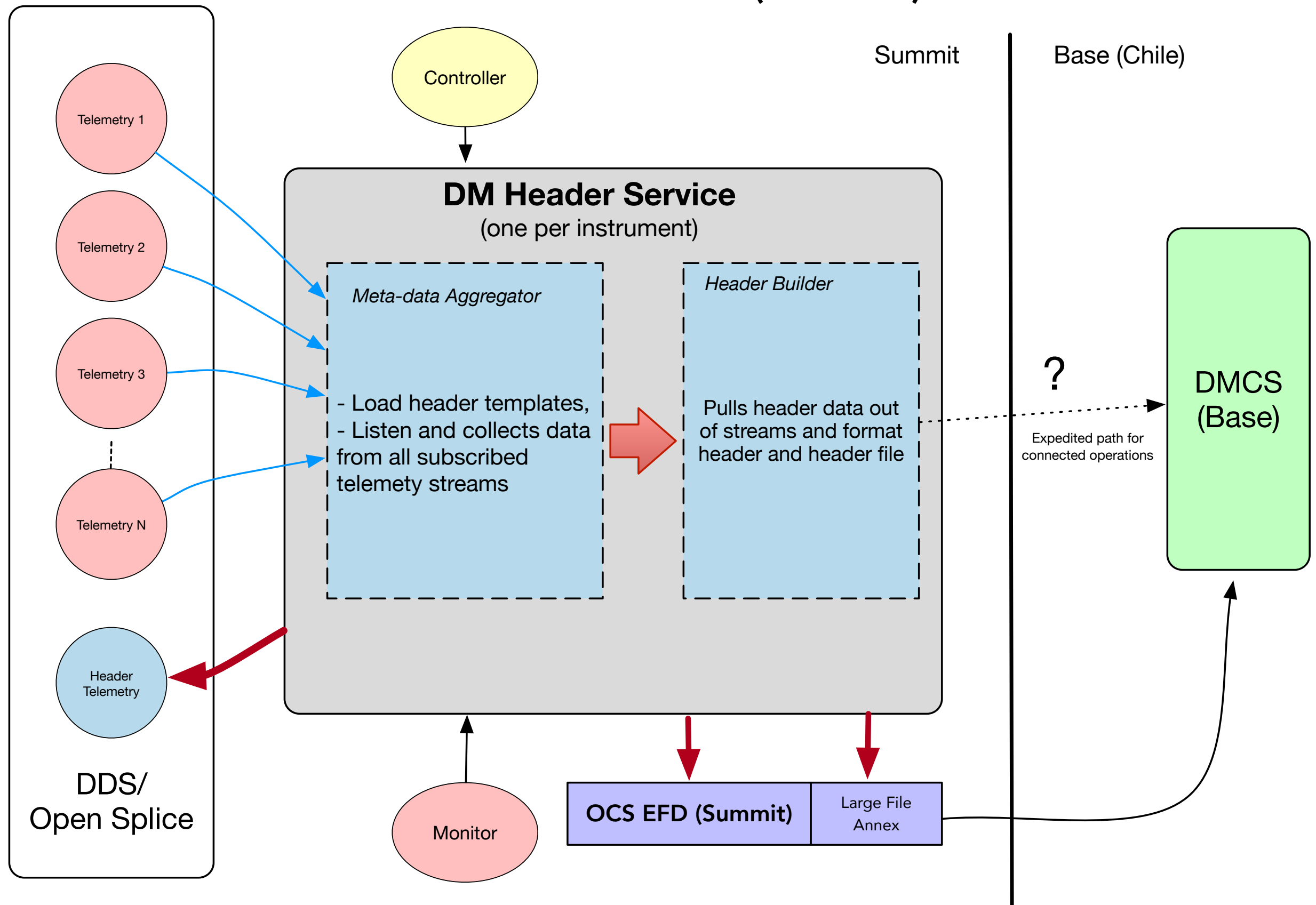
## Guiding Principles

- Provide a single method for header acquisition for Real-Time and Catch-up modes.
- Ensure the creation of header files synchronously with the image data acquisition.
- Provide uniform and consistent acquisition of meta-data for LSST visits and exposures for the Spectrograph, ComCam, and LSSTCam.
- Run at the summit (EFD Cluster Farm) and will always have access to all of the live feeds from DDS and to the EDF.
- Headers will contain ***at least*** the meta-data necessary for L1 Processing and archiving.

# DM Header Service Diagram



# DM Header Service (Detailed)



# Data Sources

(places we will be getting header data)

- Configuration Information from files (for examples header templates)
- Telemetry and Event data from the Camera Control System and TCS delivered via DDS/OpenSplice
- Possible Telemetry and Event data from other telescope functional areas such as Scheduling, weather station, dome environmental details...
- Some data will be from values that DM is using, such as the type of correction being used, Image ID, Visit ID, CCDNUM, date/time, etc
- TBD

# Data Types

- **Static data** is data that will stay the same during the course of a night, such as configuration details, who the operators currently are, etc.
- **Dynamic data** is changing data that is not associated with individual exposure details. Dome ambient temperature and airmass details are example of dynamic data.
- Logical Visit data includes descriptive values that specify the sky tile for this visit location, or pointing RA,DEC, etc.
- Live or Exposure data is data directly coupled to individual exposures, such as Image ID, Filter values, shutter values, etc.
- Some data is bookkeeping data that will be generated by DM. Examples are the CCD number, Session ID, WCS information, etc.

# Data Delivery

- *The method for passing data from the Header to each Forwarder is not yet final.*
- The default method will be via a message. The Header Client will publish an Event like **HeaderCreated** to DDS and the existence of a Large File Object (LFO) that will contain the location and names and the files that were inserted into the EFD LFO Annex.
- The Forwarders (DMCS) will retrieve the header from the EFD LFO annex using the Imageld and a standard filesystem path to locate it.
- If above is not sufficiently fast for L1, an alternative can be explored where the Header Client could pass fitsio FITSHDR Python Objects directly to the Forwarders.

# Related Docs:

- [Strawman Header Service Design Proposal](#)
- [Proposed Header Service for LSST images](#)



Thanks