

# Alert Production

F19A

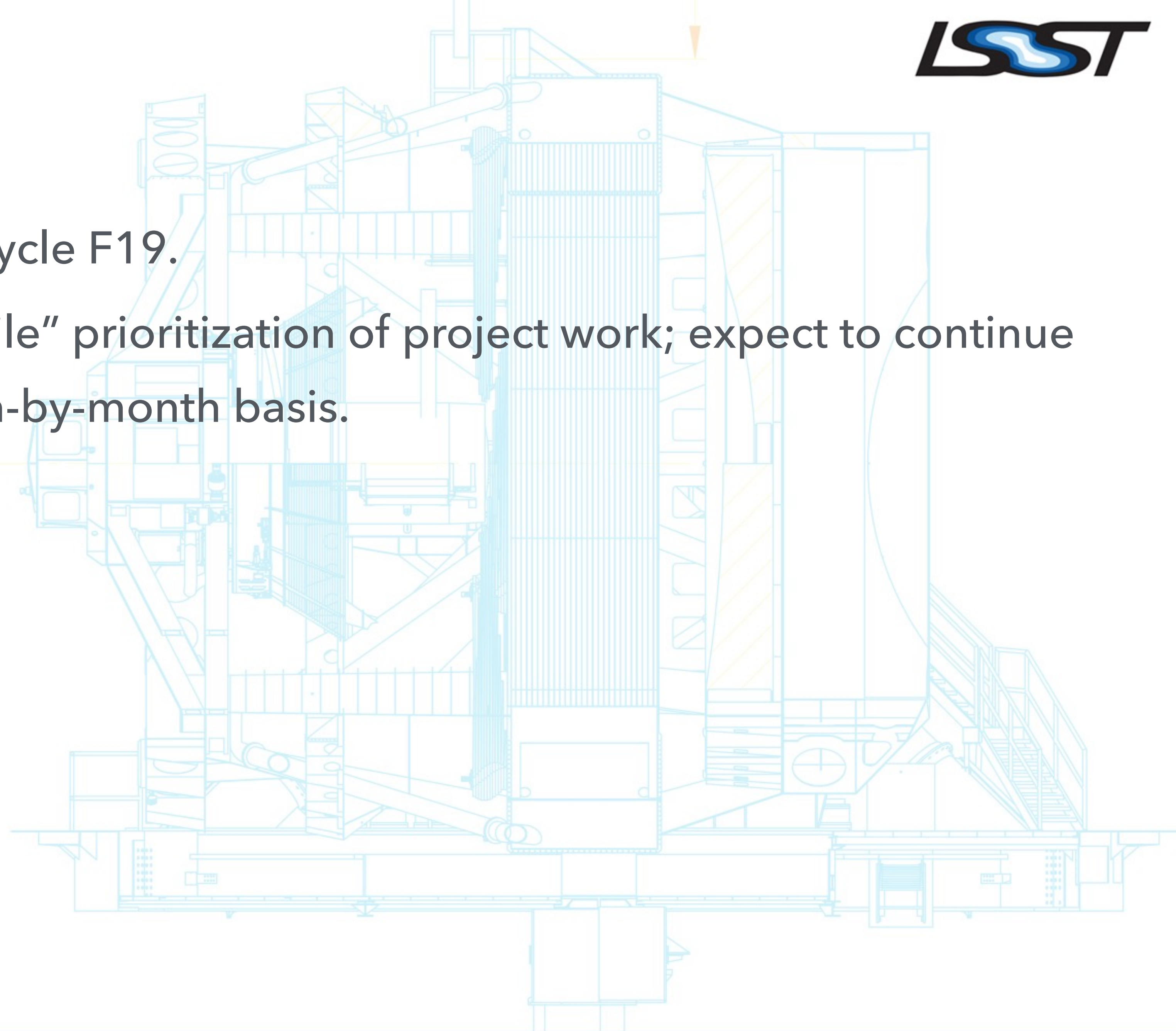
The logo for the Large Synoptic Survey Telescope (LSST). The letters 'LSST' are rendered in a bold, black, sans-serif font. The letter 'S' is filled with a blue-to-white gradient, giving it a three-dimensional, glowing appearance. The letters are outlined in white.

*Large Synoptic Survey Telescope*



# This covers cycle F19A

- That is, the first three months of cycle F19.
- See yesterday's discussion re "agile" prioritization of project work; expect to continue re-assessing priorities on a month-by-month basis.





# Standing Commitments

- Emergent work
  - ie, some effort reserved for bug fixes, short-term requests from other teams.
  - All of the AP team expect to spend some time on this.
- Continued AP Pipeline development & maintenance
  - In particular, this covers repeated reprocessing of standard test datasets, some effort to analyse the results thereof, and fixes to any major issues that identifies.
  - Also continued refinements to source association.



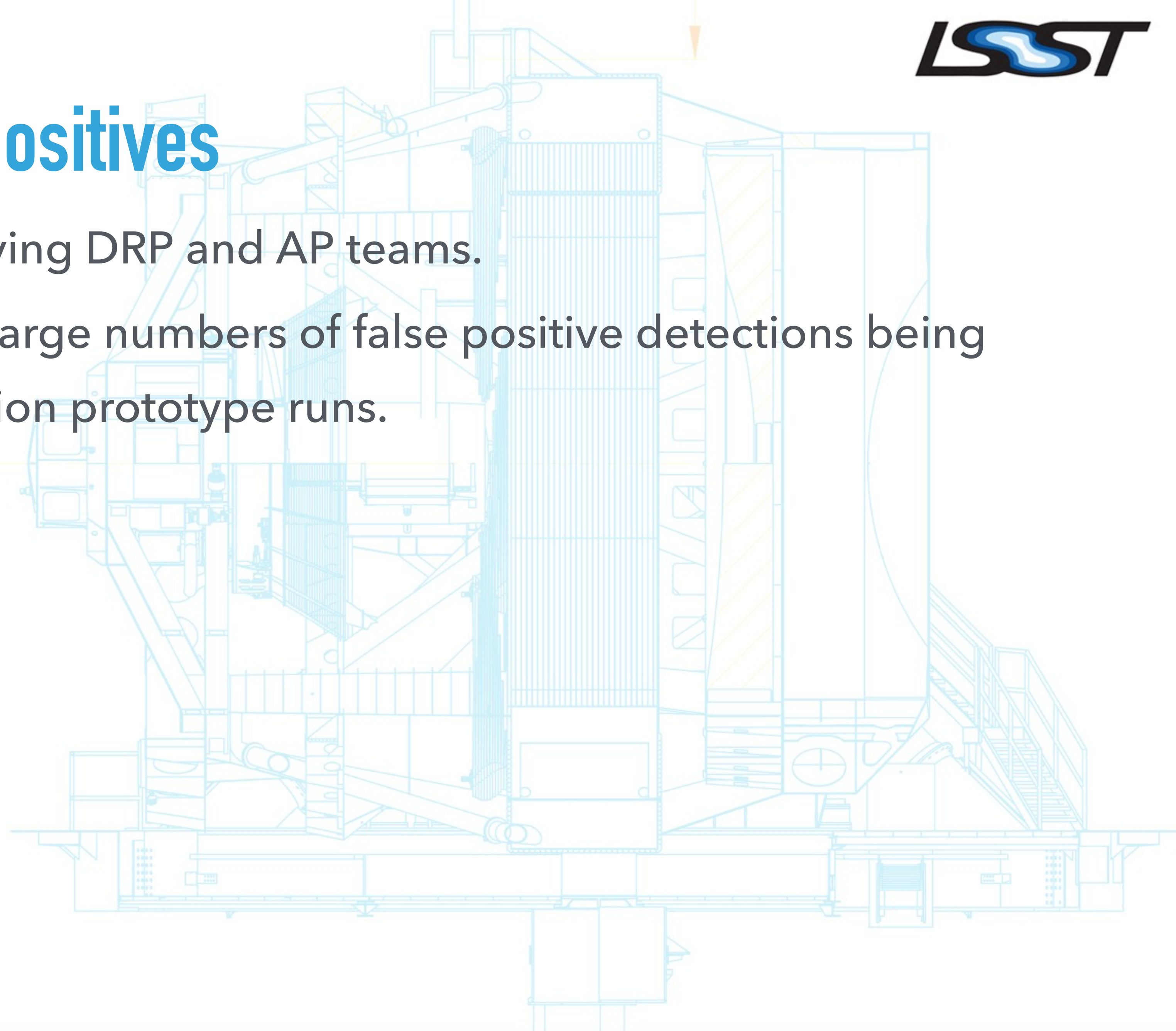
# Moving Objects

- Immediate priority is submitting an LCR which describes the “new” MOPS plan, including closer integration with the Minor Planet Center.
- Assessment of the “pytrax” system as a replacement for classical MOPS.
  - This is an implementation of the HeliLinC (Holman et al., 2018) algorithm.
  - Effectively, a version of MOPS which scales as  $O(N \log N)$ , rather than  $N^3$ , for number of tracklets  $N$ .



# Image differencing false positives

- Cross-team project in June, involving DRP and AP teams.
- Attempt to identify and mitigate large numbers of false positive detections being observed in current alert production prototype runs.





# Per-CCD distorted astrometry

- Cross-team project during June, involving AP & DRP teams.
- Upgrade the per-CCD astrometric fitting to take account of known per-CCD distortions.
- Ultimately, expect these to come from Jointcal; in the short term, working from a known distortion model on HSC.





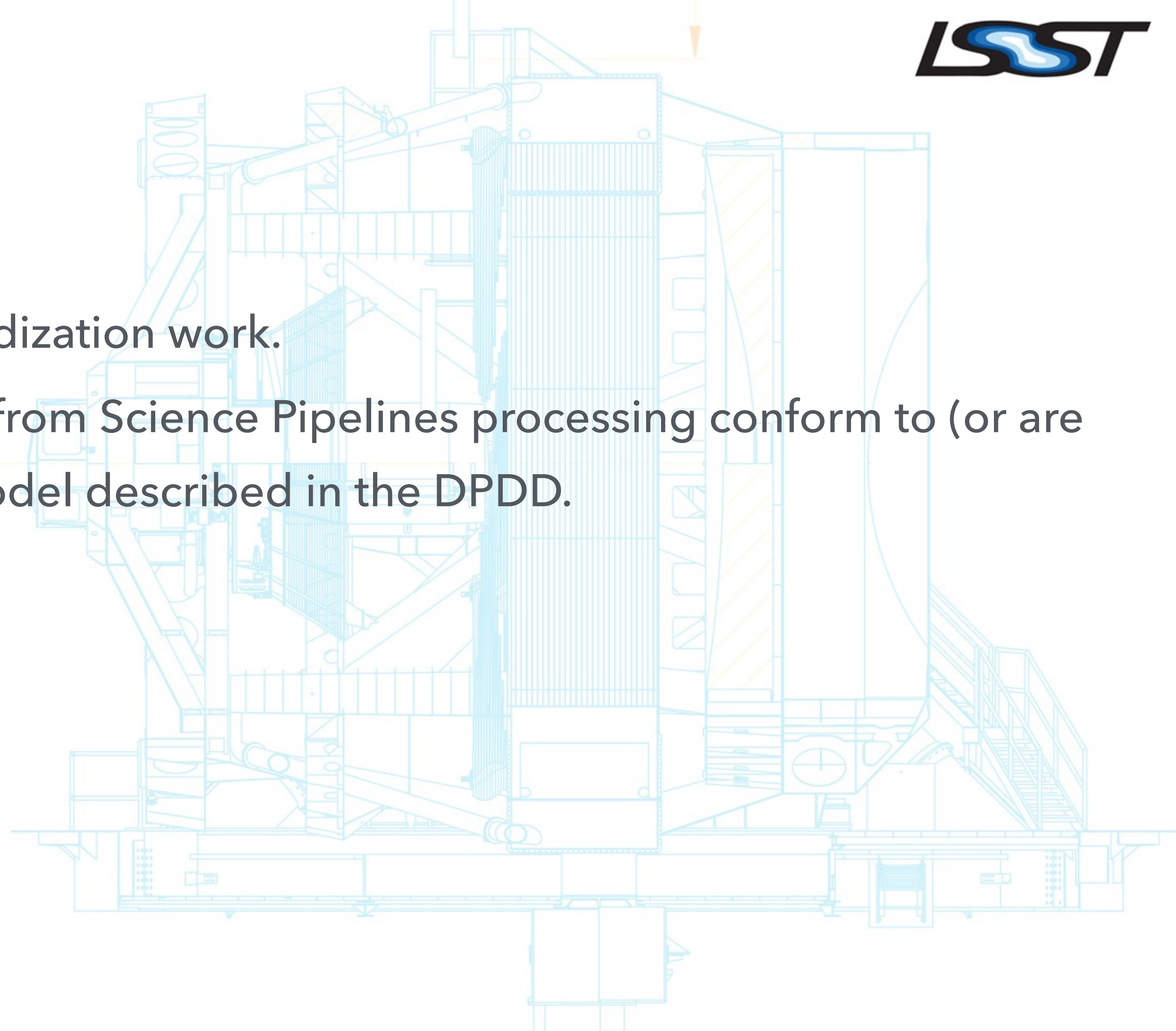
# Upgrades to “Exposure”

- See discussions on [community.lsst.org](https://community.lsst.org) from earlier this year (especially involving Jim Bosch and Krzysztof Findeisen).
- <https://community.lsst.org/t/how-the-exposure-class-and-afw-io-wrecked-the-codebase/3384>
- Effectively, reworking exposures, so that as much work as possible can be carried out in Python, rather than dropping into C++.
- Expect to arrive at a concrete design for this, but not necessarily a fully-fledged implementation.



# Science Data Model

- *Provisionally* in July.
- Contribute effort to SDM-standardization work.
- That is, making sure that outputs from Science Pipelines processing conform to (or are trivially converted to) the data model described in the DPDD.





# DECam Calibration Products

- *Provisionally* in July.
- Rather than inheriting calibration products (biases, darks, flats, etc) from the DECam Community Pipeline, we will generate our own using LSST code.
- *Both* acts as a test of LSST-provided calibration product generation code, *and* eliminates discrepancies between DECam CP products and LSST expectations.



# Middleware upgrades

- As we move into August, have the whole AP team standing by to support upgrades to the "Generation 3" middleware.
- Taking part in events around LSST2019, and (if appropriate) the build-up to that.

