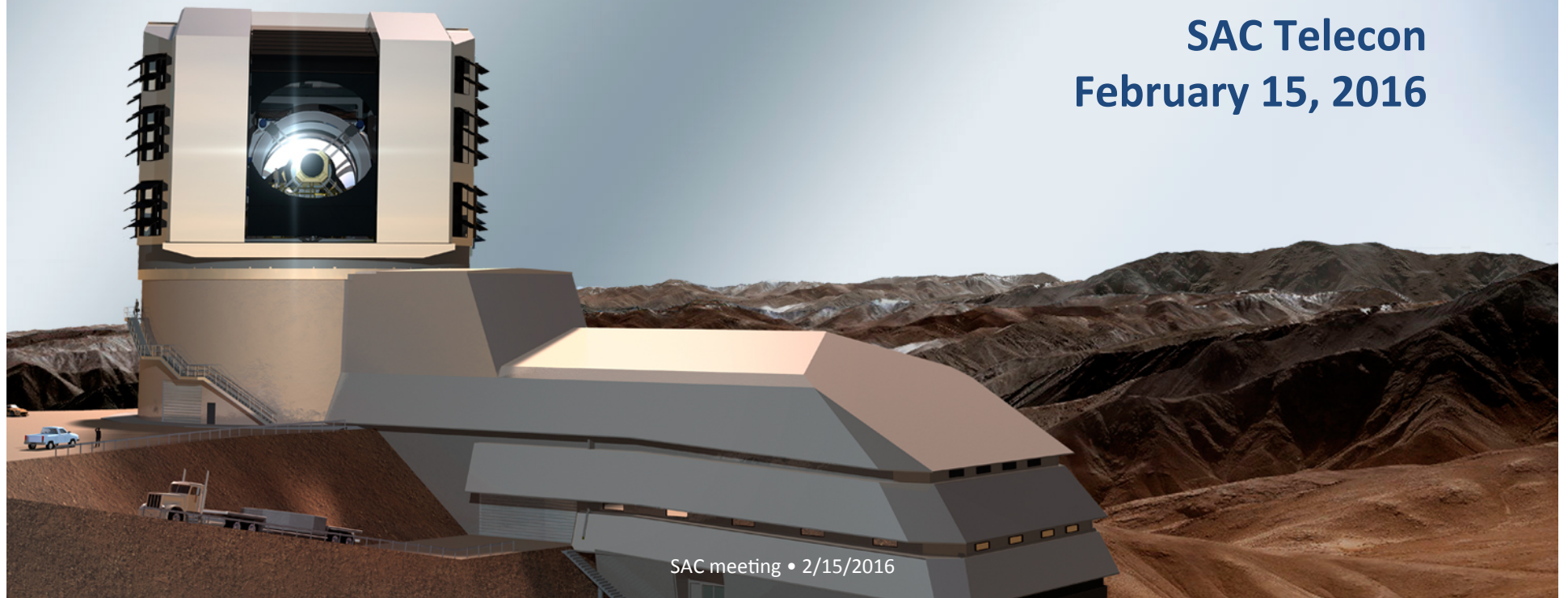




Operations Planning highlights for SAC

Beth Willman
LSST Deputy Director

SAC Telecon
February 15, 2016



Where we are in operations planning



Late 2013 – Draft Operations Plan presented at LSST’s FDR

mid-2014 – LSST Technical Operations Working Group has first meeting

November 2015 – LSST Operations Planning Team has first meeting

Oct - Dec 2015 – Initial meetings with NSF and DOE

February 2016 – First review of operations plan

We have

Identified key goals and activities of operations

A proposed Work Breakdown Structure that is loaded with steady-state FTE estimates

Hundreds of use cases, worked out to varying levels of detail

A flexible proto-plan to continually assess data products, impact, and survey strategy, and that can handle agency requests

What will it take to operate the system under construction?

LSST's Operational Goal



The operational goal of LSST is to provide a unique dataset and associated products, **which are continually assessed and improved, to enable the four LSST science objectives (measuring dark energy, cataloging the Solar System, exploring the transient sky, mapping the Milky Way)** and to engage the public in the exploration of the dynamic Universe.

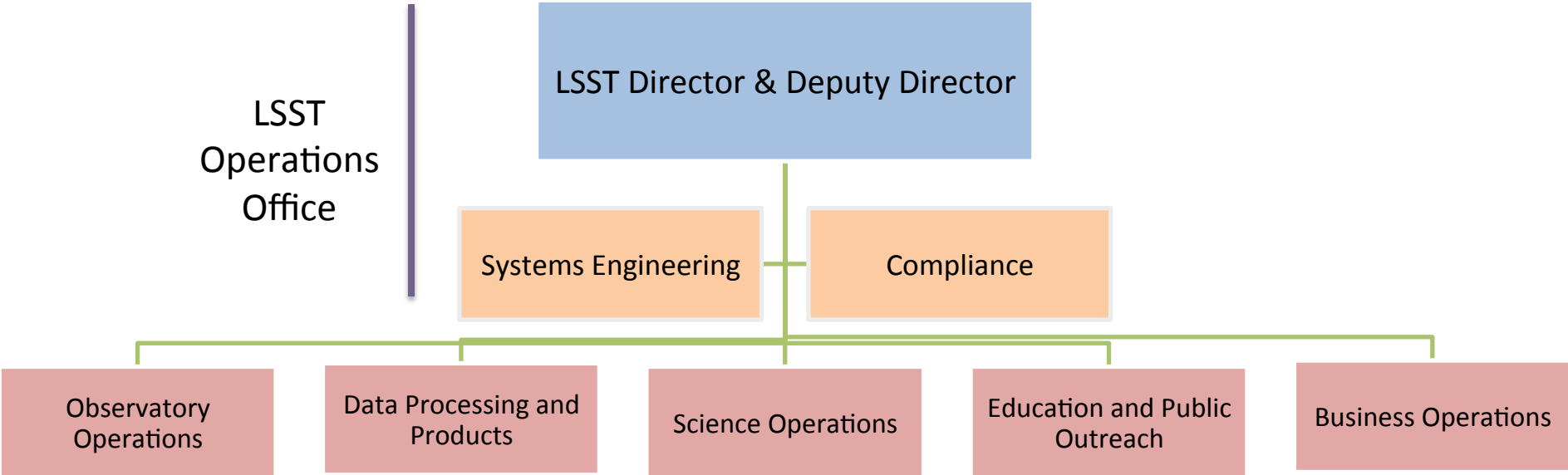
Four Components of Operations



Meeting LSST's operational goal will require the successful delivery, operation, and integration of four components:

- (i) an 8.4m (6.7m effective aperture) optical telescope with a 3.5-degree diameter field-of-view and a 3.2 billion pixel camera [Observatory Operations]
- (ii) a data system that will process, archive, and distribute survey images, associated transient alerts, and calibrated catalogs, as well as calibration and other metadata [Data Products and Processing]
- (iii) a science assurance system that monitors, supports, and responds to survey progress and products [Science Operations]**
- (iv) educational portals to LSST data products through interfaces, tools, and educational experiences directed toward a broad community of non-specialists [Education and Public Outreach]

Functionally Motivated Organizational Chart

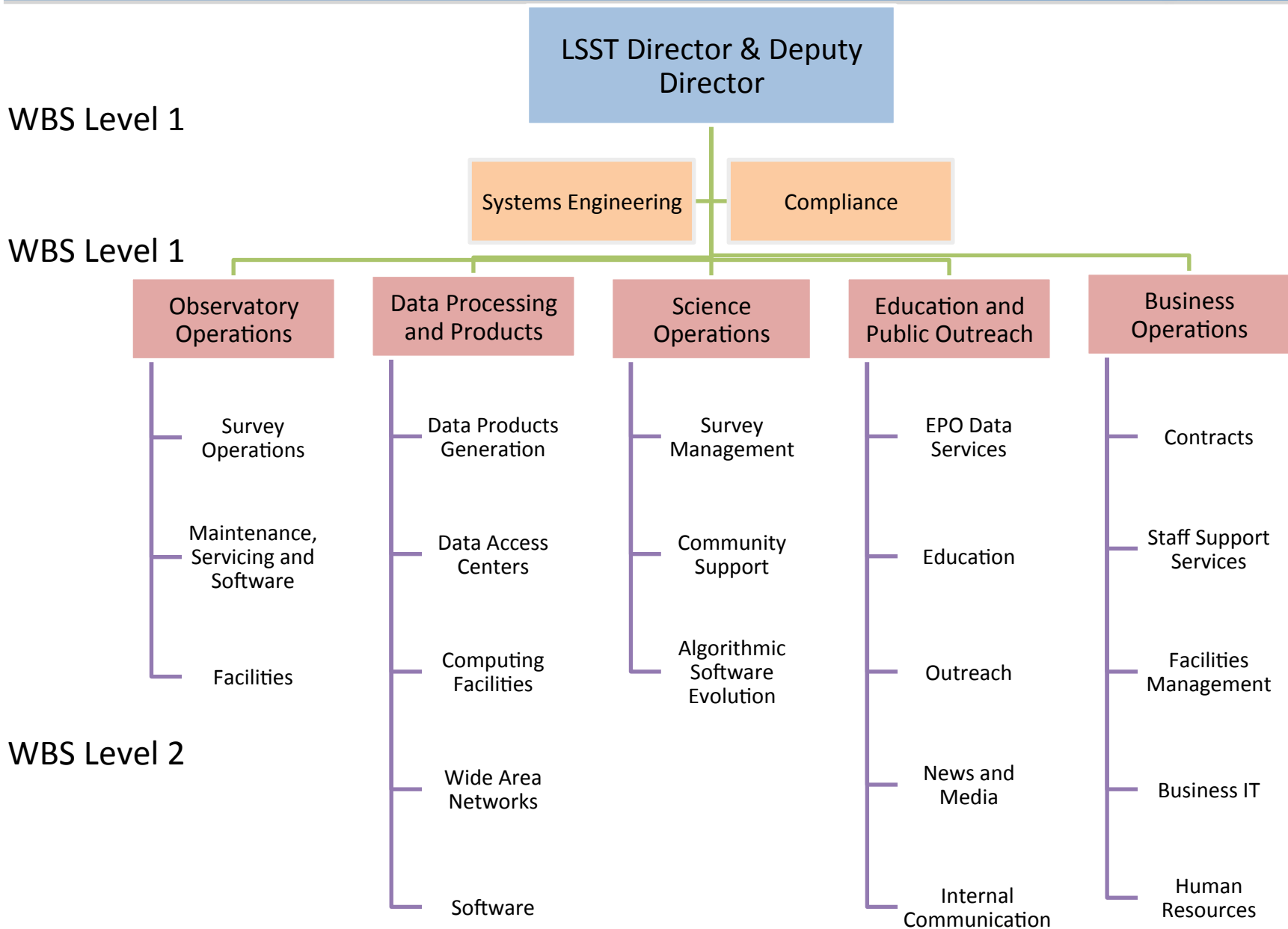




Top Level goals of science operations: Continually assess and improve science pipelines, science products, and survey strategy. Ensure that the community can use the products to accomplish their scientific goals.

To define the boundary for operations requirements as needed to properly resource load our plan, we need to define the science operation goals to another level of refinement. We also need to separate **goals** from **requirements**.

Draft Work Breakdown Structure





Top Level goals of science operations: Continually assess and improve science pipelines, science products, and survey strategy. Ensure that the community can use the products to accomplish their scientific goals.

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I'm asking the SAC to advise on appropriate refined goals, and corresponding requirements – timescale ~Spring 2016.

Where is the operations boundary?



To refine FTE estimates, we need a refined definition of operational success.

Tradeoffs of FTEs vs time:

- For operations team members to identify bugs

- To fix bugs

- To respond to help requests

- To evolve the software

- To deliver data releases

Tradeoffs of FTEs vs ability to mitigate risks:

- Science can be done with LSST-delivered resources

- Observing strategy performing relative to science goals

- System understood well enough to meet science goals

- Community support for facility (relates to usability)

Looking ahead in operations planning



March 2016 – Principal Operations Partners + LSST Project Office begin to review functional roles and begin to map on to capabilities at their individual institutions.

Tentative Dates:

Spring 2016 – Drill down review of Data Products and Processing + Science Operations

Summer 2016 – Resource load the plan

Fall 2016 – Face-to-face external review(s) – Review of overall operations plan and/or reviews focused on specific areas of operations (if needed)

Early Winter 2017 - Internal review of an operations proposal document

Spring 2017 - External review of an operations proposal document

June 30 2017 - Submit proposal to NSF and DOE