Planning for a National Center for Optical-Infrared Astronomy (NCOA)*

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*working title

NCOA Concept Development

NCOA would create a single, coherent scientific and service organization from NOAO, Gemini and LSST

as encouraged in the decadal survey report, *New Worlds, New Horizons in Astronomy and Astrophysics* (2010) and the recent National Academy of Sciences study, *Optimizing the U.S. Ground-Based Optical and Infrared Astronomy System* (2015).

Specific governance, implementation plans and cost models will be developed and reviewed in response to formal NSF guidance issued September 8, 2016.

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AURA

Core Motivation & Benefits

Create a coherent scientific and service organization

- Exploit scientific synergies among OIR facilities, especially LSST for discovery and Gemini/Four-Meters for follow-up
- Maximize scientific return-on-investment; optimize operations
- Take advantage of economies of scale across the federal OIR complex
- Meet community needs in the scientific use of a suite of facilities
- Retain and develop a professional, scientific and technical workforce
- Create natural nucleus for public-private and international partnerships to design, construct and operate future facilities
- Develop future technologies through enhanced capabilities, re-use and adaptation

AURA

High-Level NCOA Concept

- An FFRDC sponsored by NSF comprised of the programmatic elements contained within NOAO, Gemini, and future LSST operations
- Shared resources, skills and capabilities across the observatory facilities
- People centrally managed and field deployed as needed in a classic matrix organizational structure
- Well-defined lines of authority and responsibility to execute major programs and/or projects

Key Features (1)

NCOA will enable and support scientific discovery and leadership as a coordinated, community-oriented science & technology resource providing access to:

- State-of-the-art, well-calibrated/characterized/optimized observational facilities
- Outstanding stewards of high-quality data, leading efforts to advance data archives and data services
- Scientists, engineers and business professionals committed to serving the user community

Key Features (2)

NCOA will develop, operate, maintain, and modernize key research facilities and systems.

- Combined experience serving as operators and stewards of world-class, mountain-based facilities
- Technology development to be adapted and reused across programs with minimized costs
- Long-term commitment to optimizing science return to address broad range of research questions and topics

Key Features (3)

NCOA will recruit and retain a high-value professional, scientific and technical workforce to operate current programs and innovate for the future.

- Ability to competitively recruit and retain a highly qualified, diverse scientific & technical staff
- Long-term commitment as a national resource increases workforce interest and opportunities
- Increased return on “human investment” by retaining talented, experienced people

Key Features (4)

NCOA will support collaborative public outreach, engagement and education to prepare the next generation of researchers and to enhance public awareness.

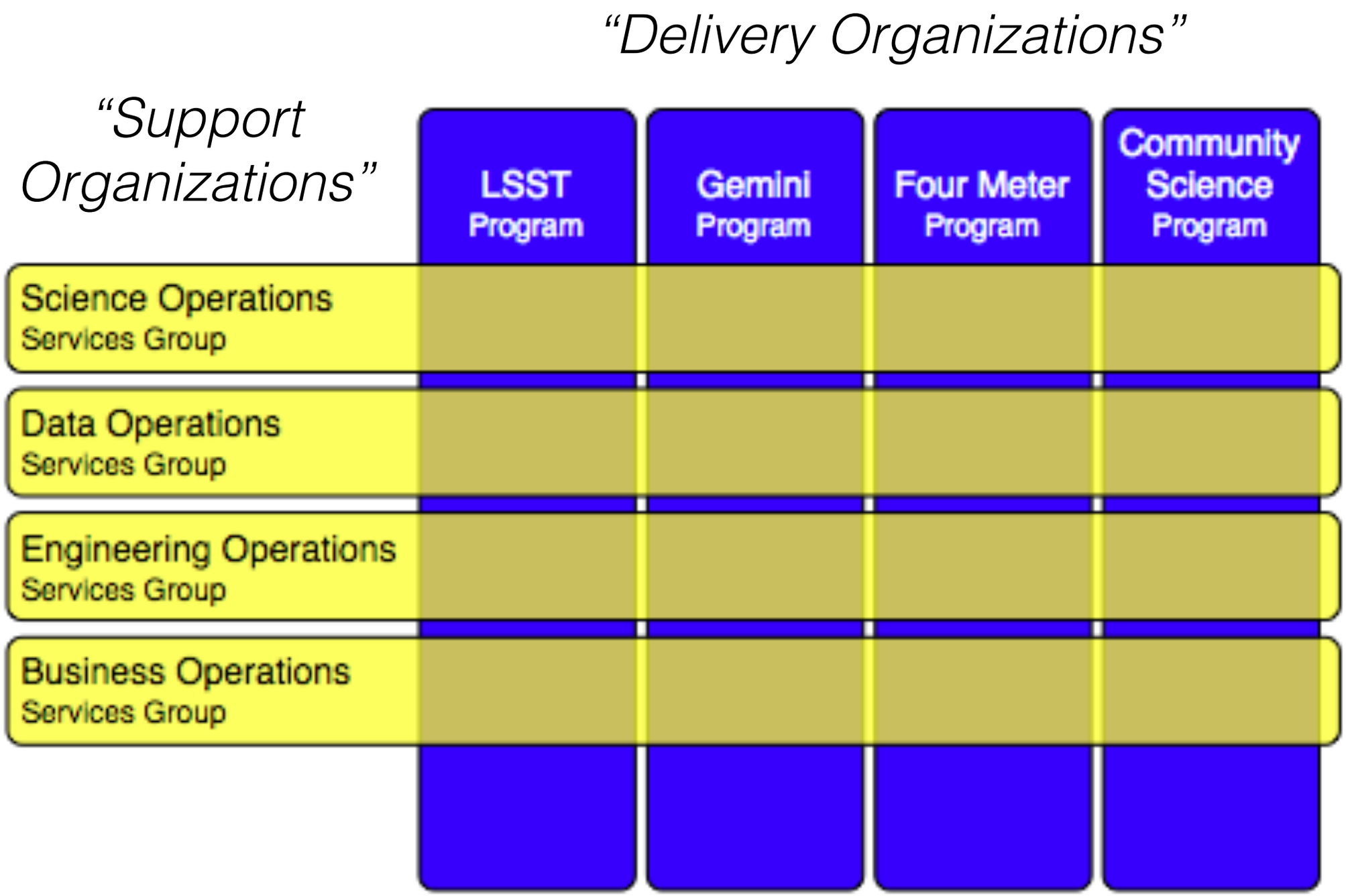
- Scientists, engineers, educators experienced in interacting with the media and public
- Leading efforts to create exciting citizen science programs
- Able to serve as a national focus for scientific and technical training in the OIR system

Key Features (5)

NCOA will be a well-respected national OIR astronomy entity to lead, promote, implement and sustain collaborations and partnerships.

- Promote, coordinate and sustain international partnerships and collaborations among federal, non-federal and international entities
- Active research scientists and technical experts serving on national and international committees
- Scientific and technical expertise to organize and integrate community-wide planning for future facilities, instrumentation and data systems

Model: Matrix Structure



Matrix Organization

- Program and Services Group leaders report to NCOA Director
- Programs each have a well-defined funding stream, often from multiple sources
- Programs use funding to procure resources and products from the Services Groups to accomplish the work and create deliverables
- Services Groups likely have personnel in multiple locations
- Matrix structure designed to facilitate sharing of resources/skills across multiple facilities
- Enables shifting of resources to address urgent/critical but temporary needs
- Matrix organization helps to ensure that all work activities are conducted to the latest best practices and standards

NCOA Directorate

The NCOA Directorate is expected to innovate, create, motivate and drive NCOA forward with the national and international research community and in collaboration with NSF.

NCOA Director's Office has authority and responsibility for:

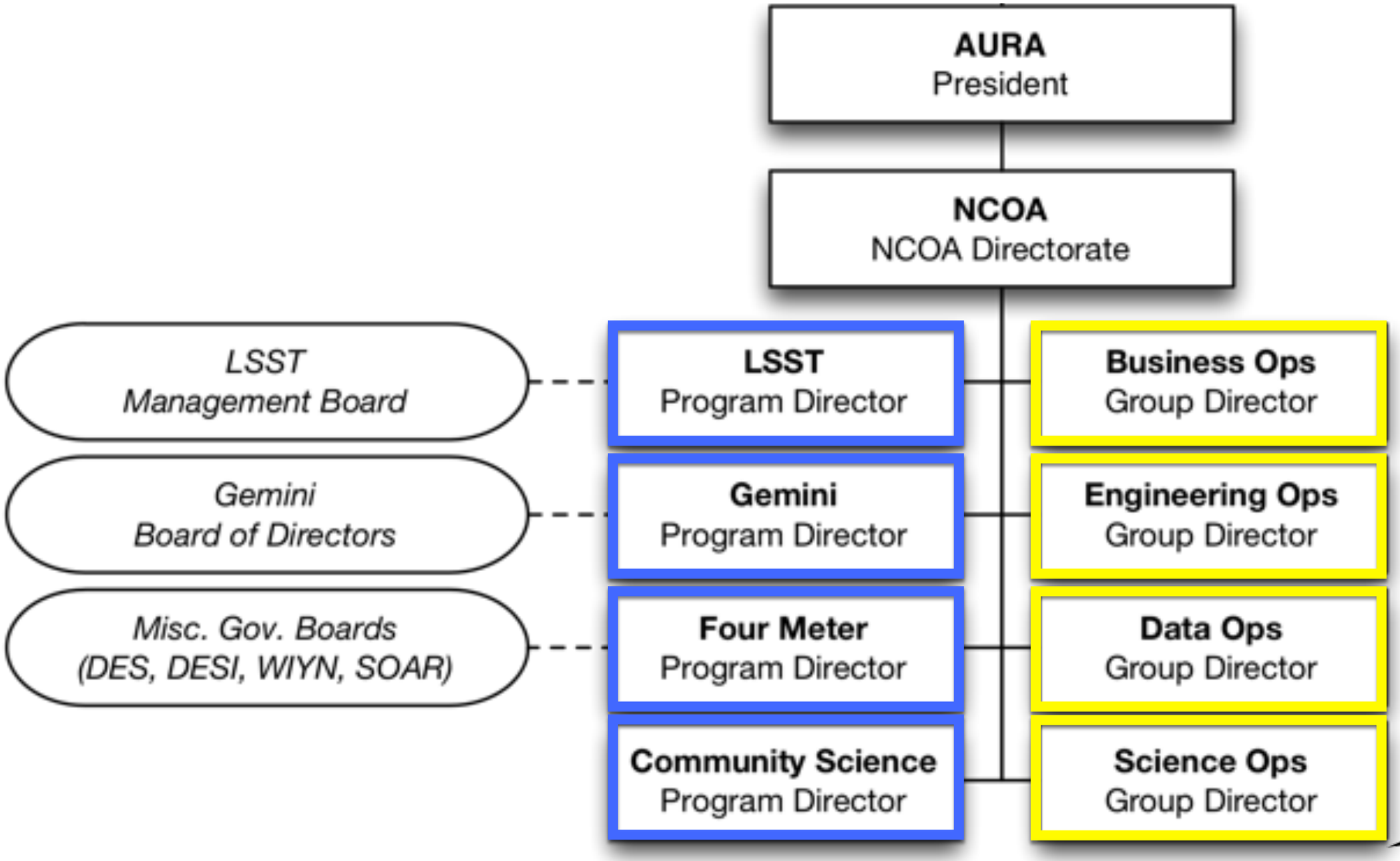
- NCOA strategic plan development, communication and implementation
- Advocacy for NCOA mission and strategic plan to all stakeholders
- Maintenance of high-level dialogue with all stakeholders
- Management of NCOA/NSF programmatic interfaces (as delegated by AURA)
- Delivery of all formal reports and plans required by NSF
- Strategic management and prioritization for all Services
- Strategic resource optimization and prioritization among Programs

Governance

NCOA is not a "free actor"

- All programs accountable to AURA through NCOA Director and to external partners/stakeholders
- No "one-size-fits-all" governance model for programs
  - NCOA Directorate delegates day-to-day authority and responsibility to program and services group leadership
  - Direct interaction between external governance/oversight bodies and program leadership
  - Tailored to work within external governance/partnership agreements and oversight mechanisms

Model: Organization Structure



Backup

NSF Guidance: Schedule

Milestone	Target Date
Initial draft of NCOA Plan	15 Dec 2016
Iterated draft of NCOA Plan	15 Apr 2017
Initial draft of Transition/Implementation Plan	15 Apr 2017
Final NCOA Plan & Trans/Imp Plan	30 Jun 2017
AURA submits LSST ops proposal	30 Jun 2017
NSF conducts review of NCOA Plans	~Oct/Nov 2017
Gemini Board considers NCOA Plans	~Nov 2017
NSF approves NCOA Plans	~June 2018
Transition/Implementation initiated	~June 2018
NSF formalizes CA/CSAs for NCOA ops	1 Oct 2018
AURA submits initial NCOA POP and NCOA operation begins	1 Oct 2018