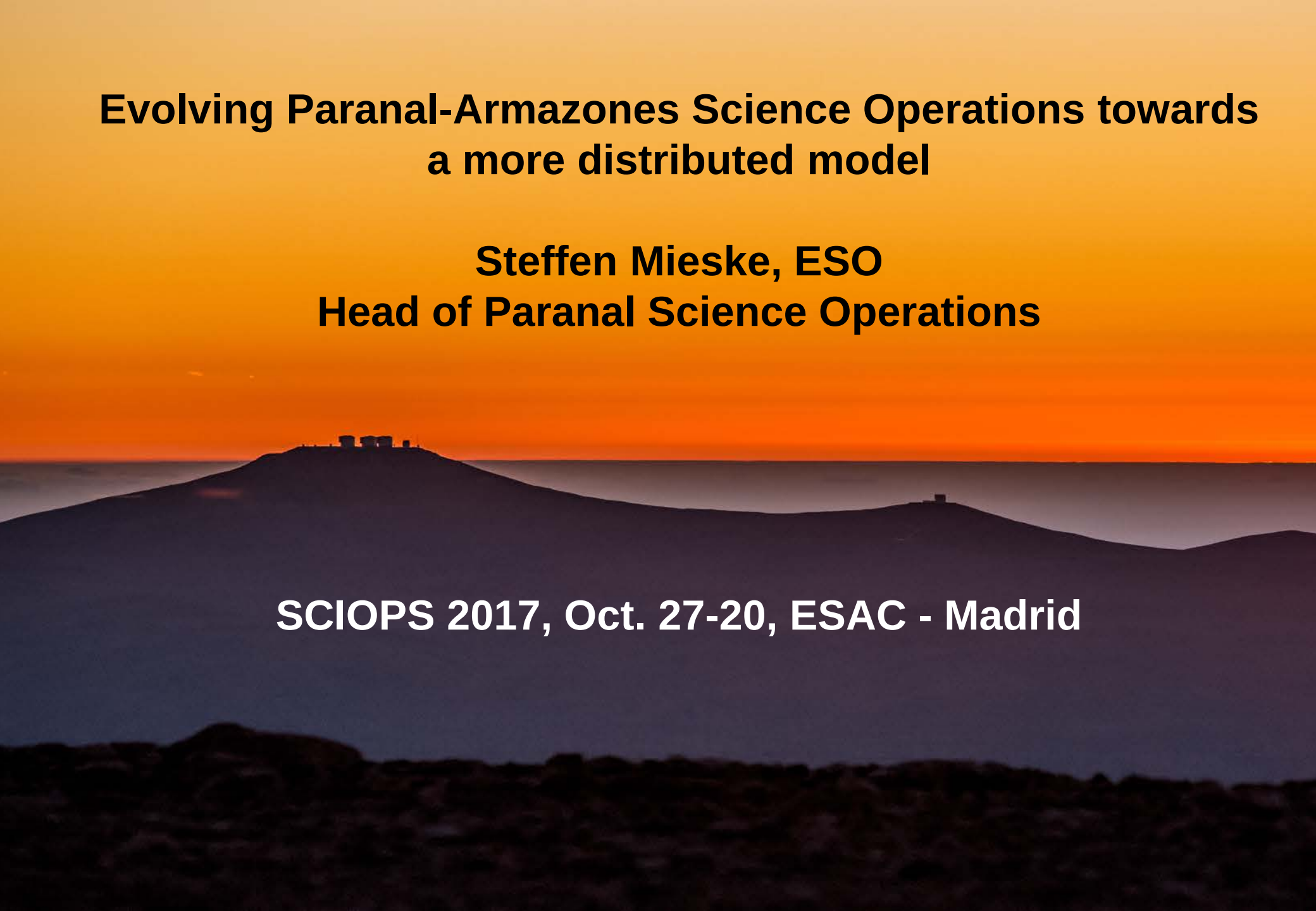
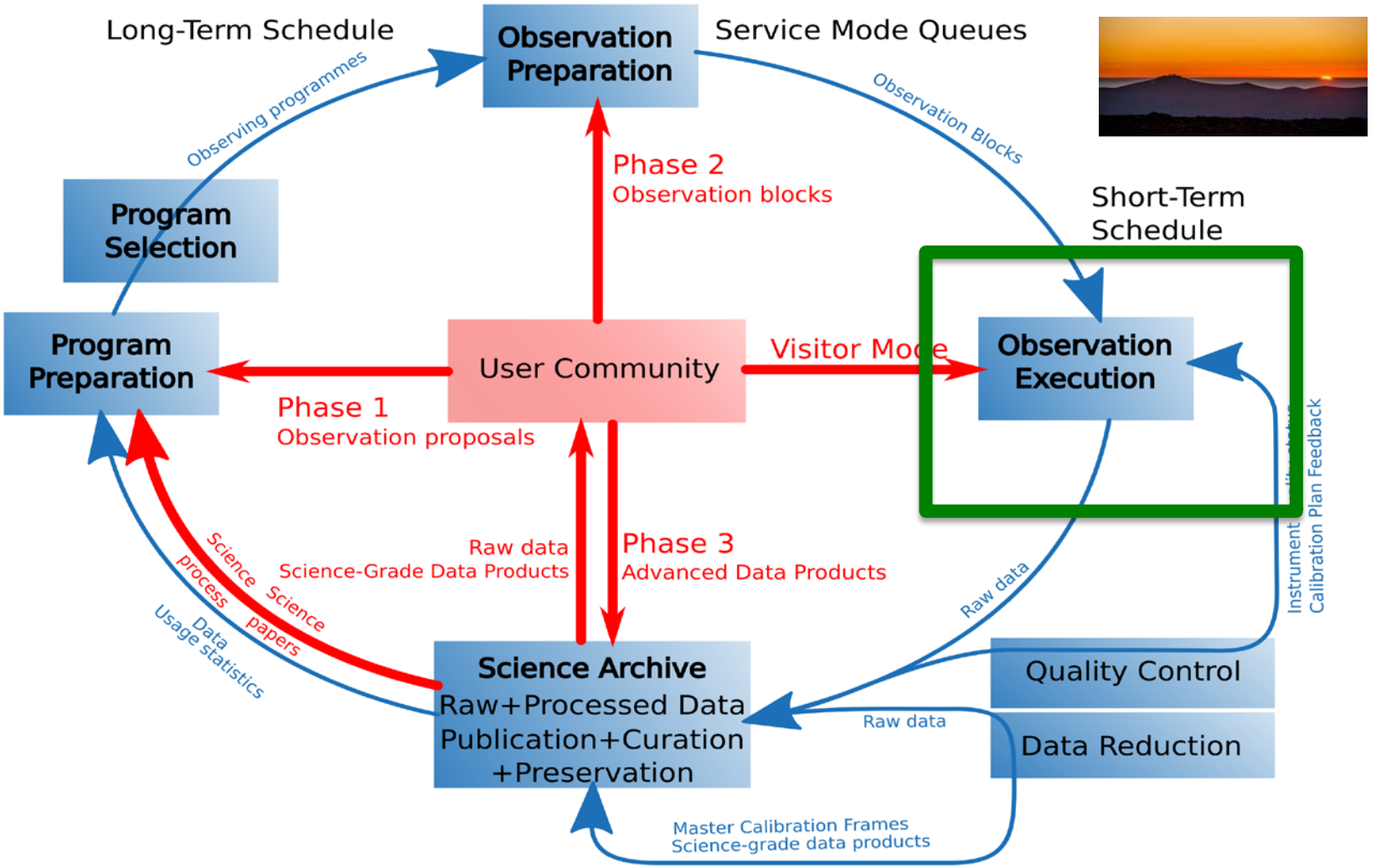
Evolving Paranal-Armazones Science Operations towards a more distributed model

Steffen Mieske, ESO
Head of Paranal Science Operations

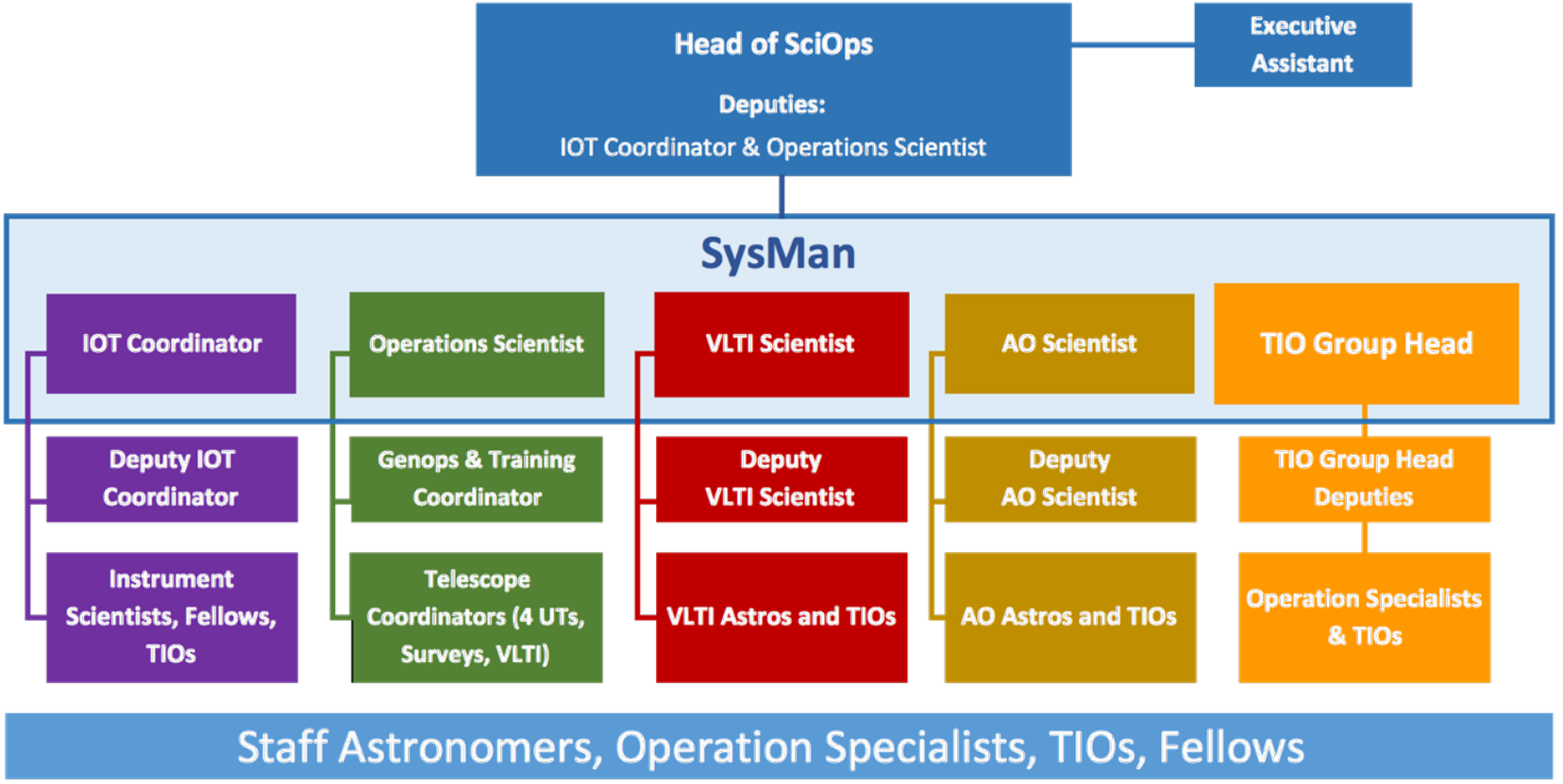


SCIOPS 2017, Oct. 27-20, ESAC - Madrid

Paranal-Armazones Science Operations (PSO) in the context of ESO's end-to-end system



Paranal-Armazones Science Operations (PSO) Organigram



About 65 staff

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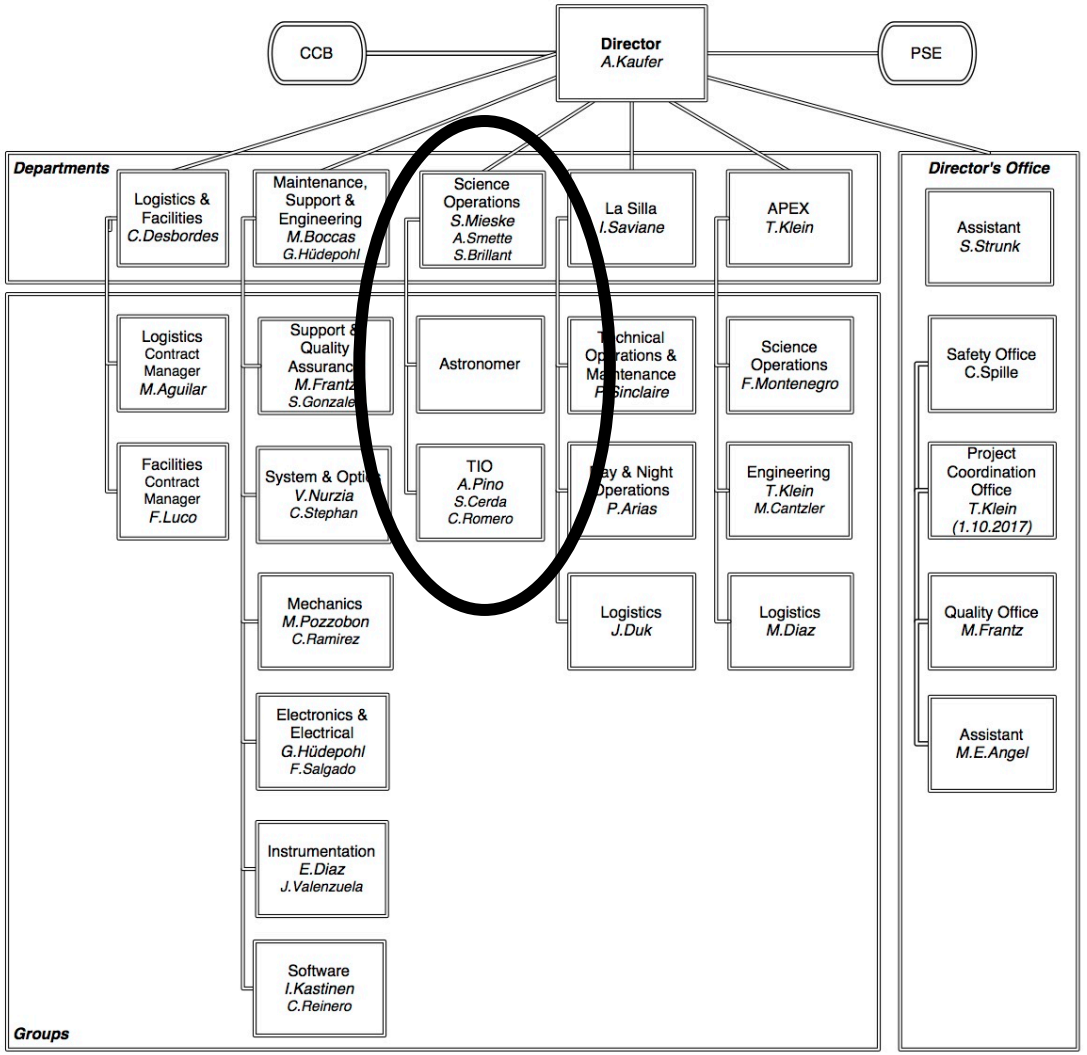


released 01-September-2017 by A.Kaufer

Paranal-Armazones Science Operations (PSO) in the context of the ESO Long Term Plan

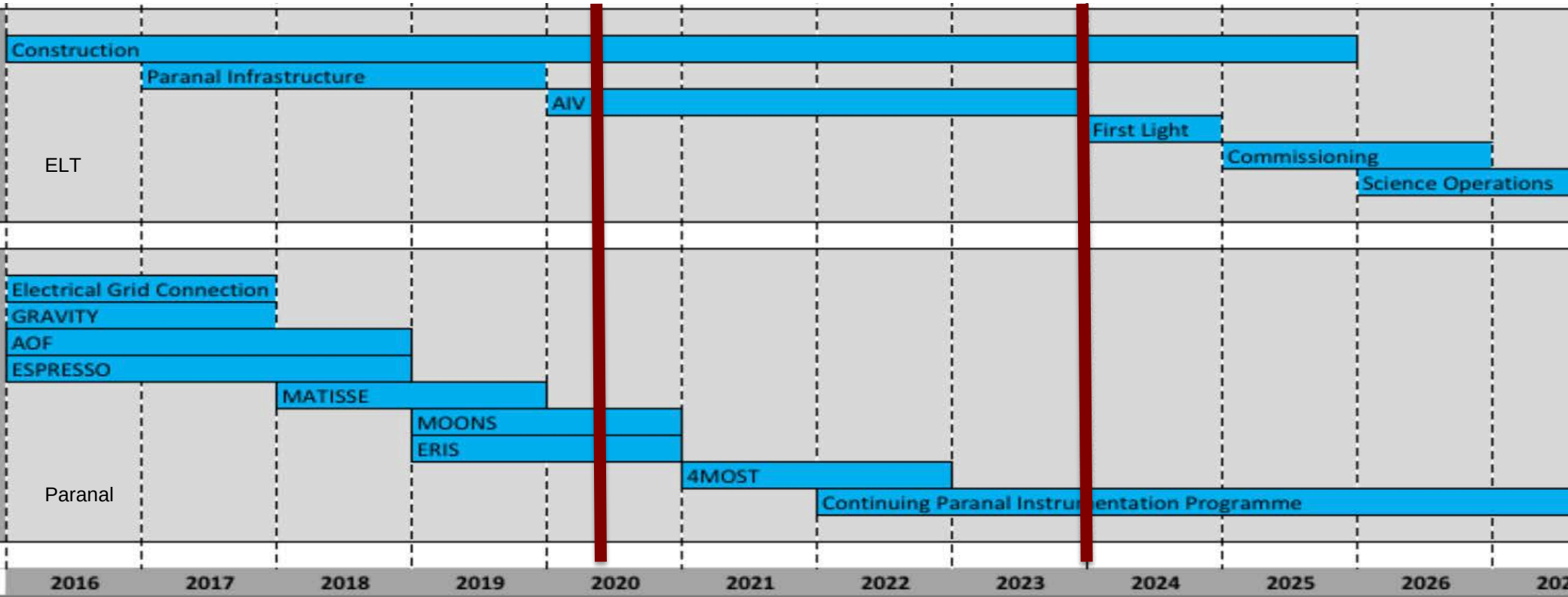
Department priorities between 2017-2026

Absorb new VLT systems
while continuing to gradually evolve VLT operations model

Optimise core operations of a mature VLT
to free up resources for further strenghtening high level support to ESO's mission: ELT preparation and VLT instruments

Early and strong involvement in ELT commissioning
taking advantage of accumulated VLT expertise in PSO and previous participation to ELT preparatory phase

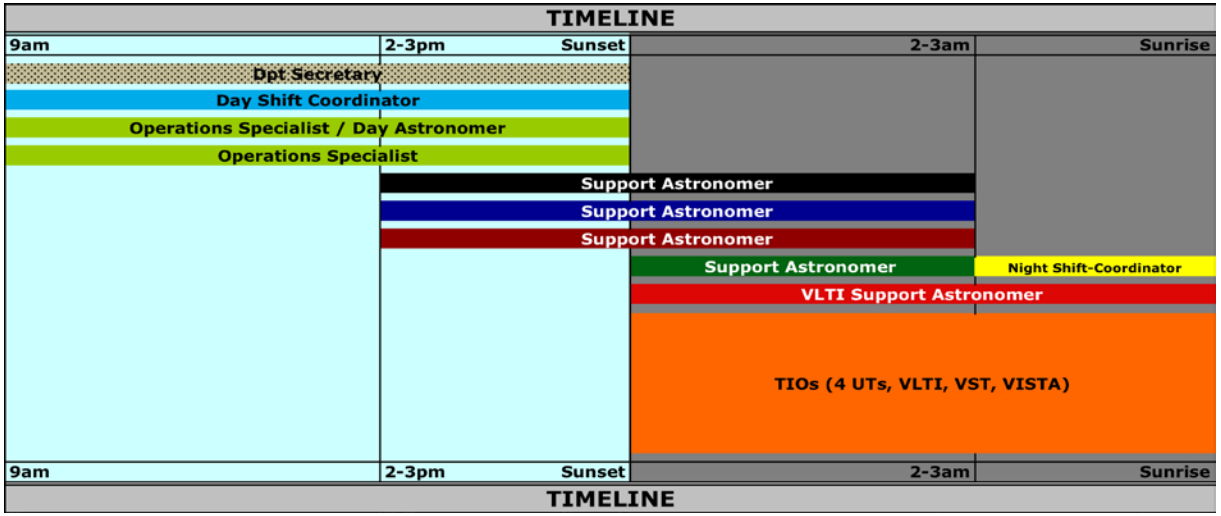
Kaufer (2016)



Paranal-Armazones Science Operations (PSO) in the context of the ESO Long Term Plan

2017-2021:

- Absorb new VLT systems
  - Gravity, AOF, ESPRESSO, Matisse, CRIRES+
  - ERIS, 4MOST, MOONS
- Continue to evolve operations model
  - 2017:



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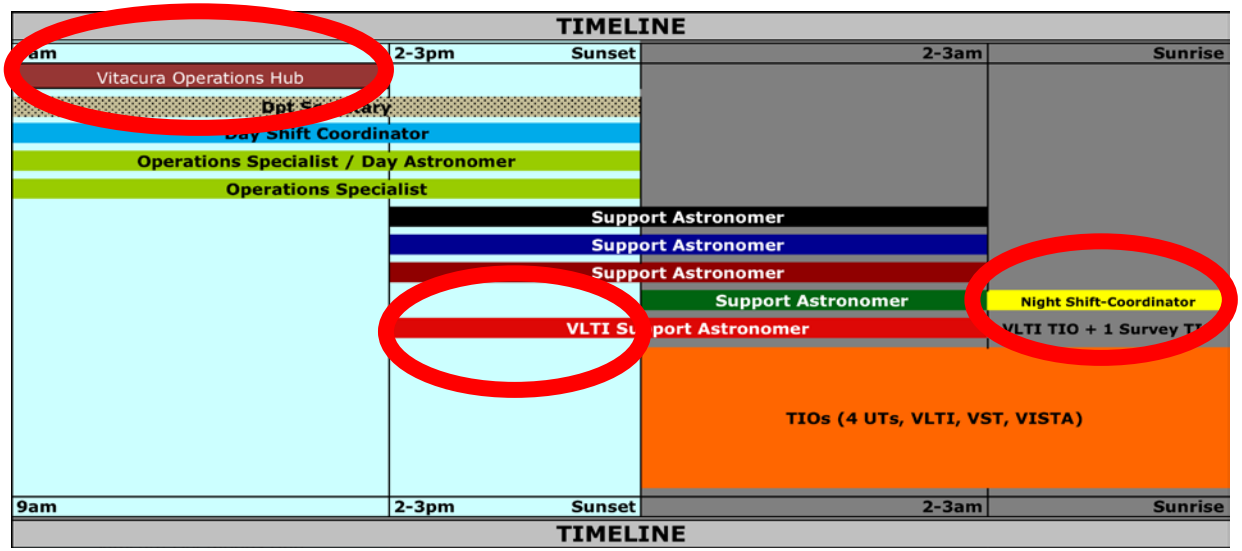

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- Define ELT science operations plan

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Natural evolution of the distributed nature of Paranal Science Operations

- Surveys 100+
  - Single operator drives both survey telescopes VST & VISTA in the second half of the night
  - Was the originally envisaged operations model, but not implemented due to insufficient system stability
  - Systems have become more stable in the last years, and operational tools have evolved
  - Dry run starting in Dec. 2017
- In staff schedule, distributes one of the TIOs in the second half of the night to the system most in need
  - e.g. VLTI, AOF

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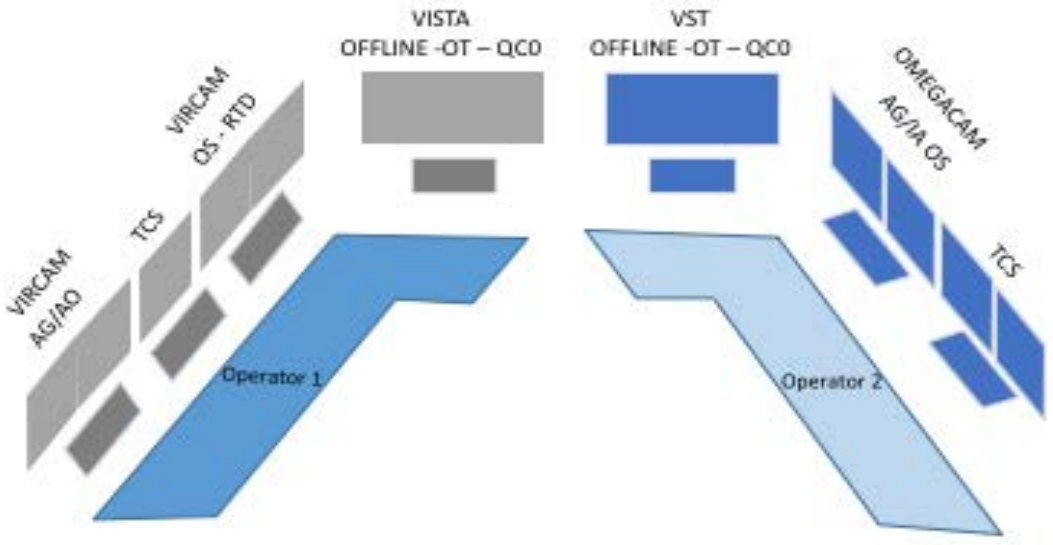

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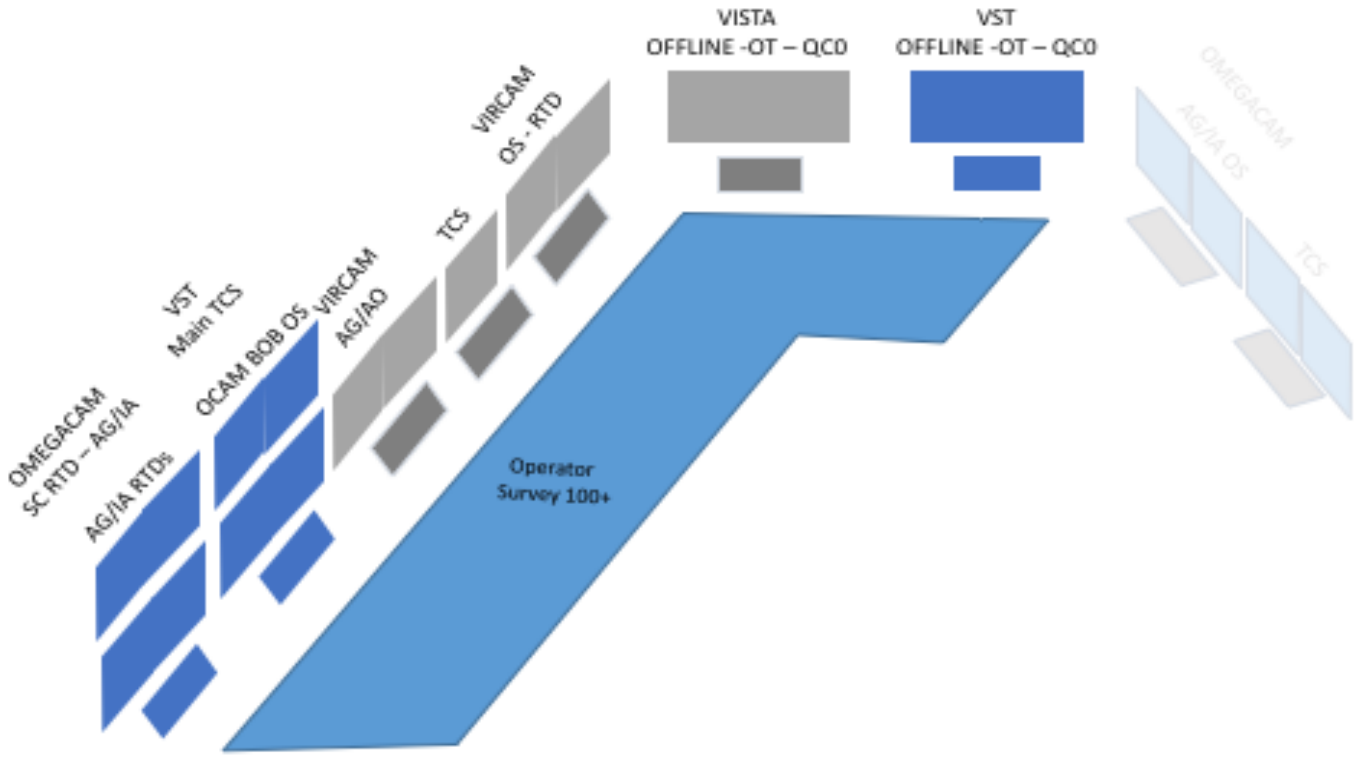

Natural evolution of the distributed nature of Paranal Science Operations

- Operations Hub
  - Quality control of science data and instrument performance monitoring
    - Natural link to QC group in Garching and PSO staff on the mountain
    - Participate to implementation of global QC evolution process
  - Physical room in ESO's Santiago office
  - Fraction of staff astronomer duty time to be spent here
  - Implementation of IT infrastructure (data processing, data transfer) to start in Q1/2018
  - To be merged with Remote Access Facility

Natural evolution of the distributed nature of Paranal Science Operations

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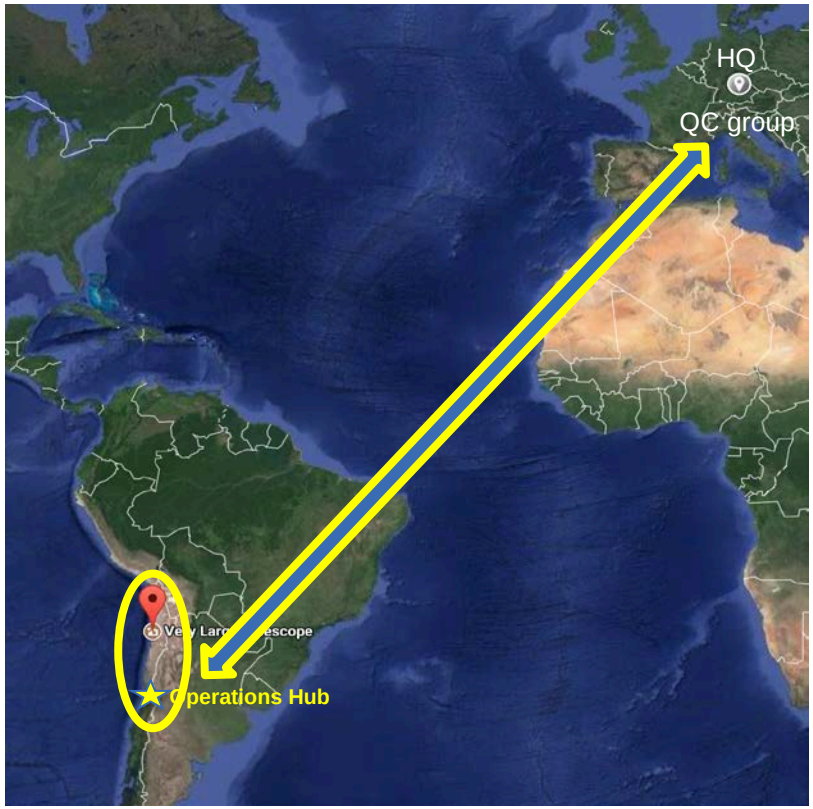
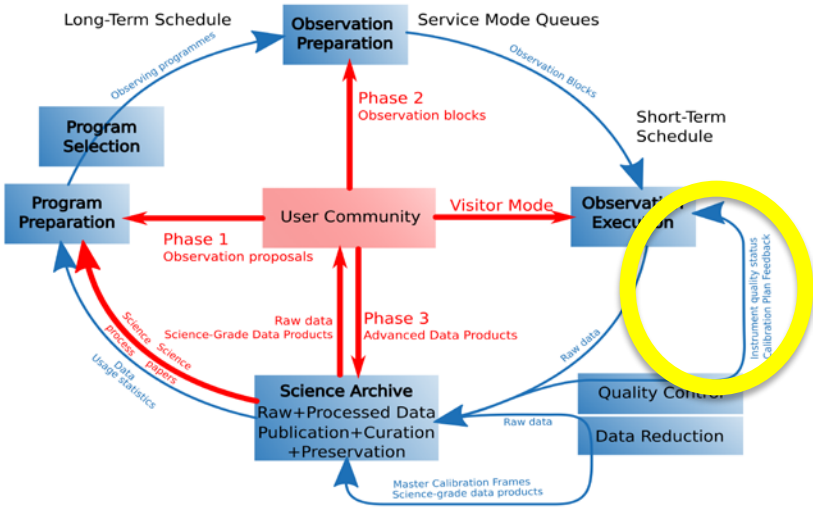
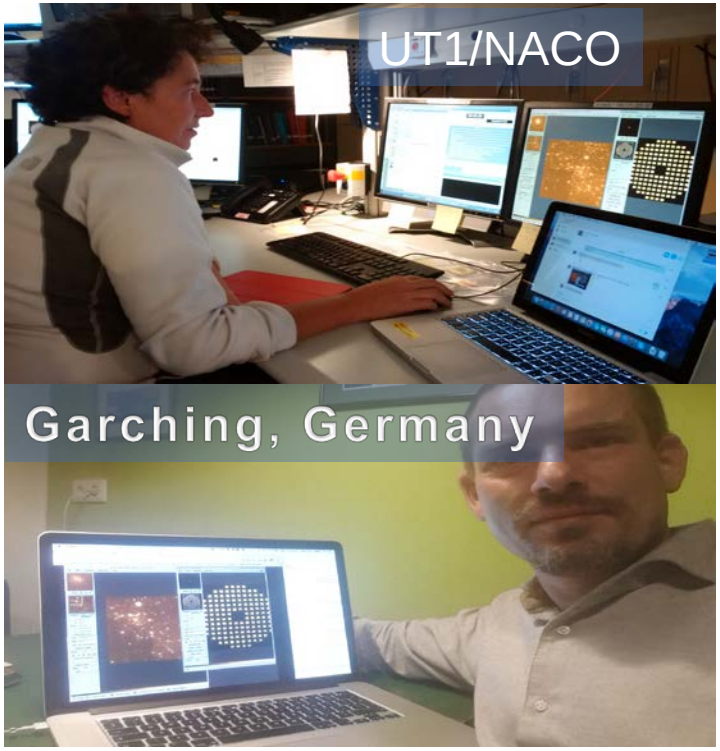
  - Quality control of science data and instrument performance monitoring





Natural evolution of the distributed nature of Paranal Science Operations

- Paranal Observatory Eavesdropping Mode
  - Live and real-time involvement of observers at home, during designated visitor mode observations



  - Officially offered since Oct. 1st, 2017

Natural evolution of the distributed nature of Paranal Science Operations

- Participate to preparation of ELT operations model
  - SciOps 3.0: merge ELT SciOps requirements with (evolving) VLT operations model
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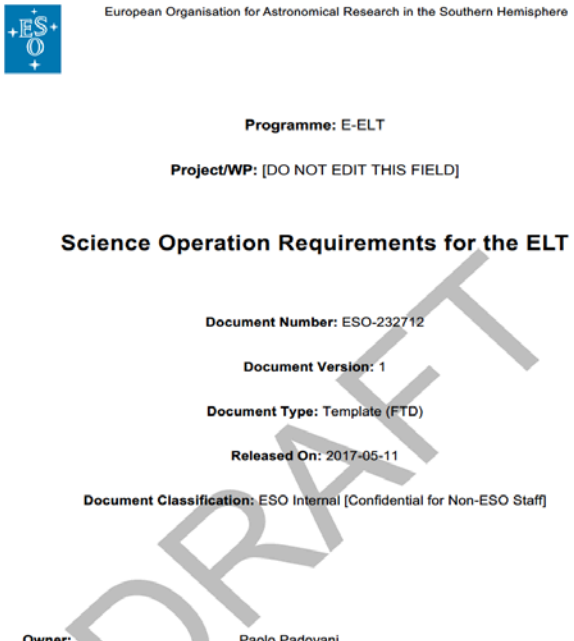
European Organisation for Astronomical Research in the Southern Hemisphere

Programme: E-ELT

Project/WP: [DO NOT EDIT THIS FIELD]

Science Operation Requirements for the ELT

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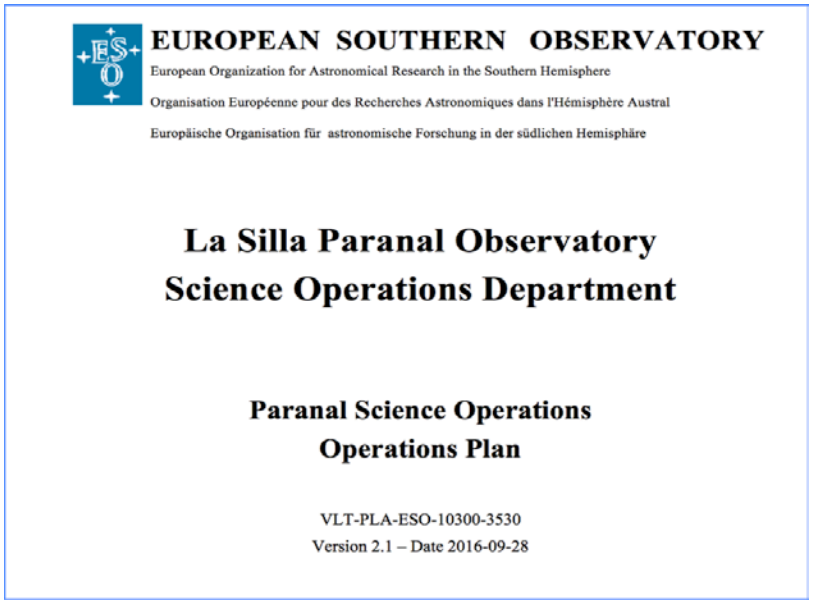
EUROPEAN SOUTHERN OBSERVATORY

European Organization for Astronomical Research in the Southern Hemisphere

Organisation Européenne pour des Recherches Astronomiques dans l'Hémisphère Austral

Europäische Organisation für astronomische Forschung in der südlichen Hemisphäre

La Silla Paranal Observatory
Science Operations Department

Paranal Science Operations
Operations Plan

VLT-PLA-ESO-10300-3530
Version 2.1 – Date 2016-09-28

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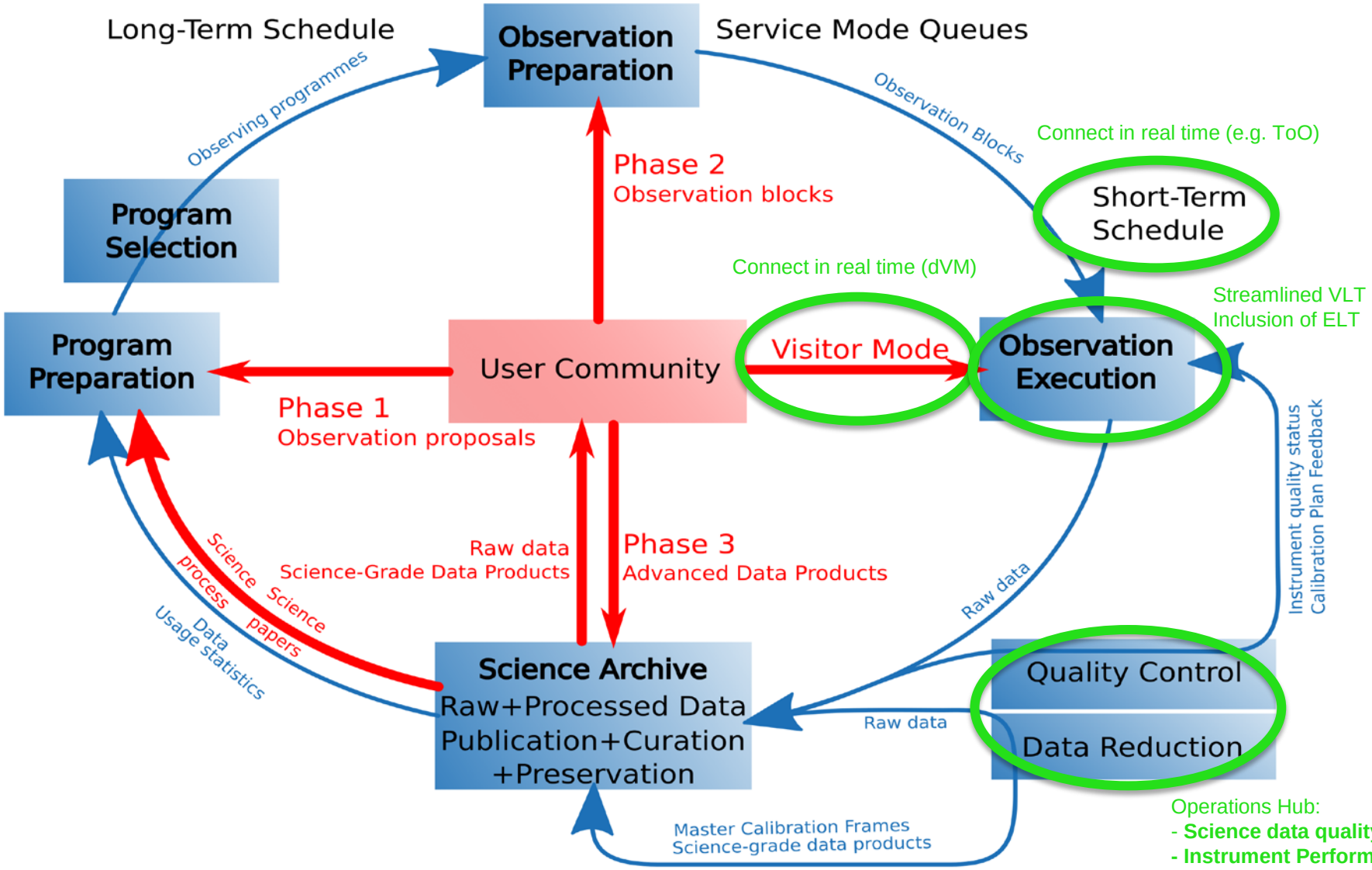
- Participate to preparation of ELT operations model
  - SciOps 3.0: merge ELT SciOps requirements with (evolving) VLT operations model
  - formal kick off meeting held in June 2017
- **Preliminary requirements include:**
  - ~3 hour forecast of relevant atmospheric conditions
  - interruptible / more flexible OB structure
  - stop integrating once requested S/N is reached
  - on-call visitor mode
  - more flexible adaptation to changing sky transparency conditions

Paranal-Armazones Science Operations (PSO):
towards a more distributed model



Paranal-Armazones Science Operations (PSO) in the context of the ESO Long Term Plan

2020-2024:

- Optimise core operations of a mature (but non-obsolete) VLT to free up resources for further high level support to ESO's mission
- Opportunities to optimise core operations:
  - Internal:
    - Automatization and synergies
    - Re-think VLT control room concept and operational workflows
    - Consider moving from a monolithic concept based on single system coverage (e.g. 2 staff jointly cover 1 system) to a more distributed model (e.g. 3 staff jointly cover 2 systems)
    - Use experience gathered from ongoing internal PSO projects that include control area redistributions (Surveys 100+, VLTI SciOps 2)
  - External:
    - ESO-VST operations may cease beyond 2021
    - VLT time allocation policy may evolve (more surveys / LPs?)
    - VLT instrument suited will be more stable