

# PLATO Follow-up coordination

## Specification and Development proposal

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**Abstract:** The follow-up programme of the PLATO mission faces the problem of efficiently distributing and planning the observations among all observatories. Here we report our proposal of a PLATO follow-up target distribution architecture that will be able of coordinating the ground-based observations in an adaptable, reliable and efficient manner.

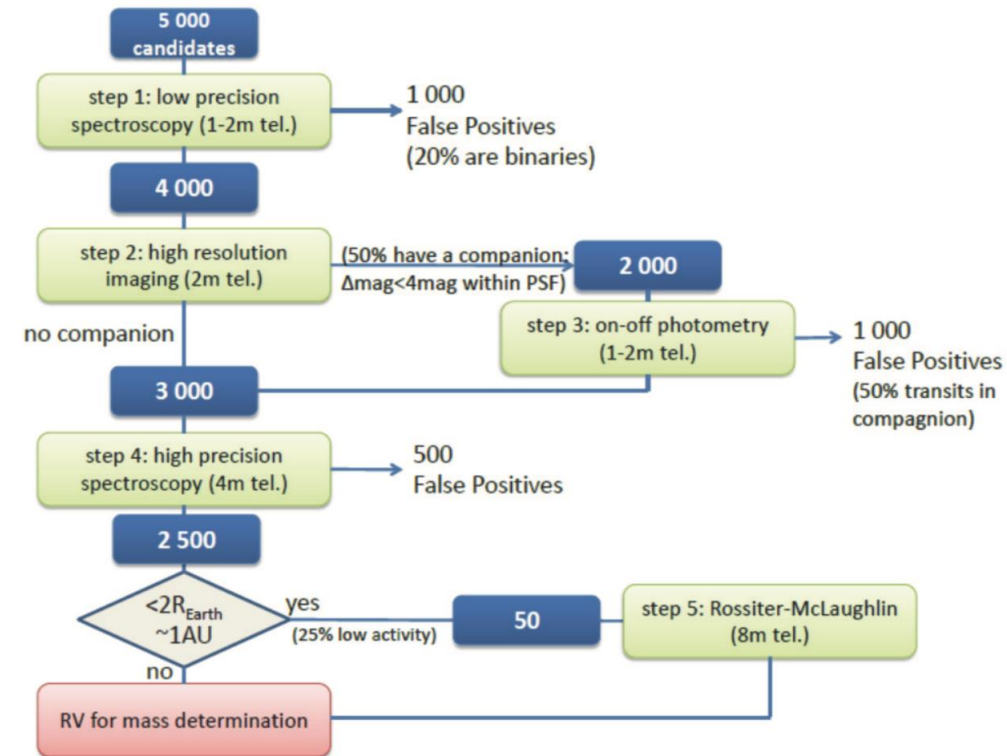
# Context: Hierarchical approach

**Mission-critical** part of the PLATO mission:

- Confirm/complement the satellite's observations
  - 20+ facilities with different sky visibilities, weather, availability patterns, etc.
  - 22000 hours of observations with a heterogeneous collection of telescopes and instruments
  - Various scenarios:
    - Redundancy (critical events)
    - Consistency of time series
    - Cross-checking
    - ...



**Automatic & dynamic  
planning is essential  
Optimization is a big plus**

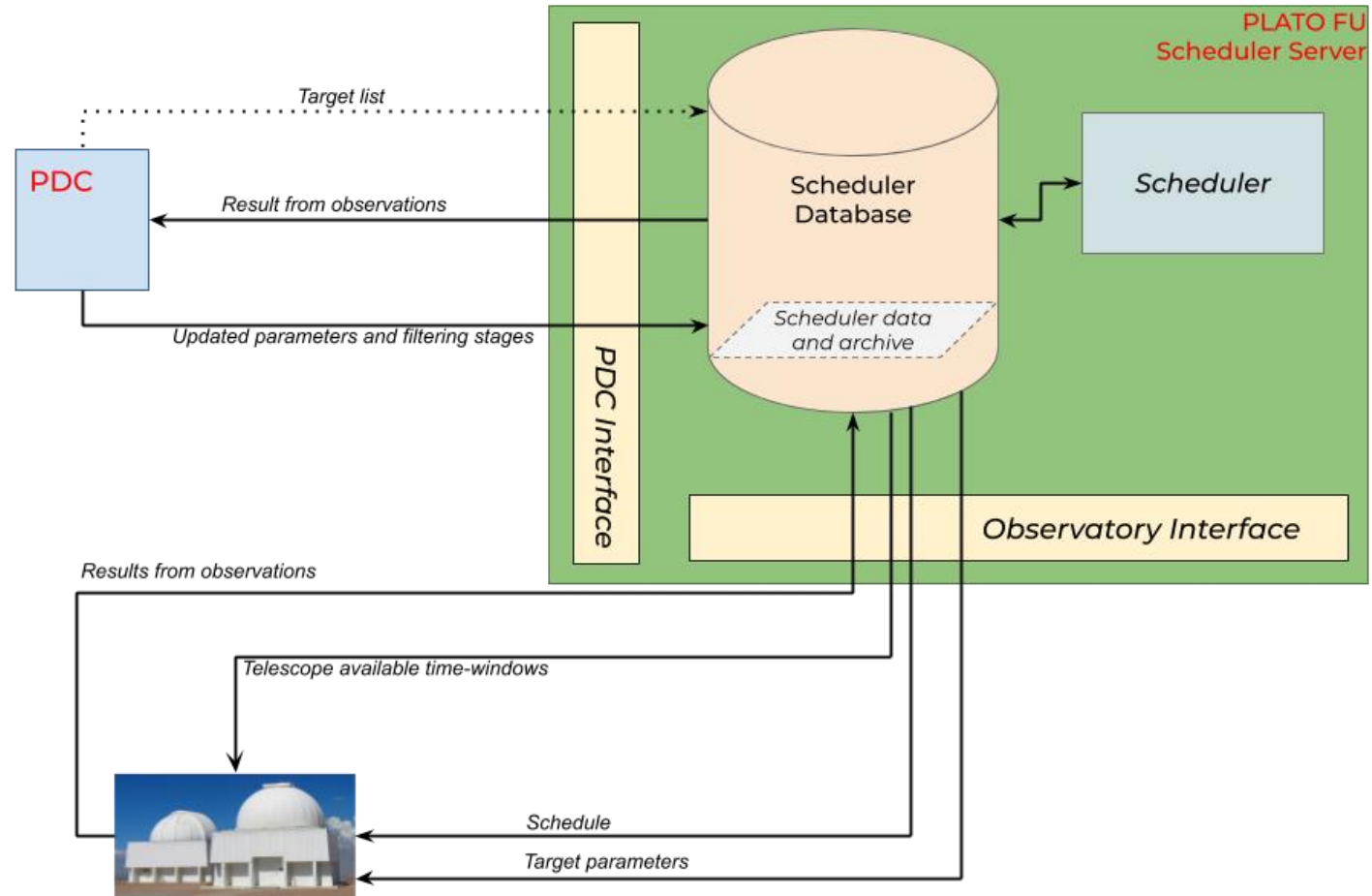


*PLATO Definition Study Report (2017)*

# Description of project

## Architectural design project

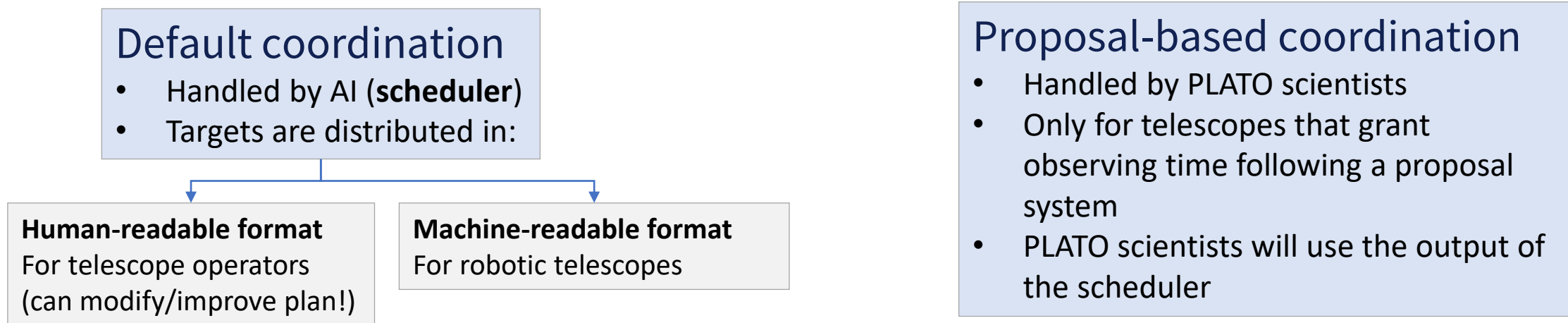
Built on top of our expertise on observatories and their scheduling



# Coordination between observatories

## Coordination protocols

How will the target distribution be coordinated?



The scheduler algorithm will be built upon the IEEC's expertise on similar projects:

- CTA
- ARIEL
- CARMENES (Calar Alto telescope)
- Others: Joan Oró, Colibrì, ...

# Observatories and the follow-up

## Use cases

How will the telescopes interact with the target distribution architecture?

### Fully dedicated observatories

- Full and immediate availability
- Must report down time

### Fixed-window observatories

- Only partial availability
- Must report available time (TBC 24h in advance)

### Non-fixed-window observatories

- Only partial availability
- Observations can be carried out at observatory discretionary time

### Limited-involvement observatories

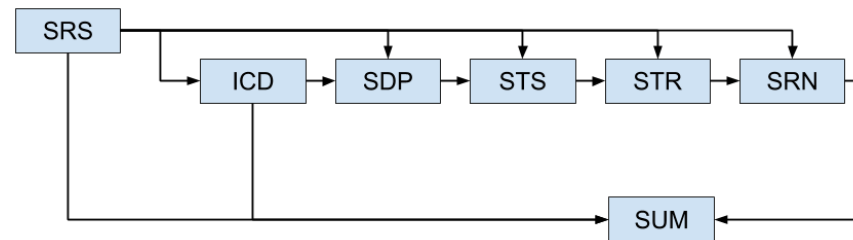
- No formal involvement with the follow-up
- Reserved for PI in proposals to outside observatories

Higher on the list: More commitment  
But more critical targets!

# Development plan and impact

## Timeline

- Compilation of a specifications and development proposal plan
- **Review and acceptance by the PLATO consortium**
- Elaboration of the full documentation



- Implementation of the scheduler algorithm
- Implementation of the target distribution architecture

## Impact

Large impact: The PLATO follow-up is **mission critical**

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