

IOSDC

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Uplink Software
On-Board Software
Command and Telemetry
Definitions
Uplink Calibration Data
Building Blocks
Uplink Template Scripts

Long Term Schedule

Calibration and Core Science
Observations

SOC

Uplink software generation
infrastructure and tools

Observation and proposal
handling system

Observations Database

Uplink Software Storage and
Configuration Control

Mission Planning System

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Data Processing System

Code Infrastructure
Processing Software
Calibration Data
Quality Control Pipeline
Change Tracking (ticketing)
System
Software Storage System
Software Build System

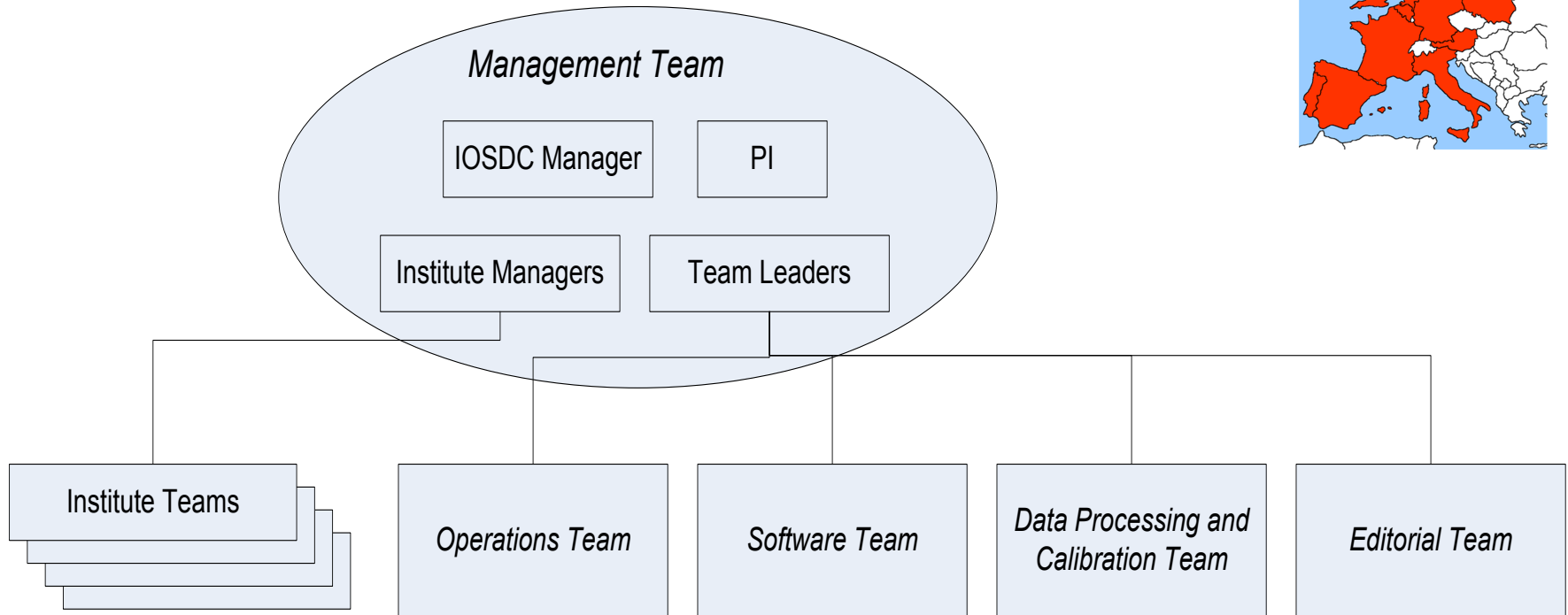
SOC

Telemetry Storage

Data Processing Hardware
e.g. ESAC Grid

Processed Data Archive

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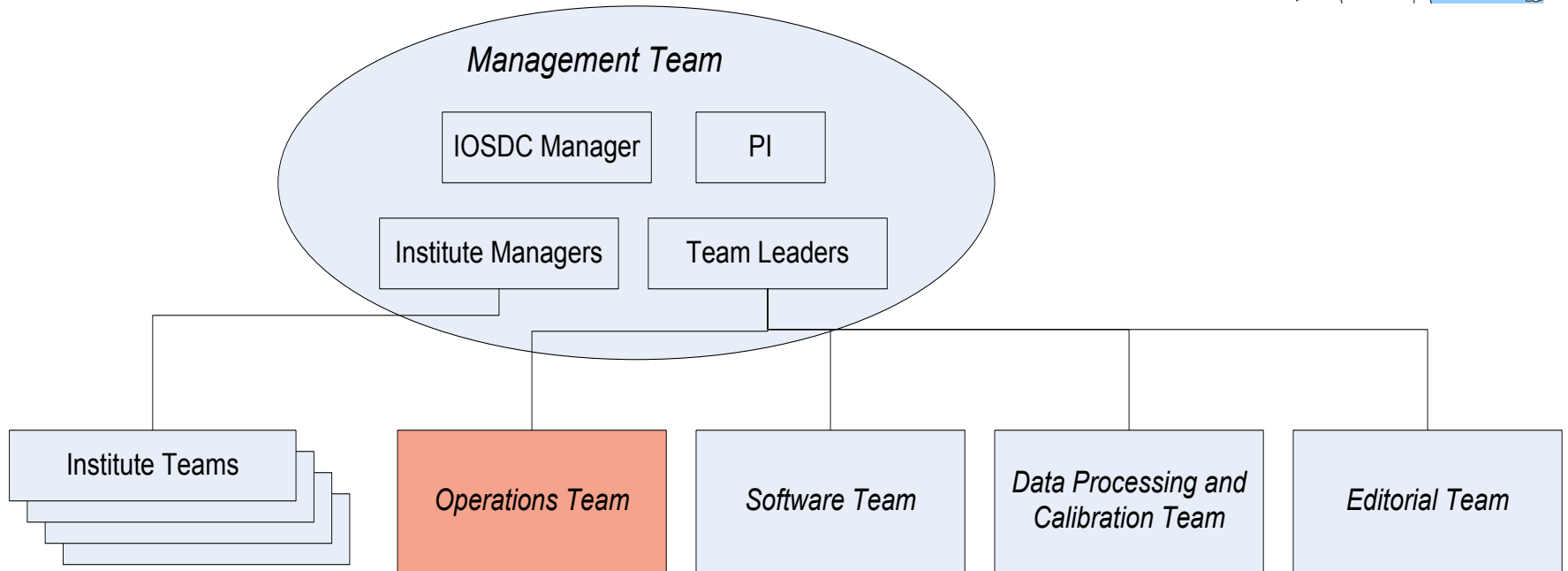


- Widely distributed team
- Organised functionally - heritage from Herschel
- Individual institutes contributing effort to more than one team
- Staff can contribute to more than one team

Working as a single centre

- Structure based on successful implementation with *Herschel-SPIRE*
- Information
 - Held on-line – accessible from any IOSDC location
 - Documents, team meeting agendas and minutes, some software and data products, procedures etc
- Whole IOSDC Meetings
 - Video/Telecons about every 2 weeks
 - Co-locations about every 6 months
- Individual Team Meetings
 - Held separately
 - Also about every 2 weeks, some less frequent
 - Team meetings held face to face during co-locations

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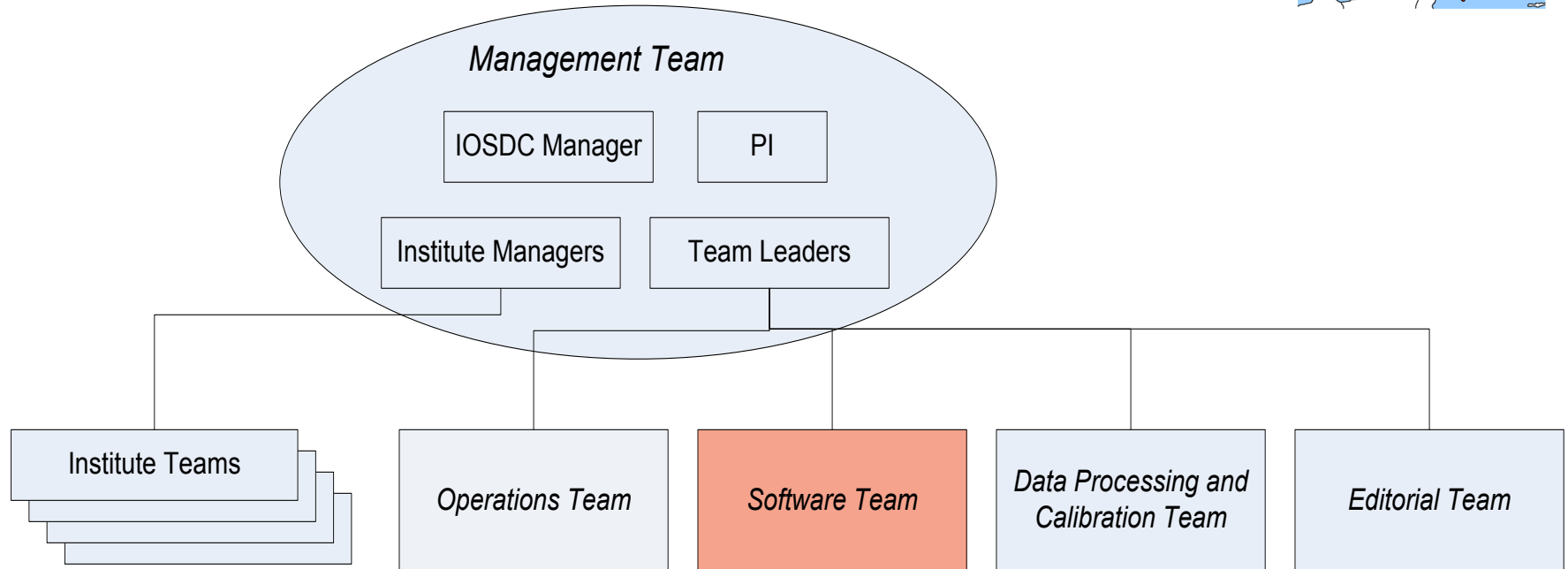
Operations Team

- Uplink Software and Manuals
 - On-Board Software
 - Command and Telemetry Definitions
 - Command Stacks, Building Blocks
 - Observation Templates (Standard Modes and Calibration Modes)
- Scheduling
 - Long Term Scheduling (core science and calibration)
 - Visibility checks
- Observation Deliveries
 - Population of templates for both core science and calibration observations
 - Delivery to SOC

Operations Team

- Instrument Commissioning
 - Functional Tests
 - Engineering Tests In Flight
 - Commissioning Phase
- Instrument Monitoring
 - Health Monitoring
 - Logging
 - Trend Analysis

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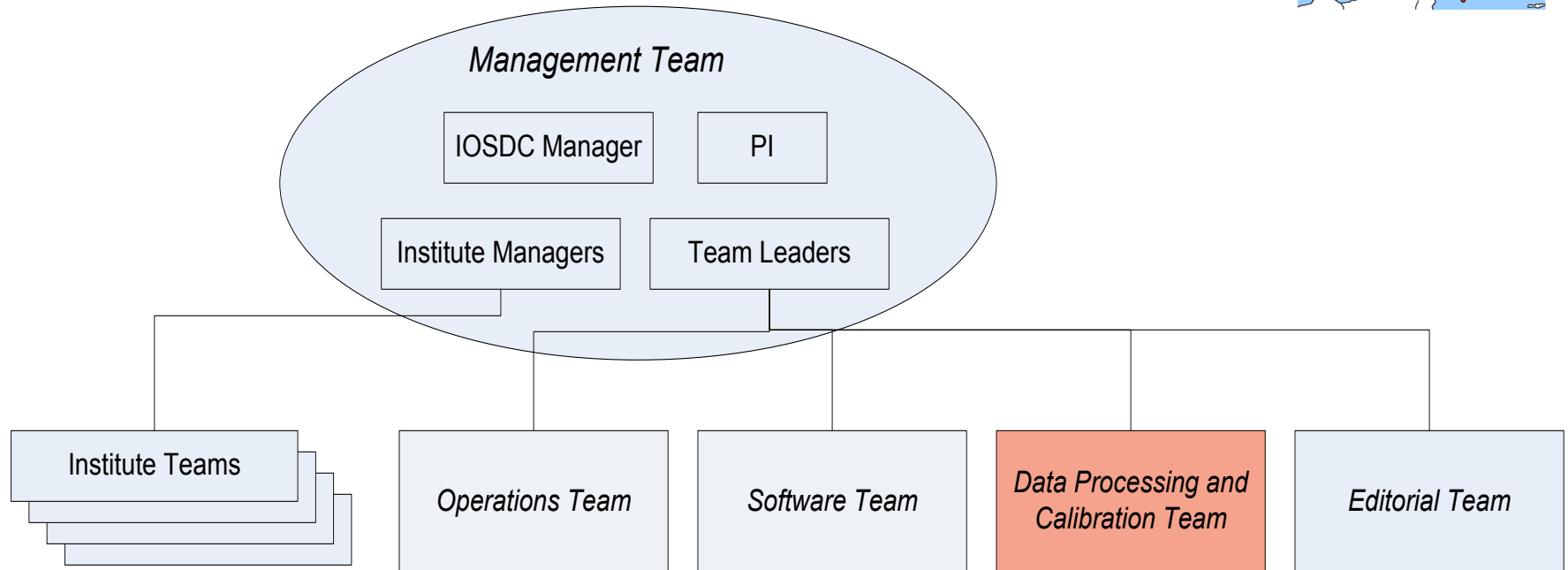
Software Team

- Software Lead/ Architect
- Software QA
 - QA Lead
 - Configuration Control
 - Ticketing System Manager (Software problem reports and change requests)
- Software Systems
 - Data Processing and Uplink Software Storage System
 - Software Build System (Data Processing)
 - Ticketing System
 - IOSDC Website

Software Team

- Software Engineering
 - Simulations
 - Data Processing Infrastructure
 - Data Processing Software
 - Quality Control Software
 - Quick Look Analysis (to support instrument testing)
- Systems Maintenance
 - Database management
 - Propagation of data from SOC
 - Systems management (at institutes)
 - Backups, software updates...
- Developer Documentation

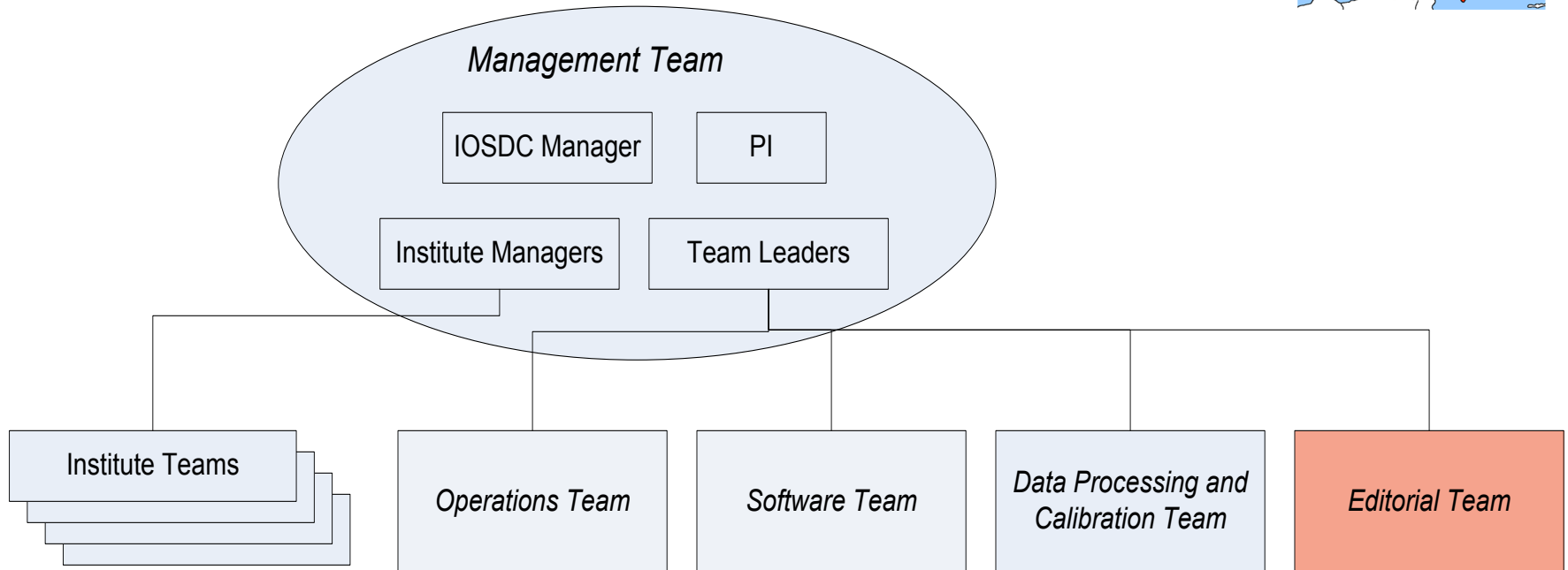
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Data Processing and Calibration Team

- Requirements
 - Data Processing Algorithms and Flow
 - Data Products (Information Content)
 - Data Quality Control
 - Quick Look Analysis
 - Calibration Processing
- Observations Definition
 - Calibration and Core Programme
- Calibration Definition
 - Calibration Requirements and Plan
- Data Analysis

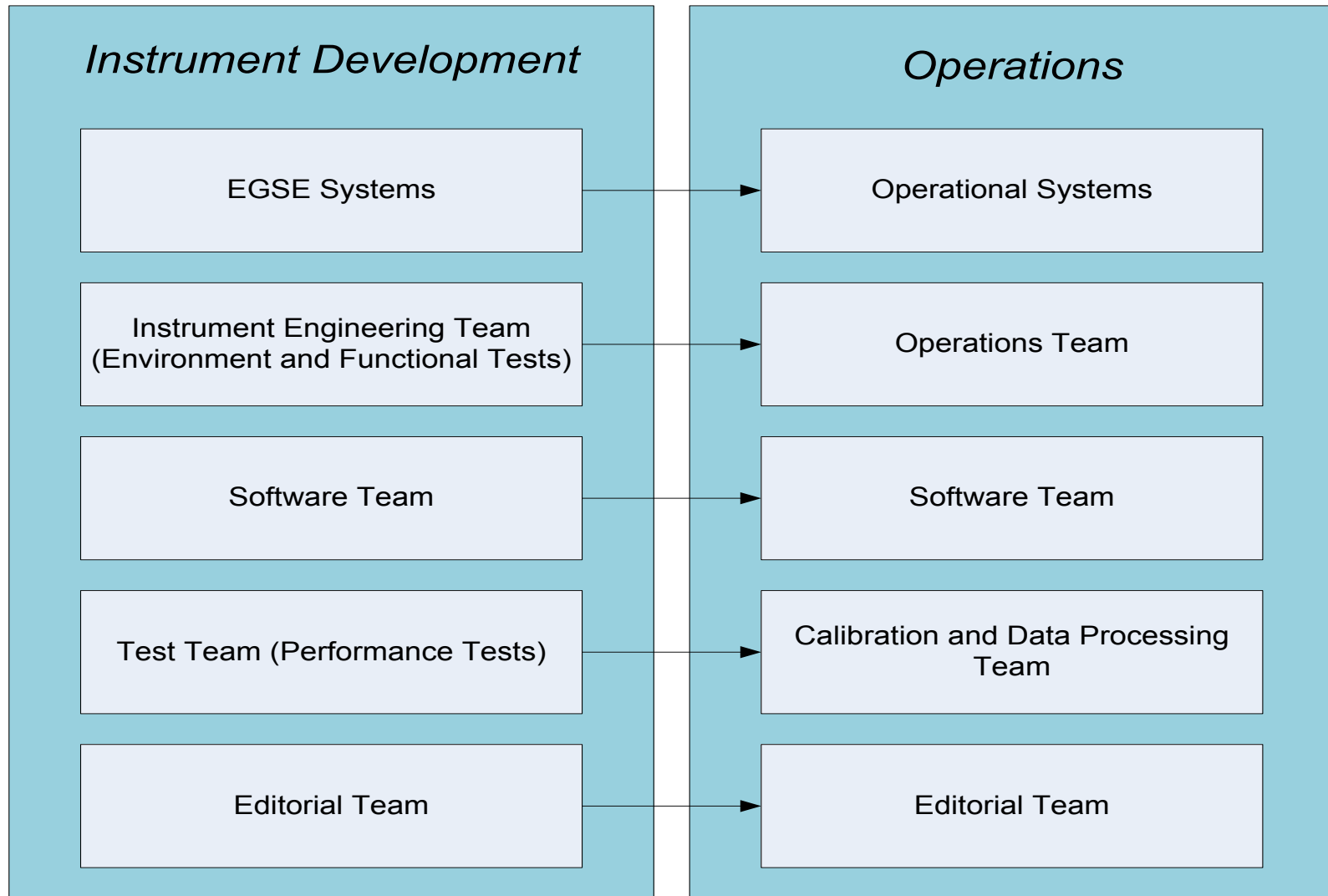
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Editorial Team

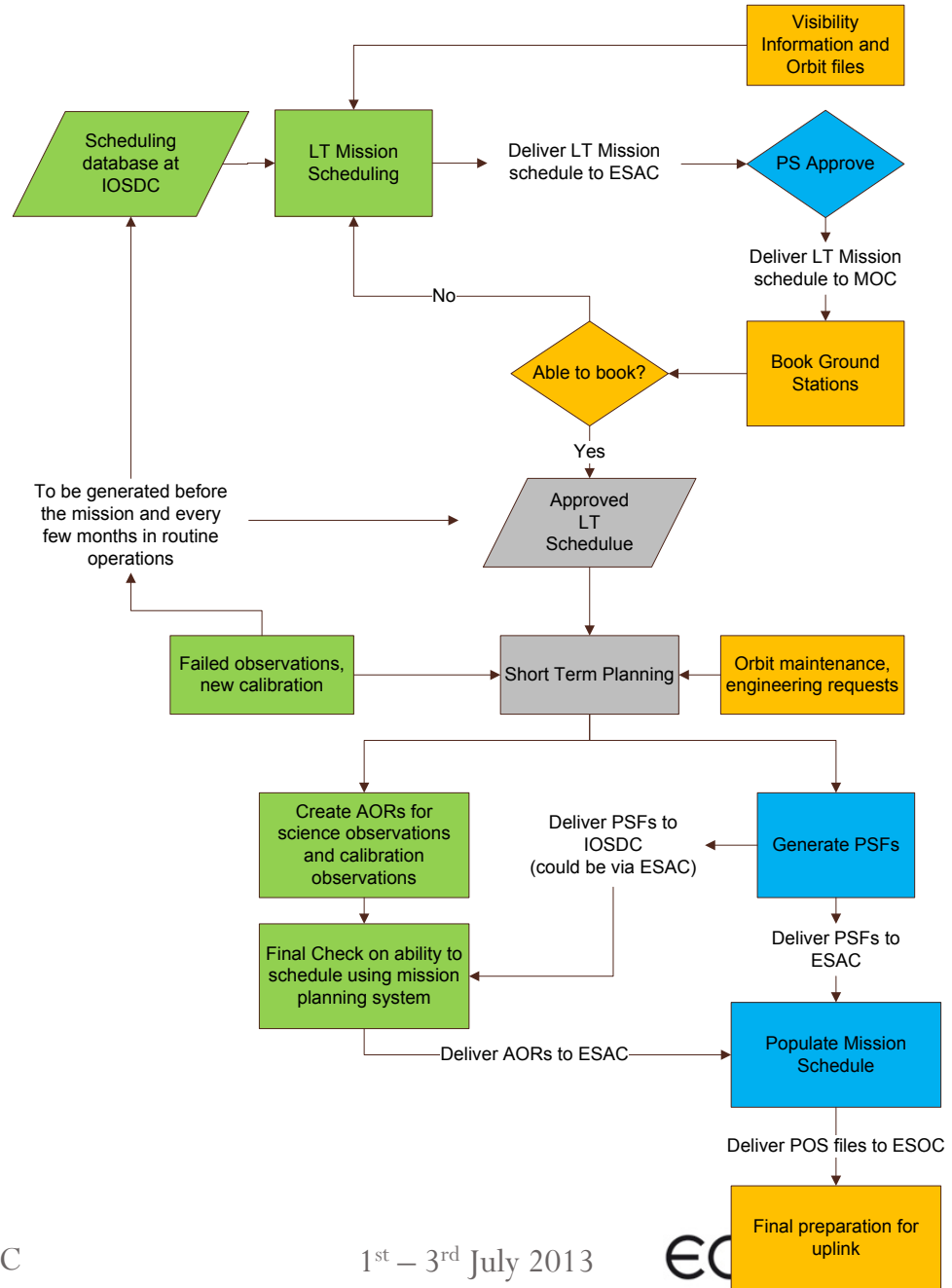
- IOSDC working website –Wiki
 - Team Areas
 - Team documents, Meeting agendas and minutes etc.
 - Internal Documentation Store
 - Other useful information such as contact details, team availability
- Information for the Community
 - Observers Manual
 - Data Users Manuals
 - Pipeline Description(s)
 - Guide to Data Products
 - Data Reduction Guide
 - Data
 - Observing Logs, Health Monitoring and trend data

Development – *Smooth Transition*

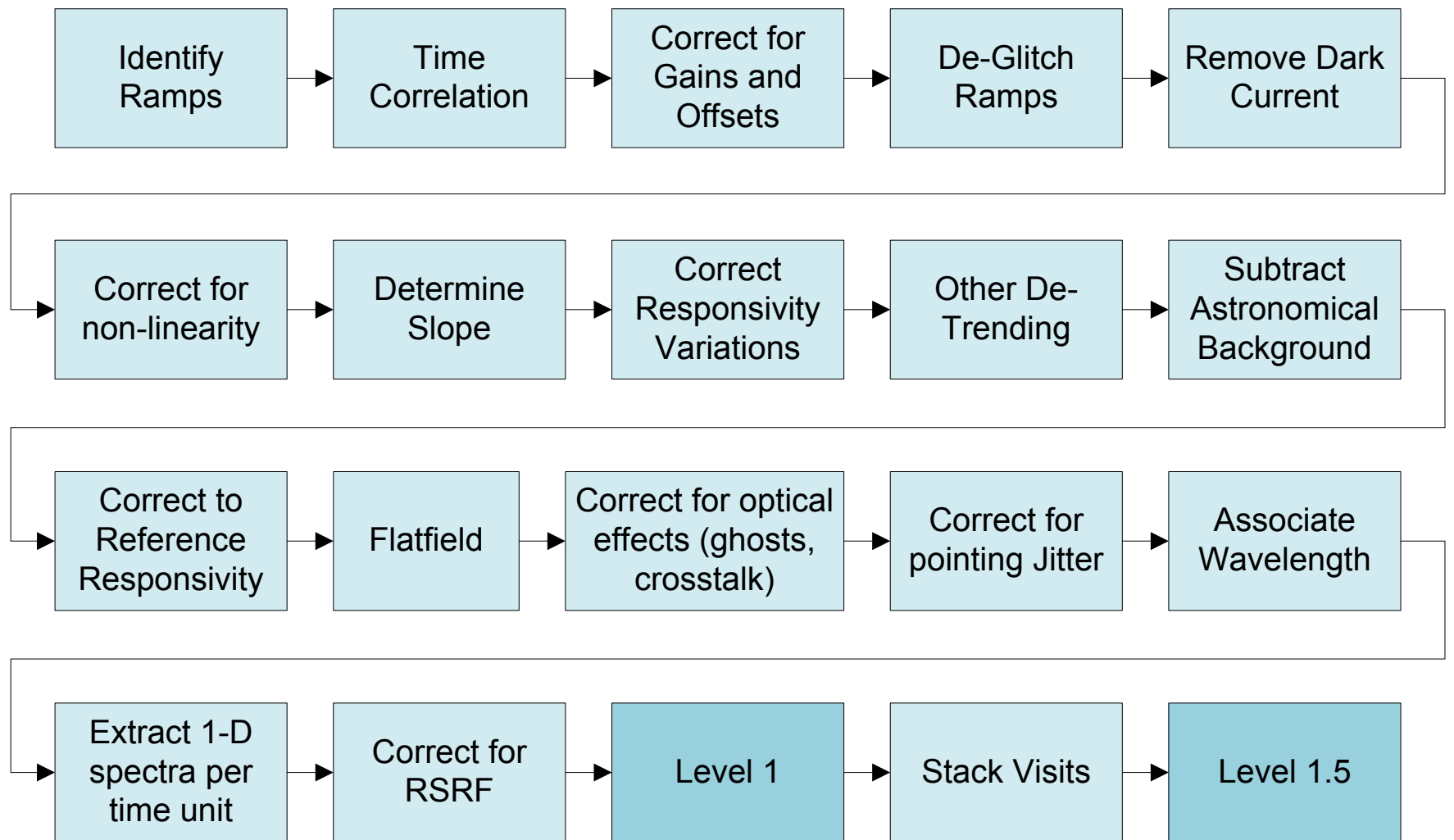


Mission Planning

- A mission of fixed time observations
- Priorities, target list agreed by science team
- Fed into IOSDC long term planning tool along with calibration observations
- Long Term Plan delivered to Science Operations Centre (SOC)
- Iteration with Mission Operations required to optimise ground station bookings
- Final delivery includes observations checked using mission scheduling tools provided by SOC
- *See later talks*



Data Processing – Simple View



Summary

- Highly experienced team
- IOSDC organisation based on what has worked before
 - Aim is to maximise communication across IOSDC
- Plan to adopt a smooth transition from development to operations
- Work has already started in several areas:
 - Operational modes and scenarios
 - Long Term Scheduling Tools
 - Instrument simulations and de-trending studies
 - Data processing definition
 - Calibration definition