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Issue	Date	Page	Description Of Change	Comment
0.1	20/07/10	All	. First draft	by AR and JLA
0.2	21/07/10	All	. Update to incorporate ECB comments from 20/7/10 meeting	by AR
0.3	26/08/10	Sects. 8 and 6.5, and all	. Addition of tables for responsibility share (Sec 8) and incorporation of comments by F. Pasian, Y. Mellier, L., T. Levoir, L. Valenziano and R. Butler and from ECB telecons	by AR
0.4	08/09/10	Sect. 8	. Incorporation of responsibility share entries following ECB+PM meeting on 31/8-1/9/10 and DPTG+ECB meeting on 8/9/10	by AR
0.4.1	08/09/10	Sect. 8	. Notation clarified in section 8.5 GS table and proposition for Science Group included	by AR
0.4.2	14/09/10	Sect. 8	. Update of the section 8 Science and GS tables following comments on v0.4.1	by AR
0.4.3	22/09/10	Sect. 8	. Science Group and SGS tables updated following ECB discussions	by AR
0.4.4	22/09/10	All	. Minor changes following comments	by AR
0.5	04/10/10	Annex, Sects 8.5, 10 & prev.11	. Annex added, Resp. sharing for GS in Sec 8.5 finalised, Publication and Membership policy sections merged and updated	by AR
0.6	22/10/10	All	. Sections completed, updated and added	by JLA and AR
0.7	26/10/10	All	. Includes V0.6 comments received	by JLA and AR
0.8	27/10/10	All	. Includes v0.7 comments received	by AR
0.9	07/07/11	All	. Major changes for Solicitation from YM, JLA	by YM
1.0	12/07/11	All	. Updates	by YM
1.1	27/07/11	Sect. 9.3.3	. Completion EST table	by YM
1.2	05/09/11	Sects 6.5, 6.7, 9 and 11	. Update SGS management section and Figure in 9.1 . Update Cosmology Coordinators . Add EC membership rules	by YM

1.3	30/12/11	All	. Update ECB, ECL, Mission System Engineer, ECL Advisory and Coordination Support, new SGW leads, new OU-VIS lead, Mission Survey Scientist . Add Michel Berthé . Include Steering Committee . Include Calibration Working Group . Add Portugal in 9.2.12 and in 6.1 . Add Mission Survey Group . Update acronyms . Country symbols in ISO 3166 . New fig. EC organisation . Homogenise item-isation and indentation (still problem in Duties of Section 11)	By JLA and YM
1.4	07-12/01/12		. Updates . Add Portugal and ECB/PT in 9.3.1 . Re-organization of sections . Interface sub-sections more detailed. . Re-shape tables . All figures re-done and homogenised	By JLA and YM
1.5	13/01/12		. Clarification roles/resp. of ECL, EACSL, Mission Sys. Eng., Calib. Group . Updates figures, tables	By JLA and YM
1.6	22/04/12		. Updated names of key positions . Update Section 6 on Calib. Group . Few rewording in ECL sub-sections . Update on SWG Coordinators . Update of Section 11.	By MB and YM
1.7	19/05/12		. Changes of SWGs “Nearby Galaxies” and “Milky Way into SWGs “Local Universe” and “Milky Way and Resolved Stellar Populations”: text, tables and figures updated. . Update: OU-VIS Deputy Lead. . Update : SWG, SWG/OU and EST sections.	By MB and YM
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1.9	30/06/12		. Update VIS team members . Precision on membership in Section 11	By YM

2.0	17/07/12		. Cleaning for EC public release. . Suppression comment on narrow band filter for VIS.	By YM
2.1	28/12/12		. Update ECB members: Jason Rhodes as ECB full member; . Eugénie Girin: ECL-Support . Sabrina Pottinger as future VIS PM . Update new SWG Coordinator spokeperson (rolling position): L. Guzzo replaced by T. Kitching . Update Cerna replaced by Clémens	By YM
2.2	28/01/13		. Update scope. . Update names leads. . Update COMS organisation . Clarification membership policy in Sect. 11	By YM
2.3	31/01/13		. Update VIS PA manager	By YM
2.4	07/02/13		. Clarifications about SWG organization: update Sect. 6.5 . Update figure 6.2 and new 6.3 added for illustration. New table 9.3.5 for SWG. . Text in Sect. 6.1 about NASA/US updated.	By YM
2.5	15/03/13		. Update Section 7.4 (COMS): updated text by the COMS group. . Update SWG table (M. Irwin replacement) . Adding C. Grenet in ECL Support table. . Adding Section 9.2.14: USA contributions.	By YM
3.0	30/04/13		. Major updates to be in line with the Project Management Documents of ESA and the Euclid Publication Policy documents issued in March 2013. . Add missing cadence meeting PMs+AECSL+ECL . Update after April 10 Steering Committee . Change Fig. 6.2 in line with EC Pub Policy document. . New figure added (Fig. 10.2) Section on ECEB and on NCPs added . New table set: ECB, NCP, NPM	By YM

3.01	18/05/13		. Update Deputy OU-MER	By YM
3.02	30/05/13		. Update: changes in EC Pub. Policy documents and Contribution Level. . Fig 6.1, 6.2 and 10.1 updated . Document references updated . Correct an inconsistency found by Sami Niemi . Table of ECMC members added . Table of ECEB members added . Sections and Table of Content corrected	By YM
3.03	26/07/13		. Update title	By YM
3.04	25/04/15		. Update reference and applicable documents . Update mission and instrument description . Update leads: A. Zacchei, replacing F. Pasian; S. Niemi leaving . Update country: Belgium tasks and A. Füzfa Belgian ECB . Update organization: ECB, COM . Update: new SWG WP document	By YM
3.05	15/02/18		. Update ECB member list, . Update EC lead names, . Add SSO to SWG list, . Update Publication Level Table.	By YM
4.00	19/02/20		Update document and lists	By JR and FJC
4.01	14/05/21		Update document and lists	By YM
4.02	22/07/21		Update document and lists	By YM, JR and FJC
4.1	12/01/22		Update membership section	By MS and FJC
4.2	21/01/22		Update membership section	By FJC
4.2.1	23/01/22		Minor changes membership section	By FJC. JR, YM
4.2.2	24/01/22		Minor changes membership section	By MO, FJC
4.3	1/06/22		Added ECC	By JR
4.4	5/10/22		Clarified SWG lead rotation schedule and procedure; outlined SCG duties SCG/SWG decoupling	By JR and MS
4.5	03/05/23		Added ILS membership category	JR
4.6	17/05/23		Added SCG rotation scheme	JR

4.7	02/09/2023		Changed Coms structure; changed he/she to they; added membership level at 1 FTE and updated membership level descriptions	JR
5.0			Change him/her to they. Split external and internal coms, put them in appropriate sections. Remove section 8 on 'EC managers' (redundant). Update Logo and org chart. Update ECB role. Updated ECCG description. Clarify IST selection process.	JR and DM with input from Jennifer Pollack, Audrey LeReun and Marc Sauvage
5.1			Update content of WP-5 for relevant countries	
5.2	24/07/24		Corrected a confusing typo in the contribution levels for authorship rights	

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1 Purpose and Scope

1.1 Purpose

This document is a description for the top-level Management Plan (MP) for the Euclid Consortium (EC). The MP defines the project management approach and methodology to be used throughout the life cycle of the mission by the EC.

This MP is based on assumed project requirements widely in usage in space applications which are mainly related to Management, Engineering, Product assurance and Programmatic requirements as well as specific requirements among else, model philosophy and geographical distribution.

This plan covers the roles and responsibilities of the EC members as well as the management processes for the consortium. Baseline schedule aspects and definition of the deliverable items, and the required deliverables from external bodies are covered as well.

1.2 Scope

This MP covers the following EC activities during the Euclid Implementation and operations and scientific exploitation:

1. The EC Steering and Management;
2. The Science activities related to the development and use of the instrument and EC ground segment;
3. The development of the VIS and NISP instruments;
4. The development of the Euclid ground segment share of the EC;
5. Communication and outreach activities (EC COM);
6. The EC membership policy;
7. The EC publication policy and EC member contribution level (together with the EC Publication Policy document [RD-14]).

This Management Plan can be updated with the approval of the Euclid Consortium Board.

2 Documents

2.1 Applicable documents

AD	Title / Author	Document Reference	Issue	Date
1	Solicitation to the Euclid Mission Consortium for a Documentation Package for the Implementation Phase	ESA/SRE(2011)10	1.0	29/04/11
2	Euclid Science Management Plan (SMP)	ESA/SPC(2012)19	2.4	24/04/13
3	Euclid Payload Element Requirement Document (PERD)	EUCL-EST-RD-3-002	1.0	18/04/13
4	Euclid Experiment Interface Document – Part-A (EID-A)	EUCL-EST-EID-3-001	2.0	24/07/14

1.

2.2 Reference documents

2.2.1 Euclid Project Reference Documents

RD	Title / Author	Document Reference	Issue	Date
1	Euclid System Performance Budget Document	SRE-PA/2010.077	2.2	21/03/12
2	Euclid Consolidated Report to Mission Analysis	MAS WP 533	1.3	26/01/11
3	Euclid Science Requirements Document (SciRD)	EUCL-EST-RQ-8-001	7.1	25/08/15
4	Euclid Mission Requirements Document (MRD)	EUCL-EST-RD-1001	1.1	16/02/15
5	Euclid Science Implementation Requirements Document (SIRD)	Euclid_SO_Dc_00006_SIRD	0.5	29/04/11
6	Euclid VIS Management Plan	EUCL-MSS-PL-6-006	1.1	26/09/13
7	Euclid NISP Management Plan	EUCL-LAM-PL-7-002	2.0	14/03/14
8	Euclid SGS Project Management Plan	EUCL-OTS-PL-8-001	2.0	30/10/15
9	SWG Work Package Description Document	EUCL-MSS-WPD-8-001	1.1	23/10/15
10	Proposition for Euclid Science Team Members	EUCL-IAP-PRO-00153	1.0	26/07/11
11	Euclid Mission Study Report (Euclid Red Book)	ESA/SRE(2011)/12	1.1	26/07/11
12	Euclid Document Management Plan	EUCL-IAP-EUC-PR-00223	0.1	20/12/11
13	The ASTRONET Infrastructure Road Map: A Strategic Plan for European Astronomy			2009
14	Euclid Consortium Publication Policy Document	EUCL-IAP-PUB-1-001	3.0	14/11/19
15	Euclid Consortium SGS Management Plan	EUCL-OTS-PL-08-005	2.0	30/10/15
16	Euclid Consortium Code of Conduct	Code_of_Conduct_v2.4	2.4	1/5/2023

2.2.2 ECSS Reference Documents

RS	Title / Author	Document Reference	Issue	Date
1	Space Project Management: Project Planning and Implementation	ECSS-M-ST-10C	-	06/07/09
2	Space Project Management: Configuration and Information Management	ECSS-M-ST-40C	-	06/07/09
3	Space Project Management: Cost and Schedule Management	ECSS-M-ST-60C	-	31/07/08
4	Space Project Management: Risk Management	ECSS-M-ST-80C	-	31/07/08

3 Acronyms

AIT Assembly Integration and Test
AIV Assembly Integration and Verification
AO Announcement of Opportunity
AOCS Attitude and Orbit Control System
ARAcceptance Review (instruments)
ASI Agenzia Spaziale Italiana
ASIC Application Specific Integrated Circuit
BAO Baryon Acoustic Oscillations
CaLA Camera Lens Assembly
CCD Charge Coupled Device
CDF Concurrent Design Facility
CDMU Command and Data Management Unit
CDPU Control and Data Processing Unit
CDR Critical Design Review
CFRP Carbon Fiber Reinforced Plastic
CEA Commissariat à l'Energie Atomique
CM Cryo-Mechanism
CNES Centre National d'Etudes Spatiales
CoLA Collimator Lens Assembly
COM COMmunication (EC COM group is referred as COM or EC COM)
CPPM Centre de Physique des Particules de Marseille
CU Calibration Unit
DCU Detector Control Unit
D-ECL Deputy ECL
DLR Deutsches zentrum für Luft- und Raumfahrt
DPU Data Processing Unit
DSDetection System
DSRI Danish Space Research Instiitute
EACSL Advisory and Coordination Support Lead
EAS Euclid Archive System
ECEuclid Consortium (=EMC)
ECB Euclid Consortium Board
ECC Early Career Committee
ECCG Euclid Consortium Coordination Group
ECDC Euclid Consortium Diversity Committee
ECEB Euclid Consortium Editorial Board
ECL Euclid Consortium Lead
ECMC Euclid Consortium Membership Committee
ECPG Euclid Consortium Publication Group
ECSS European Cooperation for Space Standardization
EEE Electrical, Electronic, and Electromechanical
EIC Euclid Imaging Channels
EIDA Euclid Experiment Interface Document
EM Engineering Model
EMA Euclid Mission Archive
EMC Euclid Mission Consortium
EPO Education and Public Outreach
EOPS EPO Scientist
ESA European Space Agency
EST Euclid Science Team
FAR Flight Acceptance Review
FCTSO Fundação para a Ciência e a Tecnologia Space Office
FM Flight Model

FMECA	Failure Mode Effects and Criticality Analysis
FoV	Field of View
FPA	Focal Plane Assembly
FWA	Filter Wheel Assembly
FWHM	Full Width Half Maximum
GC	Galaxy Clustering science (i.e. BAO+RSD)
GSE	Ground Support Equipment
GWA	Grism Wheel Assembly
HW	HardWare
H2RG	Hawaii 2-RG
I/F	Interface
IBDR	Instrument Baseline Design Review
ICD	Interface Control Document
ICL	Internal Communication Lead
ICU	Instrument Control Unit
IL	Instrument Lead
INAF	Istituto Nazionale AstroFisica
IOT	Instrument Operation Team
IQR	Instrument Qualification Review
IRR	Instrument Requirements Review
IS	Instrument Scientist
ISW	Integrated Sachs Wolf effect
JPL	Jet Propulsion Laboratory
JWST	James Webb Space Telescope
KP	Key Project
KPP	Key Project Publication
LAM	Laboratoire d'Astrophysique de Marseille
LOC	Local Organizing Committee
MGSE	Mechanical Ground Support Equipment
MINECO	Ministerio de Economia y Competividad
MLA	MultiLateral Agreement
MP	Management Plan
MPE	Max Planck institut für Extraterrestrische physik
MPIA	Max Planck Institut für Astronomie
MRD	Mission Requirements Document
MSSL	Mullard Space Science Laboratory
MTF	Modulation Transfer Function
NASA	National Aeronautic and Space Administration
NCP	National Contact Point
NCR	Non-Conformance Report
NI-OMA	NISP Opto-Mechanical Assembly
NIR	Near Infrared
NISP	Near Infrared Spectrograph and Photometer
NOVA	Nederlandse Onderzoekschool Voor Astronomie
NRB	Non-conformance Review Board
NSC	Norwegian Space Center
OU	Organisation Unit
PA	Product Assurance
PAD	Part Approval Document
PAP	Product Assurance Plan
PARD	Product Assurance Requirements Document
PA/QA	Product Assurance / Quality Assurance
PDD	Payload Definition Document
PDHU	Processing Data Handling Unit
PDR	Preliminary Design Review
PI	Principal Investigator

PLM	PayLoad Module
PM	Project Manager
PMCU	Parameters and Mechanism Control Unit
PMP	Project Management Plan
PO	Project Office
PPD	Publication Policy Document
PS	Project Scientist
PSF	Point Spread Function
PSU	Power Supply Unit
RFA	Request For Approval
ROSA	ROmanian Space Agency
RSD	Redshift Space Distortion
QE	Quantum Efficiency
RfD	Request for Deviation
ROE	Read Out Electronics (VIS)
ROM	Rough Order of Magnitude
S/C	Spacecraft
SciRD	Science Requirements Document
SDC	Science Data Center
SEMP	System Engineering Management Plan
SG	Science Group
SGS	Science Ground Segment
SiC	Silicon Carbide
SIP	Science Implementation Plan (SGS)
SMP	Science Management Plan
SOC	Science Organizing Committee
SOC	Science Operation Center
SP	Standard Project
SPP	Standard Project Publication
SPV	Science Performance Verification
SSC	Space Science Center
STM	Structural & Thermal Model
SU	Shutter Unit
SVM	SerVice Module
SWG	Science Working Group
TBC	To Be Confirmed
TBD	To Be Defined
TBW	To Be Written
TRL	Technology Readiness Level
UCL	University College London
UH	University of Helsinki
UKSA	United Kingdom Space Agency
UPTC	Universidad Politecnica de Cartagena
VIPM	VIS Project Manager
WE	Warm Electronics
WL	Weak Lensing
WP	Work Package
WPD	Work Package Description

4 Introduction

4.1 Euclid mission objectives

Euclid is a wide-field space mission designed to understand the origin of the Universe's accelerating expansion and to study dark energy, gravity and dark matter. The Euclid mission relies on two primary cosmological probes: first Weak gravitational Lensing (WL) and second Galaxy Clustering (GC) which includes Baryon Acoustic Oscillations (BAO) and Redshift-Space Distortion (RSD). The first probe requires the measurement of the shape and photometric redshifts of distant galaxies. The second probe is based on the 3-dimensional distribution of galaxies through spectroscopic redshifts. Additional cosmological probes like clusters of galaxies (CG) and integrated Sachs-Wolfe effect (ISW) are also used.

Euclid will carry out an imaging and spectroscopic wide survey of a large fraction of extra-galactic sky (15,000 deg^2) along with a deep survey (covering ~40 deg^2). These surveys will not only provide unprecedented constraints on dark energy and dark matter, but will also probe inflation models and will constitute unique legacy surveys for many other fields of astrophysics, such as galaxy formation and evolution, the search for super-massive black holes, the physics of galaxy clusters, low mass objects in our Galaxy, etc. Additional surveys dedicated to the study of the Milky Way and for the search of extra-solar planets via micro-lensing are also envisaged but require further consideration.

4.2 Mission and Instrument

To achieve these science objectives (Cf. SciRD document [RD 03]), the current Euclid reference design consists of a wide field telescope to be placed in L2 orbit by a Soyuz launch with a 6-year primary mission lifetime. The payload consists of a 1.2m diameter 3-mirror telescope with two instruments covering a common field of view of 0.54 deg^2: a VISible imaging instrument (VIS), a Near Infrared Spectrometer and Photometer instrument (NISP).

The combined data obtained from the imaging and spectroscopic instruments form the basis of the weak lensing and BAO and RSD measurements. The VIS instrument provides high-precision galaxy shape measurements for the measurement of weak lensing shear. The NISP instrument provides the deep NIR multi-band photometry necessary to derive the photometric redshifts and a distance estimate which is precise enough to scale the absolute amplitude of the gravitational shear of each lensed galaxy, cut the universe into slides for weak lensing tomography and remove wrong lensing signal produced by intrinsic galaxy alignment. The NISP instrument also provides the NIR spectroscopy to derive accurate spectroscopic redshifts of galaxies for BAO and RSD. The combined data of these instruments will also be used for the additional cosmological probes based on galaxy cluster number counts and ISW as well as to derive a unique Legacy survey for the study of galaxy evolution, Galactic structure, low mass objects in the Galaxy, Supernovae rates, and possibly to confirm an exo-planet search.

4.3 Ground Segment

The Euclid Science Ground Segment (SGS) will provide the resources necessary to analyse all Euclid data and derive science data products. The SGS tasks are split into ESA and the Euclid Consortium (EC). The EC Science Ground Segment (EC SGS) is responsible for the production of the science ready calibrated images, source catalogues and all relevant quality control and meta-data that are necessary for the scientific exploitation of the Euclid mission. This includes the data from the Euclid VIS and NISP channels, as well as all complementary External data from ground based wide field surveys.

The Euclid SGS activities are divided into development and operational components. The development component consists on the definition and the production of the processing and quality control software

tools and of the pipeline, and on the definition and development of the Euclid Archive System (EAS; previously Euclid Mission Archive, EMA, as presented in the SMP). The operational component consists on the implementation of the pipeline in dedicated science data centres (SDC) and on the operation of SDCs that will run the pipelines and feed the EAS to produce all Euclid data and releases.

4.4 The Euclid Consortium

In accordance with the Euclid Science Management Plan [AD 02], the EC is a single consortium covering both the imaging and spectroscopic aspects of the mission. It is responsible for the following activities:

- The Science activities related to the development and use of the instrument and the EC ground segment;
- The development of the VIS and NISP instruments;
- The development of the Euclid science ground segment share of the EC;
- Contributions to Euclid communication (COM) activity.

These activities will be tightly coordinated and integrated within the EC, and in interaction with ESA, in order to ensure that the high-precision cosmological goals of the mission are achieved.

5 EC Project Baselines

5.1 Instrument description

The Reference Instrument baselines are given in the EID-A [AD 04] Section 3.4. Instruments are parts of the Payload Module and consist in the VIS and the NISP Instruments as follows.

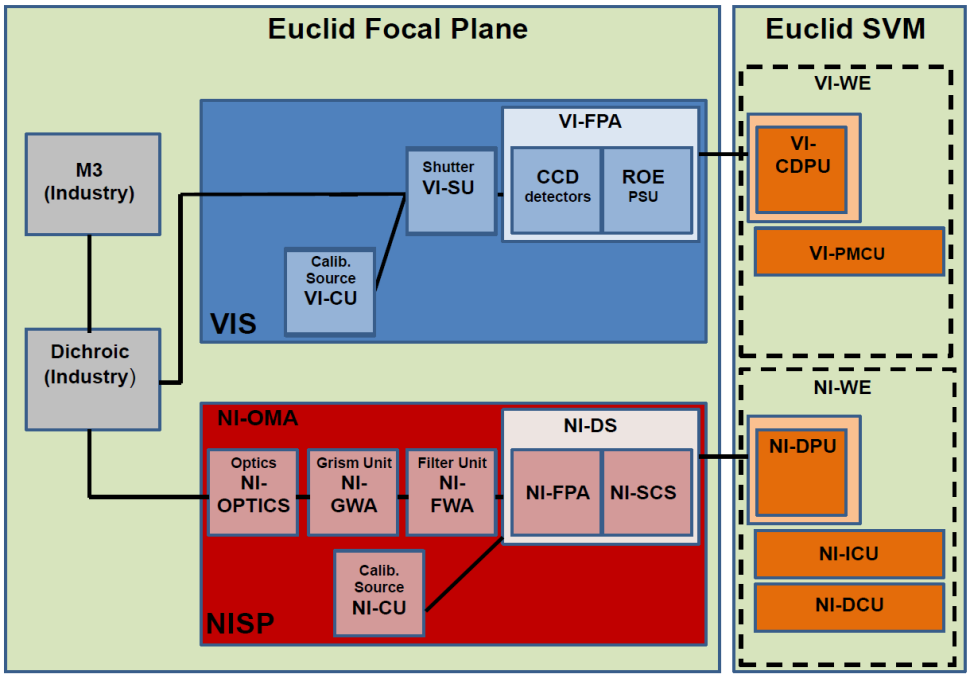

Figure 5.2: Synoptic of the Instrumental configuration

The instruments are fed by a 3-mirror Korsch telescope with a primary mirror of about 1.2 m diameter providing a minimum collecting area of 1.0 m^2. The design of the telescope optics is such that it provides a large field of view which is common to both instruments with a high image quality over the whole field. The telescope directs the light to two instruments via a dichroic filter in the exit pupil. The reflected light is led to the visual imaging instrument (VIS) and the transmitted light from the dichroic is led to the near infrared instrument (NISP) that contains a slitless spectrometer and a three broad bands photometer. Both instruments cover a large common field-of-view of ~0.54 deg^2. The system design is optimised for a sky survey in a step-and-stare tiling mode. Figure 5.2 gives a synoptic description of the instrument configuration.

The two instruments contribute to the same science objectives and their requirements are therefore flowed down from science requirements through the same path in order to ensure a coherent observation strategy and performance.

5.1.1 The VIS Instrument

The VIS Imager Instrument is designed to operate in the range of 550nm-900nm with an operational field of view on the sky of ~0.54 deg^2. The spatial sampling is 0.1 arcsec square, achieved with an array of 6 x 6 CCDs each with 4k x 4k pixels 12 µm square reading out through 4 nodes.

VIS will measure sources down to fainter than AB mag 24.5 (10σ extended source) in one wide visible band (R+I+Z) with a resolution of 0.16 arcsec (PSF FWHM) after three or four multiply dithered exposures. To measure the shear from the galaxy ellipticities, the VIS instrumental PSF is constrained to vary over the field of view by less than $2.x10^{-4}$ in ellipticity and by less than $2.x10^{-3}$ in size.

The VIS project office defines the instrument, organises and coordinates the definition, requirements flow down, design and provision of the following VIS Units:

1. PLM Units:
    - A Focal Plane Assembly (VI-FPA) consisting in a focal plane array of 6 x 6 CCD operating around 150K and its readout electronics and the suitable thermo-mechanical supports and thermal regulations. This provides digitised data via a SpaceWire interface;
    - A Calibration Unit (VI-CU) allowing providing a uniform illumination of the VI-FPA CCDs when required.
    - A Shutter Unit (VI-SU) allowing the occultation of the telescope light when required.
2. SVM Units:
    - An instrument Control and Data Processing Unit (VI-CDPU)
    - A Power and Mechanism Control Unit (VI-PMCU).

Though composed of separate units, the VIS instrument is a coherent assembly whose requirements are derived globally and which is delivered and tested as a whole.

The VIS project office is also responsible for the VIS performance at engineering level, producing models for detector effects (metrology, point spread function, linearity, cosmetics, flat fields, noise, radiation damage, cosmic rays, etc.) to be used in the overall scientific performance evaluation. Through the Euclid Consortium Coordination Group (ECCG) it ensures the maximum expertise on VIS characteristics is incorporated in the Euclid SGS for Level 1 and 2 processing of VIS data. The VIS project office also advises the EC Mission System Engineer, the Euclid Mission Scientist and the Euclid Calibration Working Group on VIS-specific calibration, both on-ground and in-orbit.

5.1.2 The NISP Instrument

The NISP Instrument is a spectrograph/photometer, operating in the 0.92μm-2.0μm wavelength range. The instrument will operate at a temperature of 150K, except for the detectors, which are cooled to ~100K. The optical chain, starting just after the dichroic, is based on refractive elements: a Collimator Lens Assembly (CoLA) and a Camera Lens Assembly (CaLA), acting as a focal reducer. The lenses are supported by a mechanical structure, where two motorized wheels are also mounted. The first wheel comprises the Filter Wheel Assembly (FWA) equipped of three IR filters (Y, J and H bands) used in the photometric operating mode, along with a blank and an open position. The second is the Grism Wheel Assembly (GWA) working in slitless mode. It is equipped with one "blue" (920-1250 nm) and 3 "red" grisms (1250-1850 nm). Each red grism is aligned with the columns or the rows providing 3 different active positions in order to separate overlapping slitless spectra during the data processing of spectroscopic observations. An open position is also included. A Calibration Unit (NI-CU) provides calibration signal to detectors.

The Detection System (NI-DS) is a mosaic of 16 H2RG detectors coupled with sidecar ASICs, mounted on a SiC structure in a 4 x 4 configuration providing a FoV of 0.54 deg^2 with 0.30 arcsec pixel and a mean spectral resolution of ~380 for a 0.5" size source. The NI-DCU (Detector Control Unit) provides bias to the detector, controls them via the sidecars, converts digital signals to the SpaceWire protocol and sends them to the warm (300K) Instrument Data Processing Unit (NI-DPU). An algorithm, running on this latter unit, samples pixel data via '*sampling-up-the-ramp'* or '*Fowler pair*' process, performs cosmic-ray hits rejection and data compression and sends data to the S/C mass memory.

The Instrument Control Unit (NI-ICU) receives telemetry from the S/C and controls the NI-DCU, NI-DPU, NI-DS thermal control, and NI-OMA (the two wheels, the torque compensation mechanism, and the thermal control). It acquires slow housekeeping data from the Instruments and sends them in scientific data telemetry to the S/C.

The NISP project office defines the NISP instrument, organises and coordinates the definition, requirements flow down, design and provision of the NISP sub-assemblies identified above.

The NISP project office is also responsible for the NISP performance at engineering level, producing models for detector effects (metrology, point spread function, linearity, cosmetics, flat fields, noise, radiation damage, cosmic rays, etc.) to be used in the overall scientific performance evaluation. Through the ECCG it ensures the maximum expertise on NISP characteristics is incorporated in the Euclid SGS for Level 1 and 2 processing of NISP data. The NISP project office also advises the EC Mission System Engineer, the Euclid Mission Scientist and the Euclid Calibration Working Group on NISP-specific calibration, both on-ground and in-orbit.

5.2 EC Science Ground Segment

Euclid will accumulate several million raw images and several tens of Petabytes of heterogeneous data: visible, near infrared imaging and slitless spectroscopy images from space, as well as imaging and spectroscopy from different wide field and targeted ground-based surveys.

The SGS tasks are split into ESA and EC. The EC Science Ground Segment (EC SGS) guarantees instrument maintenance and operations and performs the data processing from telemetry of the mission data products. It provides the resources necessary to analyse all Euclid data and derive science data products. The Euclid Science Ground Segment is responsible for the production of the science ready calibrated images and source catalogues, and all relevant quality control and meta-data that are necessary for the scientific exploitation of the Euclid mission. This includes the data from the Euclid VIS and NISP channels, as well as all complementary External data from ground based wide field surveys.

The Euclid SGS activities are divided into development and operational components ([RD-08],[RD-15]). The development component consists on the definition and the production of the processing and quality control software tools and of the pipeline, and the on the definition and development of the Euclid Archive System (EAS, previously Euclid Mission Archive in [AD-02]). The operational component consists on the implementation of the pipeline in dedicated science data centres (SDC) and on the operation of SDCs that will run the pipelines and feed the EAS to produce all Euclid data and releases.

To achieve the main objective of implementing such a system, the EC section of the SGS has been designed based on:

- Organisation Units (OUs) that are mapped upon the organisation of processing activities. They are responsible for the definition of data processing requirements and also in charge of prototyping work-packages;
- SDCs that are the Euclid Consortium development and operation centres of the Euclid mission. They host the localised hardware and software infrastructure together with development and operation teams, and are responsible for development and operations work-packages;
- A System Team responsible for the development of the e-infrastructure of the EC SGS;
- A Project Office (PO), responsible for the management issues;

Several data and processing levels are defined, each of them is well separated logically from the others, and each containing the appropriate quality control mechanisms: Level E (external data), Level S (simulations), Level 1 (unpacked and edited telemetry), Level Q (quick-release data), Level 2 (data with instrumental signatures removed, calibrated data) and Level 3 (science-ready data products).

5.3 Mission Baseline Milestones

The key dates for the Euclid milestones are the following (See EID-A [AD 04] and SMP [AD 02] – Dates are those expected in 2013, some of them have been revised with current 2021 expected dates:

- Assessment Phase in 2008- Aug. 2009
- ESA internal review: Sept. – Oct. 2009
- First down-selection of M-class missions to enter the Definition Phase (A/B1): Feb 2010
- Start of Definition Phase with two parallel industrial contracts: July 2010
- Release of updated AO documents for implementation phase: March 2011.
- Submission of final proposal for the implementation phase: July 2011
- Down-selection for CV M1/M2 missions: October 2011
- Completion of the Definition Phase (A/B1): Q1 2012
- Final adoption for the Implementation Phase (B2/C/D/E1): Q2 2012
- Start of the Implementation Phase: Q4 2012
- STM delivery: Q1 2016
- EM delivery: Q3 2016
- FM delivery: Q3-Q4 2021
- Launch (L): Q4 2022
- L+: launch and early operations phase (LEOP)
- L+ a few days: start Satellite Commissioning and Payload Performance Verification Phases
- L+ t≤6 months: start Routine Phase
- L+7 years: end of nominal mission
- L+9 years: end of Active Archive Phase.

6 EC Organisation, Roles and Responsibilities

6.1 Euclid Consortium

The Euclid Consortium (EC) has been set up to respond to the Euclid Announcement of Opportunities (Oct. 2010) and later to the Euclid Solicitation (July 2011). The Euclid Consortium was selected after the selection of Euclid as the second M-class mission of the Cosmic Vision Program in Oct. 2011.

The EC is made of about 250 European laboratories from 14 European countries as well as from Canada, Japan, and the USA. The consortium is led by the Euclid Consortium Lead (ECL), supported by a Deputy-ECL

The Euclid Consortium is steered by the Euclid Consortium Board (ECB).

The following European countries are members of the EC: Austria, Belgium, Denmark, Finland, France, Germany, Italy, Netherland, Norway, Portugal, Romania, Spain, Switzerland, and UK.
Other countries can be added to the EC with the concurrence of the ECB and the ECL.

Since selection, the USA, Canada, and Japan have been added to the EC. Each of these countries is represented by an ECB member. Additionally, Lawrence Berkeley Laboratory (USA) has an *ECB member at large* (without voting rights).

The amount and nature of the USA/NASA, Canada and Japan contributions are described in specific Memoranda of Understanding between ESA and NASA and between EC and Canadian and Japanese laboratories.

As of January 2021, the EC encompasses up to 2200 registered full members, out of which more than 1200 are researchers, and 75 members at large. A table of Euclid Consortium members is available on the internal pages of the Euclid Consortium web site (http://www.euclid-ec.org).

6.2 EC Top level organisation

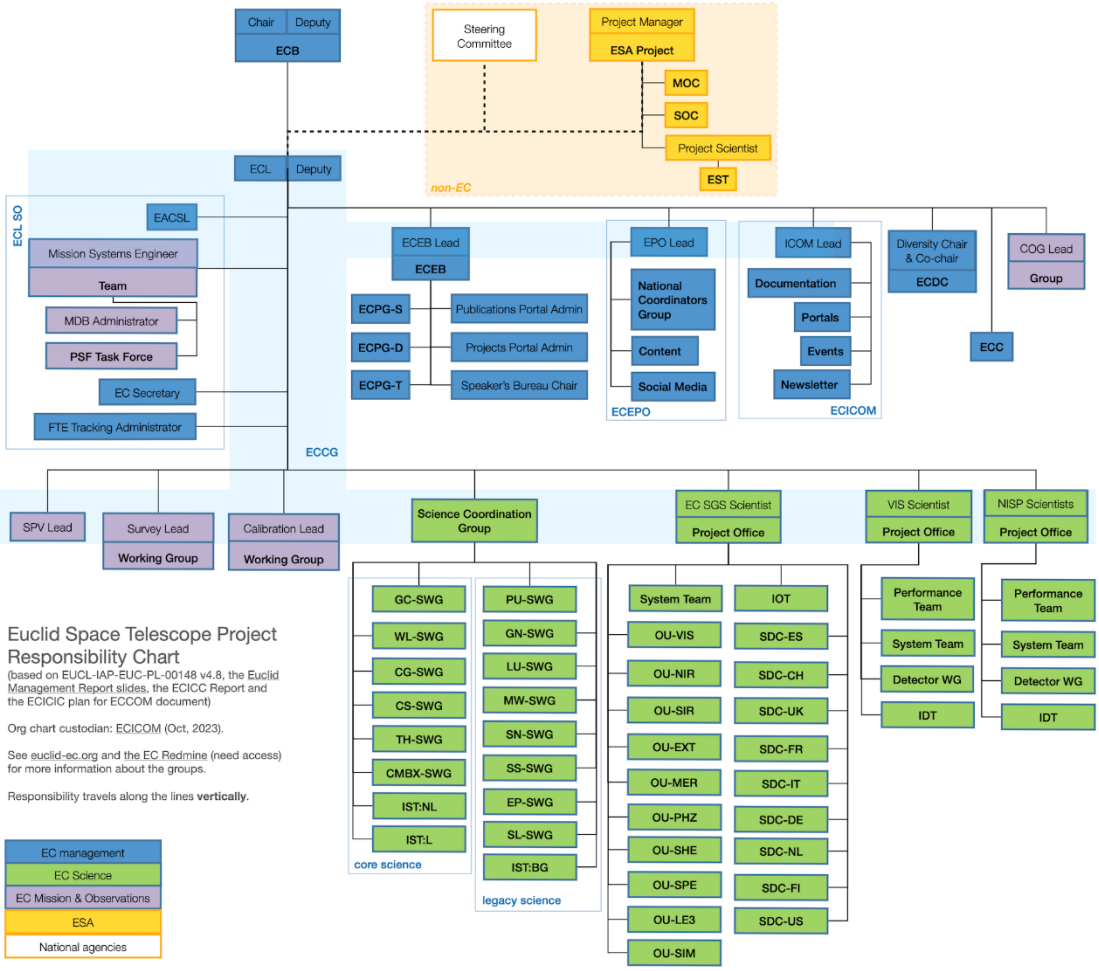

Figure 6.1: Org Chart of the Euclid Consortium and its relations with ESA & the Euclid Steering Committee. Full lines indicate permanent links, doted lines indicate exceptional links.

Figure 6.1 shows the main EC blocks as well as the upward interfaces with 3 bodies: ESA, the Euclid Science Team (EST), and the Euclid Steering Committee which definition and interaction with the EC are given in section 6.15. The reporting channels are shown on Fig 9.1. The Euclid Consortium Coordination Group (ECCG) is the structure of the EC where coordinated activities of the Euclid Consortium are organised and monitored.

The ECL and D-ECL organise and/or monitors the groups coordinating the activities in the consortium. These groups include: the ECL Support Office, the EC Survey Working Group (ECSURV), the EC Calibration Working Group (CalWG), the Complementary Observations Group (COG), the Science Performance Verification group (SPV), the Science Coordination Group (SCG), the Euclid Consortium Editorial Board (ECEB), the communication group (COM) and the Euclid Consortium Diversity Committee (ECDC) and the VIS, NISP and SGS teams.

The ECB performs a yearly review of the top level management in the EC to ensure that no key

positions in all the groups and teams are unfilled. The ECB should fill leadership positions in the EC as quickly as practical, not waiting for this yearly review. The following procedures for filling vacancies in key positions should be taken into account when filling leadership positions:

- Candidates for leadership positions are nominated by the ECL (preferably after consultation with the ECB) with final approval of the appointment made by the ECB;
- The ECL and D-ECL are in charge of the definition and organisation of the nomination process. When practical, an open call will be issued within the EC for leadership positions. Prior to closing a nomination, the fairness and conformity with the Euclid Consortium Code of Conduct of the selection process will be checked by the ECDC;
- Selection criteria will take into account the need for diversity including (but not limited to) gender and the need for an appropriate country balance in leadership positions;
- EC members should not collect multiple key leadership roles within the EC such that no one person is completely overloaded by Euclid activities unless the task requires it. EC members should be asked to step down from one leadership position if they seek a different leadership position.
- Leadership positions should have one or two Leads/Coordinators and an optional Deputy. Those positions should be rotated with a maximum term served as Deputy and/or lead being between 2 and 4 years. People can apply for leadership positions for non-consecutive terms; the ECB may occasionally approve consecutive terms. The ECB will decide what leadership positions will be rotated; this will be communicated to the EC via the internal Euclid Consortium communication channels (e.g., website and email).

6.3 Euclid Consortium Board

The Euclid Consortium Board (ECB) is the ultimate authority for decisions regarding the EC. It steers the activities of the EC and defines EC policy with respect to scientific objectives and management. It delegates the management and coordination of the consortium to the Euclid Consortium Lead (ECL) with the support of the ECL Support Office.

The ECB is composed of one or two senior scientists from each contributing country, with the authority and stature to ensure their Agencies' support to the Euclid program. ECB members are nominated by their relevant national agencies. They represent and lead their national contributions to the EC, and act as the points of contact between the EC and their respective national agencies. Board members have specific responsibility to:

- Safeguard the scientific return from the Euclid Consortium.
- Lead their national contributions to the EC.
- Define EC policy with respect to scientific objectives and management
- Assist the ECL in solving technical, managerial, schedule, and resource problems associated with work allocated to their national team.
- Ensure that sub-systems and work packages are adequately resourced and funded.

- Recognize the sections of the Multi-Lateral Agreement (MLA) setting out the detail of agreed responsibilities and work share.
- Arbitrate any dispute that could not be solved internally and with the ECL in the VIS, NISP, SGS, COM, or SWG sub-systems or groups.
- Provide scientific, technical, and political advice to the ECL on all matters affecting the Euclid Consortium and its international standing.
- Identify and ensure the appropriate level of project management within their work share.
- Appoint leadership positions in the EC.
- The ECB should address any question submitted by a minimum of ¼ of its members.
- National ECB representatives shall also interact with their national Steering Committee representatives on political or financial issues affecting Euclid; the ECL should be informed of such interactions and can initiate such interactions

To fulfil these charges, the ECB can request reports from and interact with any group within the EC; The ECB keeps the ECL informed of these interactions though the ECL-ECB reporting channel. The ECB is chaired by the ECB Chair. The ECB Chair is assisted by a Deputy ECB chair that can perform the duties of the ECB Chair in the absence of the chair. The ECB chair will be selected by the ECB from the membership of the ECB to serve a term of up to 4 years as deputy/chair. In order to provide leadership continuity on the ECB after decoupling the ECB and ECL roles, the ECB implemented the following staggered scheme:

- The ECB nominated its new Chair and a Deputy Chair in January 2020.
- The initial ECB Chair will serve a term of 2 years (starting January 2020).
- After the initial term a new Deputy Chair will be chosen, and the current Deputy Chair will assume the role of Chair when the initial Chair steps down.
- Subsequently, people will serve one term (two years) as Deputy Chair before taking over as Chair for one term (two years).
- A Chair/Deputy cannot serve consecutive terms but can be chosen to serve in the role again at a later time.

The roles of the ECB Chair shall include (but not be limited to):

- request that the ECL consider topics of concern that should be addressed by the groups under the control of the ECL
- planning for ~ monthly ECB telecons
- planning for ~ quarterly ECB meetings
- releasing the minutes of the ECB meetings
- tracking ECB actions
- having regular telecons or meetings with the ECL/D-ECL
- inviting the ECL/D-ECL to ECB meetings and telecons as appropriate
- setting up ad hoc committees needed by the ECB, requested by the ECL, and required by the ECMP
- making sure that vacancies within the EC leadership are filled in a timely manner

It is expected that the ECB chair has sufficient institutional administrative support to accommodate these duties; this support should be a prerequisite.

The ECB members are the points of the contact with their respective national agencies. The ECB provides reports as required to the Steering Committee composed of representatives of the supporting national agencies.

The ECB may also have *ECB at Large members*. The ECB at Large members do not have the same prerogatives as full ECB members. They can receive information and documentation sent to ECB members but have no voting rights on any ECB relevant matters, and may not participate to ECB closed sessions set for full members. ECB at Large member candidates must be endorsed by the ECB full members.

6.4 Euclid Consortium Lead

The Euclid Consortium Lead (ECL) is responsible for the scientific integrity and overall scientific success of Euclid. The ECL reports to the ECB, represents the Consortium at EST meetings, and is the formal interface between the EC and ESA and between the EC and the Euclid Steering Committee. The ECL is the primary representative of the EC to the scientific community.
The ECL is supported by a Deputy ECL (D-ECL) and a fully staffed Euclid Consortium Support Office. The ECL is not a term limited position. The ECL cannot be a member of the ECB.

The responsibilities of the ECL include:

- Overall management and the coordination of the consortium, as well as the final decisions on trade-offs in the last resort. This includes final decision authority on any design trades or issues that impact science or system performance, or international work divisions, based on advice from the ECB, the Mission Survey Scientist, the ECL Advisory and Coordination support Lead, the Mission System Engineer, the Mission Quality Engineer, the EC Project Managers, the Instrument and Ground Segment Scientist(s), the Science Working Groups, and any others as appropriate;
- Leading EC science activities in consultation with the SWG chairs.
- The responsibility for the deliveries of the EC contributions to ESA within the remit of the MLAs ([AD-02])
- Leading the Euclid Consortium Coordination Group (ECCG).
- Leading the EC in identifying and conducting design trades involving science or system performance, including all concerned parties.
- Leading the EC in determining international work divisions in the Euclid Consortium, including all concerned parties.
- Nominate leads and deputies for leadership positions within the EC (preferably in consultation with the ECB).
- Ensure that succession plans are in place for these positions.
- Leading the EC in international discussions of the role of the EC in science support activities;
- Organizing, negotiating, and coordinating scientific collaborations between the EC and other projects or missions.
- Coordinating and monitoring all international funding and collaboration proposals made by EC members that involve the pre- or post-launch Euclid Mission or EC proprietary data.
- Negotiating with potential new partners (countries, institutions, institutes, and laboratories) of the Euclid Consortium.
- Overseeing EC reviews, studies, and assessments, and ensuring EC support to ESA reviews.

- Overseeing implementation of the EC Membership policy, and coordinating with the ECB on drafting policies on the rights and duties of the EC members.
- Representing the Consortium at ESA EST meetings, and others meetings as appropriate.
- Coordinating and monitoring all international funding and collaboration proposals made by EC members that involve the pre- or post-launch Euclid Mission or the Euclid Consortium proprietary data;
- Instigating project reviews, studies and assessments at EC level as necessary and required to resolve issues and to enable a successful project (e.g. set up Tiger Team or Task Force);
- Overseeing the implementation of EC Membership policy;
- Maintaining the official EC membership list;
- EC Documentation Management;
- Overseeing the definition and monitoring of the EC publication policy. As such, they lead (or alternatively delegates the lead of) the Euclid Consortium Editorial Board (ECEB, see Section 6.5);
- Overseeing of EC communication, education and public outreach activities;
- Reporting to the ECB on on-going Euclid Consortium activities;
- Arbitrate and reconcile disputes and views that cannot be solved internally within or between the ECL Support, VIS, NISP, SGS, COM and SWG sub-systems.

The ECL delegates the mission definition, mission performances, calibrations, end-to-end simulation activities to several groups: the ECL Support Office, the Mission System team, the EC Survey Group (ECSURV), the Calibration Working Group (CalWG), the Science Performance Verification Group (SPV), the Science Coordination Group (SCG), the VIS and NISP instrument groups, the Euclid Consortium Science Ground Segment (SGS) group, the Euclid Consortium Editorial Board (ECEB), the EC communication group (EC COM or COM), the Euclid Consortium Diversity Committee (ECDC), and the Early Career Committee (ECC). The activities of these groups are coordinated by the EC Coordination Group (ECCG) which makes full use of the integrated nature of the consortium.

The ECL delegates the day-to-day management and coordination of the instrument, ground segment, communication, and science activities to the Instrument Lead, instrument Project Managers (PMs), Ground Segment Project Manager, Communication lead, and Science WG coordinators. In particular, the technical interactions with ESA are delegated to the instrument Project Managers, the SGS manager, and the EC EST member scientists

6.4.1 Euclid Consortium Deputy Lead (D-ECL)

The Deputy ECL is a position to provide support and help to the ECL in all his/her activities and should be able to replace the ECL whenever the ECL is unavailable. The ECL and ECB should consult on the choice of the D-ECL and the D-ECL should be appointed by the ECB based on a proposal by the ECL. The position should be temporary, with a preferred term of two years, which can be renewed. The Deputy ECL cannot be a member of the ECB. The D-ECL is considered at least a 0.5 FTE commitment.
The responsibilities of the D-ECL include:

- Support to the ECL
- Perform ECL tasks delegated to them by the ECL
- Having the power to call and chair meetings and make decisions on the ECL's behalf after consultation with the ECL

- Being prepared to take over as acting ECL whenever the ECL is unavailable or represent them when useful

The ECB will arbitrate (and eventually resolve) in case of disagreement or disputes between the ECL and D-ECL.

6.5 Mission Survey Group

The Mission Survey Group is responsible of the design, modelling and implementation of mission survey scenarios. It is led by the Mission Survey Scientist who can be assisted by a deputy coordinator.

The Mission Survey Group is responsible for:

- Contributing to identify a Mission Survey tool which is common to ESA;
- Implementing the computing resources needed to run the tool;
- Running the mission survey tool to produce realistic mission survey scenarios that are in line with the scientific requirements, the calibration requirements, the technical, astronomical and programmatic constraints;
- Optimising the survey scenario to maximise the scientific return of the mission;

Mission Survey Scientist

The Mission Survey Scientist leads the Mission Survey Group and therefore the high-level Euclid mission activities. These activities need a global view and understandings of the survey planned with Euclid, of the VIS and NISP science drivers and of the performances of the telescope and the instrument.

This pivot position aims at strengthening the day-to-day communication between the Science Working Groups and the instrument and ground segment scientists, as well as the coordination of transverse scientific activities (mission definition, mission performances, calibrations, end-to-end simulations).

- They are responsible for the definition, modelling and optimization of the Euclid survey in order to maximize the scientific return of the mission;
- They are in charge of proposing to the ECL and ECCG mission scenarios and mission trade-offs that are in lines with the core and the legacy programs, and the best scientific return to the Euclid Consortium;
- They lead the Mission Survey Group;
- They have a co-leading role in the end-to-end simulations activities;
- They have a leading role in the Calibration working group activities;
- They are responsible for finding and implementing the funding/manpower resources needed to operate the Mission Survey Group;
- They report to the ECL.

6.6 Calibration Working Group (CalWG)

The Calibration Working Group is responsible for defining and optimising the calibrations that need to be taken to ensure the scientific return of the mission.

The working group is composed of a Calibration Working Group lead, the ECL, the ECL Mission System Engineer, the Mission Survey Scientist, the VIS instrument lead, the Instruments and EC

SGS scientists, the calibration lead(s) of each instrument and the ground segment, if any, and one coordinator of the SWG.

The Calibration Working Group:

- Is in charge of coordinating and optimizing the VIS and NISP instrument and SGS calibration activities of the Euclid mission;
- Is responsible to design and optimize the full mission calibration plan that meets the requirements of the VIS, NISP and SGS and the mission constrains;
- Ensures that the calibration plan of each instrument can be done without any conflicts with the others and are technically and operationally feasible;
- Propose trade-offs whenever necessary;
- Reports to the ECL.

6.7 Euclid Consortium Lead Support Office

The ECL is assisted in his/her daily tasks by the Euclid Consortium Lead Support Office for administration, coordination and management, system engineering, and the mission survey definition. The ECL and its Support Office work in strong interactions with the VIS and NISP Instrument leads, the project managers and the instrument and ground segment scientists.

The ECL Support Office manages and monitors all top level, common and transverse technical and scientific EC activities, as well as the interface and communications with ESA, with the ECB and with the Steering Committee. The Mission Survey Group, the ECL Advisory and Coordination Support Lead, the Mission System Engineer, the Science Performance Verification Group, the Euclid Consortium Diversity Committee and the ECL Support Office team that do not have an internal Project Office directly depend and report to the ECL

The Euclid Consortium Lead Support Office provides help and support to the ECL. The Support Office responsibilities include:

- Supporting the ECL in all matters concerning the EC;
- Managerial and secretarial support to the ECL and D-ECL
- Management of EC Documentation;
- Tracking of all key activities;
- Identifying critical issues and maintaining a high-level action list;
- Maintenance of the EC web site;
- The EC membership list and tracking of individual contributions.

6.8 ECL Advisory and Coordination Support Lead (EACSL)

By ECL delegation, the EACSL is responsible for monitoring technical and schedule aspects in order to ensure the successful achievement of the EC program objectives and tasks that are parts to ECL remit.

They advise the ECL on activities that may be redirected if deemed necessary.
They attend the Management meeting/Review at ESA level.

Specifically the ECL Advisory and Coordination Support Lead is responsible for:

- Organizing and chairing meetings / telecons of the ECL Management group and issuing minutes of those meetings;
- Assisting the ECL in monitoring the EC development progresses;
- Assisting the ECL in writing the top level Management section of the EC progress report with the contributions from the EC Project Managers;
- Establishing appropriately structured and effective EC level communications;
- Setting up, monitoring and maintaining the overall EC and ECL schedules in coordination with the EC Projects Managers;
- Setting up and maintaining the EC Top risk register that are parts of the ECL remit;
- Assisting the ECL in determining the priorities for the project as a whole;
- Representing the ECL as observer, on VIS, NISP and SGS technical meetings;
- Advising the ECL on progress, risk, critical issues of any nature and in particular any apparent difficulties with resource availability and allocations;
- Assisting the ECL at meetings and on ongoing basis by regular communication;
- Preparing and coordinating the EC top level managerial and financial documents;
- Organize and coordinate the EC technical documentation activities. As such they maintainthe EC Documentation Management Plan;
- Assisting the ECL in the ECCG organisation;
- Monitoring the EC overall schedule;
- Performing the overall cost assessment of the Consortium;
- Set up and maintain the ECL action list;
- Monitor the process for risk management at ECL level;
- Preparing progress reports to be issued to ESA and the Steering Group by coordinating the progress reports from each of the EC Project Managers and from ECL;
- Ensuring that the EC level communications are appropriately structured and effective;
- The EACSL is invited to ECB meetings, when necessary.

Depending on the project phase and the associated workload, the EACSL may be assisted by a Project Assistant.

6.9 EC Mission System Engineer

The EC Mission System Engineer is the EC representative in the ESA Euclid Mission System Group. His main role is to interface with ESA on EC level system issues and to ensure the consistency of the requirements down to level 3 (L3, see [RD 01]).

The ECL Mission System Engineer is responsible for ensuring a consolidated and optimized Instrument and Mission system. He interfaces with the VIS, NISP and EC SGS Project Managers, Instrument System Engineers and Instrument Scientists, and with the ESA system team to ensure that the system complexities are effectively managed to meet the requirements.

The EC Mission System Engineer is responsible for:

- Verifying that SMP is implemented at Consortium Level;
- Implementing and maintaining the consortium Mission Model and ensuring correct interfacing with Instrument / Ground Segment modeling (especially for requirement traceability);
- Organizing requirement engineering activities within the consortium from Top-level to L3 (System Engineer is editor / secretary of all requirements; Science Coordinator and Instrument Scientist are author of Science related requirements L0 to L3);

- Planning with the ECCG the verification philosophy (i.e. which parameters will be verified, to what levels and with which environments taken into account) and monitor the Flow down of the Verification requirements;
- Reviewing and checking the verification and validation plans provided by the Instrument / Ground Segment, in the frame of the global verification and validation philosophy discussed by the ECCG;
- Defining the metrics for Measurement of Effectiveness of the system and tracking them through Project Life Cycle;
- Monitoring the EC Engineering Change proposal;
- Reporting to ECL Support Office on System status:
  - Requirement implementation status;
  - Verification Status;
  - Design Compliance to Requirement Status;
- Organizing on request from the ECL and the EACSL internal consortium Engineering Peer Reviews on specific critical technical area (e.g. creation of a Tiger Team).

6.10 Project Managers

The main role of the Project Managers is to lead their teams with the aim of producing the EC deliverables in compliance with the requirements from all nature (i.e. I/Fs) according to the delivery schedule and within the allocated resources. As they have a key role in the EC, the responsibilities and roles of the VIS, NISP and EC SGS Projects Managers are detailed in separate sections (see 7.1, 7.2 and 7.3).

The Project Managers

- Report to the ECL;
- Are members of the EC Management group led by the ECL Advisory and Coordination Support Lead by ECL delegation;
- Are members of the ECCG;
- Are invited to ECB meetings, when necessary;
- Interfaces with ESA with respect to day-to-day technical issues. They shall inform the ECL about these exchanges.

In their day-to-day activities, the Project Managers (Instruments or SGS) are responsible for:

- Setting up and maintaining the EC Instruments and SGS Management Plan;
- Setting up and maintaining the EC Instruments and SGS Development and Operation Plan;
- Setting up and maintaining the development milestones and schedule;
- Monitoring the progresses and costs and taking the decisions at managerial, technical and programmatic level within their perimeter;
- Setting up of a continuous risk evaluation process (Risk Register).

6.11 Euclid Consortium Coordination Group

The EC coordination group (ECCG) is responsible for coordinating and advising the ECL on all activities above, common and transverse to the instrument, ground segment, communication and science. The ECCG is chaired by the ECL with the deputy chair being the D-ECL. Its activities include:

- Management of activities common to the instruments, ground segment (GS) and communication such as EC-level financial plan, reviews, schedule, etc;

- Coordinating the flow down of the science requirements into the instrument and GS and distribution of error budgets to each and checking information is circulating properly;
- Coordinating of overall science performance and support of trade-offs;
- Coordinating the calibration plan;
- Coordinating the definition of the instrument operation plan;
- Monitoring the end-to-end simulation and mission survey activities;
- Coordinating and monitoring the system activity with the ESA system team;
- Coordinating the preparation of the operation activities;
- Monitoring all key positions of the Euclid Consortium in order to quickly advice the ECL if any position is not properly covered. This is to ensure that these positions are fulfilled at all time until completion of the Euclid mission, and that turn-overs or transition periods are anticipated, whenever possible, and managed quickly and smoothly.

The ECCG is responsible for the day-to-day coordination of the technical and scientific activities of the EC. It is led by the ECL who delegates the day-to-day activity to the ECL Mission System Engineer. The ECCG is composed of the following people. ECCG members are in the group ex-officio by virtue of their other roles within the EC.

- The ECL and D-ECL;
- The ECL Mission System Engineer;
- The ECL Advisory and Coordination Support;
- The Euclid Mission Survey Scientist;
- The Instrument, VIS, NISP and EC SGS managers;
- The VIS instrument lead;
- The VIS, NISP instrument and EC SGS scientists;
- The Communication Lead;
- Members of the Science Coordination Group (see Section 6.15.1) involved in the Euclid core science, with additional Science Coordinators when needed;
- The Calibration WG lead;
- Other coordinators, as needed (*e.g.* Simulation leads, leads of temporary Task Forces or Tiger Teams).

6.12 Euclid Consortium Editorial Board

The Euclid Consortium Editorial Board (ECEB) has the day-to-day responsibility of handling scientific, technical and data release publications. Its tasks and activities are fully described in the Euclid Consortium Publication Policy documents ([RD-14]).

The ECEB (see [RD-14]):

- Manages all aspects of the EC publication process including the refereeing process;
- Coordinates the activities of the three Euclid Consortium Publication Groups (ECPG) responsible of the Euclid Consortium Scientific, Data Release and Technical publications types ([RD-14]);
- Checks and determines to which examination and validation channel an EC publication should go: EC internal refereeing and/or COM;
- Checks and determines the publication type and category (details in [RD-14]) and if a publication need a standard or fast publication procedure;
- Checks and manages compliance with EC publication and authorship policy and higher level policies, whenever necessary; and the acknowledgments (details in [RD-14]);
- Checks and manages the balance of authorship lists, first author lists (including ESA scientists, when relevant);
- Manages any internal EC authorship or publication disputes;

- Determines which publications are for public or EPO-relevant communications (web sites, social network, etc…) to send to COM for short and light examination, validation and EC stamping process;
- Ensures communication with EST and ESA regarding publications of the Euclid Collaboration (the Euclid Collaboration denotes a group comprising all members of ESA, Industry or of the Euclid Consortium working on or who contributed to the Euclid mission);
- Declares when an EC paper can be submitted to EST, if relevant, and to a Journal;
- Examines if the content of a publication deserves a Press Release or any outreach;
- Organizes, maintain and is responsible of the content of the Euclid Consortium Publication web pages, including the publication-tracking pages;
- Reports to the ECL.

The ECEB is composed of (see [RD-14] for any updates after 2015):

- a Bureau, composed of
  - An ECEB Chair;
  - An ECEB Deputy;
  - An administrative/technical support group in charge of organising the ECEB day-to -day work and communication, and of the installation and operation of the EC internal publication archive and web site;
-
- The ECL;
- The ECL Advisory and Coordination Support Lead (EACSL);
- The Science Coordination Group (see 6.15.1);
- The EC members of EST (those not included in others list who may also be EST members);
- The 3 Project Managers;
- The 3 ECPG leads;
- The 3 Instrument Scientists and the SGS Scientist;
- The EC Mission Survey Scientist;
- The chair of the EC COM Group;
- The Chair of the Calibration Working Group
- The Chair of the Euclid Consortium Diversity Committee
- The ESA Project Scientist (invited)
- ECEB members at large (number set by the ECEB Chair and approved by the ECB).

The Euclid Consortium Publication Groups are responsible for the initiation, coordination and eventual completion of Euclid publications. There are three ECPGs corresponding to three different types of publication: Science, Technical and Data Releases.

The ECPG members are mostly ex-officio EC members. However, each ECPG has 2 members at large that come from the EC community. The members at large are selected from an open call and the term is 2 years renewable (see Euclid Consortium Publication Policy [RD14]). The ECPG Chairs and co-Chairs are appointed by the ECL after approval by the ECB.

6.13 Euclid Consortium Diversity Committee (ECDC)

The Euclid Consortium Diversity Committee monitors and advises the ECL and ECB on diversity, equality and inclusion issues within the consortium and, in particular, monitors the compliance with the EC Code of Conduct [RD16] by its members. The ECDC also monitors the selection process of EC positions to safeguard their fairness.

The ECDC members are appointed by the ECB, following the recommendation of the ECL who can choose to issue an open call to fill their vacancies.

6.14 Early Career Committee

The Euclid Consortium Early Career Committee (ECC) provides guidance to, and acts as a representative for early career researchers within the Euclid Collaboration (EC). The ECC monitors and advises the EC Leads (ECL) and the EC Board (ECB) regarding early career researchers within the EC, and any matters related to them. The ECC is in charge of organizing activities to provide support to early career researchers, and works closely with the ECDC.

The ECC is composed of both senior and early career members of the EC, including one ECDC representative, and a minimum of 5 members. A Chair of the committee is nominated by the ECC itself, and acts as contact with the ECL and the ECB. The ECC members are appointed by the ECB for a duration of 3 years (renewable), following the recommendation of the ECL who can choose to issue an open call to fill their vacancies.

6.15 External Communication, Education and Public Outreach (ECEPO)

As of 2023, the EC employs two communications groups: one for external communication – the Education and Public Outreach group (EPO); and an internal information management team – the Information and Communication Management group (ECICOM) defined in the Section 7.4.

The ECEPO group is led by the External Communications Lead, who is responsible for external communication, and external events, as well as EPO activities in collaboration with ESA. The EPO Lead may select a deputy, convenor, and a team to assist them with their responsibilities. The ECEPO Lead reports directly to the ECL. The ECEPO Lead acts as a point of contact with the ESA Communication Office and attends ECCG Meetings.

The ECEPO is encouraged to engage communications professionals at the national or local level in their activities whenever possible They are also encouraged to make sure that scientists and engineers within the EC who engage in communications activities are appropriately acknowledged for their efforts and receive appropriate career recognition whenever possible.

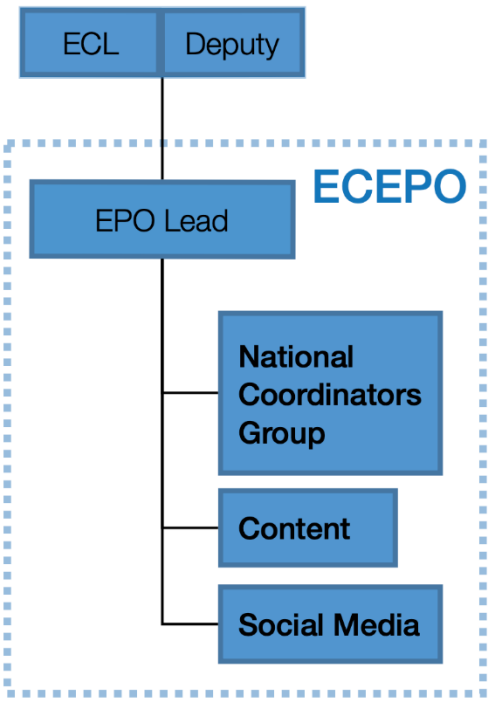

Figure 6.1: Current planned management structure of the ECEPO .

6.15.1 The ECEPO Lead

The ECEPO Lead is responsible for all of Euclid Consortium external communication, education, and public outreach activities. In particular, they are in charge of the design, development, implementation, operation, and coordination of the following 5 EC COM "Elements":

1. Euclid consortium image (including the EC Logo),
2. Media relation,
3. Web presence (including Social Media),
4. Education and public outreach.

The ECEPO Lead shall have the following responsibilities:

- Set up the ECEPO Management Plan and Management Tree;
- Monitors the progress of the ECEPO Elements;
- Liaise with the ESA Communication Office;
- Liaise with other stakeholders in Euclid EPO and communication activity e.g. communication officers at national funding agencies and EC member institutions;
- Liaise with the internal communications team (ECICOM);
- Report to the ECL on all external coms activities and participate in the ECCG;
- Defines EC-wide guidelines for all external communication needs.

6.15.2 External Communication

External communication includes all Education and Public Outreach (EPO) activities. These activities are led by an EPO Lead (optionally assisted by an EPO deputy).

The development of EPO activities will be led by a scientist or professional consultant. The Education subgroup will liaise directly with EC Scientists and EC professional communicators with Education expertise and report back to the EPO Scientist and EPO deputy.

The roles of the EPO team include:

- Liaise with the ESA Communication Office;
- Review all Euclid-related press releases involving EC members for fairness and accuracy;
- Liaise with other EPO stakeholders in the EC or related institutions;
- Define the ECEPO Communication goals and milestones;
- Maintain an ECEPO Implementation Plan
- Encourage and coordinate EPO activities of EC members on an international level;
- Encourage EC members to apply for EPO funding and assist those applying;
- Liaise with country leads (ECB) to identify EC Scientists who can provide relevant expertise to EC and/or ESA EPO activities;
- Liaise with country leads to identify and encourage participation from EC professional communicators in EC EPO activities;
- Monitor progress of EC EPO activities;
- Issue EPO communication guidelines for EC members;
- Monitor the country, gender and career-level representation for EC EPO activities;

- Negotiate with the ECB and ECL the status and rewards of those involved in EC EPO activities;
- Lead an evaluation committee of EC EPO activities and their impact. This should lead to periodic public reports;
- Coordinate, and possibly seek, additional funding for Euclid EPO activity across the EC members;
- Monitor any central EC EPO budget if appropriate; and
- Promote EC members involvement in external EPO events.

6.16 EC Activities

6.16.1 Science Activities : Science Coordination Group and Science Working Groups

The Science activities of the consortium are performed by the Science Working Groups (SWG). The organisation of the Euclid Consortium science activities is shown on Fig. 6.3. There are 14 SWGs. Each working group is led by 2 SWG leads and one deputy, with very few exceptions made by the ECB. These SWGs are augmented by temporary Inter Science Taskforces as needed. The activities of the SWGs are coordinated by a Science Coordination Group (SCG) in charge of organising the SWG activities inside the SWGs, between the SWGs, and with the ECL, the Instrument, the Mission Survey Group, the Science Performance Verification Group and the SGS scientists.

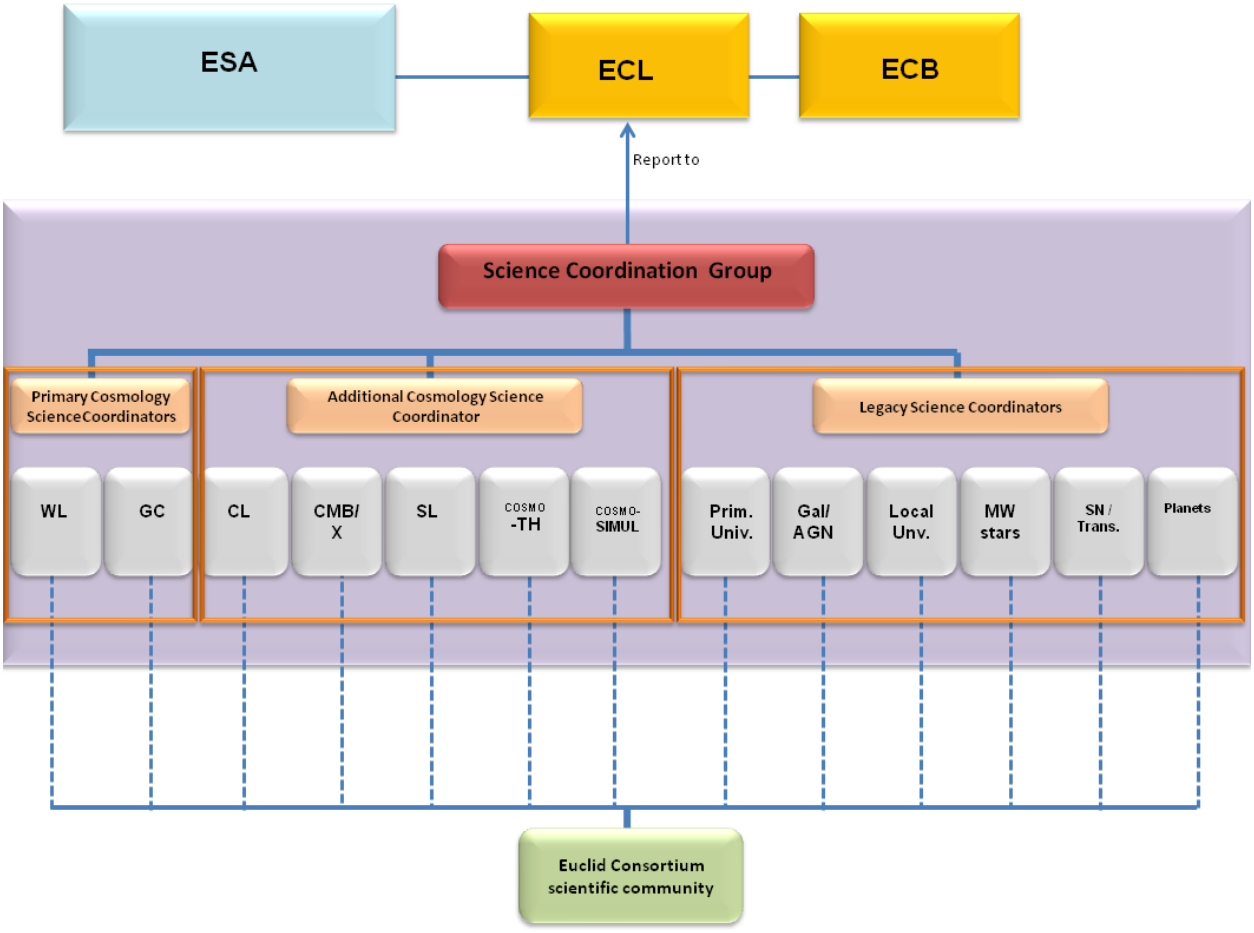

Figure 6.3: Organisation of the Euclid Consortium science activities. The Science Coordination Group is made of 7 *Science Coordinators* coordinating the activities of 14 Science Working Groups (Solar System Objects added in 2017 and is not shown in the Figure). Each Science Working Group is led by 2 *SWG leads*, and a deputy.

The EC Science Group is organized in 14 SWGs listed below:

- **Primary Cosmology Science WGs**
  - Weak Lensing
  - Galaxy Clustering
- **Additional Cosmology Science WGs**
  - Clusters
  - CMB/X cross-correlations
  - Strong Lensing
  - Cosmology Theory
  - Cosmological Simulations
- **Legacy Science WGs**
  - Primeval Universe
  - Galaxies and AGN evolution
  - Local Universe
  - Milky Way and Resolved Stellar Populations
  - Supernovae and transients
  - Planets
  - Solar System Objects

The number and scope of the Science Working Groups can be modified by the ECL with approval of the ECB in order to ensure a more efficient organisation and/or science exploitation.

The SCG nominates internally a spokesperson on a rotating basis with a term agreed by the SCG and the ECL.

Given the role of the SCG in coordinating all Euclid science and coordinating between the various Euclid SWGs, the members of the SCG should not be SWG leads or deputies at the same time as their SCG role. The 4 Primary cosmology SCG members will remain in those roles until the time of Data Release 1 (DR1). The other 3 members of the SCG will serve terms of length recommended by the SCG and ECL and approved by the ECB. After DR1, all members of the SCG should serve 3-year terms and be replaced on a rotating schedule. People are free to serve non-consecutive terms on the SCG after DR1.

6.16.1.1 Science Coordination Group

The Science Coordination Group reports to the ECL and is responsible for the following activities:

- Coordinating the development of the Science Case for the mission made by the SWGs, in support of the ECB and EST;
- Coordinating and organising the production and delivery of all EC scientific documents;
- Definition of the Science Requirements and their translation into instrument, calibration, survey and SGS requirements, in support of the ECL, ECB and EST;
- Monitoring of the science performance of the instrument and SGS and support trade-off decisions in support of the VIS and NISP Instrument Scientists, the SGS Scientist and the Science Survey Working Group;
- Together with the SGS, definition and coordination of the SGS/OU, SGS/SDC and SWG tasks and activities;

- As members of the ECEB, helping in this organising, coordinating and monitoring the Euclid Consortium scientific publications prepared by any SWG members, during the mission development (pre-launch) and after launch, that use EC proprietary materials (VIS or NISP technical information, EC simulations, SGS data products);
- Communication between SWG Coordinators and the other EC activities (ECL, ECL support, VIS, NISP, SGS and COM);
- Assisting in the coordination of Euclid science analysis with external collaborations;
- Preparing the scientific exploitation of the mission.

As of 2023, the Science Coordination Group has 7 Science Coordinators of which 4 represent the Primary Cosmology science (with reference to the WL and GC primary probes), or Euclid core science, and at least 2 representing the non-cosmology Legacy science (hereafter the Legacy Science). The remaining coordinator is selected from any science fields of the additional science in general (cosmology or not; hereafter the Additional Science). As described below, the composition and science expertise of the SCG can be modified based on suggestions from the SCG/ECL after approval by the ECB.

The SCG should have up to 7 members who are appointed by the ECB, based on a proposal from the ECL. The number and expertise of the coordinators may be modified if the ECL and the SCG (in consultation with the SWG leads) think it is necessary, provided it is approved by the ECB. The current (as of 2023) SCG members will remain in members of the SCG (unless they decide to step down) until about the time Data Release 1 (DR1). Is released publicly. Around the time of DR1, the membership of the SCG will be renewed. The ECL should consult with the SCG and other relevant parties to define the needed number and composition of the SCG for the next phase of Euclid science. The ECL should then organize an open call for volunteers and make selections in consultation with the then-current SCG. These selections should be sent to the ECB for approval. The timing of this in relation to DR1 should be set by the ECL, The outgoing SCG is expected to coordinate the release of flagship EC papers sing the DR1 data, while the incoming SCG should prepare and guide the process for DR2. The outgoing SCG and the incoming SCG should overlap for a period of about 3 months in order to facilitate a transfer of knowledge and expertise and tio help guide then definition of DR2 key projects. The same procedure should be followed to renew the SCG membership at the time of DR2 and DR3.

6.16.1.2 **Science Working Groups**

The EC Science Group is organized in 14 SWGs listed below:

- **Primary Cosmology Science WGs**
  - Weak Lensing
  - Galaxy Clustering
- **Additional Cosmology Science WGs**
  - Clusters
  - CMB/X cross-correlations
  - Strong Lensing
  - Cosmology Theory
  - Cosmological Simulations
- **Legacy Science WGs**
  - Primeval Universe
  - Galaxies and AGN evolution
  - Local Universe
  - Milky Way and Resolved Stellar Populations
  - Supernovae and transients
  - Planets
  - Solar System Objects

The number and scope of the Science Working Groups can be modified by the ECL with approval of

the ECB in order to ensure a more efficient organisation and/or science exploitation. Each SWG has 2 leads and a deputy. Each year a new deputy is chosen, the previous deputy becomes a lead, and the longest serving lead steps down. Thus, the term of service for SWG leadership is 3 years- 1 as Deputy and 2 as Lead. Half of the SWGs have their deputy chosen in the spring and half in the autumn. The selection is coordinated by the ECL, who issues an open call for new SWG leadership positions and sends nominations to the ECB for approval. SWG leadership positions vacated outside of the default timeline should be filled at the next open call to the EC with the aim of normalizing the leadership structure of the SWG as soon as possible. People can serve non-consecutive terms as SWG leads. One of the roles of SWG leads is to nurture future leaders and encourage people to take on leadership roles, ensuring a smooth succession of SWG leadership

6.16.1.3 **Inter Science Taskforce (IST)**

The Science Coordination Group can suggest the setting up of groups to investigate issues transversal to several Working Groups, the Inter Science Taskforce (IST) groups. Their proposal for the inception of an IST should be ratified by the ECL and ECB. The leads of the ISTs are selected by an open call issued by the ECL and are ratified by the ECB. The IST tasks are expected to be limited in time and therefore ISTs are not considered permanent entities in the EC structure. A review of the progress of the ISTs by the ECL/SCG should occur after 3 years if the IST is still active.
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6.16.2 Instrument Activities

The Instrument activities cover the VIS and NISP Instrument activities. See:

- For VIS section 7.1 and VIS Management Plan [RD 06];
- For NISP section 7.2 and NISP Management Plan [RD 07].

6.16.3 EC SGS Activities

See section 7.3 and EC SGS SIP [RD 08]

6.16.4 Communication activities

See section 7.4

6.17 EC Interfaces

See Figure 6.1.

6.17.1 National agencies Interfaces

6.17.1.1 **ECB**

- The members of the ECB are points of contact between the EC and their respective national agencies.

6.17.1.2 Steering Committee

- The organization and tasks of the Steering Committee are defined by ESA and some national funding agencies.

6.17.2 ESA Interfaces

- The ECL is the single formal interface to ESA (see Section 6.3.3 and the SMP [AD 02]), for all official communications between ESA and the EC, and all Mission and Science related matter. For day-to-day work on technical aspects, the PM's and the Communication Lead interact directly with ESA.

6.17.2.1 Science (EST)

- Scientific interfaces with ESA, as described by the SMP [AD 02], are done via the Euclid Science Team (EST). The EST is composed of 13 members, ten of them are "EST EC members", of which nine are nominated by the Euclid Consortium and one by NASA; 2 others are Independent Legacy Scientists nominated by ESA and the final one is the ESA Euclid Project Scientist. Additionally, the EC SGS scientist has a standing invitation to the EST meetings as a non-voting advisor to the EST. The 11 EST EC members fill the following activities/responsibilities:
  - One Survey Scientist;
  - One VIS imaging Instrument Scientist;
  - One NISP photometry and spectroscopy instrument scientist;
  - One BAO scientist;
  - One WL scientist;
  - Three Data Processing Scientist;
  - One Legacy Scientist;
  - One US scientist, NASA representative.

- The EST EC scientists [RD 10] are chosen among top-level scientists in the consortium (see Section 9). The EC members of the EST will this act as the scientific interface between ESA and the EC through the ECL and the EC coordination group. The ECL is invited to EST meetings as *ex-officio* members [AD 02]. The ECL can also be part of the EST through one of the EST EC positions mentioned above.

- In contrast with their position in the Consortium, the EC members of the EST will represent the ESA (or NASA, in the case of the US EST member) community as a whole and consider the Euclid mission in a broader perspective than the EC views in order to optimise the mission for a maximum scientific return to the ESA community, without jeopardising its primary science goals.

- Whenever necessary for the preparation of EST actions, EST EC members can request information or action to ECL support, VIS, NISP, SGS, SWG and EC COM. Requests shall be sent to the relevant Project Managers and Instrument/SGS scientists, or, when appropriate, to the SWG coordinators, EC COM Lead, ECL or ECL Advisory and Coordination Lead. A copy of all requests shall be sent to the ECL as well.

- The EST EC scientists may be invited to the ECCG telecons when ECCG members believe that some items of the agenda may be particularly relevant for them.

6.17.2.2 **Requirement Flow Down**

- The EC Coordination group interface with ESA by actively participating within a proposed joint ESA (Industry)-EC group in the requirements flow down as show in the following flow diagram (Figure 6.4).

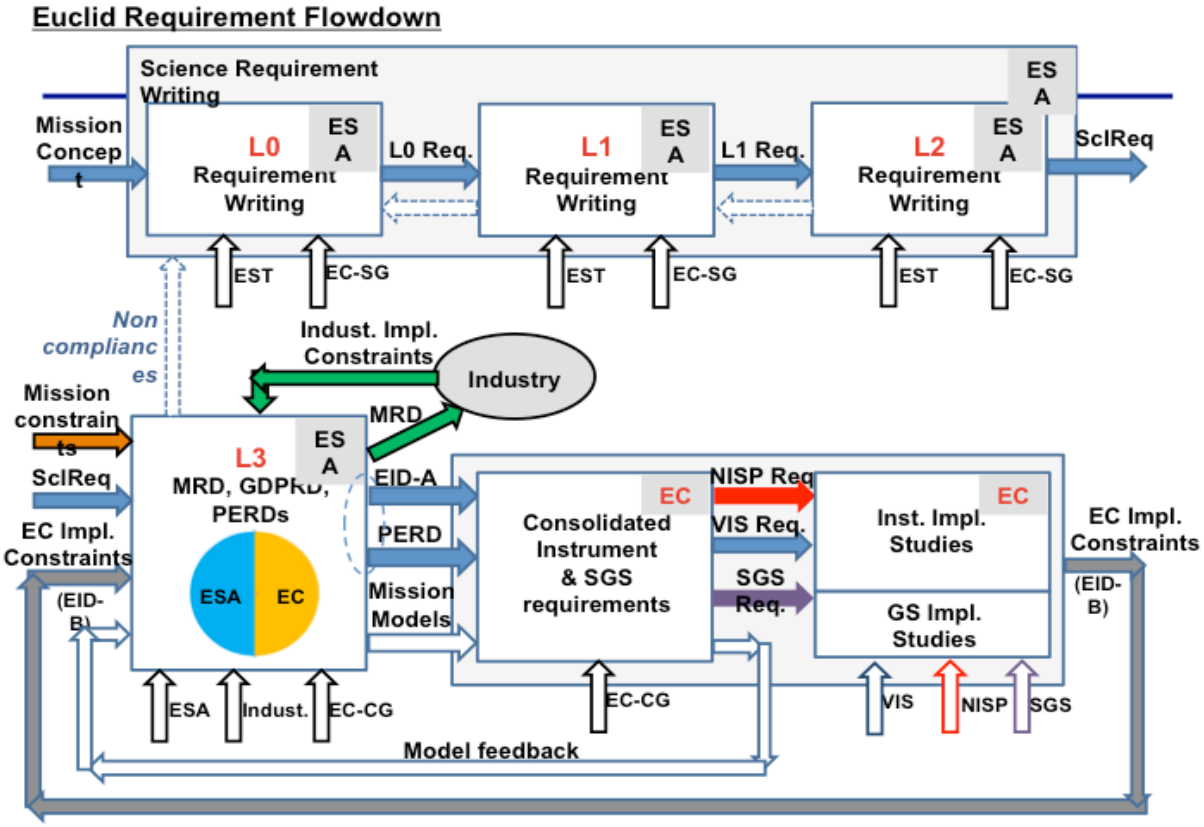

Figure 6.4: Proposed requirement flow down scheme

6.17.2.3 **Management and Project Control**

- By ECL delegation and under ECB control, the ECL and the EC Project Managers (Instrument PM, EC SGS PM and Communication Lead) interface with ESA with respect to all managerial aspects of their respective activities.

6.17.2.4 **System**

- Once the ESA Euclid Project Mission will be set up (See [AD 02]), the EC Mission System Manager will interface with the ESA Euclid Project Mission System Manager. The EC Mission System Manager will be the single contact point for all top level mission system matters.

6.17.2.5 **Technical**

6.17.2.5.1 Instruments

- The formal communication path goes via the EC Instrument Managers to the VIS and the NISP.
- In order to keep the EC requirements flow down under control, direct communications at Instrument level shall be restricted to the technical issues having no potential impacts on the requirements at EC level.

6.17.2.5.2 EC SGS

- All direct communication paths go via the EC SGS Manager, who is supported by the EC SGS Project Office and the EC SGS System Team for all technical activities.
- In order to keep the EC requirements flow down under control, direct communications at SGS level shall be restricted to the technical issues having no potential impacts on the requirement at EC level.

6.17.2.6 **Calibration**

- The EC Mission Survey Scientist, the lead of the Calibration working group and the members of the Calibration working group interface with the ESA Euclid Project Mission team members responsible for calibration matters.

6.17.2.7 **Survey**

- The EC Mission Survey Scientist and his/her deputy coordinator interface with the ESA Euclid Project Mission team members in charge of the design and planning survey scenarios.

6.17.2.8 **Detectors**

- The NISP and VIS detector working groups interface with the ESA Euclid Project Mission team members responsible for detectors.

6.17.2.9 **Communication**

- The ECICOM and ECEPO interface with the ESA Communication Project Office.

7 Instrument, SGS and Information Management

7.1 VIS Management.

Only the top-level management structure of the VIS Instrument is addressed hereafter. Refer to the VIS Instrument Management Plan for details [RD 06].

7.1.1 VIS Organisation

The VIS team is led by the VIS Instrument Lead. The top management structure also has the VIS Project Manager and the VIS instrument Scientist. The VIS project organisation is shown in Figure 7.1.

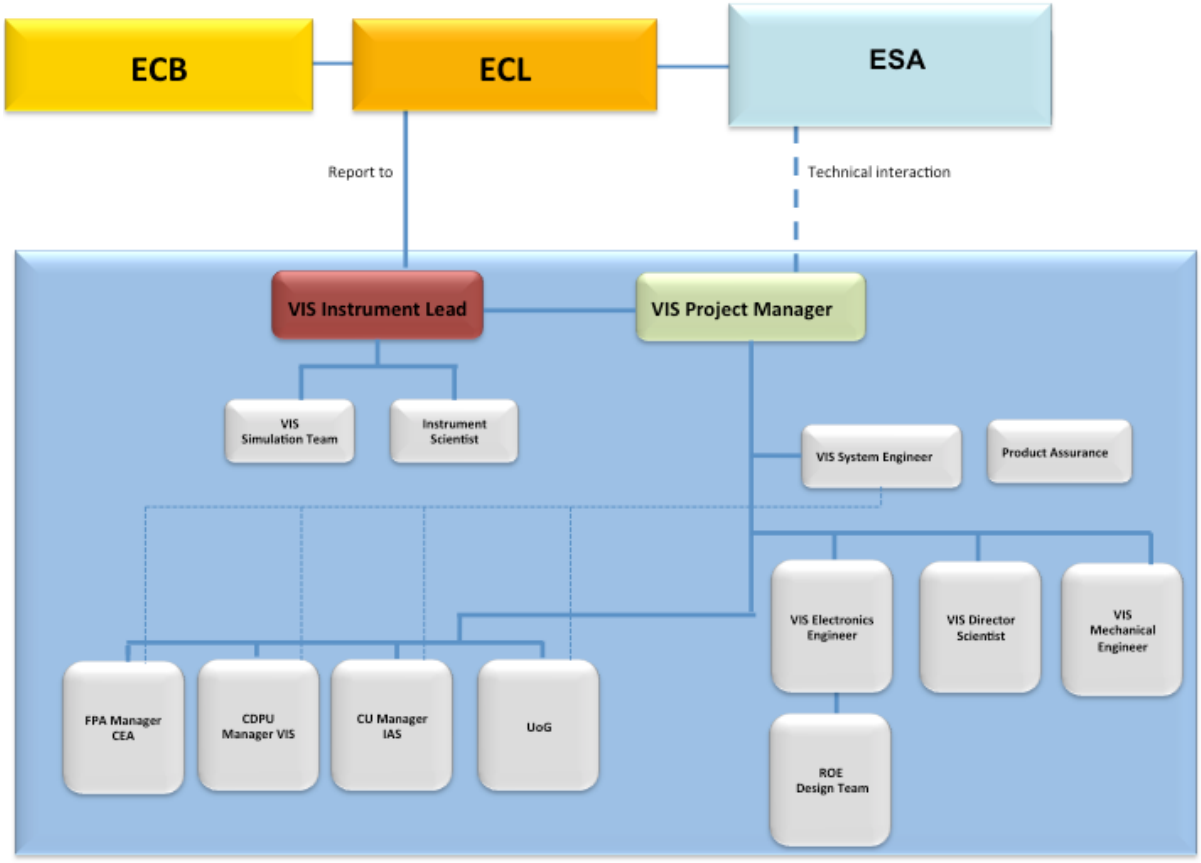

Figure 7.1: Organisation of the VIS instrument

The VIS team is formed by several groups including a CCD detector Working Group in charge of providing support to ESA in the procurement of the CCD detectors to ensure that the Science Requirements can be met ([AD 02]).

7.1.2 Roles & Responsibilities

7.1.2.1 VIS Instrument Lead

The VIS lead has responsibility for the scientific specification of the VIS programme at Euclid Consortium Board (ECB) level. The VIS lead sets the overall direction of the VIS programme, in coordination with the ECL and ECB.

7.1.2.2 VIS Project manager

The VIS Project Manager (VIPM) is responsible for the day to day direction of the programme. The VIPM reports to the VIS Instrument Lead on strategic matters.

7.1.2.3 VIS Instrument Scientist

The VIS Instrument Scientist's tasks are as follows:

- Development and maintenance of the VIS Scientific specification, in liaison with the Euclid System Team;
- Management of the production of the VIS simulations by UCL and ROE;
- Development of the VIS Calibration plan;
- Responsible for instrument performance evaluation.

7.1.2.4 VIS System Engineer

The System Engineer’s tasks are as follows:

- Development and maintenance of the VIS functional requirements and the VIS subsystem functional requirements;
- VIS Interface specifications (internal and external);
- VIS budgets;
- VIS development plan;
- VIS AIT plan;
- VIS Risk Assessment.

7.1.2.5 PA/QA manager

The VIS PA/QA manager’s tasks are as follows:

- Adaptation of the Euclid PA plan as required for VIS;
- Maintenance of NCR and RfD lists;
- Support of all reviews;
- Liaison with Euclid PA Manager and PA Managers at VIS institutes;
- Sign-off of all VIS level documents.

7.2 NISP Management.

The top-level management structure of the NISP Instrument is addressed hereafter. The NISP Instrument Management Plan [RD 07] can be consulted for details.

7.2.1 NISP Organisation

The NISP instrument activities are managed by a single Project Manager, supported by a Project Office and a Project System Team.

Each contributing party shall have its own Local Project Office, managed by a Local Project Manager.

The NISP System Team Organization is reported in Figure 7.2.

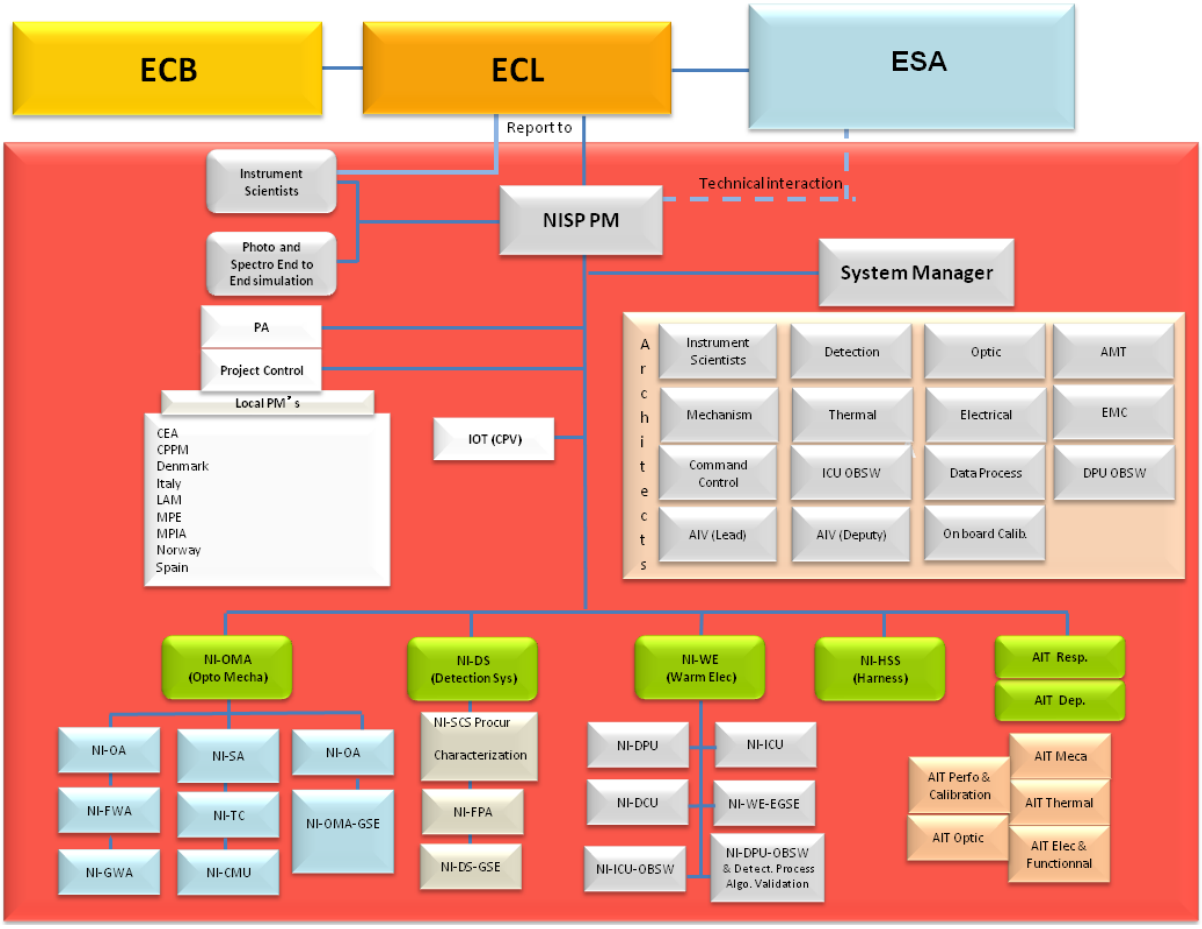

Figure 7.2: Organisation of the NISP system team

The NISP includes a HgCdTe detector Working Group in charge of providing support to ESA in the procurement of the HgCdTe detectors to ensure that the Science Requirements can be met ([AD 02]).

7.2.2 NISP roles & Responsibilities

7.2.2.1 NISP Project Office

The NISP Project Office (NPO) is led by the NISP PM and it is composed of:

- The NISP Project Manager;
- The NISP Instrument Scientists;
- The NISP System Lead Manager;
- All the NISP local project Manager;
- The NISP PA Manager;
- The NISP Project Controller.

7.2.2.2 NISP Project Manager

The NISP Manager is responsible for ensuring the NISP instrument provision to the EC, within the schedule constraint of the programme. He is responsible for all the technical and managerial aspects of the NISP instrument. He receives all formal communication, involving Instrument matters, between ESA and the Instruments Project Office. He is member of the Instruments Project Office. He is a member of the EC coordination group. He is the only formal point of contact between the Euclid Instruments Project Office and the NISP Technical Team.

7.2.2.3 NISP System Manager

The NISP System Manager coordinates the instrument development technical activities. He is member of the Instruments Project Office. The NISP System Lead provides technical support to the NISP PM, to the NISP Instrument Scientists and to the EC on matters relevant to the Instrument Requirements definition and development. The NISP System Lead cooperates directly with the NISP PM for programmatic and technical aspects. He reports directly to the NISP PM.

7.2.2.4 NISP Instrument Scientists

The Instrument Scientists (ISs) provide scientific and technical support to the PM and to the NISP System Team focused on the instrument issues. There are two instrument scientists in the NISP team: NISP Spectroscopy Instrument Scientist, who shall supervise the spectroscopic mode for NISP; NISP Photometry Instrument Scientist, who shall supervise the photometric mode for NISP. They are members of the Instruments Project Office.

7.2.2.5 NISP Project System Team

A System Team shall be set up to supervise the system design and specification of the instrument. It shall include:

- The NISP Project Manager;
- The NISP Instrument Scientists;
- The NISP System Manager;
- The different NISP system engineers;
- The NISP PA Manager.

Other members will join the NISP System Team for specific subjects such as the Program Managers of NISP subsystems and Technical Key Persons.

The composition of the Team could change with the project evolution.

The NISP Project System Team is coordinated by the NISP System Lead and shall support the NISP PM itself in managing the NISP Project under the technical and programmatic issues during the whole project development.

7.3 EC Science Ground Segment

The top-level management structure of the SGS is addressed hereafter. The SGS Definition and Implementation Plan [RD 08] and the EC SGS Management Plan [RD-15] may be consulted for details.

7.3.1 General

The EC is responsible for the design and implementation of its own section of the Euclid Science Ground Segment (SGS) - the EC Science Ground Segment (EC SGS). Based on the SMP ([AD 02]) the EC SGS is in charge of the following tasks:

- In collaboration with the SOC, it defines and maintains the instruments modes of operation in order to maximise the scientific return of the mission;
- It supports the SOC in assessing the quality of the data and monitoring the health of the payload; it may recommend to the Mission Manager changes to the payload configuration and instrumental set-up as required to optimise the performance of the mission;
- It processes and calibrates all science data and removes instrumental effects and systematic, including cosmic rays. It generates level-2 and higher data, including the final mission products and catalogues;
- It applies strict quality control to the data it processes;
- It archives all processed data into the Euclid Archive System and makes them available to EMS scientists, to the SOC and all members of the EST;
- It develops and validates all necessary data analysis algorithms, including those required for galaxy shear analysis, photometric redshift determination, spectroscopic redshift determination, and other slitless spectroscopic data analysis;
- It performs simulations to compute the end-to-end performances of the mission, verify that they meet Euclid's scientific objectives and to validate the data processing pipeline;
- It procures, archives and processes all additional external data-sets required to achieve Euclid scientific objectives;
- It contributes to the design and development of the Science Archive System (SAS) by the SOC.
- It is responsible for the Instrument Operation Teams (IOTs), during the commissioning and operation phases

The EC SGS activities are led by the EC SGS Manager, assisted by a Deputy Manager. The management activities are assisted by an EC SGS Scientist, whose role is to look after the compliance of the developments and of the SGS scientific results with the science requirements. Figure 7.3 describes the management organisation of the EC SGS.

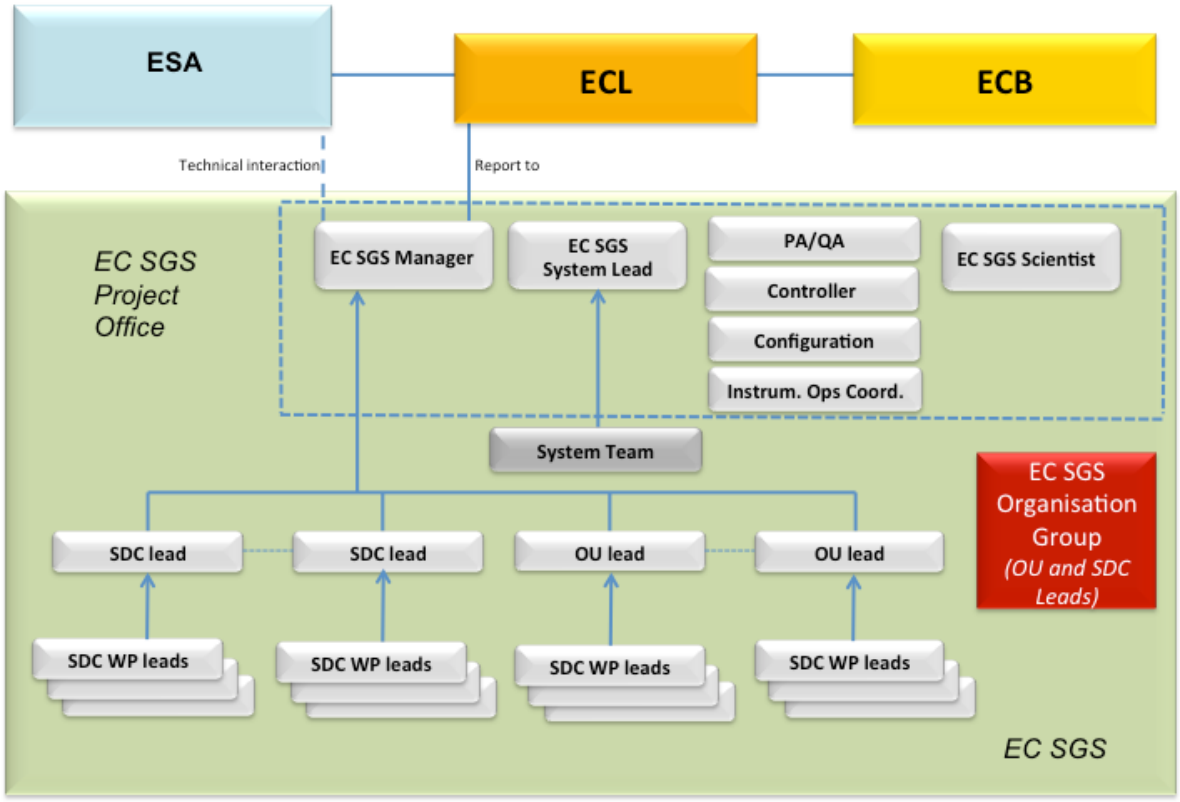

Figure 7.3: Management of the EC SGS (subset of the EC management in [AD 02], see [RD 08], [RD-15])). Reporting follows a hierarchy from WP Leads to OU and SDC Leads and System Lead, to the EC SGS Manager, who reports to the EC Lead and has technical interactions with ESA. The EC SGS Organization Group is composed of the OU and SDC Leads and Project Office members. The EC SGS Manager Support Team members are part of the Project Office.

7.3.2 EC SGS Manager

The EC SGS Manager is responsible for ensuring the successful achievement of the SGS objectives and tasks covering its technical and schedule aspects in the frame of the managerial and funding constraints throughout the project, from the Development Phase to Post-operations. The SGS Manager is also responsible for ensuring that all SDC-relevant tasks and deliverables described in OUs are taken over by at least one SDC.

During the Development Phase, the EC SGS Manager takes or endorses the decisions having an impact on all SGS subsystems. For decisions impacting the EC managerial and/or funding constraints, they shall consult the ECB. During the commissioning and operation phases, the SGS is responsible for the Instrument Operation Team (IOT, in bold on Fig 6.2) activities.

The EC SGS Manager reports to the ECL (and is permanently invited at the meetings of the ECB), is a permanent member of the EC Coordination Group. They is assisted by a EC SGS Deputy Manager and advised by the EC SGS Scientist and, for technical matters, by the EC SGS System Lead, the EC SGS PA/QA Lead, the EC SGS Project Controller and the EC SGS Configuration Lead. In principle, the EC SGS Deputy Manager is the Lead of the EC SGS System Team.

The role of the SGS Manager is to:

- Set up and maintain the EC SGS Management Plan.
- Set up and maintain the EC SGS Development Plan and the Euclid SGS Project Management Plan, supported in particular by the EC SGS System Team and PA/QA Leads;
- Set up and maintain the SGS development milestones and schedule, supported in particular by the EC SGS Project Controller;
- Monitor the progresses and costs and takes the decisions at managerial, technical and programmatic level;
- Set up a continuous risk evaluation process;
- Report to the ECB and participate to the EC Coordination Group and in particular for any apparent difficulties with resource allocations in the Consortium members or advice of any event or non event that is likely to cause delay and / or cost impacts to the Project;
- Define and, during the Operations Phase, support the procedures for instrument maintenance and performance verification, to be routinely performed by the individual SGS elements. This activity is carried out in close collaboration with the EC Instrument Operations Manager and the SOC;
- Interface with ESA for day-to-day technical interactions on the SGS, while reporting to the ECL which remains the ultimate authority for EC decisions.

7.3.3 EC SGS Project Office

The SGS Project Office is led by the EC SGS Manager, assisted by EC SGS Deputy Manager, and is made up of the EC SGS System Lead and the EC SGS Scientist.

Technical support is provided by the EC SGS Project Controller, the EC SGS PA/QA Lead, the EC SGS Configuration Lead and the Instrument Operation Coordinator, who constitute the EC Manager's Support Team.

Other key persons may be added to the Project Office, if their roles are felt as needed and appropriate to the ECB.

The EC SGS Project Office will monitor all technical, managerial and administrative activities of its own and, where appropriate, of the OUs and SDCs, and provide the directives necessary to accomplish the project, expedite resolution of problems and interface with the relevant ESA counterparts through the EC SGS Manager.

The role of the SGS Project office is to:

- Assist the EC SGS management in the running of the EC SGS activities;
- Define and manage end-to-end tests;
- Produce and maintain the EC SGS system documentation;
- Prepare the EC SGS reports;
- Coordination of EC SGS and Science activities (transfer science requirements from the SWG to algorithm definitions and prototyping software tools inside OUs);
- Coordination of EC SGS and Calibration activities;
- Coordination of inter-OU support tasks;
- Coordination of inter-SDC support tasks;
- Assist the EC Management in the preparation of the reviews.

7.3.4 EC SGS System Lead

The EC SGS System Lead is responsible for coordinating all aspects of the infrastructure needed to ensure a consolidated and optimized Instrument SGS system.

The role of the SGS System Lead is to:

- Lead the EC SGS System Team, being responsible for its WPs and deliverables;
- Coordinate the overall activity aimed at defining standards and development procedures for the SGS: system architecture(s), common tools, APIs, tests, integration and validation, EC archives structure, data distribution within the EC, etc;
- Define an approach for the flow down of the (high-level) EC Requirements Specification(s) into specifications for the SGS, including internal I/F requirements, ensuring the consistency of the requirement flow down.

7.3.5 EC SGS Scientist

The EC SGS scientist is responsible for the coordination between the scientific needs of the Euclid mission and the data products delivered by the EC SGS. They may be supported by a Deputy.

The role of the SGS Scientist is to:

- Check and guarantee that any decisions and actions relevant for the EC SGS activities do not jeopardise the main science drivers and the top level science requirements of the Euclid mission;
- Organise and maintain the strong links and coordination between the EC SGS activities and the Science Group, the simulation and the calibration activities;
- Organise the links and coordination between the SWG and OU activities and guarantee that the top level science requirements are all transferred to the relevant OUs;
- Check that the EC SGS processing tasks, the pipeline and the mission archive fulfil all the scientific needs of the Euclid mission listed in the SciRD [RD 03].

7.3.6 EC SGS PA/QA Lead

The EC SGS PA/QA Lead is responsible for the setting up all the necessary methods and procedures aiming to guarantee that the SGS development and operations activities will fulfil the product/quality assurance requirements for the EC SGS and that the quality of the deliverable software and data products are compatible with the mission.

The role of the SGS PA/QA Lead is to:

- Write and maintain the PA/QA documents (e.g. PAPs, method and procedures, software configuration control, product lists, etc) and of the risk management plan;
- Manage the EC PA/QA Plan including: placing requirements on the SDCs and OUs (TBC) to provide PA/QA plans, review and approval of those plans, audit of SDC providers against their plans and definition of internal procedures if necessary;
- Prepare reviews and inspections (documentation, working procedures);
- Define configuration control and non conformance management;
- Define best practices and control of coding procedures;
- Continuous risk assessment on all EC SGS activities and definition of risk mitigation measures whenever needed;
- Maintain the EC SGS PA/QA and Risk databases.

7.3.7 EC SGS Configuration Lead

The EC SGS Configuration Lead is responsible for the setting up all the necessary methods and procedures aiming to guarantee that the EC SGS documentation and software are regularly updated, are kept under configuration control, and are accessible to the EC members.

The role of the SGS Configuration Lead is to:

- Support the EC SGS Manager in the definition of the Documentation Tree;
- Define documentation standards for the EC SGS;
- Implement and maintain the EC SGS documentation repository;
- Implement and maintain the EC SGS software repository;
- Keep track of configured documents, software and hardware.

7.3.8 Reporting

WP leaders will provide periodical report to the relevant SDC or OU Leads, who will report themselves to the EC SGS Manager on the work under development, the updated schedule, the technical design, etc. and will communicate any problem areas (technical, manpower or funding) that impacts on the Euclid Consortium activities. These reports are endorsed by the ECL and will form the basis of the EC SGS advancement reports to ESA.

7.4 EC Information and Communication Management (ECICOM)

As of 2023, the EC employs two communications groups: one for external communication – the Education and Public Outreach group (ECEPO) defined section 6.15; and an internal information management team – the Information and Communication Management group (ECICOM) defined here.

The ECICOM group is led by the Internal Communications Lead, responsible for the internal communication and information management, as well as the communication with EC alumni. The ECICOM Lead may select a deputy, a convenor, and a team to assist them with their responsibilities. The ECICOM Lead reports directly to the ECL and attends the ECCG meetings.

ECICOM and ECEPO are encouraged to make use of the expertise of communications and information-management professionals at the national or local level in their activities whenever possible. They are also encouraged to make sure that scientists and engineers within the EC who engage in communications activities are appropriate acknowledged for their efforts and receive appropriate career recognition whenever possible.

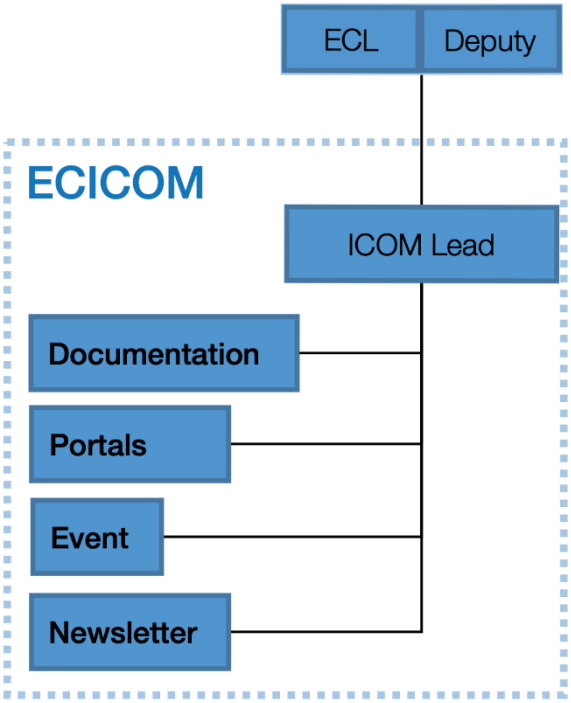

Figure 7.4: Current planned management structure of the ECICOM .

7.4.1 The ECICOM Lead

The ECICOM Lead is responsible for all aspects concerning the Euclid Consortium internal communication and information management. In particular, they are in charge of the design, development, implementation, operation and coordination of the following ECICOM "Elements":

1. The "ecosystem" of EC internal portals and pages, including (but not limited to) the Tracking Portal, Publications Portal, Projects Portal, Redmine, Gitlab, all EC Slack (and other) Workspaces, Cosmos Wiki, Speakers Bureau Portal, the consortium part of the EC website (www.euclid-ec.org), as well as the user interfaces, but not contents, of the data portals (MDB, DPS and SAS),
2. The organisation of EC internal documentation,
3. The internal events team,
4. The internal newsletter,
5. Communication with alumni and inactive members.

The ECICOM Lead has the following responsibilities:

- Set up the ECICOM Management Plan;
- Monitor the progress of the ECICOM Elements;
- Appoint an Information Security Champion (security including prevention of hacking, data loss, as well as the implementation of privacy laws, like the GDPR);
- Act as the Transparency Champion;
- Liaise with the SGS PO;
- Liaise with other stakeholders in Euclid internal communication activity (e.g. ESA Project and Mission teams, ESA portal managers etc.);

- Liaise with the external communications team (ECEPO);
- Report to the ECL on all internal coms and information activities and participate in the ECCG;
- Define EC-wide guidelines for all internal communication needs.

7.4.2 Internal Communication

The development of effective internal communication and information management is central to the success of the EC. Internal communication and information management is necessary for all groups in EC: the ECB, the SGS, the Instruments and Science activities.

The internal Information and Communication Management group (ECICOM) is led by the Internal Communication Lead (ICL) with the assistance of a deputy. The Internal Communication Lead may also call upon the assistance of an engineer, for set--up and maintenance of internal communications tools, and an internal communication administrator. The ICL and deputy will also be in charge of communicating, and monitor where necessary, EC internal policies from the ECB and ECL to the whole EC membership and external stakeholders if necessary. The ICL and deputy can be contacted by any member the EC to discuss internal communication and information management issues. The Internal Communication engineer and administrator will coordinate directly with the SGS, Instruments and Science groups to help define the EC needs regarding internal communication and information management.

The roles of the Internal Communication team include:

- Set up the Internal Communication and Information Management Plan;
- Liaise with external stakeholders relevant to information management in the EC (ESA Mission and Project teams, ESA portal managers) ;
- Defining the EC internal communication and Information management goals and milestones;
- Lead an evaluation committee of EC internal communication and information management activities and their effectiveness;
- Define and maintain the Internal Communication Implementation plan;
- Monitoring use of communication and information management tools in the EC (wiki's, Slack, email lists, etc);
- Assisting ECL and ECEB Lead with publication policy procedures;

7.4.3 Events

The Event group will deal with all internal and external events, including Euclid-themed national and international scientific conferences and media events (in collaboration with the Speakers Bureau and the ECEB). The Events group will work closely with the EC members when organising scientific conferences and will assist the EPO team in media events if needed.

The Events group will be led by an Events Lead. The Events team is formally part of the ECICOM, but works at the interface with the ECEPO with respect to external events.

The roles of the Events team are:

- Help organize national and international Euclid-themed scientific conferences, including coordination with individual Science Organizing Committees (SOCs) and Local Organizing Committees (LOCs) for specific conferences;
- Assist the EPO team with organisation of media events; and
- Help the Speakers Bureau to promote EC members in the involvement of appropriate scientific conferences;

Sharing of responsibilities

The Consortium has distributed effort according to the skills in the participating institutes, and reflecting the areas of national interest in Euclid. This also ensures that a broad spectrum of recent and appropriate technical design expertise is brought to bear on the design, construction and test of the instrument and ground segment. Each country will be committed to fund their respective contributions via their National Agencies.

7.5 Top EC Work Breakdown (from Jan 2011 to Dec 2019, see changes in Sec 6)

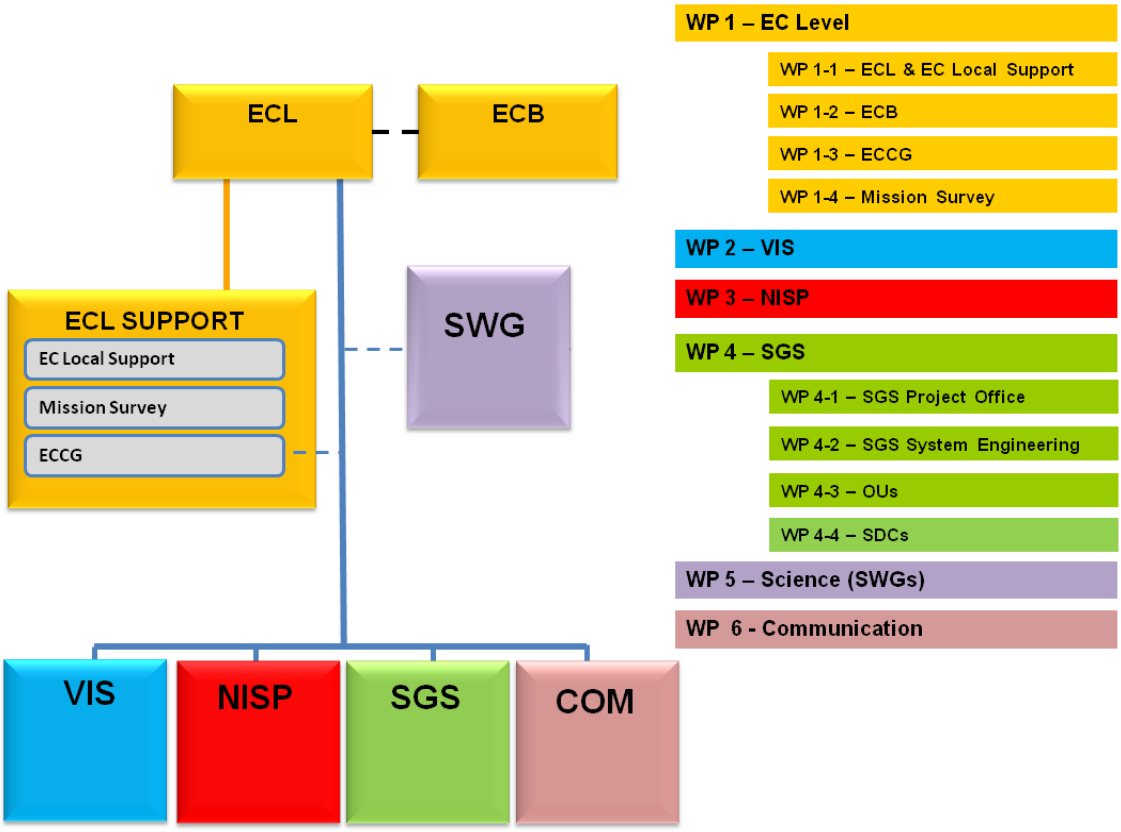

Figure 9.1: EC Work Breakdown.

7.6 Work division between countries

The commitments of each country are defined in the MultiLateral Agreement (MLA) with subsequent additions according to MoUs.

The following tables describe the work division between countries which are currently members of the EC and represented in the ECB.

7.6.1 France

WP-1 – Man. & Coord.	EC Lead – ECB – ECL Local coordination and management - ECL Mission system engineer

	Mission Survey, Complementary observations
WP-2 – VIS	VI-FPA: Lead + Thermo-mech design & procurement, Test & characterisation (shared with UK). VI-CU (Calibration Unit) GSEs VI-PMCU, VI-PMCU-PSU
WP3 – NISP	Spectrometer Instrument Scientist; Project Management, System Manager, PA/QA Lead NI-OMA Lead and Thermo_mech. Structure procurement. NI-CM (Cryo-mechanism FWA & GWA) NI-GWA Grism assemblies NI-DS (Detector System) NI-DS AIV/AIT, Instrument AIV/AIT, Contribution to GSEs Detector characterization
WP-4 – SGS	
WP-4-(1+2) PO+Sys. Engineering	Deputy EC SGS manager, EC SGS Scientist, System Team Coordination, EC-SGS Performances, Data Modelling
WP-4-3 OUs	OU-VIS (coord), OU-SIR (dpty), OU-SIM (dpty), OU-MER (dpty), OU-SPE (coord.), OU-LE3 (coord.)
WP-4-4 SDCs	French SDC
WP-5 – Science	SPV
WP-6 – Communication	

7.6.2 Italy

WP-1 – Man. & Coord.	ECB – Coordination Group Mission Survey
WP-2 – VIS	VI-CDPU HW, VI-CDPU SW, VI-CDPU PSU
WP-3 – NISP	Grism Wheel Design and AIV/AIT, FPA IF Lead, FPA Design, Thermal Design, Instrument Model, GWA mechanical parts manufacturing Warm Electronics Lead, NI-DPU, , NI-PSU, On-board SW, Warm Electronics + NI-DS AIV/AIT, Instrument AIV/AIT Phase 2, contribution to GSEs
WP-4 – SGS	Lead
WP-4-(1+2) PO+Sys. Engineering	EC SGS Manager, PA/QA, Configuration Management, Validation and Verification, System Tests, Testing Tools and Procedures, Data Quality Control Tools, Coordination with Instrument Operation Teams, Level 1 common infrastructure.
WP-4-3 OUs	OU-NIR (coord), OU-SIR (coord), OU-MER (coord), OU-SPE (dpty), OU-LE3 (dpty)
WP-4-4 SDCs	Italian SDC
WP-5 – Science	SCG
WP-6 – Communication	

7.6.3 Germany

WP-1 – Man. & Coord.	ECB – Coordination Group
WP-2 – VIS	Optical architect
WP-3 – NISP	Photometer Instrument Scientist Opto-mechanics Sub-assy, NISP Filters, NI-CU, contribution to GSEs

WP-4 – SGS	
WP-4-(1+2) PO+Sys. Engineering	
WP-4-3 OUs	OU-EXT (coord), OU-MER (dpty), OU-SHE (dpty)
WP-4-4 SDCs	DE SDC
WP-5 – Science	ECEB, SCG
WP-6 – Communication	

7.6.4 UK

WP-1 – Man. & Coord.	ECB – Coordination Group
WP-2 – VIS	VIS Lead, VIS Instrument Scientist PO: PM, SL, PA/QA CCDs (ESA Procured), ROEs, ROE-PSUs
WP-4 – SGS	
WP-4-(1+2) PO+Sys. Engineering	Common Tools
WP-4-3 OUs	OU-VIS (dpty), OU-LE3 (dpty), OU-SHE (coord)
WP-4-4 SDCs	UK SDC
WP-5 – Science	SCG
WP-6 – Communication	

7.6.5 Spain

WP-1 – Man. & Coord.	ECB, Complementary observations
WP-2 – VIS	
WP-3 – NISP	FWA, NI-ICU HW , GSEs
WP-4 – SGS	
WP-4-(1+2) PO +Sys. Engineering	
WP-4-3 OUs	OU-SIM (coord), OU-PHZ (dpty)
WP-4-4 SDCs	Spanish SDC
WP-5 – Science	EC Cosmological simulations, SWG-CoSIM
WP-6 – Communication	

7.6.6 Switzerland

WP-1 – Man. & Coord.	ECB – Coord. Group
WP-2 – VIS	VI-SU (Shutter)
WP-3 NISP	
WP-4 – SGS	
WP-4-(1+2) PO+Sys. Engineering	Abstraction Layer
WP-4-3 OUs	OU-SHE (dpty), OU-PHZ (coord)
WP-4-4 SDCs	Swiss SDC
WP-5 – Science	EC cosmological simulation, SWG-CoSIM
WP-6 – Communication	

7.6.7 Netherlands

WP-1 – Man. & Coord.	ECB
WP-2 – VIS	
WP-3 – NISP	
WP-4 – SGS	
WP-4-(1+2) PO+Sys. Engineering	EMA metadata, EMA data transfer
WP-4-3 OUs	OU-NIR (dpty), OU-EXT (coord)
WP-4-4 SDCs	Dutch SDC
WP-5 – Science	SCG
WP-6 – Communication	

7.6.8 Norway

WP-1 – Man. & Coord.	ECB
WP-2 – VIS	
WP-3 – NISP	NI-OMA structure, metallic part design optimisation and manufacturing NI-OMA Titanium Bipods design optimisation and manufacturing NISP MGSE (transport containers, handling and lifting devices)
WP-4 – SGS	
WP-4-(1+2) PO+Sys. Engineering	
WP-4-3 OUs	Contributions
WP-4-4 SDCs	
WP-5 – Science	
WP-6 – Communication	

7.6.9 Austria

WP-1 – Man. & Coord.	ECB
WP-2 – VIS	
WP-3 NISP	
WP-4 – SGS	
WP-4-(1+2) PO+Sys. Engineering	
WP-4-3 OUs	Contributions
WP-4-4 SDCs	
WP-5 – Science	
WP-6 – Communication	

7.6.10 Finland

WP-1 – Man. & Coord.	ECB
WP-2 – VIS	
WP-3 NISP	
WP-4 – SGS	
WP-4-(1+2) PO+Sys. Engineering	Data Quality Control Tools
WP-4-3 OUs	Contributions
WP-4-4 SDCs	Finnish SDC

WP-5 – Science	
WP-6 – Communication	

7.6.11 Romania

WP-1 – Man. & Coord.	ECB
WP-2 – VIS	
WP-3 – NISP	
WP-4 – SGS	
WP-4-(1+2) PO+Sys. Engineering	
WP-4-3 OUs	Contributions
WP-4-4 SDCs	
WP-5 – Science	Contributions
WP-6 – Communication	

7.6.12 Portugal

WP-1 – Man. & Coord.	ECB Mission Survey
WP-2 – VIS	
WP-3 – NISP	
WP-4 – SGS	
WP-4-(1+2) PO+Sys. Engineering	
WP-4-3 OUs	Contributions
WP-4-4 SDCs	
WP-5 – Science	SCG
WP-6 – Communication	

7.6.13 Denmark

WP-1 – Man. & Coord.	ECB
WP-2 – VIS	
WP-3 – NISP	NISP Telescope simulator including CFRP optical bench Detector characterisation: QE and MTF
WP-4 – SGS	
WP-4-(1+2) PO+Sys. Engineering	
WP-4-3 OUs	Contributions
WP-4-4 SDCs	
WP-5 – Science	
WP-6 – Communication	

7.6.14 USA

WP-1 – Man. & Coord.	ECB, Complementary observations
WP-2 – VIS	
WP-3 – NISP	NISP Detector provision and characterisation

WP-4 – SGS	
WP-4-(1+2)	
WP-4-3 OUs	Contributions
WP-4-4 SDCs	Contributions
WP-5 – Science	Contributions
WP-6 – Communication	

7.6.15 Belgium

WP-1 – Man. & Coord.	ECB
WP-2 – VIS	VIS FPA tests
WP-3 – NISP	NISP FPA tests
WP-4 – SGS	
WP-4-(1+2)	
WP-4-3 OUs	Contributions
WP-4-4 SDCs	
WP-5 – Science	Contributions
WP-6 – Communication	EPO

7.6.16 Canada

WP-1 – Man. & Coord.	ECB, Complementary observations
WP-2 – VIS	
WP-3 – NISP	
WP-4 – SGS	
WP-4-(1+2)	
WP-4-3 OUs	Contributions
WP-4-4 SDCs	
WP-5 – Science	SCG
WP-6 – Communication	EPO

7.6.17 Japan

WP-1 – Man. & Coord.	ECB, Complementary observations
WP-2 – VIS	
WP-3 – NISP	
WP-4 – SGS	
WP-4-(1+2)	
WP-4-3 OUs	Contributions
WP-4-4 SDCs	
WP-5 – Science	SCG
WP-6 – Communication	EPO

7.7 Composition of EC Groups

The Euclid Consortium internal web pages (https://www.euclid-ec.org/) list the composition of the following EC groups:

- Euclid Consortium Board (ECB)
- ECL Support Office (ECL-SO)
- Euclid Consortium Diversity Committee (ECDC)
- Early Career Committee (ECC)
- Euclid Consortium Coordination Group (ECCG)
- Euclid Science Team (EST)
- Science Working Groups (SWGs)
- VIS instrument (VIS)
- NISP instrument (NISP)
- Science Ground Segment (SGS)
- Communication Group (COMS)
- Euclid Consortium Editorial Board (ECEB)
- National Representatives (ECB, NPM, NCM, Funding Agency)

8 Project Management

8.1 Schedule management

8.1.1 Schedule monitoring

Based on ECSS-M-TST-60C [RS 03].

Baseline schedules will be set up and maintained all along the project.

A working schedule will be set up and used for progress monitoring purpose compared to the baseline.

Detailed working schedule will be set up for close monitoring over shorter time scales as requires.

8.1.2 Schedule reporting

Baseline schedule departures will be tracked and reported to ESA on a monthly basis.

8.2 Cost Control

Based on ECSS-M-TST-60C [RS 03].

The Cost at Completion will be set up and maintained all along the project on a quarter basis.

Relevant action will be taken as necessary at managerial and funding level (contingencies).

8.3 Risk Management

Based on ECSS-M-TST-80C [RS 04].

Risk management will be monitored at both managerial (PMs) and System level (System Leads).

A risk register will be set up and maintained all along the project as per EID-A [AD 04] requirements § 9.2.4.2.2.

Mitigations actions will be taken as necessary.

The top 10 risk register will be included in the progress report.

8.4 Documentation Management

The requirements, design and implementation of the Euclid Consortium documentation will be described in the Document Management Plan ([RD 12]] and the Document Management Implementation Plan (TBW).

8.5 Meetings (Consortium meetings, progress meetings, etc)

8.5.1 Consortium meetings

8.5.1.1 EC Plenary meetings

- The EC will meet in plenary session once a year (EC Annual meeting).

8.5.1.2 ECB meetings

- Fortnightly telecons;
- Face to face meetings every 3 months.

8.5.1.3 ECL/ECB-chair meetings

- Fortnightly telecon between the ECL, D-ECL and the ECB Chair and Deputy.

8.5.1.4 ESA-PO/ECL meetings

- Fortnightly telecons between the ECL, D-ECL and the ESA Euclid PO.

8.5.1.5 Coordination group meetings (ECCG)

- Fortnightly telecons.

8.5.2 Instrument and SGS meetings

8.5.2.1 Instrument Project Office meetings

- Weekly telecons;
- Face to face meetings every 2 months (4-6 times a year).

8.5.2.2 SGS Project Office meetings

- Weekly telecons;
- Face to face meetings every 2 months (4-6 times a year).

8.5.2.3 VIS meetings, NISP and SGS meetings

- As stated in the respective VIS, NISP and SGS management plans ([RD06], [RD07], [RD08]).

8.5.2.4 SWG-OU leads meetings (« Garage Days »)

- Joint meetings between all SWG and OU leads will be organized every 4 months, with dates and places set far in advance for a period of 3 years in order to have (almost) all leads attending. The cadence of the joint meetings will be revised after each 3-years period. The meetings will be co-organized by the EC SGS Project Manager and EC SGS scientist, and the SWG Coordinators and the ECL. The VIS and NISP instrument scientists, VIS instrument lead, Mission Survey Scientist, Mission System Engineer and Calibration Lead will be also invited.

8.5.3 ESA meetings

8.5.3.1 EST meeting

- The organisation of EST meetings is done by the ESA Project Scientists. EST meetings have a typical frequency of three per year.

8.5.3.2 Instrument Progress meetings

- As per EID-A [AD 04] requirements:

EIR-555 Regular Instrument Progress Meetings shall be held nominally on the premises of the instrument provider during the phase A/B1.

These meetings will be conducted between ESA and the Instrument Teams with the objective of ensuring that the interface technical design integrity of the instrument, its compatibility with the spacecraft system, and instrument programmatic are proceeding in a manner which will not jeopardise the overall programme.

EIR-556 The Instrument Teams shall be represented by the necessary teams to provide the required information.

EIR-557 The meetings shall be held on a 2 months basis. The frequency may be changed on request of ESA.

Note: EIR-555 is a statement wrt. A/B1 phase. It is assumed that similar requirement will be stated for the Implementation phase (A2, C/D, E1)

8.5.3.3 SGS Progress meetings

- Regular meetings of the joint ESA-EC SGS Working Group (to become SGS Engineering Group during the Definition Phase - TBC) will be held. The Group (membership TBD) will meet in principle every 2 months, and will invite external participants as appropriate.

- The Group will coordinate activities relevant to the overall SGS and in particular will organise the development of the common e-infrastructure and the definition of interfaces (and ICDs) wherever relevant. Detailed technical problems occurring on either side shall be flagged during these meetings and corrective actions, including their schedule impact, shall be agreed and implemented.

8.6 Reviews

8.6.1 ESA Reviews

8.6.1.1 Instrument Reviews

As per EID-A [AD 04] requirements:

EIR-646 The instrument provider shall support the reviews in Table 42 for the Implementation Phase.

Review	Schedule
Instrument Preliminary Design Review (**IPDR**)	TBD
Instrument Critical Design Review (**ICDR**)	TBD
Instrument Qualification Review (**IQR**)	TBD
Instrument Acceptance Flight Review (**IAFR**)	TBD

8.6.1.2 SGS Reviews

- The whole SGS will be subject to Requirements Review, Preliminary Design Review, (Detailed) Design Review, Implementation Review, Readiness Review. These reviews will be managed by the ESA Project Office (TBC).

- The reviews of the EC SGS will be held a limited amount of time (no more than 2 months) before the main SGS reviews (TBC). These reviews will be managed by the EC ESA Project Scientist with the support of the EC.

- Ad hoc reviews with the participation of ESA may be called by any interested party if appropriate, and will be organised by the EC SGS Project Office.

8.6.2 EC Reviews

8.6.2.1 Instruments

- EC Instrument reviews will be held 3 weeks before the formal ESA Instrument (see 10.6.1.1.1).

- The reviews will be based on the draft data pack.

- Rehearsal of Review presentation will be held as well.

8.6.2.2 **SGS**

- Internal reviews of the EC SGS will be held a limited amount of time (no more than 1 month) before the ESA reviews of the EC SGS. These reviews will be managed by the EC SGS Project Office.
- Ad hoc internal reviews may be called by any interested party if appropriate, and will be organised by the EC SGS Project Office.

8.7 Reporting

The EC reporting scheme is described in Figure 9.1

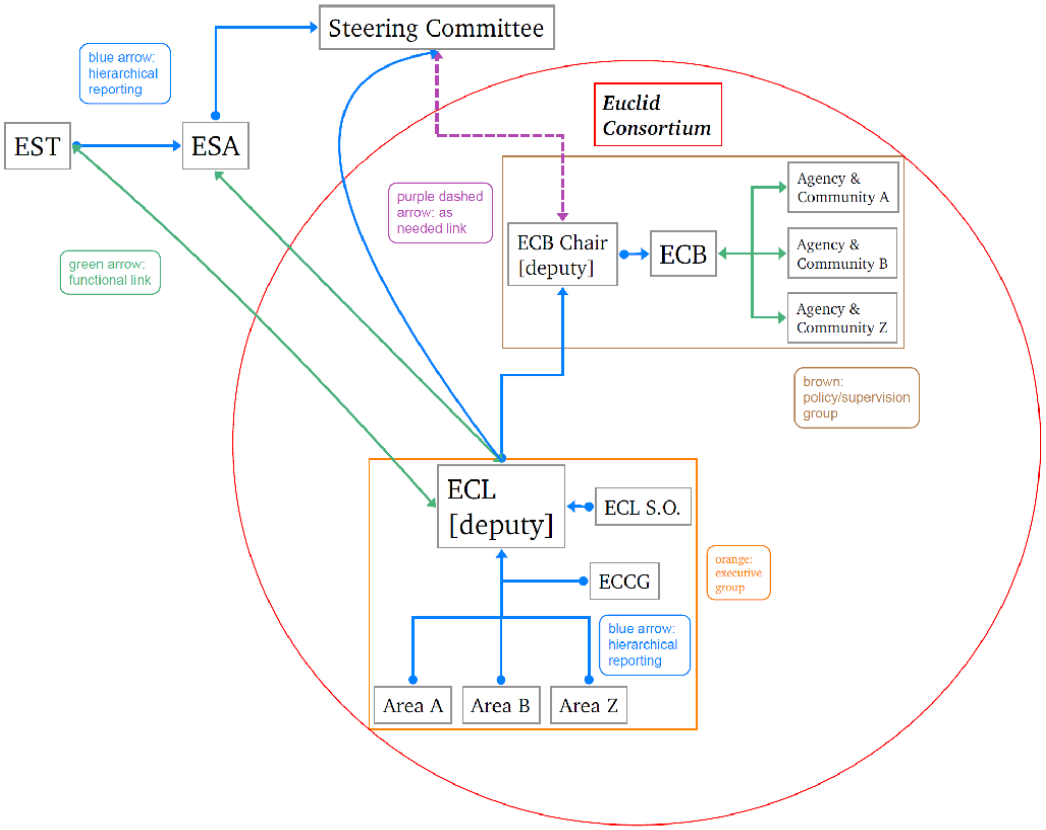

Figure 9.1 : EC reporting scheme

8.7.1 EC Internal reporting

As per the black plain lines on Figure 9.1.

8.7.2 Reporting to ESA

During the regular ESA-EC progress meeting (see above).

8.7.3 Reports

As per EID-A [AD 04] requirements:

EIR-558 The instrument provider shall submit to ESA, 5 days after the end of the month, a Monthly Progress Report in which the current status of each activity is described and problem areas or potential problem areas are highlighted together with identification of proposed remedial action. A summary of the latest working schedule shall also be included.

8.7.4 Reporting to the Euclid Steering Committee

At least once a year, and on request from the Steering Committee or from ESA.

8.8 Fast track intervention process for very urgent issues

Nominal progress during the development and operations phases is monitored by the ECL. However, it may happen that critical and very urgent issues are raised that could not be solved internally without intervention of national agencies. In order to deal with such (exceptional) case, each EC contributing country has nominated a “National Contact Point” (NCP) to represent the country in the Steering Committee. The NCP is in charge of monitoring the EC activities at national level and of reporting to its national agency. The NCP could be either the members of the Steering Committee themselves or other people nominated by their respective countries.

Normal ESA-EC (EEC) management meetings do not involve the NCP’s, as they are not incorporated in the EC management structure. The NCP’s are only involved in case the EC faces urgent problems that demand coordination with the funding agencies. The EC together with the Euclid Project Manager have set up a fast track intervention process based on an *ad hoc* committee. It is composed of the ESA Euclid Project Manager, the ECL, the EACSL, the relevant EC Project Manager(s) and the relevant NCP(s). This committee deals in particular with delays, failures of some EC contributing institutes or Industry sub-contracts, or financial issues that must be fixed on a short time scale, without or in preparation of the intervention of the Steering Committee. The process is shown on Fig. 10.2. If such anomalies are reported during its periodic EEC meetings, or at any time during the normal day-to-day work, on the VIS or NISP instrument or on EC SGS, the ECL can set up an *ad hoc* committee meeting only composed of the relevant managers and the relevant NCPs in order to take immediate actions at national agency level and coordinated with the EC and ESA. Quick actions can then be carried out without immediate Steering Committee intervention, while still keeping it informed.

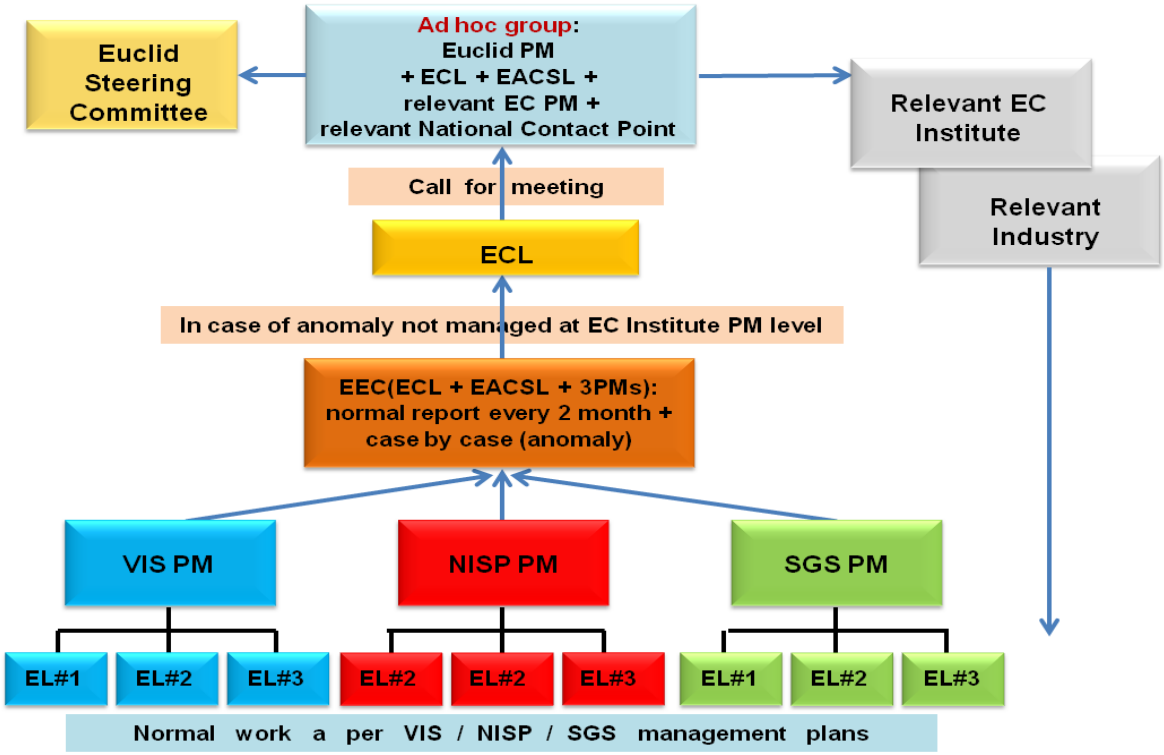

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Figure 10.2 – Fast track intervention process set up by ESA and the Euclid Consortium to fix anomalies that demand coordinated action between national agencies, the EC and ESA.

9 Consortium Membership and Publication Policy

The Euclid Consortium is composed of several hundreds of scientists and engineers, who contribute to the project very differently in time, skills and period. The ECB, in consultation with the ECL, is responsible for defining the rules that determine membership to the Euclid Consortium. These rules intend to reward the work dedicated to the project by their members with a tiered system that regulates the participation in the publications that reflect the scientific and technical output of the Euclid Consortium.

The Euclid Consortium has set up a database (https://tracking.euclid-ec.org/) to maintain the list of their members. This database is the only reference document that defines the Euclid Consortium at any time. It contains at least the name, surname, the primary institute affiliation, the institute nationality, as well as the Euclid responsibilities and tasks, email, telephone and level of participation (see below) of all members. The list is under the responsibility of the ECL, and is updated and maintained by the ECL Support Office. The list should be publicly available on the Euclid consortium web site.

As a long term space mission project, the number of EC members has been changing since its inception with new people joining and some members leaving. To take into account the mobility of their members, the Euclid Consortium membership rules define the procedures to join the EC, the duties and rights of their members and the relation that members who leave the consortium can have with the consortium.

9.1 Membership Categories

The Euclid Consortium defines the following membership categories to take into account the diversity of engagement and affiliation of people working or interested in Euclid:

- **Full member:** an individual who has been admitted to the consortium and is contributing now or has contributed in the past actively to the mission, currently holding a primary affiliation (as defined below) in a Euclid-affiliated institute or covered by a Memorandum of Understanding.
- **External collaborator:** an individual not belonging to the consortium, with a formal agreement to contribute to a specific Euclid project. Rules and rights applying to External collaborators are fully defined in the Euclid Consortium External Collaborators Policy.[1]
- **Continuing members:** former full members who, for any reason, no longer satisfy the conditions for full member status, or have chosen to leave the consortium and want to continue the projects they were involved in when members. This membership category is intended to be temporary with a standard maximum duration of one year to finish work done as full members. This standard duration could be extended depending on the membership level defined below. Exceptions could be granted by the ECB in exceptional circumstances. Individuals wanting to continue working in Euclid projects after this continuing period is over should apply to become external collaborators.
- **ILS collaborator:** At the time of the selection of the Euclid Consortium, ESA also selected two Independent Legacy Scientists (ILS) to advise ESA as members of the Euclid Science Team and to pursue their proposed science with Euclid data. This ILS science is unrelated to Euclid's core cosmology science but there are overlaps with the legacy science goals of the EC. Access to raw and calibrated data, as defined in the ESA document "Rules on Information, Data and Intellectual Property" (ESA/REG/008), from the Euclid satellite alone has been granted to the ILS by ESA. However, the ILS may need access to internal Euclid Consortium resources (e.g. the Project Portal) to facilitate the required coordination of their programs with members of the EC and the ILS may need access to Euclid Consortium data including (but not limited to) catalogs, higher level data products, and ancillary data. If the ILS require Euclid Consortium data or resources, they should apply for the status of ILS collaborator and coordinate their efforts as defined in the EC Project Definition Document. The ILS were also allowed a small team with proprietary Euclid data access when selected by ESA. These (and only these) ILS team members are also eligible to apply for ILS collaborator status. The composition of the ILS teams can only be changed by the EST. The ILS and their team will have the status of ILS collaborator after agreeing to EC rules and agreeing to abide by the Euclid Code of Conduct. ILS Collaborators will not accrue tracked effort leading to increased publication rights on Euclid papers outside of their immediate ESA-approved projects
- **Inactive member:** any full member who does not contribute or report any effort for two consecutive years will be considered an inactive member. His/her rights will be on hold until the person becomes active again. The FTE effort reported will remain archived and unchanged until the member returns to activity.

Given the relation of the Euclid Consortium has with other organisations working in the Euclid mission and the willingness to recognise the past members effort, the Euclid Consortium establishes special relations with the following associated groups:

- **ESA associates:** ESA personnel who work for Euclid. These people can apply to become full members in which case they can report their contributions to be counted towards their membership level and publication rights. Otherwise they can be associated with the EC sharing the information necessary for Euclid work and having the possibility to sign papers they have contributed to. The

[1] ECEC policy (roe.ac.uk)

Euclid Science Management Plan (SMP) grants ESA members some publication rights that supersede the previous general rule.

- **Industry associates:** Industry personnel working for Euclid. This category of individuals can be associated with the EC sharing the necessary information for Euclid work and having the possibility to sign the papers they have contributed to.
- **Alumnus:** former full members who have left the consortium (and generally academia) but want to continue being informed about Euclid. Alumni will be informed of Euclid activities and developments and of any initiative organised by the consortium that can help their career advancement. They have no rights as defined per this section of the management plan.
- **Institutional associates**: This category includes individuals who have an institutional interest in being informed of the consortium activities like key people in national funding agencies. They hold no particular rights as defined per this section of the management plan.

9.2 Affiliation

In order to comply with work regulations applicable in one form or another everywhere, any individual contributing to the Euclid mission must be legally affiliated to an institution or a company. The Euclid full membership is thus contingent upon holding a primary affiliation, that is defined as

- **Primary affiliation:** is the institution or company that employs or formally hosts (as is for instance the case of emeritus positions) a person.
- **Euclid-affiliated institute:** This is the collection of institutes that have a formal agreement to contribute to the Euclid mission. As Euclid is an ESA mission, most institutions in countries that have signed the Euclid MLA fall in this category. However, given the diversity of how Euclid is funded across European contributing countries, there is not a single definition of what constitutes a Euclid-affiliated institute.

Euclid Consortium members whose membership is regulated by a Memorandum of Understanding need to have a primary affiliation, but they do not need to belong to a Euclid-affiliated institution.

9.3 Acquiring and changing membership categories

Given that there are several Euclid Consortium membership categories, the procedures to acquire or change these categories and the circumstances under which a member will be required to change categories are specified below.

9.3.1 Admission/resignation rules to Full Membership in the Euclid Consortium

The process to become a Euclid Consortium full member is described below and can also be found in the EC web pages (https://www.euclid-ec.org/). Potential candidates should first contact their ECB National Representative to inform them about their willingness to become members and their expected contribution to the consortium. They need to satisfy the necessary conditions to become a full member, namely that they have a primary affiliation in a Euclid-affiliated institute. Candidates that do not fulfil this condition should consider the status of External collaborator or initiate formal contact between their institution and the ECL. Potential candidates whose institution or country participation is regulated by a Memorandum of Understanding (MoU) should contact the person representing the group regulated by that MoU who will check the adequacy of that candidate. If the request for membership is considered adequate, the MoU representative will inform the ECL. The ECL will check whether the request is in line with the MoU agreement in which case membership will be granted.

If these conditions are met, candidates need to fill in a registration form available at the EC tracking web page at https://dynacase.euclid-ec.org and provide a CV and a statement of interest and proposed work in the EC. The relevant ECB National Representatives are responsible for validating these membership requests. The ultimate decision on EC membership rests with the ECB, with advice from the ECL.

The total level of involvement of each Euclid Consortium member to the project will be monitored to ensure a fair treatment across the consortium. The ECL and the ECB are ultimately responsible for this monitoring and ensuring that the fractional effort committed by each member is indeed fulfilled. The monitoring will be set on a bi-annual basis report filled by each EC member.

Members who become inactive and do not report any effort for a consecutive period of two years will be considered inactive members. Their full membership status will be put on hold. Resuming their activity in the consortium will restore their membership at the same stage of effort reporting as when they became inactive.

Members such as those involved in the development of a given sub-system that has been delivered may become inactive. These members still need to maintain a certain level of activity to remain full members. This minimum activity can consist of checking and signing papers or monitoring some areas of the mission. They also need to fulfill the necessary condition to have a primary affiliation in a Euclid-affiliated institute to remain full members.

Full members need to notify their ECB National Representatives of statutory modifications that could affect their membership (institutional changes, retirement).

Full membership can apply as well to PhD students and post-docs, however a supervisor must be identified at the application time and remains responsible for the whole membership period. Post-docs and PhDs moving between two Euclid-affiliated institutes will only need to notify the respective ECB representatives (in case of a motion between countries this means up to 4 ECB members) of the change and update their status on the tracking system. Post-docs and PhDs moving to non Euclid-affiliated institutes will need to notify the ECB representative of their initial country of membership and will be automatically moved to the status of continuing member for a period of one year.

Besides ESA member states participating in Euclid as per the MLA, a number of countries have joined the project by making a certain number of in-kind contributions. For those, MoUs have been signed that define the number of consortium full members that are allocated to these countries.

In any case, as stated above, individuals requesting to join the Euclid Consortium need to first approach their national structure to examine how their participation would fit in the overall national teams, the practical implications, whether they need to be funded or if they can bring their own resources (European Research Council or other funding, contracts, etc.).

The consortium will consider the added value of the application, which depends on the uniqueness and the potential impact of the contribution, and on the needs of the Euclid Consortium, in domains that can be of scientific, technical, managerial, communication, intellectual, advisory, hardware, software, computational, manpower or funding nature.

Full members wishing to leave the consortium should notify their national representative so that the proper transition steps can be put in place. A full member leaving the consortium can become a continuing member for a period of one year, an external collaborator or an alumnus. If they move to ESA or industry and keep on working on Euclid they can be associated with the Euclid Consortium according to the categories defined above. The final decision on the new status rests with the ECB. The ECB has the prerogative to terminate a full membership. The two main cases when this can happen are: first, when the full member is no longer employed by a Euclid-affiliated institute (with a tolerance to take into account a

finite interim period between contracts when the member can become a continuing member); second, in case of a breach of the consortium code of conduct. The ECB will consult with the ECL and the ECDC to determine the proper course of action in such cases. Termination of a full membership impacts the publication rights associated to the contribution level in ways that are described below.

9.3.2 Admission/resignation rules to the Alumni of the Euclid Consortium

Admissions into the Alumni of the Euclid consortium may happen after a full consortium member resigns from the consortium. Full members may formulate a request in that sense to the ECL or ECB, or the ECL and ECB may propose this. Decisions are taken jointly by the ECL and ECB on a case by case basis, considering the interest of the consortium to keep a certain level of contact with a former member.

Alumni may decide to resign from that group at any time but this status has no time limit per se.

9.3.3 Admission/re signation rules to the Continuing Member status of the Euclid Consortium

This continuing member status in the Euclid Consortium membership is created specifically to take into account the fact that in the academic sector status changes (e.g. PhD defense or end of fixed term contract), need to be accompanied by transition periods to cover for the fact that a large fraction of the activities is sequential (i.e. papers are prepared and published after the analysis work is done…).

The continuing member status will be automatically attributed to a full member that no longer satisfies the criteria for full membership, or has signaled his or her intention to resign from full membership to the ECB representatives (it will not be attributed in case termination of full membership has been decided after a breach of the code of conduct).

This status cannot be renewed and is intended to provide the member with:

- The possibility to complete the tasks that were still ongoing at the time of termination of full membership.
- An extension of his/her publication rights to account for the delayed production of papers (see also below).
- Some time to build the next stage of his/her relationship with the Euclid Consortium.

The standard duration of the continuing member status is one year. However, to reward previous full members who have dedicated a lot of work to the project, this standard duration can be extended for those who were full members at L2 or L1 as defined in section 11.5 before becoming continuing members. These members can request an extension of their continuing membership status to the ECB. The ECB can grant continuing participation status for a total maximum of two years for previous L2 full members and up to a total period of three years for previous L1 full members

During the continuing membership, the rights and duties of the member are identical to those of a full member. It is still possible to report contributed FTEs through the tracking system, although this cannot contribute to upgrading the publication right level and thus will only matter if following the continuing membership the person can re-apply for full membership.

Beyond the maximum period of holding continuing member status, three possibilities are foreseen:

- Application for the status of External collaborator,
- Severance of all formal ties with the consortium,
- Application again for full member status if the statutory conditions are met.

Members may resign from the status of continuing member before the period of one year is over by signaling it to their ECB representative.

9.4 Rights and Duties of Full Consortium Members

Note that these rights and duties also apply to continuing and inactive members (apart from publication rights which are suspended for inactive members).

9.4.1 General Rights

All Euclid Consortium full members

- Will be registered to the Euclid Consortium Master Mailing List;
- Will have access to Euclid Consortium restricted access web pages and any other communication channels of the Euclid Consortium;
- Will have access to Euclid low-confidentiality technical and scientific document archive;
- Will be invited to all Euclid Consortium meetings (usually annual);
- Will be authorized to register to any Science Working Groups, OU, SDC or technical working groups, provided they follow the application rules;
- Will be authorized to start scientific collaborations with any consortium members, provided it follows the Euclid internal collaboration rules;
- Will have access to detailed information of the Euclid mission prior to public dissemination;
- Will have access to Euclid simulated data or other Euclid materials during the implementation and the operation phases for any Euclid-related activity they may be involved in;
- Will have access to Euclid data during the proprietary period;
- Will be authorized to invite PhD students and Post-Docs to work with them provided it follows the Euclid internal collaboration rules;
- Will be authorized to write papers, technical notes, make presentations using Euclid materials, provided it follows the Euclid Collaboration and the EC publication policy as described in [RD-14]. In particular, the Euclid material should be properly referenced, not misused, and that the Euclid Consortium should be properly acknowledged;
- Will be authorized to make funding proposals to support their own Euclid activities, provided the proposal is supported by the ECB;
- Will be authorized to propose Euclid survey follow up proposals to support its own Euclid activities, provided it follows Euclid collaboration rules.

9.4.2 General Duties

All Euclid Consortium full members

- Should first approach their national structure and provide to the Consortium the name of their national contact point;
- Must clearly define their contribution to Euclid and report in due time on the Euclid activity it may have in charge. The objectives, deliverables, fraction of time spent for the benefit of Euclid and schedule should be clearly spelled out;
- Has to declare a primary affiliation;
- Has to declare any change of primary affiliation;
- Has to re-apply for Euclid membership at each move to a new institute, when the new affiliation is not a Euclid contributing country or a contributing (contracted) laboratory;
- Has to declare whether they are members of other competing scientific projects that may conflict with Euclid;

- Will declare to their affiliated institute and their national agency (or its representative) that they are members of the Euclid Consortium;
- Agree that any information of Euclid materials they have access to or are aware of will not be used for other purposes or in another context than the Euclid mission without permission of the Euclid relevant persons and the ECL;
- Agree that any proposition of scientific collaboration or scientific projects that uses Euclid materials should be first submitted to and endorsed by the ECCG and the ECB;
- Agree to inform far in advance the ECL and the Euclid Consortium Editorial Board of any scientific papers in preparation that uses Euclid materials or work performed in the framework of the Euclid mission and comply with the EC publication policy as described in [RD-14], including the publication notice timescale;
- Agree that scientific papers, technical notes and presentations using Euclid material should be first submitted to the Euclid Editorial Board and should follow any recommendations that the Euclid Editorial Board may propose;
- Agree that scientific papers, technical notes and presentations using Euclid material should acknowledge the Euclid consortium;
- Will use the Euclid Consortium communication channels only for Euclid-related matters;
- Should comply with the Euclid internal confidentiality policy;
- Should be respectful of Euclid, especially when discussing the mission relative to other projects;
- Understand that as part of the Euclid collaboration any scientific projects that may use Euclid data will be done in collaboration with all scientists of the Euclid Consortium;
- Agree that no Euclid data will be used in collaboration with non-Euclid members without agreement by the ECB;
- Agree that in case of resignation, if they have a responsibility in any WPs of Euclid, they will inform the ECB at least 2 months before leaving and will guarantee a two-month hand over period to transfer information, starting at the date of the official resignation;
- Agree that in case of resignation none of the Euclid internal information or materials they may have in hands or aware of will be used or circulated further;
- Should read and formally agree to follow
    - the Euclid Consortium management plan (this document, in particular Section 11);
    - the EC tracking contribution process, namely to fill the bi-annual report of EC activities;
    - the Euclid Consortium Code of Conduct [RD16];
    - the Euclid Consortium Publication Policy [RD14].

The Euclid Code of Conduct (CoC) set the principles and rules of conduct every EC member must follow inside the EC. The ECB may impose sanctions to EC members not abiding to the CoC that can lead up to a temporary or permanent exclusion of the EC.

9.5 Membership levels and publication rights

The Euclid Consortium has implemented a system of tracking its members' activities to monitor the consortium activities and to ensure fair treatment across the consortium. As in similar collaborations, the membership status is subdivided into several *Contribution Levels* based on the Work Years (WY defined as the sum of all the FTE contributed during the years of membership) of each EC member. It aims at providing fair authorship rights of all EC publications based on the effective contribution to any parts of the Euclid project. The contribution level supersedes any other criteria for authorship such as position in the EC organisation, seniority (experienced scientists), legitimacy in the project, etc. It is an incremental contribution model based on a bi-annual report filled by each EC member that can therefore increase every six months from 0 WY (no contribution over the semester) to 0.5 WY (full time). Another objective of this scheme is to provide a process to include new members in the consortium that is designed to be an open organization. The membership to a given level is granted by the ECB based on the accumulated tracked FTE (L1-4) and criteria listed below for

L1 (Founders and Builders). There are five levels in the membership scheme: Associate (L5), Short-Term Contributor (L4), Medium-Term Contributor (L3). Long-Term Contributor (L2), and Founder+Builders (L1). These levels are defined in the Table 1 below~~. New members start as Associates. There is vertical mobility across contiguous levels. After the beginning of the implementation phase, changes in level are proposed to the ECB by the country representative according to the recommendation made by the lead of the relevant group (science, OU, SDC, Instruments) based on the bi-annual activity report.~~

Level	Typical Contribution of EC full members work-years (WY) counts starting from the beginning of the project until mission completion.	Publication Rights
L5: Associate	WY≤1 -New members of the EC who have not yet accumulated a full WY or people who work on Euclid at a low level.	Only papers they effectively contribute to
L4: Short-Term Contributors	1≤WY<2 WYs – EC members who have worked on Euclid long enough to have accumulated more than 1 WY of validated effort.	Only papers they effectively contribute to/ and all Flagship papers
L3: Medium-Term Contriburors	2.0 ≤WYs< 4- EC members who have worked on Euclid long enough to have accumulated more than 2 WY of validated effort.	. All Flagship and KPPs + those SPPs where they effectively contribute to/write.
L2: Long Term Contributors	WYs ≥ 4 – Typically EC full members who have Euclid as main project (spend a large fraction of time) and have significant relevant responsibilities in the project.	All Flagship and KPPs + any SPPs they wish, provided it is in their field of expertise and they confirm they understand the paper's contents.
L1: Founder + Builders	Founders include past or present members with sustained positive contributions critical to the Euclid mission during the selection period. Founders were selected by the ECB. Builders are past or present long-term key contributors having at least 4.0 WYs of activity critical to the Euclid mission. Builders are selected yearly by the ECB.	All papers.

Table 1: Contribution Levels based on the number of Work-Year (WY) contribution of each individual integrated over N_{year}: WY=FTE x N_{year} . KP, KPPs and SPPs are defined in the Euclid Consortium Publication Policy Document (RD14).

The definition and writing of EC publications is delegated by the ECL to the ECEB, together with its 3 EC Publication Groups (ECPGs). Authorship and publication processes are defined and described in the Publication Policy Document [RD-14].

The contribution levels are validated after a thorough and fair evaluation process. The evaluation will be based on the biannual activity report each EC member has to fill which then has to be validated by the relevant lead (Project manager, instrument scientists, SWG leads, SCG, etc…). Contributions taken into account start at the beginning of the assessment phase until the end of the scientific mission. As the contribution levels were implemented after the beginning of the development phase, earlier contributions are assessed by the ECB.

The Level 1 membership category is formed by Founders and Builders. Founders include past or present members with sustained positive contributions critical to the Euclid mission during the selection period. The list of Founders has been decided by the ECB and will not be modified except for rare exceptions. Builders are past or present long-term key contributors having at least 4.0 WY of activity critical to the Euclid mission. They are selected and approved by the ECB. The ECB will make regular calls (yearly) to introduce new full members to the builder status.

9.5.1 Publication rights following resignation or termination of the full member status or becoming an inactive member

First, considering that resignation or termination of the full member status does not necessarily prevent an individual to reapply for full membership, it is important to note that information related to the publication level (i.e. the WY contributed and the publication level reached) are conserved and would be reactivated, should the new application be granted. This section thus only considers how the EC intends to treat the publication rights of individuals that are no longer full members (assuming a one year of continuing membership is granted by default).
The guiding principles are the following:

- As there is always a delay between the development of a project and the publication of the related paper(s), modification of the publication rights should not occur simultaneously with the resignation or termination of the full member status, except in the particular case of termination due to a breach of the CoC.
- As ethical publication principles require that all authors have some knowledge and understanding of at least parts of the paper submitted, and since all non-full member status limit the knowledge that an individual can have of Euclid projects, publication rights have a finite duration once an individual is no longer a full member.
- A project as long in the making and exploiting as Euclid, and gathering as many scientists and engineers as Euclid, is bound to encounter very specific and difficult circumstances which will be hard to treat using general rules. The ECB will therefore have the possibility to treat these cases directly, even in ways that contradict rules set in the present document.
- The notion of holding publication rights is bound to belonging to the Euclid Consortium with its associated rights and duties. Associated groups do not have publication rights per se, although they can sign papers they have effectively contributed to. ESA associates may have exceptions covered by the Euclid Science Management Plan.

Therefore, full members will have the publication rights associated to their membership level as defined in Table 1. External collaborators publication rights are defined in the External Collaborator Policy. They will have the possibility to sign the papers their external collaboration agreement encompasses. Continuing members have the publication rights they had when they were full members. Inactive members do not have publication rights. They need to become active again to regain their publication rights.

Flagship papers as defined in the Publication Policy Document [RD-14] describe the main results of the mission and therefore people who have contributed to the mission will be in principle entitled to sign them. All Euclid Consortium full members and continuing members with > 1 accumulated FTE can sign Flagship papers. People who have contributed to the project and are not Euclid members can also be eligible authors for Flagship papers. The ECL is responsible for selecting the list of non-Euclid members that can sign the Flagship papers. The list should be ratified by the ECB.