1. INTRODUCTION

This Instruction describes the role and responsibilities of the Director of Earth Observation Programmes. It outlines the revised organisational set-up of the Directorate and sets out its terms of reference.

2. ROLE AND RESPONSIBILITIES

The Directorate of Earth Observation Programmes is a Programme Directorate within the ESA matrix structure.

Under the direct authority of the Director General, the Director of Earth Observation Programmes is responsible for the strategy for the Earth Observation sector, consistent with the European Strategy for Space and taking into account the worldwide environment and its main actors: space agencies, manufacturing and service industry, commercial operators of satellites, public and private stakeholders and customers.

The Director of Earth Observation Programmes is in charge of preparing the future by building up relevant proposals for new programmes, taking into consideration the industrial policy of the Agency.

The Director of Earth Observation Programmes is responsible for the implementation of all ESA programmes in Earth Observation.

Following the Director General's decision and in conformity with the provisions of ESA/ADMIN/ORG(2003)2 outlining the role and responsibilities of the Head of Establishment, the Director of Earth Observation Programmes is the Head of Establishment at ESRIN. As such, he is responsible for relations with the administrative authorities of the host country and for ensuring, at local level, that the terms of the Establishment Agreement are observed and applied by both ESA and those authorities. He is also responsible for on-site health safety and security.

The Director of Earth Observation Programmes interfaces with DG services and the Directorates concerned.

N.B: Any indication of gender (i.e. 'he' 'his') in this document should be understood to refer to both masculine and feminine.
3. GENERAL STRUCTURE

The general structure of the Directorate of Earth Observation Programmes comprises:

- the Science, Applications and Future Technologies Department (EOP-S)
- the Projects Department (EOP-P)
- the Ground Segment Department (EOP-G)
- the GMES Space Office (EOP-E)
- the Programme Planning and Coordination Service (EOP-C)
- the Business Unit Controlling Office (EOP-B)

The organigramme of the Directorate is shown in the Annex.

4. DESCRIPTION OF RESPONSIBILITIES

4.1 SCIENCE, APPLICATIONS AND FUTURE TECHNOLOGIES DEPARTMENT (EOP-S)

Under the direct authority of the Director of Earth Observation Programmes, the Head of the Science, Applications and Future Technologies Department is responsible for ensuring an effective interface between the Directorate and the scientific, public sector and commercial user communities.

EOP-S is responsible for the assessment and collection of the requirements of each of the communities relying upon Earth Observation in Europe and provides scientific and applications expertise and advice to the other EO Departments through all phases of missions. He is also responsible for the future technologies programme as well as for the studies relating to future missions and for the elaboration and, in cooperation with the Directorate of Technical and Quality Management (D/TEC), for the implementation of the requirements for advanced technology studies in the domain of Earth Observation, combining technical and scientific expertise, including the implementation of any related airborne or ground based campaigns.

In addition, EOP-S is responsible for future instrument studies and the preparatory activities for future missions in general and for studies up to and including Phase A of future science missions. EOP-S shall maintain an advisory structure for ESA programmes and missions, including multiple formal and informal methods of securing advice from the user communities and for developing the elements of a strategy for the EO programmes.

In particular, EOP-S shall:

- establish high level requirements for all ESA EO missions and activities including:
  - future instrument studies;
  - pre-development and preparatory activities in the EOEP, including Phase A studies for new science missions;
  - future mission design, performance and product definition;
o services and products of missions in their implementation phase;
o selection and exploitation of Third Party missions;
- manage preliminary scientific and technical studies of future mission concepts and instrumentation;
- implement the EO future technologies programme together with D/TEC;
- perform studies up to and including Phase A for the Explorer missions;
- manage approved EO exploitation programmes and programme elements and implement special projects aimed at developing scientific and applications exploitation of all missions;
- manage science studies related to missions in the exploitation phase;
- development of EO-based services, including for the GMES programme through the GMES Service Element;
- monitor closely the activities of scientific and other user communities in order to ensure their close involvement in and benefit from ongoing and future missions;
- liaise with ESA’s international partners and programmes in EO data exploitation, scientific cooperation and future mission planning and development;
- provide the management of the EO advisory structures, including the Science and Mission Advisory Groups and the Earth Science Advisory Committee (ESAC);
- support the Director in the development of an overall strategy for the EO Programmes;
- promote and develop education activities in the domain of Earth Observation, in cooperation with the Agency’s Education Office.

EOP-S retains management responsibility for the following programme lines:

- EOEP – Market Development/Value Added Element
- EOEP – Data User Element
- EOEP – EO Preparatory Activities
- EOEP – Science Support
- EOEP – Earth Watch Definition
- Earthwatch GMES Service Element

EOP-S is responsible for cost, schedule and performance of the projects under his responsibility and assists the Director of Earth Observation Programmes:

- with strategy issues and formulation of proposals concerning future Earth observation programme issues;
- in setting and achieving industrial return targets.

In addition, EOP-S assists the Director of Earth Observation Programmes in supporting the promotion of and raising awareness of ESA’s EO missions and related activities.

In carrying out these duties, EOP-S interfaces with:

- EOP-P for the formulation, maintenance, update and interpretation of high level mission requirements; for the definition of calibration and validation plans and for the definition and implementation of campaigns; for ensuring a smooth transition from the preparatory technology and the Explorer phase A activities to the full project implementation and for
the definition of studies in support of current projects and of future missions;
- EOP-G for the definition and implementation of ground segment and operation requirements;
- EOP-E for the coordination of GMES related matters.

The Science, Applications and Future Technologies Department is composed of:

- the Exploitation and Services Division (EOP-SE)
- the Mission Science Division (EOP-SM)
- the Future Missions Division (EOP-SF)
- the Science Strategy, Co-ordination and Planning Office (EOP-SA)
- the Project Control and Management Support Office (EOP-SC)

4.1.1 Exploitation and Services Division (EOP-SE)

Under the direct authority of the Head of the Science, Applications and Future Technologies Department, the Head of the Exploitation and Services Division is in charge of the development and implementation of projects in support of scientific, public sector and commercial exploitation of ESA and Third Party missions, and for related scientific research.

4.1.2 Mission Science Division (EOP-SM)

Under the direct authority of the Head of the Science, Applications and Future Technologies Department, the Head of the Mission Science Division is responsible for ensuring the application of scientific and other user community requirements in all phases of the development of missions, from precursor studies through to initial operations, and for ensuring coherence throughout with the mission objectives including the management of mission-specific advisory structures.

4.1.3 Future Missions Division (EOP-SF)

Under the direct authority of the Head of the Science, Applications and Future Technologies Department, the Head of the Future Missions Division is responsible for:

- elaborating new mission concepts;
- implementing preparatory activities for Earth Explorer (up to and including phase A), Earth Watch and GMES missions;
- implementing a future technologies programme together with D/TEC;
- acting as D/EOP contact point for all frequency management issues, in cooperation with the Agency’s Frequency Management Office in the Directorate of Telecommunication and Navigation (D/TEN).

4.1.4 Science Strategy, Co-ordination and Planning Office (EOP-SA)

Under the direct authority of the Head of the Science, Applications and Future
Technologies Department, the Head of the Science Strategy, Coordination and Planning Office is responsible for supporting the development of the overall strategy for the Directorate, for the management of mission selection procedures, for preparation and co-ordination of all science and preparatory studies within the Department, for the overall maintenance of formal requirements for future and ongoing missions. He is also responsible for support to and management of activities of the Earth Science Advisory Committee (ESAC).

4.1.5 Project Control and Management Support Office (EOP-SC)

Under the direct authority of the Head of the Science, Applications and Future Technologies Department, the Head of the Project Control and Management Support Office is responsible for project control, for the financial and manpower planning, and the maintenance of the quality management system.

4.2 PROJECTS DEPARTMENT (EOP-P)

Under the direct authority of the Director of Earth Observation Programmes, the Head of the Projects Department is responsible for the overall system definition and management of approved ESA EO programmes in phases B/C/D/E1, including launch and in-orbit verification, in accordance with high level requirements agreed with EOP-S. This includes in particular:

- the implementation of pre-development activities for risk retirement in future EO instruments;
- the implementation of phase A activities for operational missions where these lead into the implementation phases;
- the detailed system definition of ESA EO projects (Earth Explorer, and operational missions inclusive of GMES and EUMETSAT programmes) and the design and implementation of the space segment in phases B/C/D/E1 inclusive of launch and in-orbit verification;
- the definition and maintenance of mission specific ground segment requirements including Flight Operation Segment (FOS) and Payload Data Segment (PDS) for missions under his responsibility;
- the design and implementation of the Flight Operation Segment (FOS) through internal arrangements (delegated task) with the Directorate of Operations and Infrastructure (D/OPS);
- the provision of in-orbit commissioning and routine operations support to EOP-G and D/OPS.

In addition, EOP-P assists the Director of Earth Observation Programmes in interfacing with co-funding partners (e.g. Eumetsat, EC).

EOP-P retains management responsibility for the following programmes and programme lines:

- EOEP - Instrument Pre-Development
- EOEP - Explorer missions, for phases B/C/D/E1
- EOEP - Level 2 products (shared with EOP-G)
- MSG
- METOP
- GMES Space Component Sentinel-1, 2, 3 Phase B/C/D/E1
- GMES Space Component Sentinel-4, 5 Phase A and subsequent phases once approved
- Earth Watch – Fuegosat (Phase B)

EOP-P is responsible for cost, schedule and performance of the projects under his responsibility. In addition, he assists the Director of Earth Observation Programmes:

- with strategy issues and the formulation of proposals concerning future Earth Observation programmes and missions;
- in setting and achieving industrial return targets.

In carrying out these activities, EOP-P interfaces with:

- EOP-S for the formulation, maintenance, update and interpretation of high level mission requirements; for the definition of calibration and validation plans and for the definition and implementation of campaigns; for ensuring a smooth transition from the preparatory technology and the Explorer phase A activities to the full project implementation and for the definition of studies in support of current projects and of future missions;
- EOP-G for the definition and implementation of ground segment and operation requirements, via MIRD/MIP for the mission specific elements;
- EOP-E for the coordination of GMES related matters.

The Projects Department is composed of:

- Individual Project Teams, each led by a Project Manager
- Project Control and Management Support Office (EOP-PM)
- Instrument Pre-development Division (EOP-PI)
- System Support Division (EOP-PE)

and of Space Segment Programme Managers who ensure the coordination and coherency of a group of space segment projects, specifically:

- GMES Space Component Space Segment (currently Sentinel-1, Sentinel-2, Sentinel-3 and Sentinel-4/5);
- Explorer Missions (currently Cryosat, GOCE, SMOS, ADM-Aeolus, Swarm, EarthCare);
- EUMETSAT missions (currently MSG, MetOp, MTG).

The Space Segment Programme Managers shall discharge their functions either in addition to other assigned roles at department or divisional level or as their primary task.

4.2.1 EO Project Teams
Under the direct authority of the Head of the Projects Department, the Project Managers are responsible for the implementation of the relevant assigned projects. They are assisted by individual projects teams.

4.2.2 Project Control and Management Support Office (EOP-PM)

Under the direct authority of the Head of the Projects Department, the Head of Project Control and Management Support Office is responsible for the Department’s project management coordination and control, budget, financial and manpower planning.

4.2.3 Instrument Pre-development Division (EOP-PI)

Under the direct authority of the Head of the Projects Department, the Head of the Instrument Pre-development Division is responsible for the implementation of technology and risk-retirement activities through the pre-development of new instruments.

4.2.4 System Support Division (EOP-PE)

Under the direct authority of the Head of the Projects Department, the Head of the System Support Division is charged of providing support on all system issues, including in particular satellite to ground segment interfaces, definition of ground segment requirements, definition and execution of LEOP and commissioning phase, either as centralised support (e.g. orbit dynamics) or in association with the individual projects (e.g. commissioning preparation and execution). In addition, EOP-PE provides post-launch support, including monitoring of spacecraft health and anomaly investigation support.

4.3 Ground Segment Department (EOP-G)

Under the direct authority of the Director of Earth Observation Programmes, the Head of the Ground Segment Department is responsible for the management, design, coordination and operation of the ESA EO payload data ground segment infrastructures for ESA and non-ESA missions, and for the phase E management of the ESA missions. This includes:

- the project management of ESA EO Programmes in the exploitation phase (Phase-E), in accordance with the mission objectives with a subset of tasks being implemented through EOP-P, EOP-S and D/OPS;
- the design and implementation of the distributed, multimission Payload Data Segment. The mission specific requirements in line with the programmatic objectives are agreed with EOP-P;
- the operations of the Payload Data Segment (data acquisition, recording, standard product generation, distribution, instrument and data quality assurance, archiving and user services, including the day-to-day interface to the users) and the long-term preservation of ESA’s EO data;
- the agreements with other EO satellite operators for access to Third Party mission data;
- the coordination and agreements amongst operators of EO ground segment exploitation
facilities and service providers;
- the formulation of the ESA EO data policy;
- the elaboration of new strategies, related architectures and implementation plans for integrated ground segment approaches;
- the implementation of an integrated approach for data access to all necessary satellite data, ESA and non-ESA, in support of GMES services;
- the design, implementation and promotion of new internationally accepted standards for EO data, products and services;
- the implementation of special projects and related Technological Research and Development for ground segment infrastructure.

EOP-G retains management responsibility for the following programmes/programme lines:

- Envisat Phase Earth Explorer Phase E
- EOEP - Data Exploitation
- EOEP - EO Ground Segment
- EOEP - Level 2 Products (shared with EOP-P)
- EOEP - ALOS
- EOEP - Continuity of Missions
- Earthnet; the implementation of the Earthnet activities in support of the international presence and visibility of ESA is under the responsibility of EOP-S.
- GMES space component ground segment development and operations, including the lines supporting data access to Third Party missions in support of GMES.

EOP-G is responsible for cost, schedule and performance of the projects under his responsibility. In addition, he assists the Director of Earth Observation Programmes:

- with strategy issues and the formulation of proposals concerning future EO programmes and missions;
- in setting and achieving industrial return targets.

EOP-G interfaces with the other EO departments as required by their respective responsibilities and in particular:

- EOP-P during mission preparation for the analysis of ground segment and operations concepts and during phase C/D/E1 for the agreement (via MIRD/MIP) on mission specific requirements for the payload ground segment. During phase E for the provision of post launch support by EOP-P;
- EOP-S for the definition of high-level requirements concerning the exploitation of missions and the planning the ground segment infrastructure, and for the formulation and implementation of the Directorate’s communication plan;
- EOP-E for the coordination of GMES related matters.

The Ground Segment Department is composed of:

- EO Mission Management Office (EOP-GM)
- EO Ground Segment Strategy Management Office (EOP-GS)
- Facilities Management Office (EOP-GF)
- User Services and Mission Planning Office (EOP-GU)
- Data Quality and Algorithms Management Office (EOP-GQ)
- Payload Data Ground Segment Projects Office (EOP-GP)
- Service Support and Ground Segment Technology Office (EOP-GR)
- Project Control and Management Support Office (EOP-GC)

4.3.1 EO Mission Management Office (EOP-GM)

Under the direct authority of the Head of the Ground Segment Department, the Head of the EO Mission Management Office is responsible for project management, organisation and coordination of all EO missions during the Exploitation phase, and the Exploitation phase project planning from Mission Definition onwards. In addition the Office is responsible for the formulation and implementation of the ESA EO data policy, and the preparation of agreements with other mission operators and providers.

4.3.2 EO Ground Segment Strategy Management Office (EOP-GS)

Under the direct authority of the Head of the Ground Segment Department, the Head of the EO Ground Segment Strategy Management Office is responsible for the establishment and implementation of a coherent ground segment strategy for all programmes in coordination with Member States missions, and for the project management of the generic multi-mission ground segment programmes and budgets. In addition, the Office is responsible for the definition and implementation of the policies related to payload ground segment Security, Technology Research and for the coordination of the standardisation activities.

4.3.3 Facilities Management Office (EOP-GF)

Under the direct authority of the Head of the Ground Segment Department, the Head of the Facilities Management Office is responsible for the management coordination and evolution of payload ground segment receiving stations, archiving centres, near real-time and offline processing centres.

4.3.4 User Services and Mission Planning Office (EOP-GU)

Under the direct authority of the Head of the Ground Segment Department, the Head of the User Services and Mission Planning Office is responsible for the interface to the data user community including the operation, development and evolution of all user-interface tools and systems and the Earth Observation online information services; EOP-GU is also responsible for all payload data planning and scheduling, and the evolution and development of related systems.

4.3.5 Data Quality and Algorithms Management Office (EOP-GQ)

Under the direct authority of the Head of the Ground Segment Department, the Head of the Data Quality and Algorithms Management Office is responsible for the overall quality
of the data provided to users, including the data calibration and validation, the data processing algorithms tuning and evolution, the routine instrument and processing chain performances, and for the development and operations of all related systems.

4.3.6 Payload Data Ground Segment Projects Office (EOP-GP)

Under the direct authority of the Head of the Ground Segment Department, the Head of the Payload Data Ground Segment Projects Office is responsible for the management of mission specific payload data ground segment development projects agreed for new missions.

4.3.7 Service Support and Ground Segment Technology Office (EOP-GR)

Under the direct authority of the Head of the Ground Segment Department, the Head of the Service Support and Ground Segment Technology Office is responsible for coordination of initiatives facilitating the interfacing of data exploitation services with the ground segment, management and evolution of related ESA implementations and information based services, coordination of payload ground segment technology proposals and projects.

4.3.8 Project Control and Management Support Office (EOP-GC)

Under the direct authority of the Head of the Ground Segment Department, the Head of the Project Control and Management Support Office is responsible for project control, financial and manpower planning, configuration control management, and maintenance of the quality management system.

4.4 GMES SPACE OFFICE (EOP-E)

Under the direct authority of the Director of Earth Observation Programmes, the Head of the GMES Space Office carries out programmatic activities which are relevant to GMES. The tasks of EOP-E include in particular:

- monitoring the Agency’s GMES activities and ensure their coordination;
- ensuring the cooperation with the European Commission in the implementation of GMES by interfacing and providing support to the GMES Bureau set up by EC in accordance with the dispositions of the EC-ESA Framework Agreement;
- preparing GMES programmatic documents and supporting the necessary negotiations with ESA delegations the EC and other organisations on GMES;
- making proposals for the use of resources allocated to the GMES space component programme based on inputs from the implementing departments and preparing decisions for D/EOP as and when required;
- preparing GMES inputs to the definition of the European Space Programme in coordination with EOP-C.
4.5 **Programme Planning and Co-ordination Service (EOP-C)**

Under the direct authority of the Director of Earth Observation Programmes, the Head of the Programme Planning and Coordination Service is responsible, in close cooperation with EOP departments, for reviewing the Directorate’s on-going activities, for planning future actions and programmes, for formulating and implementing programmatic and strategic decisions.

He is responsible for overall coordination of the departments’ activities across all programmes executed within the Directorate and for coordinating the Directorate’s inputs for the formulation of the European Space Policy and the European Space Programme.

In fulfilling the above, he ensures the interface between D/EOP and the European partners, delegates, industry, the scientific community and the users of EO data and derived information. He is the Directorate’s focal point for interfacing with DG services.

EOP-C is in charge of supporting the Director in the daily management of the Directorate.

The Programme Planning and Coordination Service is composed of:

- **the Programme Planning Office (EOP-CP)**
- **the Coordination Office (EOP-CC)**

### 4.5.1 Programme Planning Office (EOP-CP)

Under the direct authority of the Head of the Programme Planning and Coordination Service, the Head of the Programme Planning Office is responsible for:

- assisting EOP-C in preparing and formulating future programmes and strategies, planning future activities and, in cooperation with the Business Unit controller, establishing the Long-Term Plan for the Directorate;
- coordinating the activities of the departments across all programmes executed by the Directorate;
- coordinating the Directorate’s inputs for the formulation of the European Space Policy and the European Space Programme;
- monitoring on-going activities, within the Directorate, across the Agency as well as with third parties.

### 4.5.2 Coordination Office (EOP-CC)

Under the direct authority of the Head of the Programme Planning and Coordination Service, the Head of the Coordination Office is responsible for all activities targeting the coordination of the Directorate and for the relations with Member States delegations. He shall also interface with the Directorate of Legal and External Relations (D/LEX) for the
definition and support of the communication and outreach activities concerning the Directorate. More specifically, EOP-CC is responsible for:

- providing the Secretariats of the Earth Observation Programme Board (PB-EO) and of the Data Operations Scientific and Technical Advisory Group (DOSTAG);
- coordinating the interfaces and meetings with internal and external entities, including in particular other delegate bodies (e.g. IPC, AFC, IRC), space agencies (European and non-European), and international organisations;
- providing the Directorate’s coordinating interface to the meteorological organisations, e.g. Eumetsat, WMO (World Meteorological Organisation), ECMWF (European Centre for Medium-Range Weather Forecasts), etc.;
- supporting the interfaces to the EC through a representative in Brussels;
- in co-operation with the Agency’s Communication Department, ensuring promotion and communication of all EO programmes and activities and support to corporate communication through the medium of those programmes;
- monitoring all legal agreements of the Directorate;
- preparing the internal communication of the Director.

4.6 BUSINESS UNIT CONTROLLING OFFICE (EOP-B)

Under the direct authority of the Director of Earth Observation Programmes, the Head of the Business Unit Controlling Office is responsible for:

- ensuring the provision of consolidated planning and controlling information at Directorate level to the Corporate Controller, and that the information from the Corporate Controller is appropriately translated into the Directorate’s planning and controlling actions, including Long-Term planning;
- establishing, consolidating and maintaining financial and manpower resource plans;
- monitoring and coordinating the Directorate’s risk assessment, including mitigation plans and their implementation;
- coordinating the Directorate’s implementation of the Agency’s industrial policy.

The Head of the Business Unit Controlling Office shall lead the project control network of the Directorate with full access to the line managers/project controllers, whilst maintaining the direct authority between the line managers and their project controllers.

5. IMPLEMENTATION

This Instruction comes into force with immediate effect. It supersedes ESA/ADMIN/ORG(2006)3.
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This Instruction comes into force with immediate effect. It supersedes ESA/ADMIN/ORG(2006)3.

Jean-Jacques Dordain
Director General
(1) Space Segment Programme Managers (GMES missions, Eumetsat missions, Explorer missions) ensure the coordination and coherency of a group of space segment projects.

(2) The project team structure is according to Programme requirements.