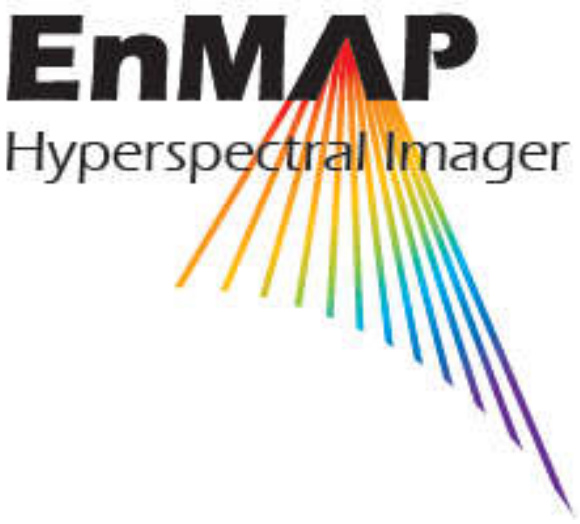
Environmental Mapping & Analysis Program (EnMAP)

EnMAP Scientific Advisory Group - Terms of Reference -



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Übersicht der Dokumentänderungen

Version	Datum	Änderung	Betroffene Seiten
Version 1	27.02.2007	New document	
Version 2	01.12.2014	ECST and EnSAG TOR combined in one document	2-9
Version 3	19.03.2020	EnSAG TOR updated	2-9

Table of Content

1 Preface

The aim of this document is to establish a set of terms of reference (TOR) for the EnMAP Scientific Advisory Group (EnSAG). These TOR are intended to clearly define the objectives and role of the EnSAG. However, as the project develops, it may be necessary to redefine specific issues.

2 Objectives of EnSAG

The primary objective of the EnSAG is the support of the Scientific Principal Investigator (PI) at the GeoForschungsZentrum Potsdam (GFZ) and the EnMAP project management of the DLR Space Agency to successfully realize the mission. It is therefore jointly established by the PI and the DLR Space Agency. In addition, the EnSAG shall be dedicated to the strategic planning and application development outside the ground segment processing.

The EnSAG has five primary objectives and functions:

a) **Monitoring the agreement** between the scientific objectives and the EnMAP program execution

b) Ensuring coordinated scientific **data exploitation**

c) Providing recommendations for complementary activities that enable **retrieval and use of the data**

d) Raising **awareness of EnMAP data** in the scientific community

e) Supporting the **communication with** the wider **science community** of EnMAP

3 Terms of Reference of EnSAG

The terms of Reference for the EnSAG are referred to two major objectives:

A. Mission performance, calibration and validation

1. **Consolidating** the calibration plan, considering the capabilities of the sensor and the quality and accuracy of future data products, in relation to key scientific questions
2. Providing **advice** on the **scientific and technical issues** which may need to be addressed within the calibration phase to realize the future applications identified

3. **Evaluating** the **sensor performance** based on **calibration results**
4. **Assessment** and **risk analyses** of calibration results considering key scientific questions and future data products prior to the commissioning phase
5. **Ascertaining data product** and **quality assurance** during commissioning phase
6. **Consolidating** the **validation plan** for EnMAP Level-1B/1C/2A data considering the capabilities of the sensor and the data products, a schedule for actions and work and a defined set of outcomes
7. **Recommending** the selection of methods and on the required accuracy of geophysical validation
8. Assisting the selection of validation sites considering **ground truthing** for the **establishment of a validation data base**
9. **Supporting scientific exploitation and data product validation** by encouraging the exchange of **flight campaign data** and **ground truth data** to the scientific community
10. **Assisting cross-calibration** with coexisting hyperspectral satellite mission within and beyond the commissioning phase

B. Scientific exploitation and application

1. **Finalizing** the proposal of the background mission and the acquisition request process and acquisition planning, including priority setting of scientific exploitation and the actual process to submit applications, and updating during the operational phase
2. **Reviewing and update the Science Plan** by developing a set of new and innovative scientific objectives of the EnMAP mission and **identifying** potential **new fields of research**. The update should including a set of actions and work to be undertaken by the science community including the definition of scientific studies to show the scientific benefit of the mission and a defined set of outcomes
3. **Encouraging cooperation** with already existing and future **missions** and **advising** the DLR space agency on future collaboration on an **international level**
4. **Liaising** with international scientific initiatives **to increase scientific outcome** of the EnMAP mission
5. **Supporting** the PI and the DLR space agency’s project management in the organisation of **scientific workshops**

6. Seeking opportunities to **promote and expand awareness of EnMAP data** by **scientific publications and presentations**
7. **Maintaining contact with scientific users and representing their needs** with respect to EnMAP data

Table 1: Schedule information for the task

	Pre-launch	Commissioning phase	Nominal operation
A.1.	X		
A.2.	X		
A.3.	X		
A.4.	X		
A.5.		X	
A.6.	X	X	(X)
A.7.	X	X	(X)
A.8.	X	X	X
A.9.	X	X	X
A.10.		X	X
B.1.	X	(X)	(X)
B.2.	X		
B.3.	X	X	X
B.4.	X	X	X
B.5.	X	X	X
B.6.	X	X	X
B.7.	X	X	X

4 Modus Operandi of EnSAG

The main activities of the EnSAG will be:

- Giving **advice to the PI and DLR** Space Agency on:
  - instrumental and **space segment** issues as far as they affect the scientific integrity of the EnMAP mission (e.g. calibration), including the preparation of the mission deployment during the commissioning phase

- the scientific requirements for the EnMAP **ground segment** activities, including the monitoring of and participation in the development of scientific retrieval algorithms
- the development and maintenance of an EnMAP **calibration and validation plan** within and beyond the commissioning phase
- the development and maintenance of an effective EnMAP **Science Plan** and scientific exploitation strategy

- Seeking **input and feedback from existing and potential users of EnMAP** data and where appropriate, ensure that responsive action is taken.
- **Monitoring the work of**, and make recommendations, if necessary, to **external groups and subgroups** which may be formed to address specific technical areas, which include validation, instrument performance, operation and health, data product integrity and improvement as well as data archives.

The following measures are foreseen:

- Discussions during **EnSAG meetings**, followed where necessary by EnSAG recommendations
- The establishment of **scientific working subgroups** if necessary in the above mentioned areas

EnSAG Meetings shall be held at least 2 times per year prior to the launch and during the commissioning phase and whenever deemed necessary by either the PI or the project management. Invitations will be distributed by the EnSAG contact person to all members of the EnSAG. The meetings are chaired by the PI. The EnSAG may invite additional experts to its meetings if necessary.

Additionally, the members of the EnSAG are expected to support and attend EnMAP science workshops as well as present the scientific outcome of the mission at national and international conferences.

The PI and the project management of the DLR Space Agency will jointly decide on new members of the EnSAG.

Annex I – Members of EnSAG

EnSAG Members Mission Design, Commissioning Phase and Calibration Validation

EnSAG Members Scientific Exploitation and Application

Annex II – Contact information of EnSAG members

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