

TOR Reference No.:	Author(s): Cláudia Morgado, Luís Marques e Susana Silva
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TERMS OF REFERENCE FOR WORK UNDER THE AUSPICES OF IMPEL	

1. Work type and title

1.1 Identify which Expert Team this needs to go to for initial consideration	
Industry	<input type="checkbox"/>
Waste and TFS	<input type="checkbox"/>
Water and land	<input type="checkbox"/>
Nature protection	<input type="checkbox"/>
Cross-cutting – tools and approaches -	<input checked="" type="checkbox"/>
1.2 Type of work you need funding for	
Exchange visits	<input checked="" type="checkbox"/>
Peer reviews (e.g. IRI)	<input type="checkbox"/>
Conference	<input type="checkbox"/>
Development of tools/guidance	<input checked="" type="checkbox"/>
Comparison studies	<input type="checkbox"/>
Assessing legislation (checklist)	<input type="checkbox"/>
Other (please describe):	<input type="checkbox"/>
1.3 Full name of work (enough to fully describe what the work area is)	
Assess the use of Copernicus Satellite images in environmental and nature conservation inspections and their evidential value.	
1.4 Abbreviated name of work or project	

2. Outline business case (why this piece of work?)

2.1 Name the legislative driver(s) where they exist (name the Directive, Regulation, etc.)
- REGULATION (EU) No 377/2014 OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL of 3 April 2014 establishing the Copernicus Programme and repealing Regulation (EU) No 911/2010

- Directive 2007/2/EC of the European Parliament and of the Council of 14 March 2007 establishing an Infrastructure for Spatial Information in the European Community (INSPIRE).

2.2 Link to IMPEL MASP priority work areas

- | | |
|--|-------------------------------------|
| 1. Assist members to implement new legislation | <input type="checkbox"/> |
| 2. Build capacity in member organisations through the IMPEL Review Initiatives | <input type="checkbox"/> |
| 3. Work on 'problem areas' of implementation identified by IMPEL and the European Commission | <input checked="" type="checkbox"/> |

2.3 Why is this work needed? (background, motivations, aims, etc.)

Copernicus is a European Union Programme, coordinated and managed by the European Commission, aimed at developing European information services based on satellite Earth Observation and in-situ (non-space) data. The Earth observation satellites, which provide the data exploited by the Copernicus services, are divided into two groups of missions: The Sentinels, which are currently being developed for the specific needs of the Copernicus programme and the Contributing Missions, which are operated by National, European or International organisations and already provide a wealth of data for Copernicus services. This information is available without cost and can be applied to several domains.

Environmental law enforcement may be supported by this highly updated and valuable geographic information, gathering, storing, managing and assisting the field activities. However it is still uncertain the methods, institutional use and the legal application of these tools for the environmental and land use analysis. Therefore, this project aims to identify the potential users of these remote sensing data, based on Copernicus services and understand how this information can support the environmental and nature conservation inspections inspection activities within the specificity of each IMPEL members involved and how it has already been applied and can be applied in the future, considering main procedures, methods, (open) access to such procedures and methods and legal constrains (concerning geo-spatial evidence appliance in different countries legal background).

Associated with the pre geo-analysis (Copernicus-based), mostly space-based data, there is a complementary related information that can be acquired through Unmanned Aerial Vehicles (UAV - Drone) for more detailed and specific (circumscribed) information on site. This information support the Copernicus images for specific, uncertain, miscellaneous (complex) areas, at high resolution and on demand. The awareness of this geo-spatial remote sense data, as tools for identify on field inspection activities offers solutions for a collaborative support system within the UE institutions, sharing experiences, main constraints and knowledge of geospatial technological application.

2.4 Desired outcome of the work (what do you want to achieve? What will be better / done differently as a result of this project?)

- Exchange of information and current best practice concerning the use of Copernicus services and UAV as a tool for environmental and nature conservation inspections and the possible legal constraints regarding the use of the collected data;
- Gather knowledge on the development of methodologies that assist IMPEL members who are currently using or planning to use these tools/technologies;
- Increase the capability of using Copernicus services outputs to support and prioritize inspection programs;

- Share methodologies and expertise of geographic information applied in environmental and nature conservation inspections;
- Identify potential barriers to using geo-spatial technologies regarding their probative value.

2.5 Does this project link to any previous or current IMPEL projects? (state which projects and how they are related)

- Water Over-abstraction and Illegal Abstraction Detection and Assessment (WODA);
- Drones and mobile technology.

Not and IMPEL project but supported by IMPEL:

- Using Satellite Earth Observation and GPS tracking to Combat Waste Crime and Ensure Waste Compliance.

3. Structure of the proposed activity

3.1 Describe the activities of the proposal (what are you going to do and how?)

Three meetings will be held: one in Portugal and two in other Member States (TBD)

1. Questionnaire:

Before the first meeting, a questionnaire will be sent to all the members in the project team to assess their expertise in the use of Copernicus services and UAV in environmental and nature conservation inspections, specifically regarding existing methodologies (in use or in development) and the use of data collected from these tools as probative value.

2. Kick-Off Meeting:

General planning of the activities; defining the state of the art of techniques adopted in the use of satellite images and UAV; analysis and presentation of the results from the questionnaire. (Instrument: Questionnaire); presentation by team leader and other participants. Preparation of training sessions to be held in the following events.

3. Intermediate Meeting:

Presentations by team members demonstrating the methodologies developed in the use of these tools. Exchange examples and research regarding the use of satellite and UAV data as probative value. Training sessions/workshop.

4. Final Meeting:

Preparation of the final Report and Follow-Up.

3.2 Describe the products of the proposal (what are you going to produce in terms of output / outcome?)

Transfer of knowledge on current practice with respect to the use of satellite images and UAV as evidence in environmental and nature conservation inspections.

Written Report:

- Conclusions on the methodologies used or developed by the participants and their dissemination to other IMPEL members.

3.3 Describe the milestones of this proposal (how will you know if you are on track to complete the work on time?)

1. Kick-Off Meeting (Apr2018)
2. Intermediate Meeting (Set 2018)
3. Final Meeting (Nov 2018)
4. Report

3.4 Risks (what are the potential risks for this project and what actions will be put in place to mitigate these?)

Potential risk of project team members accessing data, software, hardware and training background. The team leader can provide training and access within their installations, during the scheduled events.

4. Organisation of the work

4.1 Lead (who will lead the work: name, organisation and country) – this must be confirmed prior to submission of the TOR to the General Assembly)

General Inspectorate for the Ministries of Environment, Spatial Planning, Agriculture and Sea (IGAMAOT), Portugal

4.2 Project team (who will take part: name, organisation and country)

Tbd, 10 countries

4.3 Other IMPEL participants (name, organisation and country)

tbd

4.4. Other non-IMPEL participants (name, organisation and country)

- Direção-Geral do Território (DGT), Portugal
- Portuguese Environment Agency (APA), Portugal
- The Institute of Nature Conservation and Forests, I.P., hereinafter designated by ICNF;
- The Regional Inspectorate for Environment from Azores, hereinafter designated by IRA Açores, - Representatives from the Earth Observation Group (GOT), Portugal

5. High level budget projection of the proposal. In case this is a multi-year project, identify future requirements as much as possible

	Year 1 (exact)	Year 2	Year 3	Year 4
How much money do you require from IMPEL?	20000 €			
How much money is to be co-financed				
Total budget				

6. Detailed event costs of the work for year 1

	Travel € (max €360 per return journey)	Hotel € (max €90 per night)	Catering € (max €25 per day)	Total costs €
Event 1	3000	1800	500	
<i>Kick-Off Meeting</i>				
<i>Apr 2018</i>				
<i>Portugal</i>				
<i>10 2</i>				
Event 2	9000	4500	1200	
<i>Intermediate Meeting</i>				
<i>Set 2018</i>				
<i>tbd</i>				
<i>25 2</i>				
Event 3	(*)	(*)	(*)	
<i>Final Meeting</i>				
<i>Nov 2018</i>				
<i>tbd</i>				
<i>5 2</i>				
Event 4				
<i><Type of event></i>				
<i><Data of event></i>				
<i><Location></i>				
<i><No. of participants> <No. of days/nights></i>				
Total costs for all events	12000 €	6300 €	1700 €	20000 €

*No costs were considered for the final meeting since we propose to do it using videoconference.

7. Detailed other costs of the work for year 1

7.1 Are you using a consultant?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
7.2 What are the total costs for the consultant?	
7.3 Who is paying for the consultant?	
7.4. What will the consultant do?	
7.5 Are there any additional costs?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No Namely:
7.6 What are the additional costs for?	
7.7 Who is paying for the additional costs?	
7.8. Are you seeking other funding sources?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No Namely:
7.9 Do you need budget for communications around the project? If so, describe what type of activities and the related costs	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No Namely:

8. Communication and follow-up (checklist)

	What		By when
8.1 Indicate which communication materials will be developed throughout the project and when <i>(all to be sent to the communications officer at the IMPEL secretariat)</i>	TOR ^{✓*}	<input checked="" type="checkbox"/>	
	Interim report ^{✓*}	<input checked="" type="checkbox"/>	
	Project report ^{✓*}	<input checked="" type="checkbox"/>	
	Progress report(s) [✓]	<input type="checkbox"/>	
	Press releases	<input type="checkbox"/>	
	News items for the website ^{✓*}	<input checked="" type="checkbox"/>	
	News items for the e-newsletter	<input type="checkbox"/>	
	Project abstract ^{✓*}	<input checked="" type="checkbox"/>	
	IMPEL at a Glance [✓]	<input type="checkbox"/>	
	Other, (give details):	<input type="checkbox"/>	

8.2 Milestones / Scheduled meetings (for the website diary)	tbd
8.3 Images for the IMPEL image bank	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
8.4 Indicate which materials will be translated and into which languages	tbd
8.5 Indicate if web-based tools will be developed and if hosting by IMPEL is required	tbd
8.6 Identify which groups/institutions will be targeted and how	tbd
8.7 Identify parallel developments / events by other organisations, where the project can be promoted	tbd

✓) Templates are available and should be used. *) Obligatory

9. Remarks

Is there anything else you would like to add to the Terms of Reference that has not been covered above?

Portugal will have a national sub team that will involve several authorities, gathering expertise and competences in different areas, according to the scope of the project, but also with the advantage of promoting and supporting collaboration between different work units. Only one of member of this sub team participates in each IMPEL event if it is abroad (with a "paid place" by IMPEL), although the team works together to contribute to the Project. The participant countries can also use a similar approach.

*In case of doubts or questions please contact the
[IMPEL Secretariat](#).*

*Draft and final versions need to be sent to the
[IMPEL Secretariat](#) in word format, not in PDF.*

Thank you.