

## Call for tenders' details

Title: High Resolution Vegetation Phenology and Productivity Monitoring – Biophysical Parameters – Copernicus Land Monitoring Service

Start date: 09/04/2019

Time limit for receipt of tenders: 28/05/2019

Contracting authority: European Environment Agency (EEA)

Status: Closed

## Call for tenders question list

#	Submission date	Publication date	Question subject	Question	Answer
1	26/04/2019 14:39	02/05/2019 14:49	Resampling - pp14	Does the sentence “Besides the natively best possible grid resolution (it might depend on the selected vegetation index), all HRL type deliverables shall also be resampled to the HRL 100 m reference grid” mean that all deliverables shall be resampled?	<b>02/05/2019</b> All deliverables that are expected to be aligned to the HRL data (see figure 4 of the tender specifications) shall be processed (a) 'natively best possible grid resolution', and (b) to the 100m x 100m HRL reference grid.
2	26/04/2019 14:39	02/05/2019 14:50	Resampling - pp14	Shall that be made also for newly proposed vegetation indices?	<b>02/05/2019</b> Yes, this applies also to a proposed and eventually implemented vegetation index. Please note that the raw vegetation indices shall all remain as tiles only; HRL alignment (base resolution and 100m x 100m pixels) shall happen only starting at the next level (i.e. seasonal trajectories, task 3; see figure 4 of the tender specifications) of products.

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3	26/04/2019 14:39	02/05/2019 14:51	Resampling - pp14	Shall that be done at tile level or is a mosaicking process expected?	<p><b>02/05/2019</b> HRL aligned files shall be delivered as full coverage files and not as (S2) tiles. The idea if these files is to facilitate the synergic use of CLMS products. The size of the HRL-aligned files will probably impose to do still a tiling in terms of file format. Possible solution could be to create either VRT layers or to use file-internal tiles. File-size vs. access/download speed shall be considered for the proposed solution.</p>
4	26/04/2019 14:39	02/05/2019 14:53	Resampling - pp14	What is the expected delivery time for resampled deliveries?	<p><b>02/05/2019</b> Since HRL-aligned files are produced starting with seasonal trajectories (task 3), which shall be processed in Q1 of the following year (figure 2 of the tender specifications), they should be processed as soon as the tile data is finalised.</p>

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#	Submission date	Publication date	Question subject	Question	Answer
5	26/04/2019 14:38	02/05/2019 15:34	Task 6	<p>In sentence “Besides the data access described under points 1) and 2) above, also a direct, server-internal access to phenology and productivity products shall be possible”, please clarify what “server-internal” means. Internal components can always access the server they are in. Does it mean to provide access to the internal components of the server from the outside?</p>	<p><b>02/05/2019</b>            Since the amount of data produced from this project is so vast, most of the expected downstream processing activities are expected to happen on the same server/without passing HR VPP products over the internet. This means that any registered Copernicus user, that rents (or is somehow allowed to use) CPU and storage at the HR VPP hosting infrastructure, shall be allowed to access (read only) all HR VPP products. Whether this is done using the REST API of the over-the-internet M2M access or by allowing the browsing inside the folder structure, shall be proposed by tenderers as part of their offer and ultimately decided at the kick-off meeting (or soon thereafter) based on the better user experience. Please note that the envisaged solution must take into account the overall CLMS perspective, and that different solutions for different products should to the furthest extent possible be avoided.</p>

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#	Submission date	Publication date	Question subject	Question	Answer
6	26/04/2019 14:38	02/05/2019 15:40	Task 6:	Given the description of the requirements described in the TS and the existing platforms that give access to Sentinel data and their derived products, what is expected to be accomplished in the frame of the present Contract?	<b>02/05/2019</b> Sentinel (2 A/B) data are 'only' the source for the HR VPP products and are not part of the deliverables of this product. Task 6 is about making HR VPP products accessible to Copernicus users in a harmonised manner, at least across CLMS biophysical parameter products. Whether it makes sense to use mechanisms already available at an existing platform ultimately depends on the choice of the platform.
7	26/04/2019 14:40	03/05/2019 09:06	Section 1.5.5	is the infrastructure already created? Is the objective to develop a data access within the already existing infrastructure?	<b>03/05/2019</b> It is very improbable that CLMS will set up on its own dedicated processing infrastructure. Most probably one of the DIAS'es or another European cloud infrastructure provider dealing with earth observation data will be selected based on HR VPP and overall CLMS requirements. Yes, the objective is to develop the data access within the ultimately selected processing infrastructure.

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#	Submission date	Publication date	Question subject	Question	Answer
8	26/04/2019 14:35	03/05/2019 09:32	Growing Season - pp11	How should the growing season be defined? Should it be defined at Sentinel-2 tile level? Which is the geographical scope to define the growing season?	<b>03/05/2019</b> A definition of the growing season shall be based on a scientifically peer reviewed and operationally proven approach. The growing season is typically the period between the start (SOS) and the end of the season (EOS), which shall be calculated for every pixel at Sentinel 2 tile and then aligned to the HRL layers. In case several growing seasons are defined for a given year, pixel, phenological and productivity parameters will need to be defined for each individual season.
9	26/04/2019 14:37	03/05/2019 09:47	Task 5:	Is the expected output of Task 5 the products harmonised with the pre-existing products? Or only the harmonisation strategy?	<b>03/05/2019</b> The delivery of this task is a harmonisation strategy (a proposal of which must be included in the offer), which will eventually trigger a need for some modification to the actual products (which shall be seen as an integral part of the offer). Task 5 shall make sure that the barriers of enabling '... the upscaling with global level datasets and vice versa' are as low as possible.

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#	Submission date	Publication date	Question subject	Question	Answer
10	26/04/2019 14:34	03/05/2019 12:26	Reference Lost in pp9	Reference to a section is lost in the sentence "The analysis shall focus on the suitability with regards to targets as described in section Error! Reference source not found.. Further relevant details for the assessment can be found in the detailed description of the relevant tasks 3-5 (sections 1.4.2.1.3, 1.4.2.1.4, 1.4.2.1.5)."	<b>03/05/2019</b> The correct reference is 'section 1.3 The role of HR VPP'.
11	26/04/2019 14:33	03/05/2019 12:28	TASK 3: pp 9 and Forward	In the frame of Task 3, what does "season" mean for you?	<b>03/05/2019</b> The 'growing season' comprises all biomass fluctuations within a calendar year. However, please note that in lower Latitudes in Europe the growing season may start already in autumn in the previous calendar year and end in spring of the current year. It is important that such continuity of information, across calendar years, is guaranteed.

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#	Submission date	Publication date	Question subject	Question	Answer
12	26/04/2019 14:38	03/05/2019 12:36	Task 6:	In sentence "The data access shall be integrated on <a href="https://land.copernicus.eu">https://land.copernicus.eu</a> and fit into the design of the CLMS portal.", please clarify what the integration refers to: user authentication, software architecture, visual layout, or others. Some of those might require accessing and modifying <a href="https://land.copernicus.eu">land.copernicus.eu</a> . Are such modifications within the scope of this project?	<b>03/05/2019</b> No, modifying <a href="https://land.copernicus.eu">land.copernicus.eu</a> is not within the scope of this call for tenders. The goal is that the production and delivery of HR VPP products shall be integrated under the umbrella of CLMS. Users should be aware of HR VPP being part of the CLMS portfolio when accessing HR VPP products. User authentication: Users registered at CLMS shall be allowed to access HR VPP products using these user identification credentials. Registration of new users shall happen on <a href="https://land.copernicus.eu/@@register">https://land.copernicus.eu/@@register</a> and will also be handled there. Software architecture: This is not part of the present call for tenders. HR VPP will require specific configuration of spatial data access which should not be constrained by eventual limitation of the current <a href="https://land.copernicus.eu/">https://land.copernicus.eu/</a> portal. Visual layout: Yes, the layout shall be compliant with <a href="https://land.copernicus.eu/">https://land.copernicus.eu/</a> . Graphical templates will be made available by the EEA.

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#	Submission date	Publication date	Question subject	Question	Answer
13	26/04/2019 14:42	03/05/2019 12:50	QA Layer pp19	What is exactly meant with QA layer? Is it a raster?	<p><b>03/05/2019</b>            A QA layer of a raster 'data-file' is typically also a raster. It must have the very same format and spatial specifications as the data-files. Every data pixel shall be accompanied by the relevant QA information. For storage efficiency the QA information is typically bit-encoded (i.e. several quality related parameters are stored inside a 16bit string, which need to be encoded before becoming usable). Whether the QA layer shall be stored in a separated file as a layer inside the data-file will be discussed during the initial phase of project implementation. A QA layer is expected to deliver all the needed and relevant information about the quality of the actual data-file (pixels). We decided not to define QA information content too strictly, in order to allow tenderers to elaborate the most comprehensive and appropriated approach for the specific proposal.</p>

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14	26/04/2019 14:42	03/05/2019 12:54	QA Layer pp19	Which is the expected correlation coefficient?	<p><b>03/05/2019</b> The expected correlation coefficient is the Pearson's correlation coefficient, being a measure of the strength of the linear relationship between two variables. Pearson's r can range between the values -1 to 1. An r of -1 indicates a perfect negative linear relationship between variables, an r of 0 indicates no linear relationship between variables, and an r of 1 indicates a perfect positive linear relationship between variables.</p>
15	26/04/2019 14:34	03/05/2019 12:58	AOI	Will the AOI be the same in a post-Brexit scenario?	<p><b>03/05/2019</b> The geographic coverage is defined in section 1.5.2 of the tender specifications. For downloading the AOI file please refer to section 1.5.1 of the tender specifications.</p>

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#	Submission date	Publication date	Question subject	Question	Answer
16	06/05/2019 10:30	07/05/2019 10:59	Submission deadline	Taking into account the busy period with ESA living planet symposium where many potential partners are highly involved, would it possible to extend the submission deadline ?	<b>07/05/2019</b> When setting the deadline for submission, the holidays occurring in April and May 2019 were taken into consideration. The deadline set, which is well above the minimum requirement, will give tenderers at least 6 full working weeks in which to prepare an offer. This, together with internal Agency planning as to when to have a contract in place, means your request for an extension of the submission deadline is not granted.
17	07/05/2019 14:25	08/05/2019 14:32	Sentinel-2 timeframe to be processed	With reference to the provisions of section 1.4.2.1.3 and its Figure 2, do we understand correctly that the overall timeframe of Sentinel-2 data to be processed over the max. project duration will altogether comprise the period of 2017-2021?	<b>08/05/2019</b> Yes, the maximum project duration foresees the full processing of the 5 years 2017-2021. Please note that for the filtering of the time series as well as for the detection of phenology in all biogeographical regions it will be necessary to use additional datasets from Q4-2016 and from Q1-2022. (Reference: the 'NOTE' in the table P2 (Yearly costs) in section 2.2.3.2 and figure 6 of the Tender Specifications.)

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#	Submission date	Publication date	Question subject	Question	Answer
18	07/05/2019 14:28	08/05/2019 14:35	page limit	Section 2.2.3.1 requests that tenderers shall limit their technical offer to a maximum of 60 DIN A4 pages. Please confirm our understanding that this limitation applies to exactly the number of pages conforming to the chapters constituted by the very numbering and the headings of the award criteria, as stipulated in that same section – however excludes any typical “overhead pages” such as Table of Contents, Abbreviations, Annexe, etc.	<b>08/05/2019</b> Yes, your understanding is correct.
19	07/05/2019 14:30	08/05/2019 14:37	Correlation Coefficient	With respect to the previously published Clarification answer #14, may we ask you to please further specify whether the minimum 80% correlation coefficient value specified in section 1.5.8 should consequently be interpreted as R (Pearson's correlation coefficient) = 0.8?	<b>08/05/2019</b> The minimum expected coefficient of correlation is +0.8, i.e. 80%, measured by the Pearson's correlation coefficient i.e. R value.

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20	07/05/2019 14:26	08/05/2019 14:51	Infrastructure costs	Do the expected costs of the infrastructure (operation, storage and processing) impact the evaluation in any way?	<b>08/05/2019</b> As explained in section 1.5.5 of the tender specifications: 'Cloud infrastructure and cloud infrastructure related costs are not part of this open procedure, but will be addressed in a separate procurement procedure. What does form part of this open procedure, and should be factored in to the financial offer (section 1.9), is the management of the processing, storage and dissemination of HR VPP'. Storage (disc space), processing (CPU, RAM,...) costs are not part of the contract to be awarded under this open procedure, but will be addressed in an independent contractual setup. Operation costs (i.e. running, monitoring and guaranteeing a reliable and operational HR VPP service) is part of this open procedure and these costs therefore have an impact on the price score.
21	09/05/2019 16:22	10/05/2019 09:52	Page limit	Dear Sirs You specify a 60 A4 page limit for the technical proposal; is this to include the requested CVs and project management information? Kind regards	<b>10/05/2019</b> The 60 DIN A4 pages is excluding CVs and project management information. Please also see question #18.

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#	Submission date	Publication date	Question subject	Question	Answer
22	07/05/2019 14:28	13/05/2019 10:05	Use Cases	Section 1.4.2.1.4 asks that tenderers must submit use cases demonstrating phenological and productivity indices derived from S2 images. Can you please specify in more detail, in which form and extent you expect this?	<b>13/05/2019</b> The aim of use cases is to provide evidence of the tenderer's ability to implement the envisaged service. The tenderer may use already available use cases. The size of the use case shall be (approximately the size of) an S2 tile and within the envisaged Aol (EEA-39). Use cases should be submitted as GeoTIFF raster files (preferably in EPSG:3035). The raster files shall be accompanied by essential metadata and auxiliary information such as legends.
23	07/05/2019 14:23	13/05/2019 10:18	Cloud Services	Some cloud-based platform providers are offering operational data processing services, going beyond basic data access. Can we plan to exploit these for some basic tasks, provided we can assure portability, or are we expected to provide all steps of data processing in a self-contained process?	<b>13/05/2019</b> Activities covered by this open call for tenders shall all happen in a self-contained process, and no part shall be dependent on a specific cloud provider.

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24	13/05/2019 08:07	13/05/2019 10:57	Section 1.5.9	To our understanding, the expected outputs shall be rasters for all tasks. How are these outputs expected to be linked with Land Cover?	<b>13/05/2019</b> It is correct that all outputs are raster files. The type of information provided within HR VPP will be usable/contribute to determine LC/LC information as part of the production of LCLU products such as CLC+, but that is not part of the work foreseen in this open call for tenders.
25	10/05/2019 17:11	15/05/2019 10:50	Data classes	Here is a link provided in the ITT with reference to the HRLs [ <a href="https://land.copernicus.eu/pan-european/high-resolution-layers">https://land.copernicus.eu/pan-european/high-resolution-layers</a> ], which refers to 5x habitat classes (Imperviousness, Grassland, Forests, Water and wetlands, small woody features). The page then goes on to list further 3 additional classes that have been discontinued. Are the further 3 discontinued classes expected to be mapped, in addition to the baseline 5?	<b>15/05/2019</b> The requirement of "[...] (b) aligned to HRL files [...]" in sections 1.4.2.1.3 and 1.4.2.1.4 of the tender specifications shall be understood as the grid projection, pixel position and pixel size(s) of HR VPP and does not refer to the thematic content of any HRL file; i.e., the HR VPP files shall be spatially aligned to HRL files.
26	13/05/2019 08:08	15/05/2019 10:53	Section 1.4.3	From what is stated in this section, is it the output expected a WMS service?	<b>15/05/2019</b> Section 1.4.3 summarises the different type of data deliverables, not how files shall be disseminated. Dissemination of files is described in sections 1.4.2.1.6., 1.5.5., 1.5.9.

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27	15/05/2019 00:20	15/05/2019 11:03	Chapter 2.1 "Each tenderer can only submit one offer";	In chapter 2.1, it is stated that "Each tenderer can only submit one offer. No tenderer may participate in more than one consortium aiming at the framework service contract. Disregard of this rule will lead to the exclusion of all consortia involved in this practice";. It is clear, but does this apply also for all sub-contractors? There might be very specific data or expertize support needed via small sub-contracting, which might be approached by more consortia. Is that eligible?	<b>15/05/2019</b> The statement in section 1.2 that each tenderer may only submit one offer does not apply to subcontractors.

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28	15/05/2019 00:21	15/05/2019 11:14	Task 5 contents clarification (1.4.2.1.5)	In addition to Q/A No. 9... Task 5 specification in ToR is very general, so it is not fully clear (i) what do you want to achieve in the end and (2) how the tenderers shall contribute to this process. From the Q/A No.9, it is clear that harmonization strategy is expected, rather than harmonization itself, but could you please still explain a bit more the overall intention of Task 5? Both harmonisation and interoperability can be achieved on multiple levels i.e. rather technical (syntactic), thematic (semantic) or organisational (cross-domain). Could you please clarify which level shall be elaborated by tenderer as expected in such a strategy?	<b>15/05/2019</b> Task 5 aims at setting up products which allow the best possible interoperability with vegetation products from Copernicus global land ( <a href="https://land.copernicus.eu/global/themes/vegetation">https://land.copernicus.eu/global/themes/vegetation</a> ). The aim is to allow up and down scaling in between the different levels of products as well as ensuring thematic compatibility. Still this harmonisation shall not harm the quality of the products implemented with this open call for tenders. One of the most relevant aspects is the thematic harmonisation, i.e. products need to be interoperable. The details of how this is implemented is what is expected to happen in Task 5 (strategy), and this strategy might trigger some changes in the proposed implementation strategy. Tenderers are expected to propose an idea of how this could work.

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29	07/05/2019 14:27	16/05/2019 11:08	French DOMs	Footnote 13 in section 1.5.2 specifies that the geographic coverage of the products shall comprise, amongst others, the French DOMs. This seems to contradict the Aol extent as provided via the auxiliary files specified in section 1.5.1 and in Figure 5. Please confirm our understanding that the DOMs shall not be part of the Aol for the HR VPP, or provide additional specifications for such case (phenology in case of tropical vegetation, alternative map projection, raster grid, etc.).	<b>16/05/2019</b> The French DOM's shall be seen as an integral part of HR VPP. The internal assessment showed that an additional 34 Sentinel 2 tiles will need to be processed. Furthermore, due to the location which is not compatible with the CRS used by the HRLs (EPSG: 3035), in these areas only the Sentinel 2 tile based delivery shall be processed. The Equatorial area is known to be heavily affected by clouds such that even after gap filling the production of yearly seasonal trajectories, and hence phenological indices, will most probably not be possible. In cases where insufficient numbers of cloud free pixels are available, several years shall be grouped into one. The future contractor will be requested to evaluate the situation during the course of the project and give expert judgement and sound solutions for the implementation. The additional tiles can be accessed at the tender specific files location, see section 1.5.1 of the tender specifications. Filename is: Aol_S2tiles_DOM.zip

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#	Submission date	Publication date	Question subject	Question	Answer
30	20/05/2019 18:12	21/05/2019 10:11	Processing of vegetation indices	Section 1.4.2.1.1 mentions that the future contractor shall process a set of vegetation indices: is the contractor expected to process all the tiles belonging to the geographic coverage described in section 1.5.2 for the complete historical archive?	<b>21/05/2019</b> Yes, the future contractor is expected to process all Sentinel 2 A/B files within the AoI (see section 1.5.2 of the tender specifications and the answer to question No 29), starting from 01.01.2017.
31	20/05/2019 12:44	21/05/2019 13:02	Data dissemination/access	What is the expected number of users and/or volume of service use for the "Data dissemination/access" part? We understand that modern solutions should be scalable and ready to accommodate various user volumes but it is important to have a rough, order of magnitude, estimate on the use so that we can properly assess the complexity of the design (solution for hundreds of users is different than the one for millions of users, which can happen with free data access). We would specifically be interested in: - expected number of monthly users using "Interactive web map service" - expected number of monthly users using "Machine to Machine access" - expected number of requests for "Machine to Machine access"	<b>21/05/2019</b> Copernicus land service currently counts nearly 40.000 registered users. Out of these, somewhat more than 3.000 do active data access and download. That said, the nature of HR VPP products and the expected type of applications are not comparable with the 3-yearly or 6-yearly update cycles of mapping products in the current CLMS portfolio. It is expected, that HR VPP will open the doors to a new type of Copernicus users, and thus the number of active users is expected to grow. Furthermore, the continuous HR VPP data flow pared with the m2m type of access may generate many thousands or even hundreds of thousands of daily I/O intensive m2m queries. The envisaged system shall be scalable and capable of serving many m2m requests.

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32	21/05/2019 10:03	21/05/2019 13:24	Simplified Financial Statement (Annex 3) in joint consortium	In a joint consortium, where the lead member fulfills the requirements stated in section 2.2.2.2. would be enough to provide the Annex 3 and the evidence only from the lead member? In case the answer is NO, which are the options for a member that is a Public Body, and unable to present such information (Annex 3 and evidence), to prove their economic and financial capacity?	<p><b>21/05/2019</b> All members of a consortium must complete, sign and submit a simplified Financial Statement in accordance with the template provided in Annex 3 to the tender specifications. Some consortium members – such as public bodies - may have to provide clarifications to support their Financial Statement. This can be done in a separate note to be submitted as part of the tender. In our experience, most tenderers, including public bodies, are capable of providing balance sheets. However, should this option not be available, tenderers should submit appropriate statements from banks or evidence of professional risk indemnity insurance.</p>

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33	22/05/2019 13:32	27/05/2019 12:20	Support the organisation of one or two user meetings	The 5th bullet in chapter 1.4.2.1.7 (page 14) mentions one or two meetings (75-100 participants each). Are these on-site meetings in Copenhagen or via videoconference? Is the contractor responsible for ensuring the venue and logistics for these meetings?	<b>27/05/2019</b> The future contractor will not be responsible for the logistics of the user meeting(s) mentioned in section 1.4.2.1.7 of the tender specifications. The number of meetings to be held, the venue, the date, whether to have the meeting using videoconferencing, etc., will be decided by the EEA during implementation of the contract and communicated to the future contractor in due time. The role of the future contractor is supporting and shall be undertaken through the preparation of presentations, use cases, and on-line demonstrations, just as the future contractor will be responsible for drafting the minutes of the meeting(s).

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