



TENDER SPECIFICATIONS

GMES fast track service on land monitoring

High resolution core land cover data for built-up areas, including degree of soil sealing, 2006

EEA/IDS/07/001

1. Purpose and context of the contract

Strategic discussions amongst member countries, European Parliament and the main EU institutions responsible for environmental policy, reporting and assessment (DG ENV, EEA, ESTAT and JRC) have underlined an increasing need for factual and quantitative information on the state of the environment to be based on timely, quality assured data, in particular in land cover and land use related issues.

EEA is collaborating with the European Space Agency (ESA) and the European Commission (EC) on the implementation of a fast track service on land monitoring, in line with the Communication from the Commission to the Council and the European Parliament “Global Monitoring for Environment and Security (GMES): From Concept to Reality” (COM(2005) 565 final).

For the implementation of this GMES fast track service on land monitoring (Land FTS) 2006-2008, a CLC (Corine Land Cover) update will be combined with the production of new high resolution land cover data to provide a first set of cost-effective operational services on core land cover and land use data at European level, based on high quality ortho-rectified multi-temporal satellite data.

These land cover data will support a wide range of environmental information requirements for framing, implementing and evaluating several policy areas at European, national and regional level including agriculture, soil, water, urban environment, air quality, physical planning, integrated coastal zone management, biodiversity and nature protection.

2. Subject of contract

The overall objective is the production of a seamless European high resolution core land cover dataset of built-up areas, including degree of soil sealing, for the reference year 2006. The ortho-rectified satellite input data for this GMES fast track service will be made available by ESA.

3. Project description

3.1 Description of the service

The high resolution dataset of built-up areas shall be extracted from multispectral SPOT/IRS satellite data resampled to 20 m ground resolution using semi-automatic image classification. The aim of this project is to provide complementary high resolution land cover data to the Corine land cover map 2006 that will be produced in parallel by the European Environmental Observation and Information Network (Eionet) and EEA from the same satellite data.

The final product of this service will provide a per-pixel based classification of built-up and non built-up areas, together with an estimate of imperviousness of the area, also called degree of “soil sealing”. Built-up areas are characterized by the substitution of the original (semi)-natural cover or water surface with an artificial, often impervious, cover. This artificial cover is usually characterized by long cover duration (FAO Land Cover Classification System, 2005). Impervious surfaces of built-up areas account for 80 to 100% of the total cover. A per-pixel estimate of imperviousness (continuous variable from 0 to 100 percent) is to be provided as index for degree of soil sealing for the whole geographic coverage.

The data is to be produced in full spatial resolution, i.e. 20 m by 20 m, which provides the best possible core data for any further analysis.

The classification accuracy per hectare (based on a 100 m x 100 m grid) of built-up and non built-up areas should be at least 85%. Cross validation will be used by EEA to determine the accuracy of results with an independent assessment. Accuracy assessment will be validated using very high resolution data (e.g. aerial photography, other satellite data, thematic maps, etc.) within a stratified sampling design based on different Corine land cover classes.

3.2 Input data and use conditions

The work shall be produced on the basis of the following satellite data, acquired primarily in the reference year 2006 (+/- 1 year), with 4 spectral bands, re-sampled to 20 m ground resolution using cubic convolution interpolation and covering 2 dates:

SPOT (-4/-5) HRVIR, 20m (ca. 3.000 images);

IRS-P6/LISS-III, 20m (ca. 800 images).

Each coverage will be achieved with a mixture of both above types of data. The first full cloud free coverage (with a maximum of 5% clouds over the entire area) will respect the preferred narrow and extended acquisition windows of each country involved. The second full cloud free coverage will respect the second related acquisition period, at least 6 weeks apart from the respective scene selected for the first coverage of each country involved.

The images will be geometrically corrected towards national projection systems. The delivery of the images from 2006 and 2005 will be made on a per country basis. The images will become available during the first half of 2007, starting in January 2007 and expected to be completed by end April 2007.

In case of image gaps in the coverages composed of 2006 and 2005 data, filling will be made with images from 2007 or with imagery from other satellites with similar characteristics. The plan for gap filling (if required) will be prepared early 2007. The gap filling ortho-corrected images will be provided before end of September 2007.

ESA will provide the ortho-rectified images to the service provider along with a detailed products description (scenes size, algorithms used, format description, etc.). The service provider shall respect the general licensing conditions (established in the frame of this Land FTS 2006-2008 project) for the use of the data, prior to delivery. The use of the data by the service provider shall be limited to the Land FTS 2006-2008 project and these data shall be returned to EEA or ESA upon completion of the work.

Concerning country borders, EEA will provide a dataset with the national borders that should be used during the project for clipping the data at national level. Access to all other ancillary data that will be needed during the project execution will be the responsibility of the service provider.

3.3 Geographic coverage

The product to be delivered shall cover the **EU27 and neighbouring countries**, meaning, all EEA Member countries (namely: Austria, Belgium, Bulgaria, Cyprus, Czech Republic, Denmark, Estonia, Finland, France¹, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Liechtenstein, Lithuania, Luxembourg, Malta, the Netherlands, Norway², Poland, Portugal, Romania, Slovakia, Slovenia, Spain, Sweden, Switzerland, Turkey, United Kingdom) as well as the western Balkan countries (namely Albania, Bosnia-Herzegovina, Croatia, Former Yugoslavian Republic of Macedonia, Montenegro and Serbia) who are participating in the regular Corine land cover dataflow. The number of countries involved is 38. The area covered is, approximately, 5,8 Mkm².

3.4 Structure of the technical offer

The tenderer is expected to propose:

- An assessment of the user requirements and related technical specifications for the data to be produced;
- A detailed description of the methodological approach, particularly, on the image processing methods, production flow and data management of large volumes of data, accuracy assessment and the ancillary data that will be used;
- An example of the final product for a test area: 1 file with the raster dataset of built-up and non built-up areas including degree of soil sealing, 2006, in full spatial resolution (20 m by 20 m) with associated metadata, together with a printout at scale 1:50.000 of the final product together with the corresponding satellite image, for a test site of approximately 10 x 10 km within the EU27 or neighbouring countries, covering an area with some urban as well as rural landscape (area to be freely chosen by the tenderer), along with a short description of the production process applied;
- A detailed time planning of the production process, including delivery plan of the datasets;
- The procedures for QA/QC;

¹ The French Overseas Departments and Territories are not included.

² The Svalbard archipelago is not included.

- A description of the data flow between all parties involved (EEA, ESA, service provider, sub-contractors (when applied) and/or other parties involved);
- A management part explaining team composition, key personnel including CVs and risk analysis/mitigation;
- Strategies to deal with the specificities of the different regions and landscapes in Europe;
- Description of similar services carried out during the past five years.

3.5 Deliverables

The deliverables to be produced are:

1. Draft project management plan, for the kick-off meeting;
2. Draft country delivery report to be agreed at the kick-off meeting;
3. Final project management plan;
4. 38 files with the raster datasets of built-up and non built-up areas including degree of soil sealing, 2006, in full spatial resolution (20 m by 20 m) with the associated metadata;
5. 38 country delivery reports;
6. 1 file with the seamless European raster dataset of built-up and non built-up areas, including degree of soil sealing, 2006, in full spatial resolution (20m by 20m) with the associated metadata;
7. Draft final report provided, at the latest, one month before the end of the contract;
8. Final report.

The draft project management plan (to be approved by EEA) shall be generated by the service provider for the kick-off meeting which will take place around 4 weeks after contract signature. The project management plan shall be the controlling document for the project, permitting to define, organize and monitor all the activities.

A finalised project management plan shall be provided by the service provider within 2 weeks from the kick-off meeting. It shall be updated as necessary throughout the project. It shall be reissued at every major change, with EEA

approval. The project management plan shall provide a feasible and effective breakdown of the activities and shall include the following items:

- Description of methodology;
- QA/QC procedures
- Staffing Plan and Key Personnel;
- Interfaces with the Agency and other parties involved;
- Tasks breakdown and content with deliverables and delivery milestones;
- Facilities and Resources;
- Project schedule and reporting;
- Risk analysis and mitigation.

The service provider shall compile a country delivery report (which should, preferably, be a concise and short document), that will be delivered along with the raster dataset and providing, at least, the following information:

- Technical specifications and detailed description of the national data being delivered;
- Algorithms used;
- Format description;
- Metadata (according to EEA Metadata Standard for Geographic Information - MSGI);
- Estimated accuracy of the data.

3.6 Meetings

- Kick-off meeting to be held at EEA, around 4 weeks after signature of the contract.

In this meeting the service provider shall present a draft project management plan (for EEA approval) including description of the methodology and proposed schedule for the completion of work. The service provider is also requested to propose a format for the country delivery reports. Decision will also be taken on the data format for delivery, projection, country priority list for the execution of the work and the media (i.e., DVD or other) for data delivery.

- Intermediate progress meetings (to be held at EEA or by videoconferencing). The first one after completion of 10% of the area, and the second one after completion of 50% of the area.

These meetings are dedicated to evaluate project progress, risk analysis and problem solving. In case some major adjustments need to be done, the project management plan shall be updated and submitted for EEA approval.

- GMES FTS Land Monitoring Steering Committee meetings.

The service provider is requested to participate in the GMES FTS Land Monitoring Steering Committee meetings. It is expected that two meetings will take place during the project duration, one in Brussels and one in Copenhagen. The service provider might be invited, as well, to participate in one of the meetings of DG Enterprise's GMES Land Monitoring Core Service Implementation Group, who will ensure an advisory role for maintaining consistency across the implementation of the different GMES core services.

- Final meeting to be held at EEA.

At the final meeting the service provider is requested to present an overview of the performed activities, achievements, lessons learnt and provision of deliverables (not later than one year after contract signature).

3.7 Reporting

- The service provider is expected to provide one report per country (country delivery report), amounting to 38, in total.

- The service provider is expected to provide a final report to be presented at the final meeting. The final report shall include all information on applied methodology, performed activities including statistics that are required to document the accuracy of the product and results. A draft final report should be provided at the latest one month before the end of the contract.

3.8 Acceptance conditions

After delivery of each product to EEA, the data will undergo a verification process done, whenever possible, with support from Eionet under supervision of EEA. This verification will be based on standard ISO criteria for spatial data quality as reported on the EEA Data Service.

The verification process is composed of two stages:

1. Verification of completeness, logical consistency and positional accuracy of the data;

2. Verification of the thematic accuracy based on randomly selected samples within each country covered.

The verification and acceptance will be carried out within 4 weeks after reception of the data from the service provider. If the data is not accepted, the service provider is requested to produce a new dataset within 4 weeks.

3.9 Environmental considerations

The EEA runs a certified environmental management system (EMAS) aiming to minimise the environmental impact of all its activities, including those carried out under contract. The successful tenderer will, therefore, be requested to consider a similar approach in their work, in particular those relating to business travel, paper and energy consumption. Further information on the environmental management at the EEA can be found on the EEA homepage.

Moreover, we strongly recommend the tenderers to submit the tenders in an environmental-friendly way, as follows:

- Only material mentioned in the specifications (no additional material);
- Printed on both sides of paper;
- With consecutive page numbering and with a list of contents;
- Without plastic folders or binders.

3.10 Place of work

The work is to be carried out at the service provider's premises.

3.11 Duration of contract

The contract will be concluded for a period of 12 months with effect from the date it enters into force.

4. Documentation for tenderers

The following documentation is available:

1. EEA Project Implementation Plan - GMES Land FTS 2006-2008. This document gives a full overview of the process that led to the decision to produce the high resolution land cover data layers

along with a traditional Corine land cover map for 2006 (Document available upon request; email address procurement@eea.europa.eu);

2. http://dataservice.eea.europa.eu/download.asp?FileName=sharedfiles\documents\intro\Criteria_for_quality_assessment.pdf (Quality label specifications);
3. <http://www.eea.europa.eu/documents/emas> (Environmental management at the EEA)
4. <http://www.eionet.europa.eu/gis/geographicinformationstandards.html> (for finding information on EEA metadata standards);
5. http://www.eionet.europa.eu/gis/docs/EEA_GISguide_v2.doc (for finding information on EEA recommendations for projections and preferred data formats).

5. Estimated value of contract

Estimated value of the contract: between €1.2 – 2 million.

6. Financial offer

The financial offer should include a breakdown of costs, including staff and non-staff costs.

Prices shall be fixed and not subject to any revision.

Under Articles 3 and 4 of the Protocol on the Privileges and Immunities of the European Communities and Headquarters Agreement between the Agency and the Government of Denmark of 17 August 1995, the Agency is exempt from all charges, taxes and dues, including value added tax; such charges may not therefore be included in the calculation of the price quoted; the VAT amount must be indicated separately.

The price tendered must be all-inclusive and expressed in euro, including for countries that are not part of the euro zone (any exchange risks are the contractor's).

The costs incurred in preparing and submitting tenders are borne by the tenderers and cannot be reimbursed.

7. Terms of payment and guarantees

As stated in the draft service contract included in the tender documentation.

8. Criteria

8.1 Exclusion criteria

Candidates or tenderers shall be excluded from participation in a procurement procedure if:

(a) they are bankrupt or being wound up, are having their affairs administered by the courts, have entered into an arrangement with creditors, have suspended business activities, are the subject of proceedings concerning those matters, or are in any analogous situation arising from a similar procedure provided for in national legislation or regulations;

(b) they have been convicted of an offence concerning their professional conduct by a judgment which has the force of *res judicata*;

(c) they have been guilty of grave professional misconduct proven by any means which the contracting authority can justify;

(d) they have not fulfilled obligations relating to the payment of social security contributions or the payment of taxes in accordance with the legal provisions of the country in which they are established or with those of the country of the contracting authority or those of the country where the contract is to be performed;

(e) they have been the subject of a judgment which has the force of *res judicata* for fraud, corruption, involvement in a criminal organisation or any other illegal activity detrimental to the Communities' financial interests;

(f) following another procurement procedure or grant award procedure financed by the Community budget, they have been declared to be in serious breach of contract for failure to comply with their contractual obligations.

Candidates or tenderers must declare that they are not in one of the situations listed in paragraph 1. The tenderer shall provide an auto-declaration, preferably made on oath before a judicial or administrative authority, a notary or a competent professional or trade body by a person

competent to do so on behalf of the tenderer, which states that none of the grounds for exclusion apply to the tenderer (See Annex 1).

Potential contractors might be requested, at a later stage, to certify that they are not in one of the situations listed above by providing:

i) For points (a), (b) and (e) a recent extract from the judicial record, or failing that, a recent equivalent document issued by a judicial or administrative authority in the country of origin or provenance showing that those requirements are satisfied must be provided.

ii) For point (d) a recent certificate issued by the competent authority of the State concerned must be provided. Where no such certificate is issued in the country concerned, it may be replaced by a sworn or, failing that, a solemn statement made by the interested party before a judicial or administrative authority, a notary or a qualified professional body in his country of origin or provenance.

Contracts may not be awarded to candidates or tenderers who, during the procurement procedure:

(a) are subject to a conflict of interest;

(b) are guilty of misrepresentation in supplying the information required by the contracting authority as a condition of participation in the contract procedure or fail to supply this information.

8.2 Selection criteria

Legal Capacity

Any tenderer or candidate will be asked to prove that he is authorised to perform the contract under national law, as evidenced by inclusion in a trade or professional register, or a sworn declaration or certificate, membership of a specific organisation, express authorisation, or entry in the VAT register.

The tenderer should provide an identification sheet (Annex 2) duly filled out and signed, a copy of inscription in trade register, where applicable, and a copy of inscription in VAT registers.

Economic and Financial capacity

Proof of economic and financial capacity may be furnished by one or more of the following documents:

- (a) appropriate statements from banks or evidence of professional risk indemnity insurance;
- (b) the presentation of balance sheets or extracts from balance sheets for at least the last two years for which accounts have been closed, where publication of the balance sheet is required under the company law of the country in which the economic operator is established;
- (c) a statement of overall turnover and turnover concerning the services covered by the contract during the last three financial years.

If, for some exceptional reason, which the contracting authority considers justified, the tenderer or candidate is unable to provide the references requested by the contracting authority, he may prove his economic and financial capacity by any other means which the contracting authority considers appropriate.

An economic operator may, where appropriate and for a particular contract, rely on the capacities of other entities, regardless of the legal nature of the links, which it has with them. It must in that case prove to the contracting authority that it will have at its disposal the resources necessary for performance of the contract, for example by producing an undertaking on the part of those entities to place those resources at its disposal.

Under the same conditions, a consortium of economic operators may rely on the capacities of members of the consortium or of other entities.

Technical and professional capacity

The evidence of the technical and professional capacity should be furnished on the basis of the following documents:

- a) the educational and professional qualifications of the service provider and/or those of the firm's managerial staff and, in particular, those of the persons responsible for providing the services; experienced staff of minimum five years in the fields of image processing methods, production flow and data management and accuracy assessment is required; CVs of the proposed staff must be attached to the offer;

- b) a list of the principal services provided in the past five years, with the sums, dates and recipients, public or private;
- c) a statement of the average annual manpower and the number of managerial staff of the service provider in the last five years;
- d) an indication of the proportion of the contract which the service provider may intend to subcontract.

Where the services referred to in point b) are provided to contracting authorities, evidence of performance shall be in the form of certificates issued or countersigned by the competent authority.

An economic operator may, where appropriate and for a particular contract, rely on the capacities of other entities, regardless of the legal nature of the links, which it has with them. It must in that case prove to the contracting authority that it will have at its disposal the resources necessary for performance of the contract, for example by producing an undertaking on the part of those entities to place those resources at its disposal.

Under the same conditions, a consortium of economic operators may rely on the capacities of members of the consortium or of other entities.

8.3 Award criteria

The contract will be awarded to the tenderer whose tender offers best value for money in terms of the following criteria.

Tenders will be ranked in accordance with the following formula:

$$X = TM_{a-d} / P$$

TM – Technical merit (maximum 100 p.)

P – Price (in euro)

Technical merit:

Tenders will be awarded merit point in function of the following criteria:

- a. Understanding of the objectives of the contract and the work to be carried out, as documented by means of:
 - Assessment of EEA's requirements (max 10 p.);

- Reference to similar projects carried out in the past (max 10 p.);
 - Proposed team and strategy to deal with the diversity of different regions in Europe (max 10 p.);
 - Proposed management plan which takes environmental considerations into account (max 10 p.);
- b. Methodological approach, as documented by means of::
- Proposed image processing methods (max. 8 p.);
 - Proposed production flow and data management (max 8 p.);
 - Proposed accuracy assessment method (max. 8 p.);
 - Proposed quality assurance/quality control procedures (max. 8 p.);
 - Proposed risk analysis/mitigation plan (max. 8 p.);
- c. Production and detailed time plan according to which all countries can efficiently be covered within one year (max. 10 p.);
- d. Data quality of the test area (max. 10 p.).

Tenders scoring less than 50% of the maximum score of each criterion or less than 65 points in total will not be considered for the award of the contract.

The tenderer whose tender scores the highest value in terms of technical merit against price will be awarded the contract.

9. Further information

Submitting an offer implies acceptance by the tenderer of all terms and conditions of the draft contract and its annexes.

Declaration on Exclusion Criteria

The undersigned:

Name of the individual/company/organisation:

Legal address:

Registration number:

VAT number:

Declares on oath that the individual/company/organisation mentioned above:

- a) Is not bankrupt or being wound up, is not having its affairs administered by the courts, has not entered into an arrangement with creditors, has not suspended business activities, is not the subject of proceedings concerning those matters or is not in any analogous situation arising from a similar procedure provided for in national legislation or regulations;
- b) It has not been convicted of an offence concerning its professional conduct by a judgement which has the force of *res judicata*;
- c) Has not been guilty of grave professional misconduct proven by any means which the Agency can justify;
- d) Has fulfilled obligations relating to the payment of social security contributions or the payment of taxes in accordance with the legal provisions of the country in which they are established or those of the country of the Agency or those of the country where the contract is to be performed;
- e) It has not been the subject of a judgment which has the force of *res judicata* for fraud, corruption, involvement in a criminal organisation or any other illegal activity detrimental to the Communities' financial interests;
- f) Following another procurement procedure or grant award procedure financed by the Community budget, has not been declared to be in serious breach of contract for failure to comply with the contractual obligations.

I, the undersigned, understand that contracts may not be awarded if, during the procurement procedure, the individual/company/organisation mentioned above:

- Is subject to a conflict of interest;
- Is guilty of misrepresentation in supplying the information required by the contracting authority as a condition of participation in the contract procedure or fail to supply this information.

Full name:

Date:

Signature:

IDENTIFICATION SHEET

Account Holder:

Company name: _____

Address: _____

Tel: _____

Fax: _____

E-mail: _____

Company Representative:
(Person authorised to sign) _____

Contact Person: _____

VAT No: _____

Bank details:

Bank Name: _____

Branch Address: _____

Account No: _____

BIC/SWIFT code (obligatory): _____

IBAN (obligatory): _____

Company stamp + Signature of Company Representative
(obligatory)