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COMMON TECHNICAL SPECIFICATIONS

FOR THE 2011 CAMPAIGN OF

REMOTE-SENSING CONTROL OF AREA-BASED SUBSIDIES

Pre-amble

This document, which has been prepared by the European Commission (Joint Research Centre, JRC) in close collaboration with DG AGRI and Member States Administrations, describes the Commission guidelines for the 2011 campaign of the remote sensing control of agricultural area-based subsidies (referred to as "remote sensing control" or, simply "control"). Up to campaign 2009, these guidelines were used as Common Technical Specifications of the Invitation To Tender (ITT) published by Member States requiring an external remote sensing contractor. These specifications were also used as guidelines by Member States making use of Control with Remote Sensing (CwRS), whether this task was done internally or externally through a multiannual contract. As from campaign 2010, the JRC does not publish these specifications in the Official Journal of the European Union anymore, but intends to keep them up to date and with the same name (Common Technical Specifications) and format so that Member States may use them as technical specifications for their ITT.

The document aims to describe the tasks that the Administrations of the Member States wish to entrust to contractors. For the sake of completeness, however, the technical context of the work requires some descriptions of the role and responsibilities of both the Administration and the Commission, if only to explain why a certain task is expected from the contractor. Some of the technical details may seem exhaustive, but are primarily included to allow bidders the best possible chance to estimate the expected workloads. Furthermore, as a common document, it has to be inclusive of all the possible choices, options and alternatives that are used in the Member States that use remote sensing controls.

This document is complemented by a separate compulsory "**National Addendum**", which describes the choices and alternatives applicable in the respective Member State. The information given in this "National Addendum" must be taken into account in the reply to this ITT. This is all the more necessary as different schemes will coexist in the EU 27: the Single Payment Scheme (SPS) which will be applied with different models and variants in 17 Member States and the Single Area Payment Scheme (SAPS) in force in 10 of the new Member States. Since these Common Technical Specifications do not take into account all particular situations in the different Member States, derogations from particular rules indicated in this document may be introduced in the National Addendum.

The information in this document is up-to-date with the existing EU regulations that are applicable at the time of writing (November 2010). It is the bidder's responsibility to be aware of other general or specific regulations applicable in the respective Member States.

Bidders are informed that Technical Recommendations regarding the different phases of the work are also available on the WikiCAP website[1]

The role of the Commission is strictly restricted to the technical support required to compile this document. While the Commission has attempted to make the information contained in these common technical specifications as accurate as possible, it does not warrant the accuracy of the information contained or embodied in the document. The Commission does not warrant or make any representations as to the accuracy of the information contained in the National Addenda produced by respective Member States. Contracts awarded are the sole responsibility of the awarding Administrations in the respective Member States.

1 Introduction

1.1 The majority of the European Union Member States, in co-operation with the European Commission, will use Remote Sensing in 2011 to control at least a part of the subsidies for the agricultural areas funded by the EAGF and EAFRD. Although the present Technical Specifications have been prepared jointly by the Member States and the Commission, each Member State is responsible for carrying out the work on its territory.

The volume of work and requirements specific to each participating Member State are described in the "National Addendum" (see § 10.7).

1.2 Possible use of Control with Remote Sensing

Remote sensing may be used for the control of the area-related schemes defined by the following regulations:

- Council Regulation (EC) No 73/2009 and Commission Regulation (EC) No 1120/2009 laying down detailed rules for the implementation of the **Single Payment Scheme**.

  Commission Regulation (EC) No 1121/2009 laying down detailed rules for the application of Council Regulation (EC) No 73/2009 as regards the **support schemes** provided for, as follows:

  TITLE I

  - Chapter 2 -Crop-specific payment for rice;
  - Chapter 3 – Aid for starch potato growers;
  - Chapter 4 - Protein crop premium;
  - Chapter 5 - Area payment for nuts;
  - Chapter 6 - Seed aid;
  - Chapter 7 -Crop specific payment for cotton;
  - Chapter 8 -Transitional payment for fruit and vegetables and soft fruits;

[1] http://marswiki.jrc.ec.europa.eu/wikicap/index.php/Main_Page

TITLE III

- Chapter 1 - Single Area Payment Scheme;

- Chapter 2 -Complementary National Direct Payments.

- Council Regulation (EC) No 1698/2005 establishing area-related payments for agricultural production methods to protect the environment and to maintain the countryside and for certain measures in relation to forestry. This regulation is the general basis for the rural development policies of the EC and is supported by the application Commission Reg. (EC) No 1974/2006.
- The Council Regulation (EC) No 73/2009 provides for the possibility to new Member States - subject to an authorisation by the Commission – to grant Complementary National Direct Payments (CNDP) to farmers under relevant direct payments. The CNDP may take the form of a decoupled or coupled payment depending on the support schemes. As a general rule, CNDPs are fully nationally financed. However, during the first three-year period starting from the date of accession, new Member States were allowed to co-finance certain CNDP from their Rural Development Plan. In the case of co-financing, the Community rules of Commission Regulation (EC) No 1122/2009 shall apply to such payments.

1.3 The control rules in respect of the aforementioned area payments are governed by the Integrated Administration and Control System (IACS) as set out in:

- Council Regulation (EC) No 73/2009,
- Commission Regulation (EC) No 1122/2009 laying down detailed rules for applying IACS.
- Commission Regulation (EC) No 1975/2006 on control procedures and cross compliance of rural development support measures.

1.4 According to Article 11(1) of Commission Regulation (EC) No 1122/2009, "A farmer applying for aid under any of the area-related aid schemes may only submit one single application per year". The single application shall contain particulars permitting identification of all agricultural parcels on the holding, their area expressed in hectares to two decimal places, their location and, where applicable, their use and whether the agricultural parcel is irrigated (Article 12 (1) of 1122/2009). In other words, all agricultural parcels should be listed in the applicant's declaration.

1.5 According to article 2(1) of Commission Regulation (EC) No 1122/2009, an **agricultural parcel** *"means a continuous area of land, declared by one farmer, which does not cover more than one single crop group*[2]*. However where a separate declaration of the use of an area within a crop group is required in the context of this Regulation, that specific use shall if necessary further limit the agricultural parcel; Member States may lay down additional criteria for further delimitation of an agricultural parcel"*. As a general rule, **area measurement** should be made **at agricultural (crop group) parcel level**, which may imply the merging of contiguous LPIS parcels when relevant (e.g. in absence of discontinuity between two LPIS parcels cropped by the same farmer). The National Addendum will clarify the cases for which the results will be requested at the level of single crop parcel (as could be the case if a Member State has decided to further limit the agriculture parcel).

1.6 On-the-spot checks shall in general cover all the agricultural parcels for which aid is requested under aid schemes listed in Annex 1 to Regulation (EC) No 73/2009 (Article 33 of 1122/2009). **Agricultural parcel areas shall be determined** by any appropriate means proven to assure measurement of quality at least equivalent to that required by applicable technical standard, as drawn up at Community level (Article 34(1) of 1122/2009). The actual determination of areas may be limited to a sample of at least 50% of the agricultural parcels claimed under Titles III, IV or V of Regulation (EC) No 73/2009 provided that the sample guarantees a reliable and representative level of control both in respect of area checked and aid claimed. A physical inspection in the field shall be made of all agricultural parcels for which photo interpretation does not make it possible to verify the accuracy of the declaration to the satisfaction of the competent authority (Article 35 of 1122/2009).

1.7 Cross-compliance checks shall cover the whole farm i.e. all the agricultural parcels, whether they are claimed for subsidies or not. As from 2008, in line with the check of area as described in the previous paragraph, "the actual inspection in the field as part of an on-the-spot check may be limited to a sample of at least half of the agricultural parcels on the holding provided that such sample guarantees a reliable and representative level of control in respect of requirements and standards. When this sample check re-

veals non-compliances, the sample of agricultural parcels actually inspected shall be increased" (Article 53(2) of Commission Regulation (EC) No 1122/2009).

2 Overview

2.1 Farmers are required to submit their annual subsidy applications in prescribed form and by dates set in line with Regulation (EC) No 73/2009. According to Article 20(2) of the same regulation, the control of these applications can, as an option, be based on satellite or aerial remote sensing.

2.2 Remote sensing allows correct applications to be picked out so that physical inspection in the field (if necessary) can be directed to the others and to problem parcels, which should result in a reduction of the physical inspections number and control cost. Unless specified otherwise, the contractor will participate only in the stages related to the analysis of the remote sensing imagery. The penalty calculations, sanctions or financial consequences for the farmer are the responsibility of the Administration.

2.3 The Commission's contribution to the programme is restricted to the technical coordination of methodological choices and the provision of satellite imagery for control zones defined by the Member State. As from 2007, the quality control procedure, which has been carried out by the JRC for 10 years, has become the responsibility of the Member States.

2.4 The conditions under which aid is granted will be verified, wherever possible, on a sample of applications using current year remote sensing imagery. In practice this means that the area and, to a certain extent (see National Addendum), the land use of all the claimed parcels from the Control with Remote Sensing (CwRS) sample have to be checked. The Good Agricultural and Environmental Conditions (GAECs) may also be checked on all declared parcels of a sample (that may differ from the CwRS sample), using remote sensing imagery where applicable and according to the instructions of the Member State. Each agricultural parcel will be categorized separately by applying the decision tables and technical tolerances established by the Administrations.

2.5 The photo-interpretation of agricultural parcels will normally be carried out using at least **one very high resolution (VHR) image** (aerial orthophoto or satellite ortho-image with a pixel size <1m) of the **current year.** The area of agricultural parcels, their land use wherever necessary, and if requested by the National Administration, cross compliance issues will be checked. In addition to the VHR image, multitemporal high resolution (HR) images may be provided upon detailed justification by the administration.

2.6 In the case where the diagnosis may not be completed by computer-aided photo-interpretation (CAPI) procedures alone, field visits or "rapid field visits" (RFV) will be carried out by the contractor or the Administration (see National Addendum) for checking the land use and/or some other issues. These field visits may be carried out on all claimed parcels, for instance when only one VHR image is used, or limited to doubtful parcels, sensitive crop groups (such as crop groups receiving high payments) or specific commitments.

2.7 The graphical material supplied to the farmer shall indicate the boundaries and unique identification of the reference parcels. The farmer is expected under the regulations to indicate the location of each agricultural parcel on the graphical material received[2] and submit sketch maps with his application, which normally will be made available by the administration to the contractor.

2.8 The work procedure is similar in all participating Member States. The tasks will be carried out partially by the National Administration, the contractor and the Commission. The principal stages can be summarized as follows:

[2] According to article 12(4) of Commission Regulation (EC) N°796/2004, farmers are also expected to correct the preprinted forms, in particular if the area and/or boundaries of his reference parcels are incorrect.

Table 1

Main stages

Responsible	Description	Period
	Preliminary work (§ 3)	
Administration Commission	Selection of control zones, assessment of image requirements Publication of Technical Recommendations 1	September-January
Administration	Call for tenders, selection of contractors, signature of contracts	December- March
Commission	Updating of technical documentation in WikiCAP	All year long
Administration	Selection and administrative processing of applications lodged in the control zones; transfer to contractors of dossiers and data bases (declarations, digital LPIS and LPIS ortho-images)	April- June
Contractor	Collection of applications data, LPIS vectors and farmer's sketch maps	March- June
	Preparation of data (§ 4)	
Commission/ Contractor	Acquisition of satellite images (Commission) and/or aerial photographs (Administrations/Contractors), processing, geometrical correction etc.	From October until the end of the campaign
	Photo-interpretation and categorisation of applications	
Contractor	Photo-interpretation of parcels to be checked *(§§ 6, 7)*	May- August
Contractor	Categorisation of applications and return of results *(§ 8)*	June- August
	Administrative follow up	
Administration	Follow up inspections in the field (if included in CwRS strategy)	July- October
Contractor	Contractor's report to Administration and discussions of results; return of summary statistics and images (raw and rectified) to the Commission;	October- December
Commission	JRC visits to contractor and Administration in support of MS	January – September

3 Preliminary work

The majority of this preliminary work is the **responsibility of the Administration** and is outlined for information only.

3.1 Selection of control zones

3.1.1 The number and location of zones for the remote sensing controls will have been established by the Member State. The number of zones is dependent on the remote sensing sampling rate decided by each Member State and on the expected number of applications submitted in these zones. The location of the zones will remain confidential and will not be disclosed to the contractor until a contract has been awarded.

3.1.2 The selection criteria for these zones will be entirely at the discretion of the Administration and will not be discussed with the contractor. The zones to be controlled will be selected either at random or on the basis of risk analysis taking account of appropriate risk factors to be determined by the Member States (cf. art. 31 of Commission Regulation (EC) No 1122/2009 and the guidance document on the selection of control zones and risk analysis [3]).

[3] Available at http://mars.jrc.ec.europa.eu/mars/Bulletins-Publications and in WikiCAP (category: risk analysis)

3.1.3 For zones to be checked with a **VHR** satellite image to be acquired on Commission budget, the following procedure will be followed to optimize the chances of acquisition as well as the cost/benefit of such imagery:

- As a general rule, in order to maximize the use of VHR data, the total area of the sample of applications to be checked inside the VHR image (i.e. the control zone) should represent at least 25% of the VHR image. However **derogations may be accepted upon justification** by the MS (e.g. landscape mixing agriculture and forest, use of risk analysis to select the claims inside the zone).
- The Commission in coordination with the Member State will select a VHR sensor for each control zone also called "**dedicated sensor**", taking account of the shape (width) and size of the zone and also the image provider's feasibility study (see VHR Image Specifications for the CwRS Programme[4]). This means that when defining their control zones Member States should also account for the optimum size of the zone with respect to the VHR sensor as well as other factors such as the parcel size (in relation with the VHR sensor resolution) and risk factors to be determined by the Member State.

3.1.4 At the beginning of the campaign (e.g. autumn 2008 for the 2009 campaign) the Commission collects the Member States requests for VHR and HR imagery. These requests are decided upon in accordance with technical feasibility and budget available.

3.2 Selection of dossiers

3.2.1 The selection of the samples of applications to be checked on the spot (and in particular of the CwRS sample) will be made by the Administration in accordance with Articles 30 and 31 of Commission Regulation (EC) No 1122/2009 and the guidance document on the selection of control zones and risk analysis.

3.2.2 Approximate figures on the number of dossiers and zones are given in the National Addendum. On request of the bidders, the approximate size of the zones should also be given by the Administration. These figures, that should be taken as provisional, are intended to help the bidders assessing their workload. Also, in order to help the bidders determining a mean cost per application, the Administration should indicate the mean number of parcels per application and per zone, if requested by the bidders, as this number may vary significantly between regions of a given Member State.

3.2.3 The "area" based aid applications for the 2011 campaign will be submitted no later than 15 May[5]. Modification to applications may be allowed up to 15 June, depending on the Member State. Since the applications may not be available to the contractor immediately after their lodging (e.g. due to data entry, administrative checks), the Administration should give to the bidders an indicative schedule of dossiers delivery as well as a deadline for providing the results as, in case of anomaly found during the remote sensing control, some parcels may have to be inspected in the field at a time permitting the unambiguous identification of the land use and parcel boundaries. As a general rule, physical inspections of arable crops have to be carried out before or soon after the harvest to be fully effective, according to the Commission guidance on the determination of areas (art. 34 of Regulation (EC) No 1122/2009)[6].

3.2.4 The content of the dossiers, the method used to describe and locate the parcels, as well as the annexes of the application will vary greatly between Member States and from one region to another. The tenderer should demonstrate in their offer that they fully comprehend the national regulations and the type of applications that they will be expected to verify, and the information which they will contain. Relevant information may be included in the "National Addendum".

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4 available at http://mars.jrc.ec.europa.eu/mars/About-us/CID/Image-Acquisition

5 15 June for Finland and Sweden, Estonia, Latvia and Lithuania (Article 11 of Reg. No 1122/2009)

6 http://marsmap.jrc.ec.europa.eu/wikicap/index.php/Planning_of_the_inspection_programme

4 Preparation of data

In order to check the conditions under which aid is granted (e.g. parcel area, crop and possibly GAECs), a control zone may be covered with the following possible configurations of data:

- VHR imagery (satellite or airborne) of the current year, panchromatic, colour and/or multispectral (or panmerged) provided by the Commission (or the Member State, in case of airborne)[7];
- a combination of VHR imagery (satellite or airborne) with HR satellite imagery provided by the Commission (or the Member State): optical (multispectral);

In very exceptional circumstances (i.e. acquisition failure of all optical VHR data), VHR SAR data might be provided as back up imagery.

As a general rule, at least one VHR (satellite or aerial) image of the current year should be provided for each control zone (either by the Commission or the Administration). The choice of the imagery to be used shall be made according to local conditions and in agreement with the regulatory requirements as laid down in Article 34 of regulation (EC) No 1122/2009 on the accuracy of area measurements.

4.1 Reception of applications and data entry

4.1.1 Ideally, the applications to be checked will be transmitted to the contractors in digital form, after having been subjected to consistency checks by the Administration.

4.1.2 The format of the database given to the contractor will be described by the Administration, and accompanied, if necessary, by a list of the codes used. For each dossier, the minimum information provided (possibly under an anonymous form) will be:

- an identification number given by the Administration, thus creating a link between the dossiers and the database;
- the commune where the head office of the farm is located;
- agricultural region(s) as defined by the Member State in its "regionalisation" plan, if needed;
- the support scheme under which the application is made;
- for each parcel declared (even if it is not subsidized or situated outside the control zone):
  - a reference permitting the location of the parcel according to the national LPIS/GIS;
  - area in hectares to two decimal places;
  - code(s) for the (successive) use(s) of the land during the year in question;
  - code(s) for the claimed crop group(s);
  - if appropriate, a code indicating if the field is irrigated;

4.1.3 The contractor will check all dossiers received on arrival and acknowledge the receipt of each batch of dossiers. Those found to be incomplete or obviously incorrect during this check will be returned to the Administration with summary results of the preliminary checks, and will only be dealt with if corrected within 30 days.

4.1.4 If due to time constraints, the alphanumeric data of the current year cannot be delivered in digital form (see National Addendum); the contractor will have to enter the data using the applications provided in paper form. In such a case, the Administration is advised to distribute the alphanumeric data of the previous year in digital form, so as to limit data entry by the contractor to changes made in the current year application. These data will be supplied on a date agreed between the Administration and the contractor, and if necessary will be delivered in batches.

4.1.5 In case applications data will have to be entered by the contractor, in addition to the alphanumeric data of the previous year, the Administration is advised to provide its operational data entry module to the contractor. Alternatively, the list of consistency checks to be performed on the data entered as well as the necessary ancillary data (e.g. the list of the valid reference parcel ids) should be supplied to the contractor by the Administration. The tenderer shall propose a supplementary price for entering applications, calculated by dossier so the Administration can pass the data entry work to the contractor if it so wishes.

[7] Recent images (in particular orthophotos used for the national Land Parcel Identification System (LPIS)) may be used **only** in case of failure of the current year acquisition

4.2 Provision of LPIS data and other topographic documents

4.2.1 As from 1st January 2005, the Land Parcel Identification System (LPIS) is fully **digital** (i.e. stored as a GIS) in all Member States as per Regulation (EC) No 73/2009. The relevant parts of this LPIS i.e. the reference parcel vectors, as well as the reference areas and if any, the associated orthoimages, will be provided to the contractor.

4.2.2 The declarations to be controlled should contain appropriate cartographic documents localizing all agricultural parcels on the images or inside reference parcels (Cf. Art 12(3) of Commission Regulation 1122/2009). The Administration will supply them free of charge to the contractor (in the original form or scanned if possible).

4.3 Provision of satellite images

4.3.1 For each zone to be covered by a VHR satellite image provided by the Commission, an acquisition window is defined by the Member State (usually a 6-8 week window is defined, but the window may be longer if this suits the MS control requirements). Over this prime window, acquisition attempts will be restricted to a "**dedicated**" **VHR sensor** to be decided by the Commission in agreement with the Member State. For the 2010 campaign, the possible dedicated sensors are: Ikonos, Quickbird, GeoEye-1, possibly Worldview 2 and Kompsat 2, and in agreement with the MS, VHR Pan only sensors with a ground sampling distance lower than 1m (Worldview 1 and Eros B). As soon as imagery meeting the cloud cover requirements has been collected over [the whole] the zone it will be delivered to the contractor.

4.3.2 For selected zones agreed between the Member State and the Commission, a **VHR back up** mechanism will be set up[8]. As a general rule, Member States should check that the resolution of the VHR sensor (including the back up sensor) is compatible with the constraints on measurement accuracy laid down in Art. 34 of regulation (EC) No 1122/2009[9]. The back up sensor will be defined in agreement with the Commission and the Member State at the beginning of the campaign. When the back up is only PAN, an HR image (e.g. SPOT 5 or Rapid-Eye), will also be programmed during the same acquisition window.

4.3.3 For selected zones, MS may request HR multitemporal satellite images. HR images will be provided for specific checks related to land cover (e.g. check of crops receiving supplementary or recoupled payments) in complement to the VHR image. As a general rule, the VHR and HR window(s) should be defined so as to avoid acquiring both types of images during the same period (e.g. with a less than 2-3 weeks difference). To avoid acquiring redundant images, Member State will define the "dead period" between the date of acquisition of an image (VHR or HR) and the following window. This dead period corresponds to the minimum period that has to be left between two acquisitions.

4.3.4 In contrast with the VHR windows, the HR windows are open to all HR sensors[10] simultaneously (unless specified otherwise by the Member State and after agreement by the Commission). The first acceptable HR image covering the zone will be purchased. A Member State may justify a preference for a given sensor knowing that this strategy may lower the chances to obtain any HR imagery. The Commission will evaluate the justification for such a preference and try to satisfy it taking into account the acquisitions already made, availability of actual imagery, and programming feasibility.

4.3.5 The contractor will be expected to make effective use of **all** the imagery placed at their disposal, and provide justification for **selective** use in the final report delivered at the end of the contract.

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[8] Using EROS A (1.8m GSD panchromatic), EROS B (0.7m GSD panchromatic), Formosat 2 (2m GSD panchromatic and 8m GSD multispectral), SPOT 5 supermode (2.5m GSD Panchromatic), or Worldview 1 (0.5 m panchromatic).

[9] SPOT Pan Supermode, Formosat 2 and EROS A are not considered of sufficient resolution to reach alone the area measurement accuracy required by the Regulation. However, considering that these images will be used in exceptional circumstances, the application of a 1.5m buffer tolerance will be allowed (Cf. technical tolerance in WikiCAP).

[10] The HR sensors supplied by the Commission are presently SPOT 4, 5 XI/XS, LANDSAT 5 TM, IRS-P6 LISS-III, DMC (upon request), Rapid Eye (RE; this data is produced in 25x25km orthorectified tiles at 5m resolution with 5 multispectral bands: B, G, R, red edge, and NIR) and THEOS.

4.4 Management of satellite image acquisition

4.4.1 For the management of image acquisition, the contractor is referred to the VHR and the HR Imagery Specifications for the CwRS programme[11].

4.4.2 The LIODOTNET[12] (Live Image Ordering) web application will track the imagery through the campaign. This application manages acquisition request, validation, ordering, invoicing, archiving of images. Automatic email exchange synchronizes actions between different actors. LIODOTNET also allows viewing and downloading of georeferenced VHR/HR quicklooks through the CID Quicklook browser[13]. The contractor may also consult the image suppliers' catalogues in order to identify cloudy, but still usable images, and suggest these to the EC Services for upload into LIODOTNET.

4.4.3 The images will be bought by the Commission and supplied free of charge to the contractor, at the latest six working days after ordering. These data remain Commission property and will be returned at the end of the work (ref. § 3). The rules of copyright (ref. HR/VHR Imagery Specifications for the CwRS programme) both for the Commission and image suppliers will be strictly observed. The images will be supplied to the contractor preferably on FTP, or otherwise on CD/DVD, after agreement between the contractor, the Commission and the image provider. The images will be delivered to one single address as stated by the contractor, with all costs paid by the Commission, except local taxes.

4.4.4 The image processing levels/formats will be selected by the Member State or its contractor in accordance with the VHR and the HR Imagery Specifications for the CwRS programme. This information will be supplied to the EC Services at the beginning of the campaign.

4.4.5 The contractor has five days after receipt of the images, to make comments on the location or the quality of the received images, as compared to the characteristics in the order. This should be made on the order page of the LIODOTNET system by introducing the Input Data Quality Assessment (IDQA) values. Such IDQA parameters need to be introduced in LIODOTNET whether the imagery is accepted or rejected. Images that are not rejected and are subsequently considered unusable may be charged to the contractor.

4.5 Acquisition of aerial imagery (if applicable)

4.5.1 The tenderers are referred to the Guidelines for Best Practice and Quality Checking of Ortho Imagery guidelines[14] for the acquisition and ortho-rectification of aerial imagery (including digital airborne imagery).

4.5.2 The aerial photograph (if analogue) must, as a general rule, be photogrammetric precision-scanned, thus allowing accurate geometric correction, scaling and overlay, as well as low-cost paper printing. This rule is compulsory when aerial photographs are used for area measurements. It becomes advisory when an aerial photograph is used instead of or in support of rapid field visits in order to check the land use.

4.5.3 If the tenderer has at his disposal or is able to acquire archive orthophotographs and intends to use them, he should state for what purpose (e.g. back up), and list precisely in his proposal the technical characteristics, source, and cost of acquisition.

4.5.4 Unless the tenderer can demonstrate in his offer that the National Administration will organize this, he will be responsible for the acquisition of all photographs. He will research all archive photographs if necessary, negotiate all flight plans and authorisations, accept all technical and meteorological risks and organize the film processing, if applicable.

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[11] available at http://mars.jrc.ec.europa.eu/mars/About-us/CID/Image-Acquisition

[12] http://lio2.jrc.it/LioDotNet/Default.aspx

[13] http://marsimg.jrc.it/pub/lioqlbrowser09/ (or retrievable from inside LIODOTNET)

[14] Guidelines for Best Practice and Quality Checking of Ortho Imagery (JRC IPSC/G03/P/SKA/dka D(2008)(10133)) [Version 3.0] available at http://mars.jrc.ec.europa.eu/mars/Bulletins-Publications/Guidelines-for-Best-Practice-and-Quality-Checking-of-Ortho-Imagery-v-3.0

4.5.5 If the tenderer is planning to acquire aerial photographs, he must indicate in particular:

- how he plans to obtain flight authorization (without knowing the precise location of the zones) and, if relevant, give the name of the subcontractor;
- the aircraft model, the camera type, the lens, the photographic film;
- the general flight plan (without knowing the zones), altitude, scale, the proposed date(s), the minimum solar angle, the navigation system, GPS methodology, forward and lateral overlap, and whether cross strips will be used;
- the techniques: film processing, expected ground resolution of the original, scale of printing and enlargements if relevant;
- the detailed price for each stage of the work;
- the proposed timetable, from the flight to the final product;

4.5.6 The tenderer will specify how he will manage the aerial coverage obtained: proportion of photographs actually used, block-triangulation size and limits, mosaicking seams, archiving, etc.

4.6 Processing of satellite images and aerial photographs

4.6.1 Aerial photographs (if analogue) will be photogrammetric precision-scanned. Photographic developing techniques should be described, laboratory mentioned and scanning equipment detailed (e.g. type of scanner, geometric precision of scanner, scan direction, scan resolution, scanned pixel output size) in the proposal. For the remainder of this document "image" will refer both to the satellite image and the scanned aerial photograph.

4.6.2 The contractor in charge of image processing needs to have appropriate software suite (or subcontracting options), and “know how” to process all image types (i.e. be able to orthocorrect all image types, Pan-sharpen VHR bundle images, etc.) and should demonstrate this especially for the VHR sensors (prime and backup) to be acquired over his control zones For ortho-rectification of HR and VHR satellite imagery, the contractor is referred to the **Guidelines for Best Practice and Quality Checking of Ortho Imagery**[17].

4.6.3 The images will be geometrically corrected using techniques that will ensure a good image-to-map and image-to-image overlay, even with low elevation angles (i.e. high view angles). The quality of the geometric correction will be assessed through the absolute Root Mean Square Errors (RMSE) measured on check points in the X- and Y- directions separately (i.e. RMSE-X and RMSE-Y). The maximum 1-dimensional RMSE values allowed for each data type are listed below:

DATA TYPE	MAX RMSE
• aerial photographs, VHR PAN ≤1 m satellite imagery	2.5 m
• EROS A 1.8m satellite imagery single scene	2.5 m
• EROS A 1.8m satellite imagery vector scene (> 27 km)	3.5 m
• THEOS Pan[15]	4.0 m
• SPOT 5 Pan Supermode	5.0 m
• Formosat 2 [16]	5.0 m
• Rapid Eye 1B processing level[17]	5.5 m
• Rapid Eye 3A processing level[18]	8.5 m
• SPOT 5 multispectral	15 m
• THEOS multispectral[19]	15 m
• UK DMCII[20]	25 m
• SPOT 4 multispectral	30 m
• IRS P6 LISS III	40 m
• LANDSAT TM	50 m
• DMC	50 m

4.6.4 In order to meet these specifications, the contractor should carefully analyze the input data and particularly the digital terrain model (DTM) planned to be used (if applicable), the ground reference data (accuracy of GCP and CP) and each step of the geometric correction process. The tenderer shall detail all steps of this geometric correction process and justify the correction method proposed (e.g. ortho-correction or polynomial) for his control zones (with special reference to differences in altitude in these zones).

4.6.5 For the zones and image types where ortho-rectification will be considered as necessary, the tenderer shall indicate if he will correct the images in-house or sub-contract this work. If this is to be produced in-house, the price of the DTM and processing per scene (fixed or variable costs) shall be clearly indicated. If this processing is to be sub-contracted, the tenderer must name the proposed contractor, list all the necessary specifications and include in his financial statement the supplementary cost of this correction.

4.6.6 In case of ortho-rectification, the tenderer shall indicate the technical characteristics of the DTM, either if bought, produced by the tenderer or delivered by a sub-contractor. He will indicate the method used

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[15] The THEOS PAN orthoimage can reach 2m accuracy provided that systematic shift is eliminated and the rigorous model based on at least 20 well-distributed GCPs is applied together with image matching techniques for point measurement. (ref: JRC IPSC/G03/C/JNO/jno D(2010)(12154))

[16] After tests, the maximum $RMSE_{1D}$ of F2 has been set to 5m with a 20 degree across track angle and a 25 degree along track angle restriction. This 5m threshold can well be reached by the tested software suites (SIPOrtho, Prodigeo, PCI). Moreover, the specified angle restriction allows to obtain a GSD below 2.5 m, which is consistent with the SPOT supermode GSD (ref: JRC IPSC/G03/C/PAR/ D(2008)(9233 V 1.1))

[17] Provided that one ground control point (GCP) is introduced during the sensor orientation phase when using the Rational Functions mathematical model. Moreover, the addition of one more GCP allows to achieve a 1-D RMSE of 3.8m (ref: JRC IPSC/G03/C/JNO/jno D(2009)(11373), PUBSY No. JRC56483).

[18] Since the 1-D RMSE of the RapidEye standard 3A (Ortho) product may reach 26m, this requirement is fulfilled by using a set of at least 6 well distributed GCPs in order to eliminate the systematic shift of the Standard 3A product (ref: JRC IPSC/G03/C/JNO/jno D(2009)(11373), PUBSY No. JRC56483).

[19] The orthorectified THEOS 1B MS product accuracy can reach 7m, provided that systematic error is eliminated and the rigorous model based on at least 20 well-distributed GCPs is applied together with image matching techniques for point measurement. Ref: JRC IPSC/G03/C/JNO/jno D(2010)(12154)

[20] Checked on a sample of two DMC2 L1T ortho products after single scene correction applying the Keystone SIP/Ortho rigorous model based on a large group of GCPs (min 20) collected from Landsat ETM+ data and SRTM DEM V31 data. Ref: JRC IPSC/G03/C/JNO/jno D(2010)(12363)

to produce the DTM; from map contours, stereo pairs, or other. He will indicate the map scale and cartographic system, and relevant contour interval, or grid size (distance between points).

4.6.7 The tenderer will indicate his choice of cartographic system (spheroid/datum, projection) for the processed images. He may also choose to obtain the geodetic co-ordinates of the reference points from the competent Administration, or to acquire the co-ordinates of these points using a Global Positioning System (GPS). In any case he will give details on the Ground Control Points (GCP) and check points used, their source, number and distribution.

4.6.8 In the exceptional case where, in agreement with the EC Services, VHR SAR data is programmed as backup imagery, the Image Provider will provide for the orthorectification of the data. In such a case, the contractor will provide to the EC Services their National Projection system (i.e. all parameters on projection and datum) as well as a DEM[21] (if of better spatial resolution and vertical accuracy than SRTM-X) before the programming starts.

4.6.9 The tenderer will indicate and justify all other possible processing techniques envisaged: radiometric correction, contrast stretching, resampling, pansharpening, etc.

4.7 Ground data collection

4.7.1 As training for the CAPI and/or classification of the satellite images, the contractor will carry out during the period most appropriate for the crops of interest, a field survey in a sample of control zones. The survey will cover at least 750 ha (or 300 parcels) and should ensure a good representation of the crops of interest. The survey sample size may be reduced or the field survey may be focused on crops of interest or rare crops, if the tenderer is able to demonstrate to the satisfaction of the Administration, that he is able to build a database of reference fields for the most common crops in another way. Parcels along public ways can be used, especially if private parcels are inaccessible.

4.7.2 In the case of SPS, the contractor should pay special attention to crops that may be ineligible (Cf. 6.4.1) as well as to crops subject to additional payments (Cf. title IV of Reg. 73/2009 and National Addendum). As a result, the ground data collection could focus on these crops so as to train the interpreters (or the classification) to detect them.

4.7.3 The tenderer will indicate the methodology that he intends to use for this fieldwork (transects, area frame survey, etc.), the origin and the characteristics of the documents drawn up for the investigators, the personnel envisaged and their qualifications, the proposed dates, the planned duration, the area surveyed, the method proposed to ensure a minimum number of parcels per crop of interest on a per-zone basis, etc.

5 Principles of Control with Remote Sensing and possible strategies

5.1 Purpose of Control with Remote Sensing

The purpose of on-the-spot checks and therefore of Control with Remote Sensing is to check the conditions under which aid is granted on a sample of applications. In practice, for each parcel claimed for SPS or SAPS aid, this means checking at least:

- the declared area of the agricultural parcel;
- the compliance with the minimum area of the agricultural parcel where necessary;
- the declared land use to the extent requested by the regulation (see National Addendum for a description of the crop groups);
- the number and/or position of trees and other features where necessary;

[21] The requirements for this DEM and its metadata will be provided to the contractor by JRC CID.

- the eligibility of the parcel with respect to the reference period where applicable (see National Addendum);
- the respect of the cross compliance requirements and particularly of the Good Agricultural and Environmental Conditions (GAECs).

As a by-product of these checks, feedbacks to the LPIS should be made (e.g. using specific codes) wherever appropriate.

Contracts, seed certificates and other conditions (e.g. particular GAECs, or THC content in hemp) that need to be met but cannot be checked on the imagery (or in the field) will require specific provisions to be set up by the Administration.

The **list of the checks to be carried out** by the contractor **for each type of parcel, crop, zone, cross compliance issue** should be **described** explicitly in the **National Addendum**.

5.2 Principle of classical Control with Remote Sensing

5.2.1 The philosophy of **classical CwRS** is to check the claimed parcels "in the office" as much as possible. Different images in resolution and time will be supplied, weather permitting, according to the checks to be carried out (Cf. National Addendum). The primary result of these checks is a diagnosis at parcel level. Parcel results will then be aggregated to derive a diagnosis at crop group level (i.e. the level where aid and penalties are calculated) and dossier level. The objective of these diagnoses is to separate the crop groups/dossiers that will need a follow-up action from those which are considered as correct and therefore do not require any subsequent action (for the points that could be checked by remote sensing).

5.2.2 Whenever the imagery does not allow the verification of some of the points listed in the National Addendum (see § 5.1) in a satisfactory manner, a field visit will have to be carried out. This field visit can be carried out during the CwRS work so as to integrate the results of theses visits in the CwRS results or after the CwRS results have been delivered to the Administration. In this latter case, the field visits will likely be carried out by the Administration at a later time in the campaign.

5.2.3 **The sorting of dossiers** for which a follow-up action is necessary is a characteristic of CwRS. As a general rule, in classical CwRS anomalies detected on the imagery should be followed-up by any appropriate administrative action, and where necessary by a physical inspection in the field. The main objective of this sorting is to concentrate field inspections on a reduced number of problematic parcels. If the national law does not impose field inspection to certain categories of dossiers (e.g. penalised or rejected dossiers), the criteria to decide on a field inspection may also depend on organizational or strategic considerations.

5.3 Rapid field visits

5.3.1 Rapid Field Visits (RFV) are intended as a means to check the land use and possibly some cross compliance issues (GAECs) in the field without contacting the farmer.

5.3.2 As a general rule, area measurement is not carried out during rapid field visits. However, if permitted, for parcel boundaries not clearly identifiable on the VHR imagery, some distances or positions may be taken in the field so that the parcel area could be measured **on screen** at a later stage.

5.3.3 RFV may be systematic i.e. carried out on all parcels of the CwRS sample or directed to problem or doubtful parcels (Cf. National Addendum).

5.3.4 **Systematic RFV** are usually carried out for checking the land use and cross compliance when only one VHR image is available per control zone. In this method, the task of CAPI operators is mainly limited to measuring parcel areas on the screen. The advantages of this method are the following:

- field visits are made at the best possible timing for identifying the crop and assessing its extent;
- crops likely to be poorly recognized on the imagery (e.g. durum wheat versus soft wheat or barley) can be identified and a sample taken as a proof if requested by the National Addendum;
- cross compliance issues, whose the verification may no be feasible on the imagery, can be verified in the field, whenever possible;

– in principle no follow-up field inspection is needed; the follow-up action usually consists in summoning applicants to a meeting.

5.3.5 Classical CwRS may plan **RFV for problem parcels** when the available images do not permit a satisfactory verification of the land use (typically for doubtful parcels or crops of difficult identification such as durum wheat) or cross compliance issues.

5.3.6 Digital photographs of the parcels visited and (especially) parcels with problems may be taken during the visit, and stored in a database with their location, so as to be presented to the applicant in a follow-up meeting, thus reducing the number of follow up field inspections to a minimum.

5.3.7 RFV can be undertaken either by the CAPI operators or by other staff trained in crop identification and cross compliance checks. If relevant, the tenderer should indicate the following:

– The number of RFV planned, if any, and the type of parcels to be visited;

– The material and timing for these RFV;

– The personnel planned for this work and their qualifications.

The rapid field visits can also be undertaken by the local services of the Administration and their results sent back to the contractor for completion of the diagnosis at parcel level (Cf. national Addendum).

5.3.8 Field visit documents such as maps for the overall location of the parcels and detailed location documents (e.g. parcel boundaries overlaid on a VHR image) will have to be provided to the staff in charge of RFV. Alternatively, navigation systems based on GPS and systems allowing the display of images, vectors and data on a mobile computer in the field may be used. Predefined codes should be used to report on the actual land use and any anomaly found.

5.3.9 In classical CwRS, RFV may be used to assess the quality of the diagnosis derived from the imagery. In this case the diagnosis established before and after RFV should be recorded.

5.4 Crop Groups and CwRS diagnosis

5.4.1 Article 56 of Commission regulation (EC) No 1122/2009 defines the crop groups for the purpose of calculation of aid, reductions and exclusions. This means that the diagnosis affecting the payment to the farmer is made at crop group level, where compensation between parcels (of the same crop group) is allowed. The National Addendum will give the list of crop groups applicable in a Member State. Tenderers may expect to find:

– The SPS crop group in the 17 Member States applying SPS or the SAPS crop group in the 10 Member States applying SAPS. As from 2009, the SPS crop group includes any agricultural area of the holding, and any area planted with short rotation coppice (CN code ex 0602 90 41) that is used for an agricultural activity or, where the area is used as well for non-agricultural activities, predominantly used for agricultural activity (cf. Article 34(2)(a) of Regulation EC No 73/2009). Certain afforested areas or areas which no longer fulfill the definition of eligible hectare may still be eligible in accordance with Article 34(2)(b) of the same Regulation. The SAPS crop group remains unchanged i.e. includes any crop (arable and permanent crops, kitchen gardens…).

– Crops receiving a different rate of aid, i.e. crops receiving supplementary or re-coupled payments (i.e. title IV or Article 68 aid) in SPS or Complementary National Direct Payments (CNDP) in SAPS. These aids are referred to as "**coupled payments**" in this document as they depend on the crop. As a general rule, all parcels / crops receiving the same (additional) aid per ha belong to the same crop group.

As a result of the health check, the set-aside obligation in SPS is abolished as from 01/01/2009 and set-aside entitlements were converted to normal entitlements.

5.4.2 It is important to note that a given parcel/crop may belong to several crop groups (e.g. SPS and protein crop, or SAPS and CNDP). As a result, different measurements may be made for a given set of contiguous parcels (e.g. one measurement for the parcels claimed for SAPS/SPS and one for the parcels claimed for supplementary aid, if these differ).

5.4.3 The CwRS contractor will establish a diagnosis (accept or reject) for each of the crop groups claimed and a summary diagnosis at dossier level. Each dossier should therefore fall in one of the following three categories:

- Dossiers (crop groups) accepted by RS that will not be subjected to a follow-up action regarding the points checked by RS (except for QC reasons for a sample of these dossiers). These dossiers may however be subjected to complementary controls according to the strategy of the National Administration (e.g. for checking seed certificates, specific crops such as durum wheat, the respect of agri-environmental measures, GAECs not verifiable with RS…).
- Dossiers (crop groups) rejected by RS that will be subjected to an appropriate follow-up action; the choice of the action (simple notification, meeting with the farmer, physical inspection…) remains of the responsibility of the Administration.
- Incomplete dossiers, i.e. dossiers for which less than 50% of the claimed parcels[22] could be checked, that will be completed in the field (this rule applies to all the dossiers belonging to the initial control sample).

5.4.4 The Contractor may not be able to calculate the final diagnosis at crop group level for the **SPS** crop group because such diagnosis requires access to the entitlements database. The National Addendum should describe whether the contractor should only provide results at parcel level for the SPS crop group or also at crop group level similarly as for the other crop groups.

5.4.5 As a general rule, reductions or exclusions should not be applied following remote-sensing controls without informing the applicant i.e. without offering him any possibility of recourse or re-inspection.

6 Checks at parcel level

6.1 Location of the claimed parcel

6.1.1 Each declared parcel will be located on screen with the help of the **reference parcels** (LPIS) vectors and the farmer's **sketch map** wherever necessary[23]. The limits of the parcel will be determined by Computer-Aided Photo-Interpretation (CAPI) using the available imagery, i.e. the current year VHR imagery. Only **in exceptional circumstances**, i.e. in case of failure of acquisition of the VHR imagery (prime and back up sensors), may archive VHR imagery be used in combination with current year HR imagery to determine the limits of the parcel. In this latter case, field visits may be needed to verify the parcel boundaries.

6.1.2 **Ineligible areas** such as buildings, wooded areas, or water bodies shall be **excluded** from the parcel, except if specified otherwise in the National Addendum (see "definition of the area to be measured" in category Art34 in WikiCAP).

6.1.3 It is important to locate and delineate all declared parcels, including those for which no aid is claimed, so as to detect possible multiple claims and to verify cross compliance issues required by the National Addendum. ~~Moreover, parcels not claimed may contain crops which may not be eligible for aid (e.g. fruit and vegetables in some MS applying SPS); therefore digitizing these parcels may train the interpreters (or a classifier) in the detection of these crops).~~

6.2 Parcel area check

6.2.1 As a general rule, the area of each subsidized agricultural parcel will be verified on the current year VHR imagery. Unless requested otherwise by the Administration, the area of non-subsidized agricultural parcels will, in general, not be checked. The result of this digitization will be the photo-interpreted area, also called "measured" area, which will be compared to the declared area for each agricultural parcel. The results will be expressed in hectares rounded to two decimal places.

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[22] See § 8.3.2 and WikiCAP (planning of the inspection programme) for the possible additional criteria regarding the representativeness of the parcels sample with regard to the claimed area and the claimed aid.

[23] It is reminded that according to Article 12(3) of Regulation 1122/2009, the farmer shall indicate the location of each agricultural parcel on the graphical material supplied to him by the Administration.

6.2.2 The National Addendum shall provide the definition of the agricultural parcel selected by the MS (e.g. single crop group parcel or single crop parcel – cf. Article 2 (1) of Commission Regulation (EC) No 1122/2009). The contractor shall follow this definition when measuring the claimed parcels.

6.2.3 The comparison between declared and measured area will be carried out during the categorisation phase. For declared parcels grouped at the time of measurement (i.e. when single crop group parcels are measured while single crop parcels are declared[24]), the sum of declared areas will be compared to the measured area.

6.2.4 For the parcels whose observed crop group agrees with the claimed crop group, a **technical tolerance** per (measured) parcel will be calculated. Technical tolerances are intended to take into consideration the uncertainties specific to any measurement technique. The National Addendum will specify the technical tolerance to be used according to the measurement method (type of imagery). The principle of applying a **technical tolerance to the parcel measured area** is outlined in WikiCAP (Cf. technical tolerance in category Art34).

6.2.5 Calculation of technical tolerances

6.2.5.1 As from 2008, only a buffer tolerance of **maximum** 1.5 m shall be used for any type of area measurement. This buffer tolerance is calculated by multiplying the parcel **outer perimeter** with a buffer width to obtain a buffer area (Cf. WikiCAP).

6.2.5.2 In case of failure of acquisition of the current year dedicated VHR ortho-imagery, provisions should be taken to meet the requested area measurement accuracy. These may include the use of VHR back up imagery if available and of sufficient resolution or of recent archive ortho imagery in case of stable boundaries; otherwise field inspections (e.g. with GPS measurement) should be carried out as stated in Article 35(1)(b) of Commission Regulation (EC) No 1122/2009.

6.2.5.3 The technical tolerances should be applied only to agricultural parcels, and not to the internal cadastral parcels. In cases where the agricultural parcel is composed of several cadastral parcels, computing the tolerance at the level of internal cadastral parcel would lead to the application of an excessive technical tolerance.

6.3 Minimum size

6.3.1 The minimum parcel size applicable in a Member State (cf. Article 13(9) of Commission Regulation (EC) No 1122/2009) will be given in the National Addendum. Parcels found below this minimum parcel size are not eligible for aid and should be flagged with an appropriate code.

6.3.2 For parcels claimed for nuts aid, the minimum parcel size should be at least 0.10 ha and will be indicated in the National Addendum (cf. Article 5(2) of Commission Regulation (EC) No 1121/2009).

6.4 Land use check

Land use may be checked by automatic classification (supervised or unsupervised) or by Computer Aided Photo Interpretation (CAPI) of the available imagery.

If the tenderer uses classification, he will justify and illustrate his choice and the different stages of the checks. In particular he will give the criteria for assignment of land use and explain how the classification results are used in the parcel categorisation (e.g. as an ancillary image layer helping the interpreter or as automatic parcel label). Whatever the method chosen (CAPI or classification), the tenderer will describe the training techniques and quality control for the proposed method.

As a general rule, since the interpreter needs to determine the crop / land use extension by CAPI for checking the area, verifying the land use at the same time does not represent significant extra work. Performing an automatic classification might however be useful for detecting ineligible crops in SPS.

[24] Even if a MS opts for the crop group (agricultural) parcel, farmers may still declare single crop parcels (i.e. fields) because the crop may be needed to locate the claimed parcel inside the reference parcel.

6.4.1 Decoupled Payment and land use check

As from 2009, any agricultural activity is eligible for SPS, as has been the case for SAPS since 2004. ~~However, in certain MS, fruit and vegetables may remain ineligible (in MS deferring the integration of the fruit and vegetable sector into SPS and where areas with fruit and vegetables are eligible only if accompanied with a sticker. The national addendum should provide the list of eligible crops.~~

In practice, land use check for decoupled payment will consist in checking that the parcel is cultivated (i.e. not abandoned) or, if not cultivated, maintained in GAEC and has no ineligible element (not yet referenced in the LPIS) ~~or no potentially ineligible crop~~ for SPS.

~~Since only a few crops or land covers are (potentially) ineligible in SPS, interpreters should be trained in detecting these crops or land covers. It may also be interesting to develop classification algorithms for the detection of these crops or land covers.~~

6.4.2 Coupled payments: crops claimed for Title IV aids or CNDP

The National Addendum will give the list of crops receiving supplementary or re-coupled payments, hereafter referred to as "coupled payments", applicable in the Member State (cf. title IV of Council Regulation (EC) No 73/2009).

For parcels declared for coupled payments, the declared crop will be checked using the available imagery (VHR and HR). Doubtful cases will be visited in the field by the contractor if requested in the contract, or flagged for further verification by the National Administration.

In case only a few parcels are concerned by coupled payments, the National Addendum will indicate whether these parcels should be checked by systematic RFV or by CAPI first. For instance checking summer crops directly by RFV should allow visiting the parcels at a time where the crop is till in place instead of waiting for the summer HR image and having to visit a sample of these parcels afterwards (e.g. because of possible confusion with potato).

6.4.3 Particular case of nuts

The control of the nut tree areas aid scheme (cf. Section 4 of Chapter 1 of Title IV of Council Regulation (EC) No 73/2009) will be carried out on the basis of the rules set up in articles 5(2), 15 and 16 (in case of additional national aid) of Commission Regulation (EC) No 1121/2009.

For the practical implementation of this control, Member States and contractors are referred to the Wiki-CAP guidelines (category Art34)[25] providing guidance for on-the-spot checks of area and area measurement.

In addition to the minimum plot size, the minimum tree density which may vary according to the type of nut (hazelnuts, almonds, walnuts, pistachios or locust beans) will be indicated in the National Addendum.

6.5 Reference year eligibility checks

6.5.1 For the **8 MS applying SAPS** that entered the European Union on 1st May 2004, the reference year check consists in checking that any claimed parcel was in **good agricultural condition at 30 June 2003** (cf. Article 124(1) of Council Regulation (EC) No 73/2009; for the definition of these conditions, see the National Addendum). The purpose of this reference year check is to avoid any undue increase of agricultural land following the implementation of SAPS.

6.5.2 For **Bulgaria and Romania**, there is **no reference year check**: a parcel is eligible for SAPS in a given campaign if it is in good agricultural condition, whether in production or not, in that campaign (Cf. Article 124(1) of Council Regulation (EC) No 73/2009).

6.5.3 If the national LPIS does not provide information on the eligibility of the reference parcels,, an extra photo-interpretation of the most suitable ortho-imagery (e.g. LPIS ortho-images) could be requested to

[25] http://marswiki.jrc.ec.europa.eu/wikicap/index.php/1.3._Specific_considerations_for_area_measurement

the contractor in order to identify ineligible parcels or doubtful cases where complementary evidence could be requested to farmers (Cf. National Addendum). No archive satellite data will be provided. Doubtful cases identified by CAPI will lead to administrative follow up.

6.6 Control of Cross Compliance

6.6.1 Regulation (EC) No 73/2009 provides for controls on cross compliance regarding Statutory Management Requirements (SMR) and Good Agricultural and Environmental Conditions (GAEC), applicable for both SPS and SAPS[26] (cf. annexes II and III for SMR and GAEC respectively). The National Addendum will describe the ~~minimum~~ requirements and criteria to check the SMR and GAEC.

6.6.2 The different domains (or areas) of cross compliance defined by Regulation No 73/2009 are (1) public, animal and plant health, (2) environment, (3) animal welfare, and (4) GAEC. The respect of cross compliance requirements in these different domains shall be checked by competent authorities. The options for selecting the (at least) 1% cross compliance sample are described in articles 50 and 51~~ and 52~~ of Commission Regulation (EC) No 1122/2009. It is worth noting that as from 2008, the "cross compliance" sample needs to be selected partly on the basis of **risk analysis** and partly **at random** either among the 5% OTS check sample or among the whole population of farmers lodging aid applications under support schemes established in Regulation No 73/2009.

As a result of the vineyard reform, farmers receiving payments for restructuring and conversion, grubbing up and green harvesting (Cf. Regulation No 479/2008) shall comply with the cross compliance obligations referred to in Articles 4, 5, 6, 23, 24 of Regulation No 73/2009 (Cf. Articles 20 and 103 of Regulation No 479/2008). The control of cross compliance for these farmers are defined by the implementing rules provided for in Regulation 1122/2009 ~~and apply as from 1 January 2009~~.

It is reminded that the samples may be drawn at the level of each act or standard or each group of act of standards, which allows to define a risk analysis specific to each (group of) act(s) or standard(s).

6.6.3 Remote sensing data may be used in two ways for the control of cross compliance:

- Use of RS for a partial control of the GAEC.
- Use of RS as a support for the selection of the cross compliance sample (risk analysis).

6.6.4 CwRS as a partial control of cross compliance: This approach may be envisaged for the GAEC (or SMR) that may be checked on satellite or airborne imagery. This is the case for instance for the maintenance of a soil cover during winter, the prohibition of burning cereals stubble, the maintenance of grassland and set aside (absence of bushes), the ploughing on slopes above a certain threshold (DTM needed) etc… According to the minimum requirement defined for a given act or standard, MS may decide to use RS images to check specific conditions (e.g. requirements that need to be checked during autumn or winter).

In practice, during the photo-interpretation of the satellite imagery the CAPI operator will flag any case of possible non compliance (e.g. doubtful land use) with an appropriate code.

Also cases of non compliance in respect of some GAEC that would be observed during a RFV should be reported to the Administration.

6.6.5 CwRS as a support for selecting the cross compliance sample: On the CwRS OTSC sample or on the whole area covered by the HR image, an automatic classification (refined by CAPI) could provide a list of parcels potentially in breach with some GAEC that can be checked with RS. The corresponding dossiers may hence be part of the risk based sample for the controls of cross compliance of a given control body (the "1% sample" per competent authority).

6.6.6 Member States should mention in their National Addendum the option(s) retained (no control of cross compliance with RS, use of RS for partial control or for risk analysis) for each of the control zones. If

[26] As from 2011 the SMRs in the area of Environment and in the area of Public, animal and plant health are also applicable to new MS. Requirements in the area of animal welfare will be applicable to new MS as from 2013

relevant, the GAECs to be checked and the criteria to be assessed should also be described as well as the specific imagery / processing requested (e.g. SAR imagery in winter for the detection of bare soil).

6.7 Other schemes

Parcels benefiting from other area subsidy schemes included in the accompanying measures of Council Regulation (EC) No 1698/2005 on rural development (see § 1.2), or in national environment protection schemes, and included in the sample, may also be checked during the control, depending on the choice of the Member State (Cf. National Addendum). Examples of such schemes are the compensatory allowances paid for less favoured areas (LFA) and for areas with environmental restrictions, and support measures for agri-environment and afforestation measures. For these schemes, the role of CwRS is generally restricted to the measurement of the parcel area and the identification of the land use. The controls needed to verify the other commitments related to these schemes (e.g. farm inspections) should be clarified by the Administration. In practice, the parcels claimed in these schemes may be managed as special groups (Cf. National Addendum).

7 Diagnosis at parcel level

7.1 General considerations

7.1.1 At the end of the CwRS process (i.e. after the pre-CAPI check, the CAPI or RFV), each claimed parcel should be assigned at least one technical code, a measured area (wherever feasible) and an observed land use or crop group.

7.1.2 The roles of the technical codes are the following:

- Trace the work of the interpreter (e.g. for quality control purposes);
- Allow to compute the retained area for each claimed parcel;
- Describe the problem found to the administration (and the inspector for parcels to be visited in the field);
- Allow a posteriori analysis and identification of particular problems (e.g. high occurrence of a given code in a region).

7.1.3 The retained area should then be compared (capped) to the official area of the reference parcel (i.e. LPIS area), as specified in § 7.5.

7.1.4 Although parcels not claimed will have no impact on the diagnosis, checking these parcels allows to better check claimed parcels (in case parcels not claimed share a reference parcel with claimed parcels) and to train the interpreter on specific crops (e.g. crops that may not be eligible for SPS).

7.1.5 Several codes may be used simultaneously if necessary. When several codes are assigned to a parcel, the retained area and land use should correspond to the least favourable condition. In any case the rules should always be defined in accordance with the National Administration.

7.1.6 Some codes are likely to change after a rapid field visit (if this option is chosen). In the latter case, it will be preferable to keep track of the two successive situations: i.e. to keep the code(s) before and code(s) after the rapid field visit.

7.2 Codification rules and standard codes

7.2.1 A series of "standard" codes have been defined in relation to specific conditions as stated in Table 2 below:

- The **T**x codes are assigned to parcels not checked for some technical reason independent from the interpreter (e.g. parcel outside the image). As assigning a T code implies giving the benefit of doubt to the applicant, these codes should not be assigned to parcels deemed doubtful during CAPI.
- The **A**x codes correspond to anomalies, in particular those related to eligibility, and lead to the rejection of part or a totality of the parcel.

- The **C**x codes are assigned to the interpreted parcels (i.e. checked parcels) but for which the declared area or crop group is not accepted by the interpreter. Different rules apply for computing the retained area.

If relevant, several codes could be assigned to the same parcel. If both the declared area and the declared crop group are accepted, the controlled parcel will be coded as "OK".

7.2.2 Additional codes may be defined by the National Administration to record specific cases not described by existing codes (e.g. LPIS boundary to be updated, or codes for other schemes). In order to avoid confusion it is preferable:

- not to reuse already existing codes (by changing their definition);
- to create new codes by subdividing existing codes: for example A31 (unknown cadastral reference), A32 (valid cadastral reference, but no vector).

Moreover, the new code(s) should be connected to an existing category (T, A, C) as much as possible.

7.2.3 Calculation of retained area: The last column of Table 2 indicates which area should be retained at parcel level and therefore transferred to the crop group level.

Table 2
Standard codes related to the conditions encountered at the parcel level, and proposed rules for the calculation of retained area

Observations at the parcel level	Code	Areas transferred to the crop group
Parcel outside all current year images Parcel outside control zone (i.e. VHR zone) Parcel covered by clouds	**T2** **T3** **T4**	Use the declared area and land use
Parcel declared or found as less than the minimum parcel size set by the Administration	**A1**	Give zero value to the area
Parcel (or part) claimed more than once	**A2**	Give zero value to (the disputed part of) the area
Parcel or reference not found in the LPIS Area ineligible (reference year 2003)	**A3** **A4**	Give zero value to area
Parcel ineligible for decoupled group (SPS or SAPS) Parcel declared in one coupled crop group, but found in another	**C1d** **C1c**	Give zero value to the eligible area, except for "obvious errors". If possible, indicate the land use found
Parcel declared in only one crop group, but found to be in more than one crop group	**C2**	Divide parcel, then apply previous rules
Land use correct, area outside tolerance (over-declaration i.e. declared > measured)	**C3+**	Use measured area And observed land use
Land use correct, area outside tolerance (under-declaration)	**C3-**	
Land use interpretation impossible or parcel limit problem not resolved on the image	**C4**	Give zero value to the area
Obvious error not covered by another code	**E1**	Use measured area And observed land use
Land use correct, area within tolerance	**OK**	Use declared area and declared land use

7.3 Comments on the standard codes

7.3.1 **Code T2:** parcels falling outside all current year images and that cannot be checked by CAPI are given the benefit of doubt with the T2 code (the declared area and land use are retained). However this code should not be used if a potential problem appears on the archive VHR ortho imagery (e.g. LPIS orthophotos). Example of such problems could be: the parcel appears to fall on an ineligible land (wood, ur-

ban area, water); the parcel seems to include ineligible features… In such a case, a reject code (e.g. C1a for C1 on archive imagery) should be used so as to trigger some follow up. These codes should be defined with the National Administration.

7.3.2 **Code T3**: this code should be given to parcels falling outside the control zone, i.e. the VHR current imagery, but only in cases where no other check can be made. For instance if the parcel area and land use can be checked using the available current year HR imagery and archive VHR ortho imagery, this code should not be used.

7.3.3 As a general rule, before applying a T code (e.g. T4 for CAPI impossible due to cloud on one image) the interpreter should check that CAPI is not feasible with the remaining images available.

7.3.4 **Code A1** is assigned to parcels declared or found, after the application of the tolerance rule[27], below the minimum size of agricultural parcel defined by the MS (this minimum cannot exceed 0.3 ha according to Article 13(9) of Commission Regulation 1122/2009). For such parcels, the retained area is set to 0.

7.3.5 Parcels claimed more than once, i.e. with a partial or total overlap, should be coded **A2**. In case several farmers declare a part of a reference (LPIS) parcel, the code A2 may be applied when the sum of the declared areas exceeds the official reference area (overclaim). Multiple claims identified at an early stage (i.e. before CAPI) may be returned to the Administration for clarification with the farmers involved.

The retained area for A2 coded cases not solved before CAPI is calculated by subtracting the overlapping (or overclaimed) area to each of the parcels involved. Alternatively, disallowing the whole area of these parcels is also acceptable.

7.3.6 Code **A3**: In MS where the IACS has been running for several years, parcels "not found" should be an exception and are no longer a "technical" but an "administrative" problem, i.e. a declaration anomaly coded A3, with a retained area set to zero. In the new MS the A3 code will be very important to assess the quality of the declaration and of the LPIS. In all MS, specific codes may be used to better characterize the different types of LPIS anomaly identified. Alternatively an A5 code may be defined for agricultural parcels declared in an existing LPIS parcel but found to be in another LPIS parcel.

7.3.7 Code **A4**: The Commission suggests that the check of reference year eligibility[28] should be made separately i.e. after the normal crop / area checks. The parcels found ineligible, fully or partly, will be assigned an A4 code and the ineligible part of the parcel will be set to zero.

7.3.8 Since a given parcel may be claimed for decoupled and coupled payments simultaneously, the C1 code has been divided into two new codes: C1d for cases where a parcel claimed for decoupled payment is not eligible and the C1c for parcels claimed for coupled payment and where the observed crop group differs from the declared crop group.

7.3.9 Code C2 has been designed as a transitional code and mainly for coupled crop groups; another code should be added to explain the decision made on the subparcels resulting from the division (e.g. C3+, overdeclaration).

7.3.10 The C4 code regroups cases of "land use interpretation impossible" and "parcel limit problem not resolved on the image". In contrast with the T codes, the C4 code is the result of some interpretation and an indication of possible disagreements with the declared land use or area. It should hence require some follow-up action (e.g. RFV).

7.3.11 Code E1: this code only applies to the cases that comply with the definition of "obvious error" given in the document DOC AGR 49533/2002.

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[27] For a parcel declared above and measured below the minimum size, the declared area is retained if the parcel is found inside tolerance (i.e. OK); otherwise, the A1 code is applied and the retained area is set to 0.

[28] See § 6.5

7.4 New codes for Cross-Compliance

7.4.1 In the frame of the control of Cross-Compliance, specific **codes should be applied to flag parcels for which a breach to a specific GAEC or cross compliance issue is observed or suspected during the CAPI process**.

7.4.2 For the dossiers belonging to the GAEC sample, all requirements defined by the MS should be checked. The Administration will indicate to the CwRS contractor the list of requirements that will have to be checked with the support of imagery and/or GIS. Paragraph 7.4.5 indicates the procedure and codes to be applied for these requirements.

7.4.3 In addition, the Administration may ask the contractor to report any possible anomaly identified on a parcel of the "5%" CwRS sample (e.g. heterogeneity that may be related to a lack of maintenance, encroachment of unwanted vegetation, erosion). Paragraph 7.4.6 describes the procedure and codes to be used for these additional GAEC checks.

7.4.4 In order to harmonize the GAEC codes across EU (e.g. for the compilation of summary statistics), it is proposed to code any requirement defined by a MS as follows: Gi.j.k where

- i is a number ranging from 1 to 5 and indicating the issue concerned by the requirement (1 for soil erosion, 2 for soil organic matter, 3 for soil structure, 4 for minimum level of maintenance; 5 for protection and water management; cf. annex III of Regulation No 73/2009);
- j is a number ranging from 1 to 7 and indicating the standard concerned by the requirement (annex III of Council Regulation (EC) No 73/2009 lists 8 compulsory and 7 optional standards in 5 issues, with a maximum of 7 for issue number 4);
- k is a sequential number indicating the national requirement.

NB: National requirements addressing more than one issue / standard should be identified by the code of the main issue / standard in order to avoid duplication.

In case the Administration decides to check some of the Statutory Management Requirements (SMR) related to the environment on the imagery during the CAPI phase, a similar coding is proposed: Si.j where i is the SMR number (from 1 to 5 according to Annex II of Reg. No 73/2009) and j is a sequential number indicating the element to be checked.

7.4.5 The parcels belonging to the **GAEC sample** will be screened by the operator in order to detect on the available imagery any anomaly that may indicate a possible GAEC breach. **For each of the requirements** to be checked, one of the following codes should be used:

Table 3: Codes to be applied for the GAEC check

Code	Meaning	Follow up rule
N/A	Requirement not applicable	-
NC	Requirement not checked	Compulsory RFV to check requirement
S	Suspected non compliance	Compulsory RFV to check requirement
Pb	Clear infringement	RFV to be decided by Administration
OK	Parcel compliant with requirement	RFV could be carried out on a sample of parcels for QC purpose

- By default, all the GAEC for the parcels of the GAEC sample are considered as not checked (NC).
- The N/A code will be assigned either manually or automatically by the system. This will be the case for parcels for which a given GAEC is not applicable, either because of their observed land use (e.g. GAEC specific to pasture or olive grove) or because of environmental characteristics (slope, presence of terrace…).

- Parcels where a possible infringement is suspected (e.g. lack of winter coverage, encroachment of unwanted vegetation) will be assigned an S code. These cases will have to be clarified in the field.
- The Pb code should be limited to parcels for which the infringement is clearly identifiable on the imagery and could constitute non-disputable evidence. The purpose of the Pb code is to identify cases for which a field visit could be avoided during the inspection if the farmer accepts the evidence of the imagery.
- The OK code will be assigned only if the interpretation of the parcel allows confirmation of full compliancy with the considered GAEC.
- The NC code will remain assigned for requirements that were not checked on the imagery (e.g. because of cloud, parcel outside image, unsuitable date of the images). A RFV will have to be carried out to check these requirements.

The following table shows an example of a GAEC check report for a given parcel located in a MS where the following 5 requirements would be checked with remote sensing:
- G1.1.1 corresponds to the obligation of minimum soil cover in winter;
- G1.2.1 corresponds to the prohibition of certain crops on parcels with a slope > 10%;
- G2.1.1 corresponds to the prohibition of burning stubbles;
- G3.4.1 corresponds to heavy poaching by animals;
- G4.2.1 corresponds to the obligation of maintenance of the parcel with respect to unwanted vegetation;

GAEC	G1.1.1	G1.2.1	G2.2.1	G3.0.1	G4.4.1
Code	S	N/A	NC	OK	Pb

It should be emphasised that when any anomaly is observed in a parcel, the **whole parcel is considered as non-compliant**. Therefore there is no need to digitize any exclusion area inside the parcel. However, in order to ease the work of the controller during the field visit, the location of the breach (e.g. mark of erosion) can be indicated with a point or a cross in the parcel.

7.4.6 For **parcels** subjected to CAPI checks which are **not part of the GAEC sample**, anomalies related to a possible GAEC breach may be detected on the imagery. Should this be the case, the operator should report on the observed anomalies. Ideally, a drop-down menu should present all possible anomalies that the Administration wishes the contractor to check by CAPI. Only the points where an anomaly is suspected (S code) or clearly identified (Pb code) will be reported by the operator (e.g. encroachment of unwanted vegetation, erosion trace). The GAEC check report for such parcels may therefore look as follows:

GAEC	G1.1.1	G1.2.1	G2.2.1	G3.0.1	G4.4.1
Code				S	Pb

7.4.7 For the GAEC that need to be checked at the whole farm level, in contrast with the GAEC that are to be checked at parcel level (e.g. "the farm should have at least x% of such cover" or "the farm should have at least x types of crops"), the diagnosis is derived automatically from observations at parcel level (e.g. land use). Generally only two diagnoses are possible: Pass (compliant) or Fail (not compliant). The Administration should decide whether the contractor will calculate this diagnosis at farm level.

7.4.8 The results of the GAEC checks (list of GAEC codes with their corresponding number of parcels assigned N/A, NC, D, Pb, OK before and after field visits) will be supplied to the JRC in dedicated tables of the Summary Statistics.

7.5 Capping the parcel retained area to the reference area

7.5.1 As a general rule the area(s) retained for the single payment (SPS, SAPS) should not exceed the maximum eligible area of the corresponding LPIS reference parcel (hereafter called reference area). The Administration will specify in its National Addendum the exact procedure to apply and provide the reference areas in digital form to the contractor.

7.5.2 For each agricultural parcel, the retained area, i.e. the area determined by applying the rules set in Table 2 (and in particular the rules on the technical tolerance), is compared to the reference area of the corre-

sponding LPIS parcel(s). This retained area is kept when it is not greater than the reference area. If this retained area exceeds the reference area, the reference area is adopted. A particular code may be defined to record the cases where this reduction applied (e.g. OKr or C3+r instead of OK or C3+ respectively).

7.5.3 A similar cap applies in the case of a reference parcel containing several agricultural parcels. In particular, when these parcels are declared by different farmers, a proportional reduction of the retained areas may be applied (Cf. Article 28(3) of Commission Regulation (EC) No 1122/2009). In any case the contractor is referred to the instructions of the national Addendum.

7.5.4 However, if the LPIS reference parcel contains several crops eligible for different area-related aid schemes, capping to the LPIS area applies individually for each scheme (cf. Article 56 of Commission Regulation (EC) No 1122/2009).

8 Diagnosis at crop group and application level

8.1 Principle

8.1.1 "Standard" decision rules based on current European or national regulations and applicable to crop groups and applications have already been set up in previous years in co-operation with the Administrations. These rules are summarized in the present chapter and will be adapted, where necessary, taking into account the particular situation of each Member State (Cf. National Addendum).

8.1.2 The rules for the application of sanctions or exclusions are defined at the crop group level (cf. article 58 of Commission Regulation (EC) No 1122/2009 for SPS and SAPS). As a consequence, the most appropriate method for sorting the dossiers to follow up is a diagnosis at the crop group level.

8.1.3 The follow up procedure is at the discretion of the National Administration. The decision to inspect a rejected crop group or dossier in the field rather than summoning the farmer to a meeting or sending a letter informing him his claim will be reduced in conformity with the discrepancy found may depend on the importance of the discrepancy and/or the procedures in place in the Member State. For the SPS crop group, it will also depend on the number of payment entitlements, a data that the contractor may not have. Area thresholds expressed in absolute and/or relative values (ha or %) or monetary thresholds based on the payment in play may be used to decide on the follow-up action. The National Addendum will specify the results and documents to be provided by the contractor, as a function of the diagnosis at crop group and dossier level. A justification of the decision taken at parcel level may also be requested.

8.2 Conformity test at crop group level

8.2.1 For each crop group, the total declared area of the crop group (Dg) will be compared to the total retained area of the crop group (Mg). In practice, the areas declared and retained for all parcels claimed in a given crop group are summed, therefore allowing compensation between over-claimed and under-claimed parcels of the same crop group (if this compensation is allowed in the Member State concerned – cf. National Addendum).

8.2.2 Since, for the SPS crop group, the calculation of reductions and exclusions depends not only on the declared and retained group areas (Dg and Mg) but also on the number of entitlements, the categorisation rules based on Dg and Mg may not be relevant for the SPS crop group. The contractor is referred to the National Addendum for the diagnosis of the SPS crop group (the National Addendum may require the contractor to indicate only the declared and retained group areas, separating between different types of areas eligible for SPS).

8.2.3 The conformity test based on the group declared and retained areas is however valid for the other crop groups i.e. title IV aids (e.g. protein crops, rice, nuts), Article 68 support, SAPS and CNDP.

8.2.4 Sorting of crop groups into Accepts and Rejects

For a given crop group, the following three cases may be encountered:

- A1: The declared area is equal to the measured area (**Dg - Mg = 0**).

- A2: The declared area is less than the measured area (**Dg - Mg < 0**). In this case, the Administration will accept and pay only the claimed group area.
- R: The declared area is greater than the measured area (**Dg - Mg > 0**).

The first two categories are considered as accepted. All crop groups with a declared area greater than the retained area (third category) shall be **rejected.**

8.2.5 Sorting of rejected crop groups into minor and major rejects

As any rejected crop group should be subjected to a follow-up action because it incurs reductions or exclusions, a second test may be performed in order to sort minor and major rejects. This test, which consists in comparing the discrepancy (Dg – Mg) with some threshold to be fixed by the Member State (cf. National Addendum), is useful when the follow-up action varies according to the discrepancy. If the follow up action is the same for all rejects (e.g. letter sent to the farmer and field inspection in case of no reply within a number of days), sorting the rejected crop groups appears as unnecessary.

The thresholds suggested (cf. in Table 4) are those stipulated by the regulation [29] to determine whether a sanction should be applied to a crop group. As already stated in § 8.1.3, the criteria for sorting rejected crop groups into minor or major rejects will be decided by the National Administration.

The follow up actions for minor and major rejects are of the responsibility of the Administration. In particular, if the contractor is requested to establish a diagnosis for the SPS crop group without accounting for the payment entitlements, this indicative diagnosis may have to be recomputed by the Administration before starting any follow up action.

Table 4
Sorting of the rejected crop groups into minor or major rejects

Scheme		**Test**	**Codes for the crop groups**	
		declared – measured crop group areas	**No**	**Yes**
All schemes i.e. SPS, SAPS, coupled payments, SAPS CNDP[30]		(Dg - Mg) > 3% Mg or 2 ha	RMi	RMa

In this table: **Dg** - declared area of the crop group; **Mg** - total retained area for the crop group.

8.3 Categorisation at dossier level

There are three steps in the categorisation of the dossiers: A conformity test; a completeness test; and a final diagnosis per dossier combining the two previous ones.

8.3.1 Conformity test

A dossier is accepted if all crop groups are accepted (i.e. Dg-Mg ≤ 0 for any crop group). Table 5 below summarizes this test for Member States making a distinction between minor rejects (all crop groups are minor rejects) and major rejects (i.e. at least one crop group is a major reject) at dossier level. The proposed coding (DMi and DMa) remains valid whatever the test applied for sorting the rejected dossiers (e.g. fixed threshold in ha or monetary unit). If no sorting is applied (i.e. all rejected dossiers are processed in the same way), the categories DMi and DMa could be amalgamated into one category coded DR1.

[29] Article 58 of Commission Regulation (EC) No 1122/2009 for both SPS and SAPS

[30] The National Addendum should indicate if this sorting applies to CNDP. According to Article 93 of Commission Regulation (EC) No 1121/2009, MS "have to apply appropriate control measures in order to ensure that the conditions for granting of the CNDP are complied with".

For dossiers including the SPS crop group, the categorization (as Accept or Reject and for the Rejects, as minor or major Rejects) will be considered as provisory as long as the payment entitlements will not have been taken into account. This provisory categorization may be used as an indicator of the quality of the application.

8.3.2 Completeness test

8.3.2.1 The purpose of the completeness test is to avoid "accepting" a dossier which has been checked on a too restricted extent due to technical problems, i.e. T codes. In such a case, the dossier is considered as not having been controlled by remote sensing. If the dossier was part of the control sample, it has to be completed it in the field, i.e. field inspected.

8.3.2.2 Once a farmer has been selected for a remote sensing control, at least 50% of the parcels for which he requests aid shall be checked, "provided that the sample guarantees a reliable and representative level of control in respect of area checked and aid claimed" (Article 33 of Commission Regulation (EC) No 1122/2009).

8.3.2.3 A dossier will be categorized as "complete" if the percentage of parcels with T codes with respect to the claimed parcels is lower than 50% (Cf. Table 5). The assessment of the representativeness of the sample of parcels checked in terms of area and aid claimed is left at the discretion of MS. A possibility could be to request that at least 80% of the total claimed area and at least one parcel per crop group should be checked.

Table 5
DOSSIER level tests

Input	**Test**	**Dossier conformity test**	Dossier codes	
			Yes	**No**
The whole dossier	**D1**	All crop groups accepted (Dg-Mg ≤ 0) ?	**DA1**	
		If at least 1 crop group is rejected, dossier is rejected Are all rejected crop groups coded RMi?	**DMi** All rejected groups are RMi	**DMa** at least 1 rejected group is RMa
Area retained for:		**Dossier completeness test**	Dossier codes	
			Pass (complete)	**Fail** (incomplete)
the whole dossier	**D2**	(# of parcels with T codes) / (# of claimed parcels) ≤ 50% (and total retained area of T coded parcels / total retained area < 20% and at least one parcel per crop group)	**DC**	**DI**

8.3.2.4 In order to improve the efficiency of the control, applications sharing a reference parcel with any application from the control sample may be included (Cf. National Addendum). This recommendation is valid for any type of OTS check (physical inspection or CwRS), and particularly for checking joint cultivations, but is probably easier to apply in CwRS than in physical inspection. Such *"ancillary" applications* are likely to be incomplete and should hence not be completed in the field, in contrast with the applications from the control sample. However, although very partially checked, these applications could be rejected on the basis of irregularities found on the parcels checked.

8.3.3 Final diagnosis at the dossier level

8.3.3.1 The final diagnosis summarizes the diagnoses of the conformity and completeness tests at dossier level. Table 6 below proposes a general diagnostic code per dossier and describes a possible follow-up action to be undertaken for rejected crop groups[31] or incomplete dossiers. It is reminded that incomplete dossiers that were part of the initial control sample have to be completed in the field. In some Member States, the contractor may be in charge of the RFV necessary to complete the dossier (Cf. National Addendum).

8.3.3.2 The general diagnostic code proposed takes account of the distinction between dossiers rejected for minor and major discrepancies. If such a sorting is not used, the diagnostic codes can be simplified (e.g. DR7 and DR8 for rejected complete and rejected incomplete respectively).

8.3.3.3 Whatever the diagnosis at dossier level, Member States may decide to manage parcels outside tolerances by appropriate administrative procedures, in particular if the anomaly originates from the LPIS.

8.3.3.4 A dossier categorized as incomplete will be counted and paid to the contractor if it has been processed and photo-interpreted normally. It neither will be counted nor paid if it appeared incomplete before the digitization and the photo-interpretation.

Table 6
Final diagnosis at the dossier level

Test	Conformity	Completeness	Code	Conclusion
D5	Pass	Pass (complete)	**DA5**	Dossier accepted by remote sensing
D6	Pass	Fail (incomplete)	**DI6**	Dossier not controlled with Remote Sensing; the parcels which have caused the dossier to be incomplete are verified in the field
D7	Fail due to small discrepancy only (DMi)	Pass (complete)	**DR7p**	Dossier "rejected"; all the rejected crop groups being RMi (cf. Table 4), an appropriate administrative procedure may be used to notify the farmer of the correction
D8	Fail due to small discrepancy only (DMi)	Fail (incomplete)	**DR8p**	Dossier "rejected"; the parcels that caused the dossier to be incomplete are verified in the field; the opportunity can be taken to check rejected crop groups (in case no appropriate administrative procedure has been applied)
D7	Fail due to large discrepancy (DMa)	Pass (complete)	**DR7f**	Dossier "rejected"; an appropriate administrative procedure may be used to notify the farmer of the correction, but usually the rejected crop groups are verified in the field
D8	Fail due to large discrepancy (DMa)	Fail (incomplete)	**DR8f**	Dossier "rejected"; both the rejected crop groups and the parcels that caused the dossier to be incomplete are verified in the field

[31] This follow up may not apply to the SPS group if payment entitlements have not been taken into account for establishing the diagnosis

9 Administrative organisation

Sections 9 to 12 below are left in case MS would like to use them for their own ITT. As from 2010, only the VHR orthorectified images should be delivered to the JRC (see 9.5.3).

9.1 Field inspections (by the Administration)

9.1.1 The field inspections that will be made to rejected dossiers after photo-interpretation (if such is the strategy of the Member State) are not the subject of the present Technical Specifications.

9.1.2 The National Addendum will describe the field documents required to carry out these field inspections.

9.1.3 If needed, priority of processing will be given to dossiers from areas where there is an early harvest so that field inspections can start earlier. In certain cases, a deadline may be decided when the photo-interpretation will start whatever the number of images received. Also, dossiers where area problems have been found or where technical problems that might prevent a correct categorisation have already been identified may be returned in anticipation to the Administration. The contractor will adapt his work schedule to these conditions and the choices and deadlines of the Administration (Cf. National Addendum).

9.1.4 It may also be agreed with the Administration that the contractor should return in anticipation all applications where there is evidence of errors in parcel area, together with field documents for the surveyor that highlight the problem. This may help the Administration to begin field inspections earlier, without having to wait for land use determination. In this situation it is necessary to decide with the Administration whether or not to continue with the photo-interpretation of these dossiers.

9.1.5 The Administration may require field documents to be produced for a sample of accepted dossiers, as a supplementary quality control (Cf. National Addendum).

9.2 Work calendar

Indicative dates of the work calendar are given in Table 7. This calendar may differ between and within Member States, from one agricultural region to another.

For the interim report, the final report and satellite image return (which are all deliverables to JRC) the indicated dates are fixed. In case the contractor is not able to keep one of these dates, a justification, approved by the Administration, explaining the delay and indicating the new delivery date, should reach JRC not later than 10 days before the expiry of the deadline.

Table 7

Provisional work calendar for campaign n

15.09 (year n-1)- 15.01	selection of control zones
01.01 - 01.05	Selection of contractor and signature of contract
01.04 - 15.06	receipt of digitized declarations of sample to control
01.05 - 30.06	ground data collection
15.06	interim report deliverable to Administration (if requested) ~~and JRC~~
20.06 - 15.09	delivery of interpretation results and control documents
15.10	final report deliverable to Administration (if requested) ~~and JRC~~
Before 01.12	Return of all supplied satellite data to JRC

9.3 Meetings

9.3.1 The contractors must provide for one meeting at their own expenses, to be held with the Commission and the Administration during the contract, either at the JRC, Ispra, or in Brussels.

9.3.2 Regular progress meetings (at intervals to be agreed) will also be organized with the National Administration, though not necessarily with the participation of the Commission. The contractor will be responsible for his travel costs.

9.4 Quality control

9.4.1 It is important that the contractors implement quality management in their procedures. An internal quality assurance is required from the contractor (e.g. resulting in Quality Control Records). In his interim report, the tenderer shall include a description of such internal quality assurance and its outputs, which he expects to put in place at each stage of the work at his premises and also at the sub-contractor's premises (if relevant).

9.4.2 The **external** quality control of the contractor's work, which was formerly carried out by the Commission on one control zone per contractor, has been the responsibility of the Member State as from the 2006 campaign. On request the Commission will support the National Administration for the setting up of a similar system.

9.4.3 As from 2009, the JRC stopped requesting quality control data over one control zone per contractor. A similar set of data (i.e. LPIS and interpreted vectors, orthorectified imagery, orthorectification Quality Control Records (QCRs), declaration data, measured and retained areas at parcel level) may however be requested for specific studies to prepare the technical visits to the Member States. During these visits, the whole CwRS methodology from dossier selection to follow up of CwRS results may be reviewed. CAPI of a sample of parcels may also be re-performed on the contractor's system.

9.5 Deliverables

The contractor shall deliver the following documents:

9.5.1 To the Administration on dates to be agreed taking into account § 9.1:

9.5.1.1 Alternative "a": Control results by dossier:

- a list of dossiers by geographical unit and by category (accepted or rejected, complete or incomplete), with reason(s) and the level of completeness;
- for each dossier, the results by parcel (category, both declared and found area and land use, technical code given, and possible remarks);
- for the applications with at least one "rejected" crop group, a folder prepared for the field inspector which will contain:
  - a geometrically corrected "imagette" made from the most precise image (e.g. VHR ortho image) at a scale and format to be agreed with the Administration (e.g. 1:10,000 scale at DIN A4), with delimitation of the boundaries, indication of the reference of each parcel and those subsidized (or to be verified);
  - if required, a large-scale cartographic document, possibly transparent and that can be superimposed on the imagette (to be agreed with the administration), enabling the field worker to navigate to the parcels easily;
  - a table giving comments per parcel.

OR

9.5.1.2 **Alternative "b"**: Control results **by "geographic unit"** (section of commune, map sheet, block of adjacent parcels, etc.):

- for rejected dossiers, alphanumeric documents containing the parcels within the section as for the first two indents of alternative "a";
- for all sections containing parcels of dossiers judged as rejected, a folder for the field inspector should be included, as alternative "a", but for example in DIN A3 format and covering the whole section. All declared parcels should be included and those subsidized (or to verify) should be flagged;
- a table containing all declared parcels in the section and a comment for all parcels of dossiers judged as rejected.

9.5.1.3 Member States will indicate their choice of alternative "a" or "b". The delivery of control documents in batches is recommended, in order to spread out the workload of the inspectors.

9.5.2 To the Administration, no later than the 31.12.2011 (Cf. National Addendum):

- return all documentation supplied by the Administration (original or copies of the declarations, etc.);
- all the documents purchased or produced for the contract and paid for (photos, maps, ortho-images, forms, etc.);
- all data base files developed during the contract, in the format agreed with the Administration;
- all digitized parcel vectors files along with attribute files containing field information and topology (format to be agreed with Administration);
- a copy of the flight plan and the aerial photographs used for the control (raw and/or processed and scanned).

9.5.3 In accordance with the VHR and HR Image Specifications for the CwRS Programme all source imagery used by the contractors is automatically harvested by the EC Services. The HR imagery is semi-automatically orthorectified by the EC Services so there is NO need to return orthorectified HR data, while the **VHR orthorectified imagery must** still **be returned** to the EC Services at JRC, Ispra no later than the 01.12.2011.Please follow carefully the instructions given in above references.

9.6 Documents to receive

The documents, dossiers and images to be delivered to the contractor have been described above.

After the on-the-spot checks or other follow up action, the Administrations may supply, if necessary in batches, feedback on the findings made by the Administration for all verified dossiers (see § 9.1). In such a case, these results will be available at a date and in a format to be agreed with the contractor. If specified in the National Addendum, the contractor will compare their results with those of the Administration in the final report. Any conflicting evidence will be discussed.

9.7 Progress reports

The contractor will provide to the Administration, at the end of every month, from the contract notification until the end of the work, a short progress report (in the national language). It should show an updated work schedule and a summary of the documents, maps, files, dossiers, images, aerial photographs, etc., received, produced and/or delivered and the volume of data processed.

9.8 Reports

The National Addendum will specify the number of report(s) to be delivered by the contractor to the Administration. These reports will be subjected to cross-examination before approval. If some part of the work is unfinished or some results are not available at the final report deadline, the report will be delivered at the fixed deadline and an addendum will be provided later.

9.8.1 **Interim report if required by the National Addendum: Printed version:** number of copies to the Administration as required in the National Addendum ~~and one copy to the JRC~~. **Digital version:** one copy to the Administration~~, and one to the JRC~~.

The report shall contain:

- overview of methodology and possible revisions;
- analysis of decision rules, tolerances, techniques and adaptations;
- definitive organisational plan, work schedule, personnel, material, detailed hard-and software description, division of work between partners;
- description of the internal quality assurance set up by the contractor;
- organisation of the ground data collection;
- draft field document for field inspectors;
- present work position and rate of progress;
- revised work schedule indicating actual work progress relative to the planned one.

The Administration may decide, before the beginning of the work, not to require this interim report. In that event, it will deduct its cost from the contract price.

9.8.2 **Final report (by 15.10.): Printed version:** number of copies to the Administration as required in the National Addendum~~, one copy to the JRC if the report is available in digital form, otherwise 2 copies~~.
Digital version: 1 copy of the report to the Administration~~, and 1 copy of the report to the JRC~~.

The report shall contain:

- A summary in English and in the national language;
- a synthesis and update of the interim report;
- a critical assessment of the initial methodology, adaptations (justifying the changes if relevant) and results obtained;
- expected and actual calendars, and discussion of the delays if relevant;
- division of work between partners or sub-contractors;
- detailed analysis of the quality of reference documents: applications, databases given to the contractor, etc.;
- detailed analysis of the remote-sensing and field checks results, synthesis, and discussion of the differences;
- examples of field documents;
- analysis of the different types of:
  - farms (size, mean area, number of parcels, etc.);
  - irregularities and their frequency and areas concerned;
- synthesis of the average difference between data declared and measured;
- analysis of the precision of measurements and the tolerances used;
- analysis of the ground data results;
- proposals for simplifying and improving the methodology;
- analysis of the duration of work and actual costs;
- analysis forms/tables prepared by ~~the JRC and~~ the Administration.

9.9 Archive

9.9.1 The contractor shall keep, at least until **31.12.2012** for possible audits, an archive of the main databases having led to the categorisation delivered to the Administration, for all dossiers processed: alphanumeric and vector databases (with attributes), digital maps and processed images. He shall ensure for the same period the capacity to extract the necessary data from the database and to print the documents referred to in the next paragraph, and the protection of the data. This date could be postponed, after agreement with the Administration, for a defined period (e.g. for 1 year) and price.

9.9.2 If needed and for some dossiers still unresolved, the Administration may require the contractor, during the storage period, to print documents analogous to those described under § 9.5.1, containing colour (except for black-and-white data) imagettes from all images or aerial photographs having been used to categorize these dossiers.

9.9.3 The tender will include, as an option, one or several price proposals:

- possibly, to keep this archive beyond 31.12.2012;
- the price per dossier to print documents as described above.

9.10 Penalties applicable to the contractor

9.10.1 Errors of Interpretation

The final purpose of Control with Remote Sensing is ensuring that applications are correctly checked. Contractors should make sure that their operators are appropriately trained to perform CAPI and use the technical codes adequately. National Administrations are entitled to apply penalties in case important or systematic errors of interpretation are discovered during their quality control (Cf. National Addendum).

9.10.2 Delays

Unless agreed beforehand by the parties involved, there may be a penalty of 0.2 % of the contract value for each working day of delay relative to the date agreed for the delivery, either of the control documents mentioned in § 9.5.1, or the reports mentioned in § 9.8. The delivery dates will be fixed referring to the reception date of the dossiers to process or of the last image used. These penalties are all cumulative. The late delivery of only a part of the work will be penalized *pro rata*. If the delays are not due to

the contractor the corresponding dates will be postponed. However, sub-contractors failings may not be invoked.

10 General recommendations

10.1 Groups of contractors are allowed to submit a tender or to negotiate without having to assume a particular legal form. In this case the persons responsible for the main phases of the work should be mentioned, and their qualifications indicated. Any company awards or certificates obtained (e.g. ISO 9000 series) should be mentioned.

10.2 The tenderer is committed by all terms of his tender: price, methodology, personnel, sub-contractors, working places, software, etc. He may not change it substantially after having lodged the tender or during the contract life, except if the procedures applicable to the public contracts are respected and the Administration agrees.

10.3 The successful tenderers will be invited to sign a contract with the Administration concerned, referring to these Technical Specifications. The tenderer will ask for information from the Administration, on the particular conditions applicable to the public works contracts of the type referred to by the present call for tender. The principal contractor shall furnish the Administration with a copy of the agreements with their partners (and/or sub-contractors).

10.4 Due to the sensitive nature of the work and the access to confidential documents, close collaboration between the contractor and the Administration services is absolutely necessary. The contractor must therefore propose staff who speak the national language(s), and are based in the Member State concerned in each offer. The tenderer must keep these authorities up to date on the progress of work, and on the basic techniques being used so that those authorities can, in return, provide the information that the contractor needs and understand why it is needed. In particular it is in the contractor's interest to warn the authorities of any difficulties that arise, to propose appropriate solutions, and to settle any differences of interpretation as soon as possible.

10.5 The administration of the contract will be coordinated jointly by the Administration and the JRC. More precisely, the main responsibilities will be divided as follows:

- the Administration will sign the contract and receive all results, approve all reports received from the contractor and manage the financial aspects of the contract;
- the contractor will be responsible, to the Administration, for all obligations ensuing from the present Technical Specifications and the resulting contract;
- the JRC will provide the satellite images, participate in the technical evaluation of the work and, as far as necessary and possible, provide a technical support to the Administration and the contractor.

10.6 The Administration and the Commission will each be, insofar they are concerned, the owners of all the results of the work. Any use or publication of the results will be subject to their prior agreement.

10.7 A **compulsory addendum**, containing special requirements or additional national provisions, should be requested from the awarding Administration in each Member State of interest for the tenderer. Furthermore, the information given in Annex 1 may have changed since the publication of the call for tender. Before submitting the tender, the tenderer is invited to verify with the Administration concerned, that his assumptions in terms of alternatives, number of zones and dossiers, etc. correspond well with the position of the Administration.

11 Technical offer

11.1 Presentation rules

11.1.1 Various **alternatives** have been suggested (for example §§ 5.2, 5.3 , 9.5.1 etc.), for which the tenderer will have to make a choice, in line with the details given in the National Addendum. Additional **options** that are not mentioned in these specifications can also be proposed. In such cases, a comparison with a standard method will always be made. Only options that are directly operational and productive, without risk of compromising parts of the checks and with costs competitive to previously tested solutions, will be considered.

11.1.2 The availability of adapted and powerful software in order to carry out the work is a vital pre-condition for success. As a consequence, this aspect will be one of the essential selection criteria. The proposal shall provide full details on the software used and for what part of the work it is intended, by whom it has been developed, whether it has already been used for similar work and for how long, what is the tenderer's experience, whether previous versions will be adapted, if options are available, etc.

11.1.3 All proposals prepared in reply to this call for tender will be submitted using the standard format given below, in order to ensure easy comprehension and objective comparability. The tenderer is invited to discuss in detail all the elements which will enable him to automate the control process, and which will affect the categorisation quality and unit cost of the dossiers to check.

11.1.4 If the tenderer already has collaborated with the Administration concerned in the framework of the control or has already submitted tenders in previous years, he is advised to facilitate the reading of the tender by highlighting what is new in the proposal for 2011.

11.2 Contents

11.2.1 General information:
- name of the tenderer(s). Contact address and person responsible;
- summary of the tender;
- compliance matrix and indication of where to find the answers to the various prescriptions of the Technical Specifications;
- general analysis of work, demonstrating a knowledge of the European and National regulations, local conditions, national application system under the IACS, contents of the applications which will be checked, and experience of working with the Administration responsible for the IACS.

11.2.2 Detailed description of the methodology:
- discussion and justification of the basic choice: satellite and/or aerial photographs;
- if relevant, complete technical appraisal of the aerial photography;
- analysis of the geometric and radiometric corrections and proposal;
- references and discussion of the use of radar data;
- proposed technique to create links between the declared data and the LPIS parcels;
- analysis of the working timetable and "bottlenecks";
- ground data collection;
- validation of the parcel limits and area calculation;
- detailed study of automatic classification and photo-interpretation; description of training (software and personnel), photo-interpretation keys and examples of the proposed method;
- possibly, organisation of the rapid field visits (§ 5.3);
- methodology for the reference years checks;
- proposal for documents to be delivered to the Administration (for accepted and rejected dossiers).

11.2.3 Personnel and materials available
- if relevant, precise distribution of work between partners or subcontractors and justification of subcontracting, share of the work planned for each partner (in per cent of the total price); written agreement between all the partners for the tasks allotted;
- personnel, precise tasks and qualifications;
- number of teams, number of persons per team, number of shifts planned for the various phases of the project. Estimate of the total number of dossiers processed each day/shift with the full team: (1) digitization and photo-interpretation of the parcels; (2) field document production;
- location(s) where the various phases of work will be carried out. If this will be carried out in several zones simultaneously, means provided to guarantee the homogeneity of the results;
- processing facilities available, specifying: (1) hardware and software proposed for the main tasks; (2) capacity installed; (3) whether it is already available, or to be acquired or developed; (4) level of experience already acquired; (5) precise location (town, country, if several workplaces);
- summary of materials already available: images, aerial photographs, maps, etc.

11.2.4 Project management:
- general organisation, production chain, co-ordination, internal meetings;
- management and training of permanent and temporary staff;
- relations with the Administration.

11.2.5 Timetable (taking into account the fact that the precise location of the zones is not disclosed):
- dates ("acquisition windows") proposed for acquisition of satellite images or photographs;
- dates proposed for archive images (reference years control);
- detailed timetable for the various phases of the work;
- provisional timetable for delivery of the results.

11.2.6 Internal quality assurance:

Description of the internal quality assurance to be put in place at each stage of the work and for each sub-contractor (if relevant).

11.2.7 Confidentiality:

The confidential nature of this work is of paramount importance. Confidentiality must be guaranteed for the farmers' applications, the control zones, the image acquisition dates and the results of checks. A detailed explanation of the tenderers data protection measures must feature in the proposal.

11.2.8 Possible options:

If the tenderer wishes to present additional options, he will:
- describe in detail and justify his proposition;
- analyse the effects as regards results, timetable, simplification of work and costs;
- compare it with a standard method of the specifications.

11.2.9 Agreements
- the tenderer's agreement to carry out the work, duration of validity of the offer;
- accept the possible external quality control and the consequences that may ensue therefrom;
- agree to the confidentiality and measures provided to ensure this;
- status of the person authorized to sign the tender, date and signature of tender.

11.2.10 Companies and personnel:
- description of all the participating companies, references since 2003 relevant to the work;
- number of permanent personnel members at the date of the tender, by principal category, and if relevant, by partner;
- if applicable, ISO certifications or others and date of obtaining;
- curricula vitae of the participants, with the description of their responsibilities.

11.2.11 Summary tables

These tables may be used to evaluate the tenders. The tenderer should check carefully that he has completed the tables, that all figures match and that all information provided in the tables is consistent with that of the full proposal. There are two sets of tables to complete:
- a technical summary of the proposal (see Annex 2);
- a financial summary of the tender (see Annex 3).

12 Price proposal

12.1 A summary of the tender will be supplied as set out in Annex 1 (technical part) and Annex 2 (financial part).

12.2 Tenders may be made for several lots, so long as the pricing of each is distinct. The equipment and methodology may differ from one lot to another, but must remain homogenous within a lot. However:
- the proposed satellite or aerial data may differ from one control zone to another, but the resulting price difference should clearly be shown;
- where the Member State imposes different techniques according to the zones, each group of zones using the same technique will constitute a separated lot.

12.3 If the tenderer already possesses materials or earlier work and can use them free of charge, this should be mentioned in the tender so as to avoid misinterpretation of the costs put forward. In all cases, the offers will exclude the cost of standard level satellite imagery, which are bought directly by the Commission but will include in detail the cost of processing the images following the different options to be chosen. Con-

versely, the price of aerial photography and processing will always be included in the proposed price, except if they are free.

12.4 Each stage of the work shall be identified and priced separately. Furthermore, the offer will distinguish between fixed and variable costs with the principal items detailed for both of these groups.

Fixed costs are those that do not vary directly with the control of individual applications. They in turn can be divided into base project costs (management, meetings, equipment, training, salaries, etc.), and fixed costs per zone (image processing, ground data collection, etc.). The price of topographic maps will be considered as fixed if their use is general, and variable if they are used for individual dossiers. The tenderer will list what he considers as fixed and variable cost in his tender, respectively.

12.5 The variable prices will be calculated with a series of parameters, either imposed in the National Addendum, or to be proposed in the tender. In both cases, they must be presented in Annex 2. These parameters are explained below.

12.5.1 The control "*method*" to be used in the various zones will be codified in the following way:

M1	control zone with satellite images only
M2	zone with satellite images and 2009 aerial photographs
M3	zone with satellite images and archive aerial photographs
M4	zone with aerial photographs only and rapid field visits
M5	zone with satellite images and rapid field visits
Mx	zone with other method, to be defined

12.5.2 The following parameters will be defined in the National Addendum:

NSM1, NSM2, .., NSMx	number of zones with methods respectively M1, M2, ..., Mx
NDM1, NDM2, .., NDMx	number of dossiers respectively in zones with methods M1, M2, ..., Mx
NDD	number of dossiers to be input (if relevant)

All these parameters will be adjusted if necessary at the completion of the contract, in order to obtain the final price.

12.5.3 The following parameters in principle depend upon the lack of optical images:

NSR	number of zones where radar images will be used
NDR	number of dossiers with radar controls

12.6 The tender shall also include the following unit prices, these may not be changed after the tender submission:

FP	**base** fixed costs for the project
FR	**additional** fixed costs for the use of radar images (if relevant)
CSM1, CSM2, ..., CSMx	fixed costs **per zone** with methods respectively M1, M2, ..., Mx
CSR	additional fixed costs **per zone** where radar images will be used
CDM1, CDM2, ..., CDMx	variable costs **per dossier** in zones respectively M1, M2, ..., Mx
CDR	additional variable costs **per dossier** in zones with radar images
CDD	additional variable costs **per dossier** to be input

12.6.1 In case different categories of applications or subsidy schemes (Cf. § 6.7) must be checked by the contractor (Cf. National Addendum) separate unit prices, one for each dossier type, may be proposed. In that event, a weighted average price ("CD") shall be calculated. This is not necessary if a single lump sum is proposed for all types. The assumed distribution between the different types will take into account all available information, notably the possible absence of certain types in the Member State considered.

12.6.2 If the prices per dossier type are differentiated, a rule for adjusting "CD" may be provided for if the final type weight differs with more than 5% from that anticipated. If sensible differences are envisaged between zones in respect of the type weight and if different methods are used, the weighting per zone

("CDMx") shall be adapted, taking into account the various methods and dossiers types. In that event, the calculation formulas used shall be provided.

12.6.3 Some of the prices defined above may be zero, if the corresponding task is not performed or is not charged. All non-relevant parameters and prices will be set to zero.

12.7 The contract **base price** will be calculated with the following formula. After the completion of the work, it will possibly be adjusted if some adaptable parameters have been modified.

Base price = FP
+ CSM1*NSM1 + CSM2*NSM2 +... + CSMx*NSMx
+ CDM1*NDM1 + CDM2*NDM2 + ... + CDMx*NDMx
+ price of the aerial photography, if applicable.

12.8 The possible **supplements** will be calculated in the following way:

Supplements = FR
+ CSR*NSR + CDR*NDR + CDD*NDD + options + alternatives.

12.9 Each price proposal (see annex 2, G.3), will mention at least the *average unit* price for:
- input one dossier (see §§ 4.1.4, 4.1.5);
- one field document to be handed over to the inspector;
- one "rapid field visit" for an individual dossier (if relevant).

12.10 If necessary, the number of dossiers to be processed ("ND") will be modified by the Administration before the signature of the contract. This number however will never be less than 0.50 "ND" or more than 1.50 "ND", unless otherwise specified in the National Addendum. Also the contract may specify that, if the Administration is obliged to alter, or the contractor is unable to process, the expected number of dossiers, a price adjustment will be made based on the actual number processed.

12.11 The Administration may also require in the National Addendum several proposals following various hypotheses: different number of zones or dossiers, alternative techniques, etc. In that event, several columns with different prices should be given in Annex 2 F.

12.12 If options are proposed, the cost of each must be indicated with precision. Especially, if the tenderer wants to submit two offers, using satellite or aerial photography respectively, he will then propose separate prices, i.e. several Annexes 2.

12.13 Independently from the principal one-year tender, the tenderer shall also propose a price for the following two years, thus allowing the Administration to choose between one-year and multi-year contracts.
- These multi-year prices will use a current price indicator (salaries, currencies, inflation, etc.), also giving, where appropriate, a correction factor for the anticipated changes in this indicator;
- the prices will be divided between fixed and variable costs;
- the rate and period of paying-off will be clearly identified.

12.14 The tenderer is expected to have sufficient knowledge of the country for which he presents an offer: structure of control services, availability of topographic or cadastral documents, regionalisation plans adopted, average size of the farms etc. If price reservations are made (e.g. on the number of fields or cadastral maps needed to cover a farm, the complexity of the declaration or the regionalisation plans, etc.), the necessary parameters should be attached, in order to allow the Administration to recalculate the tender price corresponding to the final figures. However, a price in standard conditions must always be given in Annex 2.

12.15 If any part of the offer implies the payment of Value Added Tax (VAT) or other taxes, this shall be specified separately, so that if necessary it can be reimbursed.

12.16 Depending on the National rules, payment shall be made, for example in four instalments, corresponding to the contract signature, on approval of each of the two reports referred to in § 9.8, and after delivery of the documents described under § 9.5.2. The first payment may be subject to a performance guarantee issued by a bank or official institution for the benefit of the Administration. This guarantee will cover the advance payment and should be valid until 31.12.2009. If no interim report is delivered, another milestone may be agreed.

ANNEX 1: TECHNICAL SUMMARY OF THE PROPOSAL

Member State	
Name of principal tenderer:	Name and function of the person responsible:

Contact Address Phone: Fax: E-mail

Associated Companies	Project Responsibilities	% of price	Person principally responsible

Location of the principal tasks (give details for each partner or sub-contractor)		
Tasks	Location of performance (city, country)	Person principally responsible

A. TECHNICAL PERSONNEL

	Name	Qualifications
Project Manager		
Technical Manager		
Persons responsible from sub-contractors or partners		

N° of employees	Management	Computer	Field Work	Digitization	Photo-interp	Other
permanent: actual						
to be recruited						
temporary: actual						
to be recruited						

B. METHODOLOGY

Dossiers Analysis	
Basic choice: satellite and/or aerial photos. In the latter case, please give details:	
Documents for parcel location (type, scale):	
Level of pre-processing and geometric correction for satellite images and aerial photographs:	
Maps and DTMs for geometric correction (type/scale, average date):	
Expected precision for geometric corrections (metre):	absolute relative
Ground Data Collection Method:	
Processing (CAPI and/or classification):	Place (city, country) if part of CAPI is subcontracted
Description of the rapid field visits, if relevant:	

C. COMPUTER EQUIPMENT

SOFTWARE for the project	Installation place (city, country)	Installed (name & version number)	Years of experience	Proposed (if different)
Operating System(s):				
Database:				
Image Processing:				

Software (contd.)	Installation place	Already installed	Years of experience	Proposed
GIS:				
Management/ Diagnosis:				

				number	
HARDWARE	Type	% for the project	location (city, country)	already installed	to be bought/ leased
Computers					
Printers					
Ancillary hardware (e.g. GPS, digital camera…)					
Security and back up strategy					

Network details (e.g. ftp):	

Number of dossiers processed per normal work day (1 shift) and for all the team available			
Dossiers digitized per day:	Dossiers photo-interpreted per day	dossiers per photo-interpreter/hour:	number of shifts per day:

D. MISCELLANEOUS

Summary of possible options and variations with reference to § 12.3:
Other relevant points:

ANNEX 2: FINANCIAL SUMMARY OF THE PROPOSAL

(A) Currency:	(B) VAT Percentage if applicable: %

(C) Definition of some elements used in the formulas below	
(C.1) Dossiers types	
(C.2) Zones/Methods	
(C.3) Other costs included in the **base** proposal (see E.4 below)	

(D) **Assumptions as per § 12.6.1, and the associated number of dossiers**

	General	Simplified	Forage	Others	...	Total
Number of dossiers of different types						
Unit variable cost per dossier						
Total cost for all dossiers						
Average cost per dossier (=CD)						

(E) **Calculation of base proposal price**

(E.1) Fixed costs for the project, VAT not included (= FP)	

(E.2) Fixed costs per zone (base proposal, VAT not included)

Method	M1	M2	M3	M4	M5	...	TOTAL
Fixed costs per zone (= CSMx)							
Number of zones (= NSMx)							
Total cost (= CSMx*NSMx)							

(E.3) Variable costs per dossier (base proposal, VAT not included)

Code for the different zones	M1	M2	M3	M4	M5	...	TOTAL
Cost per dossier (CDMx)							
Number of dossiers (NDMx)							
Total cost (= CDMx*NDMx)							

(E.4) Other costs to include in the **base** proposal price (following C.3 above)	

(E.5) **Total cost of base proposal** (= E.1 + E.2 + E.3 + E.4)

	VAT not included	VAT	VAT included
Total price for base proposal			

(F) **Details of base proposal price** excluding VAT

(if necessary for different hypotheses, see § 12.11)

	Cost of the hypotheses applicable		
(F.1) **FIXED COSTS** (overall and per zone)	hypothesis 1	hypothesis ...	hypothesis ...
Set-up of the project and general management:			
Computer (1) hardware: (2) software (bought or developed):			
Maps and DTM bought:			
Aerial Photographs (if applicable) (1) flight: (2) processing and scanning:			
Geometric and radiometric corrections (1) satellite images: (2) Aerial photography (if applicable):			
Automatic classification:			
Ground Survey:			
Average fixed personnel costs:			
Meetings			
Interim report			
Final report			
Other fixed costs:			
TOTAL FIXED COSTS:			
(F.2) **VARIABLE** COSTS (per dossier)			
Preliminary checks of dossiers on arrival			
Maps bought for the dossiers (field location):			
Boundary validation and Photo-interpret. (CAPI) :			
Production of on-the-spot control documents:			
Rapid field visits (if relevant):			
Categorisation and preparation of results:			
Variable costs for personnel (not included above):			
Other variable costs:			
TOTAL VARIABLE COSTS:			
(F.3) **TOTAL COSTS OF BASE PROPOSAL, excluding VAT**:			
VAT			
(F.3) **TOTAL COSTS OF BASE PROPOSAL, including VAT**:			

(G) **Price proposal for possible supplements**, excluding VAT

(G.1) Radar images	FR	CSR	CDR
Costs excluding VAT			

(G.2) References	CSH1	CDH1
Costs excluding VAT		

(G.3) Costs excluding VAT, **per dossier** (see § 12.9)			
Input of 1 dossier (CDD)	digitization of the limits of 1 dossier	1 field control document	rapid field visit for 1 dossier

(G.4) Other additional costs	Unit price
to keep the archive beyond 31.12.2009:	
to print **one** complete colour dossier:	

(G.5) Other possible options or alternatives	Unit or total price (specify)

(H) **Multi-year base proposal**, excluding VAT (see § 12.9)

	year 1	year 2	year 3
Base fixed costs			
Fixed costs per zone			
Variable costs			
Total without options, constant 2009 prices:			
assumption of annual price change retained (inflation, salaries, etc.), in per cent:		%	%
Total without options, variable prices:			

Date:	
Name and Signature:	

(End of document).