EUROPEAN COMMISSION
DIRECTORATE GENERAL JRC
JOINT RESEARCH CENTRE - ISPRA
Institute for the Protection and Security of the Citizen
Agriculture and Fisheries Unit

JRC IPSC/G03/P/HKE/hke D(2005)(5038)

Ispra, 03 December 2005

ITT no. **2005/S 233-229332**

COMMON TECHNICAL SPECIFICATIONS

FOR THE 2006 CAMPAIGN OF

REMOTE-SENSING CONTROL OF AREA-BASED SUBSIDIES

Pre-amble

This document describes the common technical specifications for the 2006 campaign of the remote sensing control of agricultural area-based subsidies (referred to as "remote sensing control" or, simply "control"). The document has been prepared by the European Commission (Joint Research Centre, JRC) in close collaboration with DG AGRI and the awarding Administrations in the participating Member States.

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, options 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 25: in addition to the Single Payment Scheme (SPS) which will be applied with different models and variants in 15 Member States, the Single Area Payment Scheme (SAPS) is applied in 8 of the new Member States while the remaining 2 (Malta and Slovenia) apply the classical "coupled payments" scheme. 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 2005). It is the bidder's responsibility to be aware of other general or specific regulations in the respective Member States that are applicable at the time of control.

Bidders are informed that Technical Recommendations regarding the different phases of the work are issued by the Commission every year in April. For information, the 2005 Recommendations are available on the JRC website (http://agrifish.jrc.it/marspac/CwRS/).

The role of the Commission in the procurement procedure to which this document relates is strictly restricted to the technical support required to compile this document and in the coordination of the common publication. The selection, award and follow-up of any contract following from this open procedure is the sole responsibility of the awarding authority in the respective Member States as published in the Official Journal of 3/12/2005 2005/S 233-229332 (http://ted.publications.eu.int/official/). 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 2006 to control at least a part of the subsidies for the agricultural areas funded by the EAGGF. 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 following Member States participate in this Invitation to Tender: Cyprus, Germany (5 Länder: Baden-Württemberg, Hessen, Mecklenburg-Vorpommern, Schleswig-Holstein, and Bayern), Greece, Portugal and UK Wales**.** On the other hand, all other Member States and new Member States using remote sensing will follow these common Technical Specifications, but in a multi-annual programme that is not concerned by the present ITT. Austria, Finland and Luxemburg will not participate in the programme for the 2006 campaign. The volume of work and requirements specific to each participating Member State are described in Annex 1 and in the "National Addendum" (see § 8.7).

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. 1782/2003 and Commission Regulation (EC) No. 795/2004 laying down detailed rules for the implementation of the **Single Payment Scheme**.

  Commission Regulation (EC) No. 1973/2004 laying down detailed rules for the application of Council Regulation (EC) No. 1782/2003 as regards the **support schemes** provided for, as follows:

  - Chapter 2 - Specific quality premium for durum wheat;
  - Chapter 3 - Protein crop premium;
  - Chapter 4 - Crop-specific payment for rice;
  - Chapter 5 - Area payment for nuts;
  - Chapter 6 – Aid for starch potato;
  - Chapter 8 - Aid for energy crops;
  - Chapter 9 - Specific regional aid for arable crops;
  - Chapter 10 – Seed aid;
  - Chapter 11 - Arable crops area payment;
  - Chapter 13 - Forage areas with regard to stocking density requirements;
  - Chapter 14 – Single Area Payment Scheme;

- Chapter 16 – Use of land set-aside for the production of raw materials;
- Chapter 17 – Hops area aid.
- Chapter 18 – Crop specific payment for cotton.
- Chapter 19 – Aid for olive groves.
- Chapter 20 – Tobacco aid.

- Council Regulation (EC) No 1257/1999 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 445/02 repealed by (EC) 817/2004 and by Recommendations from DG AGRI (Doc. VI/10535/99 - Rev.7).
- The Act of Accession establishes the possibility for the new Member States to pay farmers Complementary National Direct Payments (CNDP) under any CAP support scheme (but to be linked to a surface area), which may partly be financed out of the rural development budget in accordance with Council Regulation (EC) No. 1257/1999.

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. 1782/2003,
- Commission Regulation (EC) No 796/2004 laying down detailed rules for applying IACS.

1.4 According to Article 11 (1) of the Commission Regulation (EC) No. 796/2004, 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. In other words, all agricultural parcels should be listed in the applicant's declaration, even though some of them will not be subsidized.

1.5 According to Commission Regulation (EC) No. 796/2004, an agricultural parcel is "a continuous area of land on which a single crop **group** is cultivated by a single farmer". Member States may however, as a national requirement, request farmers to declare the different crops / land uses within these single crop group parcels. The National Addendum will clarify if the CAPI should be carried out at the level of the crop group parcel or of the single crop / land use 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 No. 1 to Regulation (EC) No. 1782/2003. **Agricultural parcel areas shall be determined** by any appropriate means defined by the competent authority. However, once a farmer has been selected for an on-the-spot check using means of remote sensing, at least 80 % of the area for which he requests aid shall be subject to photo interpretation of agricultural parcels. A physical inspection in the field should 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.

1.7 Cross-compliance checks shall cover the whole farm i.e. all the agricultural parcels, whether they are claimed for subsidies or not.

2 Overview

2.1 Farmers are required to submit their annual subsidy applications in prescribed form and by dates set in line with Regulation No 1782/2003. According to Article 23 § 2 of the same regulation, the control of these applications can, as an option, be based on satellite or aerial remote sensing and use of external contractors.

2.2 Remote sensing allows correct applications to be picked out so that inspection on the spot can be directed to the others and to problem parcels and the inspection number and cost are reduced accordingly. The contractor participates only in the stages related to this photo-interpretation, as the previous and final processing of dossiers is reserved for the Administration. Also, this arrangement is assumed to be "invisible" to the

farmer, since no third party appears between him and the Administration. The penalty calculations, sanctions or financial consequences for the farmer are not the responsibility of the contractor.

2.3 The Commission's contribution to the programme is, since the 1999 campaign, restricted to furnishing satellite imagery free of charge, the execution of an external quality control procedure (see § 7.4.2) and the technical coordination of methodological choices. This role is observed as a direct support to the Member States' administrations that participate in the programme.

2.4 The area and land use of all the subsidized parcels of a sample of the applications lodged by the farmers will be verified. Each crop/payment group will be categorized separately by applying the decision tables and technical tolerances established by the Administrations.

2.5 The photo-interpretation can be carried out on a series of several satellite images (or aerial photographs) distributed in time ("time series"), or on only one very high resolution (VHR) image (aerial orthophoto or VHR satellite ortho-image). In the latter case at least, the diagnosis may not be completed by computer-aided photo-interpretation (CAPI) procedures alone. In such a case, while the area can be checked on the VHR imagery, the land use and/or some other issues will have to be checked through "rapid field visits" (RFV), which implies that such visits are feasible in the local context. These visits may be systematic (i.e. carried out on all claimed parcels, for instance when only one orthophoto is used) or limited to doubtful parcels, sensitive groups (such as set-aside, durum wheat) or specific commitments.

2.6 The graphical material supplied to the farmer shall indicate the boundaries and unique identification of the reference parcels. The farmer shall indicate the location of each agricultural parcel on the graphical material received and submit sketch maps with his application if necessary.

2.7 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:

Table 1

Main stages

Responsible	Description	Period
	Preliminary work (§ 0)	
Administration	Choice of control sites, assessment of image requirements Publication of Technical Recommendations 1	September-December
Administration	Call for tenders, selection of contractors, signature of contracts	December- March
Commission	Publication of Technical Recommendations 2 to 5[1]	April-May
Administration	Selection and administrative processing of applications lodged in chosen sites; transfer to contractors of dossiers and data bases (declarations, and if available, digital LPIS and ortho-images)	April- June
Contractor	Collection of topographical or GIS data needed and boundary digitization of parcels declared	March- June
	Preparation of data (§ 4)	
Commission/ Contractor	Acquisition of satellite images (Commission) and/or aerial photographs (Administrations/Contractors), processing, geometrical correction etc.	September - November, March - September
	Photo-interpretation of applications (§ 5)	
Contractor	Photo-interpretation of parcels to be checked	May- August
	Decision rules and technical tolerances (§ 6)	
Contractor	Categorisation and return of dossiers and results	June- August
	Administrative follow up (§ 7)	
Administration	Inspection on the spot (problem parcels,…)	July- October
Contractor	Contractor's report to Administration and discussions of results	October- November
Commission	Quality assurance	October – May

[1] Technical Recommendations 5 now incorporates all issues related to guidelines/deliverables concerning **Summary Statistics of the 2006 Campaign**

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 sites

3.1.1 The number and location of sites for the remote sensing controls will have been established by the Member State. The number of sites is dependent on the remote sensing sampling rate decided by each Member State and on the expected number of applications submitted in these sites. The location of the sites 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 sites will be entirely at the discretion of the Administration and will not be discussed with the contractor. In general, the sites to be controlled are selected taking account of appropriate risk factors to be determined by the Member States according to the principles laid down in the Commission Regulation (EC) no. 796/2004 Article 32 (Cf. § 3.2.1). As it is not possible to describe these sites in detail, the bidder should use the following information to evaluate the work to be done. The sites to be controlled:

- by high resolution (HR) satellite images will be defined, in general, as a circle of a 25 km radius. The size and shape of the actual control site may differ from the 25 km radius circle but is included in this circle.
- by Very High Resolution satellite (VHR) satellite images (possibly in combination with HR satellite images) will be defined by the Administration in conjunction with the Commission taking into account the applications selected for control and the characteristics of the VHR sensors. In order to optimize the VHR image acquisition, these sites will normally be dedicated to a specific sensor (Ikonos or Quickbird)[2]. The actually controlled area within the control site should be at least 25 to 30% of the control site.
- by aerial photographs could be distributed inside administrative boundaries, as a function of optimised flight plans and administrative units (e.g. communes) to be checked.

3.1.3 For the 2006 campaign the Commission intends to increase the area covered by VHR sensors from 126,000 km2 to approx 140,000 km2 (Quickbird and Ikonos as prime dedicated, and with backup of EROS A, and SPOT Supermode. The intention is also to use Orbview3, Formosat2 and possibly Eros B as back up). The use of such data for controlling the Single Payment Scheme and the Single Area Payment Scheme appears appropriate in conjunction with rapid field visits (RFV) (see § 5.2.2).

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 26, 27 and 32 of Commission Regulation (EC) No 796/2004.

3.2.2 Approximate figures on the number of dossiers and sites are given in Annex 1. These figures should be taken as provisional. 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 control region, 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 2006 campaign will be submitted no later than 15 May[3]. Modification to applications may be allowed up to 15 June, depending on the Member State. According to the way applications are selected by the Administration, contractors may receive the dossiers to be controlled early after their lodging (e.g. end of May - early June) and generally in paper form, or later in the campaign (e.g. July) and preferably in digital form as these will have been entered and checked by the Administration. These two alternatives depend on the strategy adopted by the Administration for

[2] see Technical Recommendations 1 for more details

[3] 15 June for Finland and Sweden, Estonia, Latvia and Lithuania (art. 11 of Reg. 796/2004)

selecting the sample of applications to be checked: this sample may be selected on the basis of the declarations and controls from the previous year(s) in which case the sample should be (approximately) determined early in the campaign[4] or from the list of current year applications, once entered in the database. 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 of the crops have to be inspected in the field before a certain date (e.g. 31 August for set-aside). As a general rule, inspections of arable crops have to be carried out before or soon after the harvest to be fully effective, according to DG AGRI's recommendations on On-The-Spot checks of area[5].

3.2.4 The contents 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 his offer that he fully comprehends the national regulations and the type of applications that he will be expected to verify, and the information which they will contain. Relevant information may be included in the "National Addendum".

3.3 Delivery of applications and data entry

3.3.1 In principle, the Administrations will strive to check the applications to be delivered to the contractor so as to eliminate any inconsistencies (e.g. invalid reference parcel number).

3.3.2 Ideally, the alphanumeric data of the dossiers will be transmitted to the contractors in digital form. If due to time constraints, the alphanumeric data of the current year cannot be delivered in digital form, 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. The cartographic documentation should be supplied, where available, at the same time (see § 4.5).

3.3.3 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;
- the support scheme under which the application is made (see also § 10.7.1);
- for each parcel declared (even if it is not subsidized or situated outside the control site):
  - 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 (successive) crop/payment group(s);
  - if appropriate, a code indicating if the field is irrigated;

3.3.4 The contractor will check on arrival all dossiers received 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.

3.3.5 In some Member States (see the National Addendum, § 8.7), the applications to be checked may be provided in paper form to speed up their delivery. In this case, the contractor will have to perform the alphanumeric data entry himself. In addition to the alphanumeric data of the previous year (see § 3.3.2), the Administration should provide to the contractor its operational module for data entry. 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 inputting applications, calculated by dossier so the Administration can pass the data entry work to the contractor if it so wishes.

---

[4] The definitive sample will be known only when all applications will have been lodged.

[5] "On-the-spot checks of area according to articles 23-32 of Commission Regulation (EC) No 796/2004", DG-AGRI J3 Working Document Ref. AGRI/60363 of 9 March 2005.

4 Preparation of data

A number of possible alternatives can be considered in order to obtain the necessary image material for parcel measurement and photo-interpretation:

- VHR satellite imagery: bundled (i.e. panchromatic and multispectral), or panmerged imagery
- aerial photos: several options are acceptable: in black-and-white, true colour or colour-infrared (CIR) mode, acquired during the current year or recent archive images (in particular, recent ortho-photos used for the national Land Parcel Identification System (LPIS) can be used), mono- or multi-temporal coverage;
- a combination of one of above with HR satellite imagery: optical (multispectral) or radar images (as backup to complement or replace missing optical images);

The choice shall be made according to local conditions; in agreement with the regulatory requirements as laid down in Article 30 of 796/2004 on the accuracy of area measurements[5] (i.e. the technical tolerance should not exceed 5% of the measured area of the agricultural parcel or a 1.5 m perimeter buffer). If the choice is not imposed by the Administration, the tenderer must indicate and justify in detail his choice, with possible different alternatives according to local conditions.

4.1 Acquisition of satellite images

4.1.1 For each site to be controlled by HR satellite images, a series of multi-temporal SPOT 2,4,5 XI/XS, LANDSAT TM or IRS-1C/D/P6 LISS-III or DMC[6] data set will be ordered directly by the Commission, based on requirements drawn up and agreed with the Administration and/or the contractor. If possible, one XI/XS/TM/LISS-III/DMC autumn and three (or maximum four also to permit GAEC Controls) winter/spring/summer images will be supplied. The Commission will request a SPOT programming service for the established acquisition windows.

4.1.2 The Commission will not supply SPOT or IRS panchromatic images since VHR satellite imagery or aerial orthophotography should be used for area measurement and should be available for all the sites.

4.1.3 Extrapolation of quality norms for existing VHR satellite data tells that SPOT Supermode data is not of sufficient resolution to reach the area measurement accuracy required by the Commission[5] for most regions. As a consequence, SPOT 5 Supermode PAN data will be supplied upon special request form MS Administration and agreement with the Commission to regions where parcel size allows measurements using this resolution, for use together with recent archive VHR ortho-imagery, or as backup to the VHR prime dedicated sensors Ikonos and Quickbird.

4.1.4 Above is also true, until further analysis of the geometric accuracy, for the satellite sensors OrbView3, Formosat 2, and EROS B; these will be used only as backup imagery to the VHR prime dedicated Ikonos and Quickbird.

4.1.5 Multispectral 10 m resolution SPOT 5 will be supplied to contractors whenever possible. The SPOT 5 sensor provides an option to deliver sub-scenes of 20x20 km2, 30x30km2 and 40x40 km2. Where possible, and especially for VHR sites, SPOT 5 data may be delivered in such sub scenes covering the actual zone to be controlled.

4.1.6 For the VHR sites defined by the National Administration following JRC document Technical Recommendations 1, one Ikonos or Quickbird bundled (PAN and multispectral), or panmerged dataset will be ordered and, if Contractor agrees, will also close relative spring (multispectral) HR window. This should only be done only if CAPI crop identification may be performed using the multispectral bands of the VHR image set. The Quickbird or Ikonos windows will be carefully defined by the MS Administration open as early as possible and remain open for 6 to 8 weeks. The 1.8m resolution panchromatic EROS data (and OrbView3, Formosat 2, and EROS B) will be used as backup during the same period. Such data will be distributed to MS that agrees to this type of back up and provided that their contractor is able to orthorectify this type of data.

---

[6] The DMC satellites will be used for a maximum of one window per site. DMC = Disaster Monitoring Constellation; 5 satellites, 32m resolution, 3 band sensors see www.dmcii.com

4.1.7 The Commission may also supply radar images (RADARSAT[7]) to complement or replace optical data at the request of the Administration in the regions (and/or seasons) where optical acquisitions are most difficult (in general above 50 degrees north or in winter[8]). For the radar series of images meant to discriminate winter crops (e.g. typically a May, June July series), in case of successful acquisition of the first spring optical image, the radar images not yet acquired at this date will be cancelled. For all sites receiving more than one radar image, the contractor will be committed to process all the radar images received and return the processed data at the end of the campaign. All tenderers requiring radar data have to demonstrate their ability to use such images.

4.1.8 In the photo-interpretation, the contractor will be committed to use the complete series of images delivered according to the agreed acquisition schedule. The exclusive use of radar images will not be accepted if good optical images are also available. The use of the radar images provided will be compulsory only if a complete diagnosis cannot be established based on optical images only.

4.1.9 The sensors, the acquisition windows and the optimal number of images for the Member State concerned should be discussed in detail by the tenderer. He will take into account the necessary compromise between the acquisition of late images in 2005 for better discrimination of the spring sown crops, and the need to provide early results, in order to allow the Administration to carry out follow-up inspections in the field before the harvest. The tenderer may differentiate by region and justify a possible preference for a given sensor (e.g. SPOT XI, exclusion of Landsat and DMC), but taking into account that a preference for one sensor may lower the statistical chances to obtain any imagery at all. The Commission will evaluate the justification and try to satisfy this preference, taking into account the acquisitions already made, availability of actual imagery, and programming feasibility.

4.2 Management of image acquisition

4.2.1 The Commission will order the first good HR image (i.e. cloud-free) acquired for each site and each period fixed and have it delivered automatically to the contractor. If cloud-free images are not available, cloud cover evaluations of other images will be forwarded by the Commission to the contractor via use of the LIODOTNET WEB Application. Alternatively, the contractor may consult the image suppliers' catalogue in order to identify cloudy, but still usable images, and suggest these to the Commission for supply.

4.2.2 The Contractor should consider the use of partly cloudy VHR images[9], possibly in conjunction with requested backup images from EROS, SPOT Supermode and possibly OrbView3, Formosat 2, and EROS B.

4.2.3 The choice of archive images, if required, will be made with the help of the Commission, but under the exclusive responsibility of the contractor, by cross-checking the archives of SPOT, LANDSAT and IRS-1C/D with the geographic co-ordinates of the defined control sites. The tenderer will indicate if he has the facility to make this search or has access to relevant archive images. If the necessary images are available from the archive of the Joint Research Centre of the Commission in Ispra, they have to be used.

4.2.4 The images will be bought by the Commission and supplied free of charge to the contractor, at the latest 10 working days after the order or the acquisition for VHR satellite images. These data remain Commission property and will be returned at the end of the work (Cf. § 5.8 Technical Recommendations 1). The rules of copyright both for the Commission and image suppliers will be strictly adhered to. The images will be supplied to contractor preferably on CD, DVD, and/or FTP 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.

4.2.5 The image processing levels[10] will be level "1A" or "1B" for SPOT, "raw" (0) or "system corrected" (1G) for LANDSAT, and "only radiometrically corrected" (RC) or "system-corrected" for IRS. For the DMC the product will be level L1R (system corrected), or L2G (orthocorrected). For RADARSAT the "Fine beam path image" will be provided as Path Image" or SLC.

---

7 The default SAR product supplied is the so-called fine beam mode RADARSAT time series, which have a resolution of 10 m; Path Image or Single Look Complex

8 possibly for checking some cross compliance requirements (Cf. 5.3)

9 See Technical recommendations 1 (§ 5.4) for description of image validation

10 For relative formats see Technical recommendations 1 (§ 5.6)

4.2.6 For the VHR sensors the processing level will be the Geo Ortho-Kit product for Ikonos, the Standard Ortho-Ready product for Quickbird, the 1A "raw" plus pass file for EROS, the Levels Express (including satellite telemetry, RPC) or Enhanced (as Express plus post processed GPS data and metadata for rigorous photogram. triangulation) for OrbView3, and for Formosat 2 (levels 1A, or 1B).

4.2.7 If data is not delivered already orthocorrected by the Commission (possible case for DMC, and Formosat2), all extra cost of all further processing (geometric ortho correction, enhancement etc.) will be at the expense of the contractor.

4.2.8 The contractor has five days after receipt of the images to make possible comments on the location or the quality of the received images, as compared to the characteristics announced when the order was placed. If required, he may request a longer approbation period. If the contractor does not react within this specified period, the images are considered suitable without restrictions. The price paid for the images that were not rejected and are considered unusable may be charged to the contractor.

4.3 Acquisition of aerial imagery (if applicable)

4.3.1 The tenderers are referred to the Guidelines for Best Practice and Quality Checking of Ortho Imagery guidelines[11] for the acquisition and ortho-rectification of aerial imagery (including digital airborne imagery).

4.3.2 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.

4.3.3 If the tenderer has at his disposal or is able to acquire archive photographs and intends to use them, he should state for what purpose, and list precisely in his proposal the technical characteristics, source, and cost of acquisition and processing.

4.3.4 Except if 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.

4.3.5 If the tenderer is planning to acquire aerial photographs in the year 2006, he must indicate in particular:

- how he will obtain flight authorization and, if relevant, give the name of the subcontractor;
- the aircraft model, the camera type, the lens, the photographic film;
- the flight plan, 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;
- justification of the above selections.

4.3.6 The tenderer will always include a buffer zone around each control site (size to be agreed with the Administration), in order to avoid having too many parcels of selected dossiers falling outside the area covered by the photographs.

4.3.7 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, disk space, etc.

4.4 Processing of images and photographs

[11] Guidelines for Best Practice and Quality Checking of Ortho Imagery (JRC IPSC/G03/P/SKA/ska D(2003)(2402)) [Version 2.4 date March 2005]

4.4.1 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.

4.4.2 The contractor needs to have appropriate software suite (or sub-contracting options), and "know how" to process all image types (i.e. orthocorrection all image types, Pan-sharpen VHR bundle images etc.) and should demonstrate this especially for the new VHR sensors (Ikonos, Quickbird, EROS, OrbView3). 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**[10].

4.4.3 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 allowed geometric errors in the output images are expressed as a maximum "absolute" Root Mean Square Error (RMSE) tolerance on check points, and are stated below. These values are 1-dimensional RMSE values, and apply independently in the *X*- , and in the *Y*- directions:

DATA TYPE	MAX RMSE
• aerial photographs, VHR PAN 1 m satellite imagery (eg. Quickbird, Ikonos)	2.5 m
• OrbView 3	2.5 m
• EROS 1.8m satellite imagery single scene	2.5 m
• EROS 1.8m satellite imagery vector scene (> 27 km)	3.5 m
• Formosat 2	3.5 m
• SPOT 2, 4 multispectral	30 m
• SPOT 5 multispectral	15 m
• SPOT 5 Pan Supermode	5 m
• IRS multispectral	40 m
• RADARSAT	20 m
• LANDSAT TM	50 m
• DMC	50 m

The above RMSE tolerances values should be considered maximum allowed RMSE. They put requirements on the input data, on the ground reference data, on the digital terrain model (DTM[12]) (if applicable) and on each step of the geometric correction process. The tenderer shall detail all steps in the production chain. He shall justify the correction method proposed (e.g. ortho-correction or polynomial) and how he expects to obtain the precision, with special reference to differences in altitude in the agricultural areas concerned.

4.4.4 For the sites 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.

4.4.5 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 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).

4.4.6 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 (GCPs) and check points used, their source, number and distribution.

---

12 normally, RMSEx = RMSEy and RMSEz = 2 x RMSEx.

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

4.4.8 The tenderer shall indicate his previous experience, capability and comments with regard to processing radar images. In particular, he will discuss the software to be used and outline how he proposes to carry out geometric correction and to identify the land use using these images. He will propose a timetable for the acquisition of the radar images intended to replace the optical images.

4.5 Provision of the LPIS data and other topographic documents

4.5.1 As from 1st January 2005, the Land Parcel Identification System (LPIS) should be fully **digital** (i.e. stored as a GIS) in all Member States as per Council Reg. 1782/2003. The relevant parts of this LPIS i.e. the vector of the reference parcels as well as the reference areas and, if any, the associated ortho-photos or VHR images will be provided to the contractor.

4.5.2 The declarations to be controlled shall contain appropriate cartographic documents localizing the agricultural parcels on the images or inside reference parcels (Cf. art 12(3) of Commission Regulation 796/2004). The Administration will supply them free of charge to the contractor (in the original form if possible).

4.5.3 The contractor may acquire other maps to have an overview of the sites, for field work, geometric correction, etc.

4.6 Ground data collection

4.6.1 As a 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 each control site selected. 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.

4.6.2 In the case of SPS, the contractor should pay special attention to crops that are or may be non-eligible (e.g. potatoes[13], vegetables, fresh fruits, orchards and permanent crops) as well as to crops subject to additional payments if relevant (Cf. title IV of Reg. 1782/2003 and National Addendum). As a result, ground data may be partly collected on non-eligible crops so as to train the interpreters (or the classification) to detect these crops.

4.6.3 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-site basis, etc.

5 Photo-interpretation of applications

The purpose of the remote-sensing control is to check the area and land use of the agricultural parcels in the dossier. Computer-Aided Photo-Interpretation (CAPI) will be used for checking the area claimed and generally the land use. The minimum area/width may also have to be checked for specific land uses (e.g. set-aside, nuts) and/or schemes (Cf. National Addendum).

[13] Starch potatoes are eligible but the claim should contain a copy of the cultivation contract. In the regional model table potatoes as well as fruit and vegetables may be eligible under special conditions.

5.1 Parcel area check

5.1.1 To determine the agricultural parcel areas, the parcel will be located on the screen with the help of the reference parcels vectors and other appropriate documentation (graphical material indicating the location of each agricultural parcel as provided by the farmer)) and its limits determined using mainly the imagery of the highest resolution, preferably of the current year (in line with the reference in footnote 5 on page 6). This work will be undertaken, if possible as soon as the relevant imagery is available.

5.1.2 The area of each subsidized agricultural parcel will be verified. Unless requested otherwise by the Administration, the area of non-subsidized agricultural parcels will, in general, not be checked. However, in cases where non-subsidized parcels share a reference parcel with subsidized ones, checking the non-subsidized parcels will allow to better check the subsidized ones (i.e. detect incompatibilities) and, on the other hand, may train the interpreter on specific crops. During the photo-interpretation on later images, the software should, if necessary, allow further modifications to the limits already fixed on the earlier image. The result of this work will be the photo-interpreted (called "measured") area, to be compared with the declared area for each agricultural parcel. The results will be expressed in hectares with two decimal places, rounded to the nearest unit.

5.1.3 The comparison between declared and measured area will be carried out during the categorisation phase, and for the parcels whose declared land use has been validated, a technical tolerance per parcel will be taken into account. Once the parcel area and land use checks performed, a technical code should be assigned to each parcel (see § 6.2.3), hence allowing to compute a retained area. This retained area should then be capped to the official area of the reference parcel (i.e. LPIS area), as specified in § 6.2.5.

5.2 Land use checks

The land use check may be performed on screen and will be completed, if necessary, by rapid field visits (according to specifications of the National Addendum) or may be carried out by systematic rapid field visits. The latter approach has proved to be particularly reliable for checking the land use (as these visits can be made when the crop is still in place, leaving no room for doubt or dispute) and may develop in the context of the CAP reform for checking the cross-compliance requirements that cannot be verified in the office. Whatever the procedure selected, the contractor has to organize himself to be able to provide a diagnosis for all the parcels of the sample within the sites.

Member States should indicate in their National Addendum the specific aids they wish to control (e.g. nuts, energy crops…) and the sites concerned. For these specific aids, CwRS should be completed by a farm (or field) inspection to control legal requirements that would not have been verified previously through the administrative controls (e.g. crop density).

5.2.1 On the screen

The land use check with **multi-temporal** images may be made through **automatic classification** and/or **photo-interpretation** on the screen (Computer-Aided Photo-Interpretation, CAPI). The images will be overlaid with the LPIS vectors showing the position of the parcels to be checked. The tenderer will justify and illustrate his choice and the different stages of the checks. He will describe the training techniques and quality control for the proposed method. If he uses classification, 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). As the interpreter needs to determine the crop / land use extension for checking the area by CAPI, he may check the land use at the same time (this will in general be possible except for crops not yet visible on the highest resolution image, e.g. the summer crops on a May orthophoto or VHR image). In such a strategy, performing an automatic classification (in general with as many dates as possible) may not appear as cost-effective.

The control of the SAPS group will be supported by the use of the farmers' sketch maps describing the land use inside the reference parcels. This control may focus on removing the ineligible areas (such as buildings, woody areas, or water bodies) inside the reference parcels.

5.2.2 "Rapid field visits" option

5.2.2.1 The purpose of the rapid field visits (RFV) is to observe the actual land use without contacting the farmer. The area measurements are in general not carried out during rapid field visits. However, if permitted, for parcel boundaries not clearly identifiable on the highest resolution imagery, some length or point measurements will be made so that the parcel area could be measured on screen at a later stage. The RFV option is relevant in case of mono-temporal images (e.g. control based on one VHR image) or when the available images do not permit a correct interpretation of the land use (typically for doubtful parcels or important crops of difficult identification). They can also be proposed when the strategy of the National Administration is to reduce the number of farm inspections to a minimum (in which case, photographs of the parcel may be taken and shown to the applicant during a contradictory meeting).
While the RFV are primarily intended for checking the land use (or area) of the agricultural parcels, they provide an opportunity for checking some of the cross compliance issues at the same time (Cf. 5.3).

5.2.2.2 The rapid field visits can be undertaken either by the CAPI operators or by other staff with good knowledge of crop identification. If relevant, the tenderer should indicate the following:
- whether he proposes a field visit and the procedure envisaged;
- what is the volume of work envisaged and whether the contractor expects to do this himself or how he will sub-contract it;
- the personnel planned for this work and their qualification.

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

5.2.2.3 The rapid field visits will be carried out on the basis of the first results of categorisation generated by the contractor. Field visit documents (such as maps for the overall location of parcels, detailed location document, e.g. with image background overlaid by the vector boundaries) have to be made available to facilitate the work of the staff in charge of rapid field visits. The results of rapid field visits should indicate the actual land use and any pre-defined anomaly code if appropriate.

5.2.2.4 The contractor should record that the method of land-use identification is by means of a rapid field visit, in order to be able to identify the rate of validation by this method (when land use and area are first checked by CAPI). Then the categorisation should be run again, using the rapid field visit results.

5.2.3 Crop and payment groups

Article 49 of Commission regulation (EC) N° 796/04 defines the crop groups for the purpose of calculation of aid, reductions and exclusions. These groups actually correspond to payment groups (or "penalty" groups), in other words compensation between the retained areas of parcels/crops receiving the same aid per hectare is allowed. A given crop may belong to several payment groups (e.g. SPS and energy crops, or SAPS and CNDP X).

In addition to these payment groups, crops groups are required in the IACS for the checking of base areas.

The crop groups and payment groups will be defined in the National Addendum, according to the national schemes. The following indicative list of "crop groups" may be considered:
- cereals, distinguishing maize, rice and durum wheat if relevant;
- oilseed, except linseed;
- linseed, flax and hemp;
- grain legumes (if applicable);
- protein crops;
- set-aside, differentiated as much as possible from other bare or uncultivated soil;
- pasture and other forage crops as distinguished in Art. 49 of Regulation 796/2004;
- The different group of crops subject to Complementary National Direct Payments (CNDP)
- other annual crops;
- permanent land use other than grass (orchards, vineyards, woods etc.);
- non-agricultural use (buildings, lakes, etc.).

Other agricultural land use may be distinguished by eligibility, for possible cross checking with other schemes. Irrigated and non-irrigated crops will be distinguished where the Member States use this differentiation.

5.2.4 Other schemes

Parcels benefiting from other area subsidy schemes included in the accompanying measures of the Council Regulation (EC) No. 1257/1999 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. 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. In all such cases, the role of the control by remote sensing is generally restricted to the measurement of the parcel area and the identification of the land use. For the other commitments related to these schemes, additional measures (e.g. inspections) should be defined by the Administration.

5.3 Control of cross compliance

5.3.1 Regulation (EC) N° 1782/03 introduces additional controls on cross compliance regarding statutory management Requirements (SMR) and Good Agricultural and Environmental Conditions" (GAEC), applicable for SPS and "full IACS"[14].

5.3.2 The SMR applicable in 2006 (annex III of reg. (EC) N° 1782/03) include a number of Environmental Directives implemented by national regulations. In contrast, specific GAEC may be defined by the Member States, following the general recommendations (annex IV of Reg. 1782/03). The National Addendum will describe the minimum requirements and the criteria to check these conditions.

5.3.3 As for the controls relating to cross compliance, the respect of the different domains of cross compliance (e.g. public, animal and plant health, environment, animal welfare, GAEC…) shall be checked by competent authorities. At least 1% of all farmers submitting aid applications and having to respect the cross compliance requirements of the responsibility of a given control body should be checked by this control body (in other words, at least 1% of the subpopulation of farmers under the responsibility of a given control body should be checked for the different requirements to be met). The "cross compliance" sample of a given control body will be selected by **risk analysis**. Two options are possible for this selection:

- select the 1% (minimum) cross compliance sample among the 5% On-The-Spot Control (OTSC) sample (actually the part of the OTSC sample that should respect the cross compliance requirements of the responsibility of the control body).

- select the 1% (minimum) cross compliance sample among the whole population of farmers lodging aid applications under support schemes established in Title III and IV of Reg. 1782/2003 and having to respect the cross compliance requirements of the responsibility of the control body.

5.3.4 As a consequence of the selection strategy, the cross compliance sample may be part of the OTSC sample or a different sample. It may contain applications checked by remote sensing or not. Again in 2006 Member States will have the possibility to use CwRS as a support to the control of cross compliance as a pilot testing, i.e. with a specific request of evaluation and reporting of the results, on the following conditions:

- For a given application, CwRS will not allow the control of all cross compliance requirements but may be useful to check some land-use issues related to some of the cross compliance requirements, especially requirements related to GAEC.

- It shall be in any case followed by a field/farm inspection to control the other requirements of the GAEC or of other domains of cross compliance.

5.3.5 Two possible approaches are identified in the use of remote sensing data for the control of cross compliance:

- Use of RS for a partial control of some of the GAEC.

[14] In case of SAPS, only GAEC are applicable.

- Use of RS as a support for the selection of the cross compliance sample.

5.3.6 CwRS as a partial control of cross compliance: This approach may be envisaged for the GAEC that can be checked on satellite or airborne imagery. This is the case for instance of 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 definition of GAEC, MS may decide to use RS images at specific dates to check specific conditions (especially autumn / winter imagery).

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 - land cover) with an appropriate G code, In any case, the parcels flagged with a G code should lead to an administrative follow up (i.e. inspection) in order to be considered as controlled.

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

5.3.7 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 with possible non compliance with respect to 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).

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

5.4 Synthesis at the application level

5.4.1 The parcel checks will have the following primary objectives:

- for all parcels declared as "subsidized":
  - to check the net area and land use of each parcel;
  - to eliminate fields with an observed area lower than the prescribed minimum;
  - to remove the ineligible parts of fields;
  - to check that the parcel is not included in another application.
- for parcels declared as fallow:
  - to detect fields cropped or harvested fraudulently;
  - to verify all types of fallow, authorized according to the regions;
- for parcels declared as forage:
  - to check that they were in production during the period fixed;
- for parcels not subsidized:
  - to check if necessary that the parcel does not overlap or is not included in subsidized parcels (of other declarations, for example).

5.4.2 Generally, no check will be made by the contractor for the following:

- the parcels not declared;
- the presence of animals;
- the final use of the products, in the case where crops may be used for forage or grain (e.g. oilseed rape or maize), or for industrial set-aside;
- the compliance of the observed percentage set-aside in respect with the farmer's obligations;
- the dividing of areas between farmers having common fields or between associates;
- the varieties of oilseed rape or durum wheat.

However, if required by the National Addendum, the contractor may have to take into account the animal density per hectare for the forage group, using information provided by the Administration from the livestock declarations (to be defined in the National Addendum).

5.4.3 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 size or area, together with field documents for the surveyor that highlight the problem. This helps the Administration to begin on-the-spot checks 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.

5.5 Two-phase controls

5.5.1 In the Member States or sites where summer crops are important, it may not be feasible to categorize all crops in time to ensure that the winter-sown crops are checked before the harvest. In this case the dossiers may be divided into two or three categories: "winter", "summer" and possibly "mixed", to be defined by the Administration. The dossiers will then be categorized in two phases. Where this methodology is adopted:

- the "winter" and "mixed" dossiers will be checked first for the winter crops and the unclear or rejected dossiers will be pointed out to the Administration;
- once the summer image is available (or once the RFV have been carried out), the "summer" and possibly "mixed" dossiers will be processed again for the summer crops and a final diagnosis will be provided;
- the results and on-the-spot documents (see § 7.5.1) will be produced successively for each category and will be of the type "alternative b" if they are not grouped by dossier.

5.5.2 This two-phase control can be replaced, for the summer crops, by a partial photo-interpretation followed by a rapid field visit.

5.6 Reference year eligibility checks

~~As from 2005, no imagery over the 1987 – 1991 period will be provided for checking the eligibility of arable parcels on 31.12.1991.~~

5.6.1 According to Articles 54 (2) and 108 of Council Regulation 1782/2003, MS shall consider specific provisions to control the **2003 eligibility of set-aside and arable crops partly coupled** (payments may not be made in respect of land under permanent pasture, permanent crops or trees or land used for non-agricultural purposes at the date provided for the area aid application in 2003). In case the LPIS or IACS DB does not provide the relevant information (i.e. that the parcel was arable in 2003), extra imagery, and in particular VHR ortho-imagery from the LPIS, may have to be used.

5.6.2 For the new MS **not applying SAPS** (i.e. Malta and Slovenia), the reference year check consists in checking that claimed parcels were not under "permanent" crop (grassland, orchards, wood, etc.) on 31.12.2000.

- The purpose of this reference eligibility is to avoid an undue increase of arable lands following the implementation of IACS. If the national LPIS does not provide clear information on the eligibility of the reference parcels, an extra photo-interpretation of the orthophotos from the LPIS should be requested to identify ineligible parcels or doubtful cases where complementary evidence could be requested to farmers (Cf. National Addendum).

5.6.3 For the MS **applying SAPS**, the reference year check consists in checking that any claimed parcel was in good agricultural conditions at 30 June 2003 (Cf. definition of these conditions in the National Addendum). This check should preferably involve the LPIS ortho-imagery (no archive satellite data will be provided). Doubtful cases identified by CAPI will lead to administrative follow up.

5.6.4 **Olive Trees**: Olive groves planted after May 1998 (or December 2001 for Malta and Cyprus) are not eligible for decoupled (SPS) or coupled aid. If required by the National Addendum, photo interpretation will be carried out to detect young plantations and identify the non eligible parts of agricultural parcels using the historical OLIGIS.

6 Decision rules and technical tolerances

6.1 General remarks on decision rules and technical tolerances

6.1.1 "Standard" decision rules based on current European or national regulations and applicable to crop/payment 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 in the year 2006 (Cf. National Addendum).

6.1.2 At the end of the photo-interpretation phase and/or the RFV (whether these are systematic or not), each claimed parcel should be assigned at least one technical code that will allow the determination of the parcel retained area. A diagnosis will then be issued for each crop/payment group and then at dossier level. This diagnosis will be based on the group declared and retained areas. As area compensation between parcels of the same group are foreseen by the regulations, the rules for the application of sanctions or exclusions are defined at the payment group level (thresholds of 3%, 2 ha, 20%, as per Article 51 of Regulation No 796/2004). As a consequence, the most appropriate method for sorting dossiers is a diagnostic rule at the group level.

6.1.3 **The sorting of dossiers** for which a follow-up action is necessary is a characteristic of remote-sensing controls. As a general rule, anomalies detected following remote sensing controls should be followed-up by any appropriate administrative action, and where necessary by a field inspection. One of the objectives of the sorting of dossiers is to concentrate field inspections on a reduced number of problematical data. The criteria to be retained therefore depend on organizational or strategic considerations (see § 6.3.3), but also on the national law.

6.1.4 Since 2001, all Member States apply tolerances at the parcel level, which is consistent and compatible with the Commission's recommendations and state-of-the-art for other types of area control measurements.

6.1.5 **Technical tolerances** are intended to take into consideration the uncertainties specific to any measurement technique. Technical tolerances apply to the result of any area measurement during the control and make it possible to appreciate its reliability. The definition of technical tolerances concerns all "on-the-spot controls", and standards have been set considering the precision of the instruments or of the methods used [15]. In the case of controls with remote sensing, the technical tolerance defined at the parcel level will take into account the type of maps, the spatial resolution of the images or aerial photographs used, and other factors such as the size and shape of parcels. Note that the choice of the appropriate (satellite or airborne) image resolution for use in area measurement in a given site is ultimately determined by the requirement that the method of measurement must be adapted to the expected agricultural parcel size in the region concerned, so that the **technical tolerance does not exceed 5% of the agricultural parcel area measured or** a **1.5 m perimeter buffer** for all measured parcels (Art 30 of Reg. 796/2004). The buffer tolerance is calculated by multiplying the parcel perimeter with a buffer width (see § 6.2.2).

6.1.6 **The principle of applying a technical tolerance to the parcel measured area is the following**: If the difference (positive or negative) between the areas declared and measured at the parcel level is less than the technical tolerance, then the declared area is retained; if this difference is greater than the technical tolerance, the measured area is retained. The over- and under-declarations are processed in the same way, making possible the compensation between parcels of the same group and outside tolerances.

6.1.7 At the parcel level, no photo-interpretation will be carried out for

- parcels within the sample but falling outside the imagery or parcels that cannot be located due to erroneous or missing reference parcel number;

[15] See JRC document "Technical Tolerances for On the Spot Checks" (Ref: JRC IPSC/G03/P/SKA/ska D(2003)(1576)) for technical information on the maximum tolerances to be applied for different classes of measurement tools and in particular for RS / aerial ortho imagery.

- agricultural parcels declared as less than the minimum area eligible for aid. This minimum area which may not exceed 0.3 ha (Article 14 (4) of Regulation 796/2004) will be defined in the National Addendum.

In case the interpretation of small parcels may not be feasible due to the lack of imagery of a sufficient resolution, the National Administration will define the minimum size under which the parcel cannot be interpreted.

Special decision rules applying to these cases as well as for all the other circumstances where the control with remote sensing is not applicable are explained below (see § 6.2.4 and Table 3).

6.1.8 **The principle of sorting of dossiers at the crop/payment group level is the following:** The areas declared and retained for each parcel are summed at the group level, where the decision on payment is made. The sorting is based on the discrepancies between the declared and retained areas. All groups with a declared area greater than the retained area shall be rejected. However the decision to field inspect the corresponding dossiers may depend on the importance of the discrepancy and/or the procedures in place in the Member State. Area thresholds expressed in absolute (ha) and/or relative (%) values or monetary thresholds based on the payment in play are generally used to decide on the follow-up action. Whatever this follow-up action, an overall conclusion for the crop groups and the dossiers will always be presented, as well as the justification of the decision at the parcel level for each criterion.

6.2 Observations and codification at the parcel level

6.2.1 Schematically, there are four steps in the categorisation at parcel level:

Step 1: For each measured agricultural parcel, the technical tolerance is calculated.

Step 2: A code is assigned to the interpreted agricultural parcel according to codification rules. The standard rules are set forth in § 6.2.3.

Step 3: According to the technical code, the retained area and the retained land use are assigned to the agricultural parcel (see § 6.2.4).

Step 4: The retained area is compared to the official reference area (as registered in the LPIS) for ceiling (see § 6.2.5).

In certain cases, the first and second steps may be carried out in reverse order.

6.2.2 Calculation of technical tolerances

6.2.2.1 At the end of the photo-interpretation process, each interpreted parcel should have in the database at least one technical code, a measured area and an observed land use.

6.2.2.2 A technical tolerance with regard to the measured area of the agricultural parcel should be defined according to Article 30 of Reg. 796/2004. ~~this tolerance shall not exceed either 5% of the agricultural parcel measured area or a buffer of 1.5 m applied to the perimeter of the parcel. For very small parcels, an absolute tolerance of 0.02 ha may be applied to take account of errors in rounding~~.

6.2.2.3 The buffer tolerance is calculated by multiplying the parcel **outer perimeter** with a buffer width to obtain a buffer area.

6.2.2.4 The buffer approach is recommended as it is technically sound. The buffer widths proposed in Table 2 below are maxima and are listed for image products accepted for parcel measurement.

Table 2
Maximum buffer widths proposed for the calculation of parcel area measurement tolerance[16]

[16] The use of stand-alone SPOT/IRS PAN satellite images is no longer recommended for parcel measurement.

Code	Image product used	Buffer widths
L1	Current year VHR ortho-imagery (aerial photography or VHR satellite imagery)	+/- 1.5 metres
L2	Recent archive VHR ortho imagery combined with current year satellite images (EROS, Spot Supermode, Formosat 2 and/or HR)	+/- 3 metres

6.2.2.5 MS may opt for a buffer width greater than 1.5 m for instance in case of very large parcels and no current year VHR ortho-imagery or in case of failure of acquisition of current year VHR ortho-imagery. However an extra test should be implemented to check that the computed tolerance (e.g. 3m x perimeter) does not exceed the maximum tolerance of Article 30 of Reg. 796/2004.

6.2.2.6 The technical tolerances should be applied only to ~~photo-interpreted~~ 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 unjustified and excessive technical tolerance.

6.2.2.7 Measurement of Olive tree and dry nuts parcels will be carried out on the basis of the rules set up in the Commission Regulation 1973/2004.

6.2.3 Codification rules

6.2.3.1 A series of "standard" codes have been defined in relation to specific conditions as stated in Table 3 below:

- The Tx 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 Ax codes correspond to anomalies, in particular those related to eligibility, and lead to the rejection of part or a totality of the parcel.
- The Cx codes are assigned to the parcels interpreted (i.e. checked) but for which the declared area or crop/payment 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/payment group are accepted, the controlled parcel will be coded as "OK".

6.2.3.2 When several codes are assigned, the retained area and the retained land use should always correspond to the least favourable condition. In any case the rules should always be defined in accordance with the National Administration.

6.2.3.3 Additional codes may be defined at the national level to record specific cases not described by the existing codes (e.g. for other schemes). In such cases it is recommended not to use already existing codes (Cf Table 3).

6.2.3.4 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 (except T6), 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).

Table 3
Standard codes related to the condition encountered at the parcel level, and proposed rules for the calculation of retained area and retained land use to be transferred to the group level

Observations at the parcel level	Code	Areas transferred to the group
Outside images or aerial photographs Outside control site (or outside maps available) Covered by clouds Declared as less than threshold set by Administration	**T2** **T3** **T4** **T6**	Use the declared area and land use
Declared or found as less than the minimum parcel size set by the Administration Set-aside declared or found under minimum size (Cf. National Addendum)	**A1** **A1a**	Give zero value to the area
Set-aside width under minimum width	**A1b**	Give 0 value to the ineligible part
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 2000 or 2003[17])	**A3** **A4**	Give zero value to area
Declared in one crop/payment group, but found in another	**C1**	Give zero value to the eligible area, except for "obvious errors". If possible, indicate the land use found
Parcel declared in only one group, but found to be in more than one 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

6.2.4 Calculation of retained area and retained land use

The last column of Table 3 indicates which area should be retained at parcel level.

6.2.4.1 The threshold for the **T6 code** should be fixed by the Administration taking into account the resolution of the imagery available: Where the land use and area checks are based only on 10-20m pixel satellite images, a threshold of 0.7 ha at least should be used. If 1m pixel images of the current year are used, the Administration may decide not to fix any threshold. In any case, the T6 code should not be applied automatically to all parcels declared below the threshold but assigned by the interpreter to parcels not interpretable due to size but for which the declared crop is thought to be correct.

6.2.4.2 The threshold for the **A1 code** is the minimum size of an agricultural parcel for which aid can be claimed (Cf. National Addendum). For parcels declared above the threshold but found below, a technical tolerance may be applied. In particular, for parcels found outside tolerance with respect to the declared area but inside tolerance with respect to the A1 threshold, the retained area can be fixed either to the A1 threshold (the parcel is deemed eligible and is assigned a C3+ code) or to zero (with the A1 code).

6.2.4.3 For set-aside, the minimum size and width are of 0.1 ha and 10m respectively[18] (except for Malta which may set minimum requirements below these values). Moreover, for duly justified environmental rea-

[17] Cf. §5.6.2 and 5.6.1 respectively

[18] Article 54 (4) of Council Regulation 1782/2003

sons (e.g. along a hedge, wood, watercourse), MS may define minimum size and width of at least 0.05 ha and 5 m respectively (Cf. National Addendum). Additional codes (e.g. A1c) may be defined to flag parcels not respecting these conditions. For set-aside strips that are partly eligible (e.g. coded A1b), the eligible part will be measured and compared to the minimum size authorized. Contractors are referred to the procedure defined by the Administration for classical field inspection.

6.2.4.4 For parcels (partially or fully) claimed more than once (i.e. coded A2), the proposed rule consists in subtracting the overlapping / over-claimed area to each of the parcels in conflict. However, disallowing the whole area of these parcels is also acceptable.

6.2.5 Parcel area ceiling based upon the Land Parcel Identification System

6.2.5.1 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.

6.2.5.2 For each agricultural parcel, the retained area (i.e. the area determined after application of the technical tolerance) is compared to the reference area of the corresponding LPIS parcel(s). The retained area is kept when it is not greater than the reference area. Above this threshold, 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).

6.2.5.3 A similar ceiling 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 24.2 of 796/04).

6.2.5.4 However, if the LPIS reference parcel contains several crops eligible for different area-related aid schemes, the ceiling to the LPIS area applies individually for each scheme (cf. Article 49 of 796/04). In consequence, the sum of the retained areas for the different schemes may exceed the reference area in case of associated crops (arable crop with coupled olive trees for instance).

6.3 Categorisation at the payment group level: conformity test

6.3.1 For each payment group, the total declared area of the group (Dg) has to be compared to the total retained area of the group (Mg). The categorisation tests are applied at the payment group level, in order to allow compensation between over-claimed and under-claimed parcels of the same group (if this compensation is allowed or possible in the Member State concerned).

6.3.2 The application of a technical code[19] to each claimed parcel allows the determination of a retained area for each parcel. Dg and Mg are then calculated by summing the declared and retained areas of the parcels belonging to the same payment group. The following three cases will be encountered at the payment group level:

- 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 what was claimed.
- R: The declared area is greater than the measured area (**Dg - Mg > 0**)[20].

The first two categories can be considered as accepted. **The third category should be considered rejected.** As any rejected dossier should be subjected to a follow-up action, a second test may be performed in order to determine whether the follow-up action should be field inspection or another appropriate administrative action.

[19] In case several technical codes are applied to a given parcel, the main code should be the stricter one (in terms of retained area).

[20] Groups with declared area larger than zero (Dg > 0) but found with zero area (Mg = 0) should obviously be rejected.

6.3.3 Sorting of rejected groups (R1-R3)

The following tests are suggested for rejected groups to categorize the severity of the rejection. For each rejected group, one of the tests R1 to R3 below will apply as a function of the group retained area (Mg). A field inspection is recommended for groups failing the test (i.e. coded RF1, RF2 or RF3). For the rejected groups that pass the test (RP1, RP2 or RP3) the Administration has the choice of either carrying out field inspections or using any appropriate administrative procedure (i.e. correspondence informing the farmer that his claim will be reduced in conformity with the discrepancy found, with possibility of recourse for the applicant if foreseen by the national law). In this context, the R1-R3 tests serve as an optimisation step in the reporting process to the Administration.

Table 4
Sorting to be applied at the group level in case of rejection

Test	**Range of the test according to the area observed**	**Sorting criterion (declared – measured)**	**Codes for the groups**	
			Pass	**Fail**
R1	$0 < Mg \leq S2/P4$	$0 < (Dg - Mg) \leq S2$ (ha)	RP1	RF1
R2	$S2/P4 < Mg \leq S3/P4$	$0 < ((Dg - Mg)/Mg) \leq P4$ (%)	RP2	RF2
R3	$S3/P4 < Mg$	$0 < (Dg - Mg) \leq S3$ (ha)	RP3	RF3

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

6.3.3.1 Table 5 below indicates the proposed values for the P4, S2 and S3 thresholds. These thresholds should be adapted to the local conditions by the National Administrations.

6.3.3.2 Parameters S2 and P4 may be optimised in order to avoid organizing field inspections for small discrepancies. A Member State may decide to apply only one absolute threshold, for instance based on the calculation of the disputed payment, to sort the dossiers to be field inspected.

Table 5

Proposed categorisation thresholds for the crop group

Categorisation thresholds for the crop group	**Code**	**Proposed thresholds**
relative (%)	**P4**	≤ 2 %
absolute (ha)	**S2**	≤ 0.5 ha
	S3	≤ 2 ha

6.4 Categorisation at the 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.

6.4.1 Conformity test

A dossier is accepted if all groups are accepted (i.e. $Dg\text{-}Mg \leq 0$ for any payment group). Table 6 below summarizes this test for Member States making a distinction between the dossiers rejected for minor discrepancies (i.e. with none of the groups coded RF1, RF2 or RF3) and those rejected for major discrepancies (with at least 1 group coded RF1, RF2 or RF3). The proposed coding (DP1 and DF1) 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 DP1 and DF1 could be amalgamated into one category coded DR1.

6.4.2 Completeness test

A dossier will be categorized as "complete" if the percentage of the total retained area of the T coded parcels in the processed groups is lower than two thresholds (Cf.Table 6):

- P2 (for the total surface area of the dossier);
- **and** P3 (for the set-aside group if relevant).

The P2 threshold applies to all claimed parcels of the dossier, while P3 only concerns the set-aside group, if relevant i.e. in regions/schemes where a minimum rate of set-aside land is compulsory (Cf. National Addendum). For the calculation of the relevant areas (T coded area, dossier area…), a given parcel will be counted only once even if declared in several payment groups (i.e. even if appearing on more than one declaration line). If the percentage of T coded areas exceeds any of these thresholds, the dossier is incomplete (codes DI2 and DI3).

The maximum values of the two thresholds are indicated in Table 7. However, the two thresholds and, possibly, the list of the groups to be considered important should be determined by the National Administrations (i.e. other groups may be added to the set-aside group).

Table 6
DOSSIER level tests

Input	**Test**	**Dossier conformity test**	Dossier codes	
			Yes	**No**
The whole dossier	**D1**	All groups accepted (Dg-Mg ≤ 0) ?	**DA1**	
		If at least 1 group is rejected, dossier is rejected Are all rejected groups coded RP1, 2 or 3 ?	**DP1** All rejected groups are RP1, 2 or 3	**DF1** at least 1 rejected group is RF1, 2 or 3
Area retained for:		**Dossier completeness test**	Dossier codes	
			Pass (complete)	**Fail** (incomplete)
the whole dossier **AND** the set-aside group	**D2** **D3**	Σ [dossier retained area T codes] / Σ Mg ≤ P2 [set-aside retained area T codes] / Mg set-as. ≤P3	**DC**	**DI2** **DI3**

Table 7
Parameters to be fixed by the Administration

Code	**Relative tolerances (%)**	**Proposed maximum**	
		Application with set-aside	Application without set-aside
P2	Dossier retained area with T codes	20 %	20 %
P3	Set-aside group retained areas with T codes	20 %	-

6.4.3 Final diagnosis at the dossier level

6.4.3.1 The final diagnosis summarizes the diagnoses of the conformity and completeness tests at dossier level. Table 8 below proposes a general diagnostic code per dossier and describes the follow-up action to be undertaken for rejected or incomplete dossiers. In particular, 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).

6.4.3.2 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).

6.4.3.3 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.

6.4.3.4 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 8
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; groups which have caused the dossier to be incomplete are verified on the spot
D7	Fail due to small discrepancy only (DP1)	Pass (complete)	**DR7p**	Dossier "rejected"; all the rejected groups being in the RPn categories (cf. Table 4), an appropriate administrative procedure may be used to notify the farmer of the correction.
D8	Fail due to small discrepancy only (DP1)	Fail (incomplete)	**DR8p**	Dossier "rejected"; the parcels that caused the dossier to be incomplete are verified on the spot; the opportunity can be taken to check rejected groups (in case no appropriate administrative procedure has been applied).
D7	Fail due to large discrepancy (DF1)	Pass (complete)	**DR7f**	Dossier "rejected"; an appropriate administrative procedure may be used to notify the farmer of the correction, but usually the rejected groups are verified on the spot.
D8	Fail due to large discrepancy (DF1)	Fail (incomplete)	**DR8f**	Dossier "rejected"; both the rejected groups and the parcels that caused the dossier to be incomplete are verified on the spot

7 Administrative organisation

7.1 Field inspections (by the Administration)

7.1.1 The field inspections will be made after photo-interpretation (and possibly after the rapid field visits) and are not the subject of the present Technical Specifications.

7.1.2 If needed, the areas where there is an early harvest can be given priority so that these results are delivered first (see § 5.5). 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 (see § 5.4.3) 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.

7.2 Work calendar

Indicative dates of the work calendar are given in Table 9. This calendar may differ between and within Member States, from one agricultural region to another.

For the interim report, site data for quality control, 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 9

Provisional work calendar

15.09.2005 - 15.01.2006	selection of control sites
01.03 - 01.04.2006	signature of contract
01.04 - 15.06.2006	receipt of digitized declarations of sample to control
01.05 - 30.06.2006	ground data collection
15.06.2006	interim report deliverable to Administration and JRC
20.06 - 20.08.2006	delivery of interpretation results and control documents
15.08 - 10.09.2006	(possible) delivery of photo-interpretation results for late crops
01.09 - 01.10.2006	transmission to the contractor of the results of the follow up inspections
15.9.2006	Delivery of site data for quality control to the JRC
15.10.2006	final report deliverable to Administration and JRC
Before 01.12.2006	Return of all supplied satellite data to JRC

7.3 Meetings

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

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

7.4 Quality control

7.4.1 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) (see § 7.8.1).

7.4.2 An **external** quality control relating to the execution and the results of remote sensing will be organized jointly by the Member States and the Commission. This quality control will cover:

- Verification of the general organisation of the project (conformity to the Technical Specifications, work flow and project management, adequate technical and human resources, etc.);
- Specific verification of the technical stages
- Assessment of the work undertaken by the contractor and control of the results of the contractor on the basis of a sample of dossiers.

In 2006, these checks will be carried out on **one** control site per contractor, selected by the Administration. The contractors will be obliged to deliver all necessary elements for the quality control to the JRC by the prescribed date. A JRC document describes the data and formats requested (see Recommendations 4).

As from 2004, a **simplified Quality Control** has been introduced with the objective of speeding the delivery of the QC results to the Administration. This simplified QC will consist in an analysis of the QC data provided by the contractor (as for the full QC, a number of queries will be run) followed by a 3 to 5 day visit to the contractor to clarify any anomaly found and check a sample of dossiers or parcels using the contractor's system. The objective of this visit is to separate real "problems" from database export artefacts and clarify any specific procedure or rule.

7.4.3 The Administration may also require field documents to be produced for a sample of "accepted" dossiers, as a supplementary quality control. Each of these documents ~~which are over 10 % of the controlled dossiers~~ will be paid at the set price proposed in § 10.10 or in the National Addendum.

7.5 Deliverables

The contractor shall deliver the following documents:

7.5.1 To the Administration on dates to be agreed taking into account §§ 5.4.3, 5.5 and 7.1.2:

7.5.1.1 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" group, a folder prepared for the field inspector which will contain:
  - a geometrically corrected "imagette", if possible made from the most precise document (e.g. aerial photograph) in black and white 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 locate all the parcels easily when on the spot;
  - a table giving comments per parcel.

Whatever the percentage of rejected or incomplete dossiers, the minimum of field documents to be produced in alternative “a” will be 10% of the number photo-interpreted. If necessary, the Administration will select a sample of accepted dossiers, in order to reach this minimum. It will then be the responsibility of the Administration to decide which dossiers it will inspect on the spot, or will not inspect.

OR

7.5.1.2 **Alternative “b”**: Control results **by “geographic unit”** (section of cadastre, 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.

7.5.1.3 Member States will indicate their choice of alternative "a" or "b". The separate control of spring-sown crops (§ 5.5) necessitates two deliveries of the control documents, preferably type alternative "b". In all cases, the delivery of control documents in batches is recommended, in order to spread out the workload of the inspectors.

7.5.2 To the Administration, no later than the 31.12.2006 (or a date to be agreed):

- return all documentation supplied by the Administration (cadastral maps, 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).

7.5.3 To the JRC for the quality control, no later than 15.09.2006: the data listed in Table 10, for one site selected by the Member State.

Table 10
Data required for the Quality Control

Type of data	Contents	Format
Alphanumeric	Data resulting from the application input (dossiers, groups and parcels declared) Contractor's results of photo-interpretation and categorisation, per parcel, group and dossier. Ancillary information	ACCESS database (pre-defined and supplied by JRC)
Vector	Vectorial database of the parcels as validated after the photo-interpretation. Original maps used for the location of declared parcels (in vector or raster format). Data from the ground survey (used for land use interpretation training)	SHAPE files or *Export* ARC/INFO or compatible with *Ungenerate* of ARC/INFO
Images	Satellite images and/or scanned aerial photographs (fully processed)	Digital, under the formats ERDAS "IMG", TIFF or compressed MrSID or ECW formats and related files (e.g. "TFW", etc.)
Ancillary data	Description of files and formats delivered. Metadata database inherent to each geometrically corrected image. Quality Control Records (QCRs) Nomenclature of the land uses and crop groups declared and observed. Photo-interpretation rules and manual. Categorisation rules and tolerances. Quality Assurance procedures	ACCESS data base (pre-defined and supplied by JRC) Tables and digital files, and/or hard copies

7.5.4 To the Commission, no later than the 01.12.2006, the HR/VHR source and ortho-corrected imagery used in the CwRS Campaign must be returned to the JRC, Ispra (see also Recommendations 1 (§ 5.8.1)) The delivery shall include the data and the necessary documentation:

- the **original** images (in the original format/level delivered to the contractor) on a CD or DVD together with the relevant IDQA_2006 (Image Data Quality Assessment) file giving parameters on the source image
- the **orthorectified** images (including VHR images) with their corresponding metadata XML file to be filled on the following website: http://marsmap.jrc.it/public/tools/metadata_2006/ . The metadata file should follow the naming convention (cf. instructions on the website) and be returned on the same support (DVD) as the rectified images. These images will be stored on the JRC image server and will be available to MS Administrations under specific conditions.
  For the VHR images, for every single image frame received by the contractor, all bands that have been orthorectified shall be returned in GeoTIFF or Erdas IMG. If an uncompressed (possibly pan-sharpened) mosaic of the site is available, this can be returned instead or in addition to the single image frames. In case the file corresponding to the product to be returned is larger than 2GB uncompressed, it must be splitted into tiles not larger than 2GB uncompressed. The file formats accepted are uncompressed GeoTIFF and Erdas IMG. It is absolutely mandatory to specify the coordinate reference system (CRS) associated to every single product as an EPSG code (http://www.epsg.org/Geodetic.html). In case an EPSG code does not exist for the CRS used in the product, the CRS specifications shall be provided in Well Known Text format (description in the OpenGIS Project document 01-009 available at http://www.opengeospatial.org/docs/01-009.pdf).

The contractors are invited to refer to the MARS website for further information on image return (http://agrifish.jrc.it/marspac/CwRS/default.htm).

7.6 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 will supply, if necessary in batches, feedback on the findings made by the Administration for all verified dossiers (see § 7.1). These results will be available by the 01.10.2006 and delivered in an agreed format. The contractors shall compare their results with those of the Administrations in the final report. Any conflicting evidence will be discussed.

7.7 Progress reports

The contractor will provide to the Administration, at the end of every month, from the contract notification until the end of September 2006, 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.

7.8 Reports

Two reports shall be delivered. They 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.

7.8.1 **Interim report (by 15.06.2006): Printed version:** 4 copies to the Administration and 2 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;
- sampling plan and organisation of the ground data collection;
- appraisal of administrative checks of the application sample;
- 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 possibly 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.

7.8.2 **Final report (by 15.10.2006): Printed version:** 4 copies of the final report to the Administration, 3 copies of the final report to the JRC. **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 appraisal 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: maps, declarations, data bases 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;
- discussion and interpretation of the regulations;
- 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.

7.8.3 The printed reports addressed to the JRC must be sent by private courier service (e.g. DHL, UPS etc.), and not by public post.

7.9 Archive

7.9.1 The contractor shall keep, at least until **31.12.2007** for possible audits, an archive of the main databases having led to the categorisation delivered to the Administration, for all dossiers processed: alphanumeric and vectorial 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.

7.9.2 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 § 7.5.1, containing colour (except for black-and-white data) imagettes from all images or aerial photographs having been used to categorize these dossiers.

7.9.3 The tender will include, as an option, one or several price proposals:
- possibly, to keep this archive beyond 31.12.2007;
- the price per dossier to print documents as described above.

7.10 Penalties applicable to the contractor

7.10.1 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).

7.10.2 Lateness

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 § 7.5.1, or the reports mentioned in § 7.8. 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.

8 General recommendations

8.1 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.

8.2 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.

8.3 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).

8.4 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.

8.5 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.

8.6 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.

8.7 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 sites and dossiers, etc. correspond well with the position of the Administration.

9 Technical offer

9.1 Presentation rules

9.1.1 Various **alternatives** have been suggested (for example §§ 3.3.5, 4.3.4, 5.2.1, 5.2.2, 7.5.1 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.

9.1.2 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.

9.1.3 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.

9.1.4 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 2006.

9.2 Contents

9.2.1 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.

9.2.2 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 (§ 5.2.2);
- discussion of the summer crops (§ 5.5), i.e. two-phase controls;
- methodology for the reference years checks;
- proposal for documents to be delivered to the Administration (for accepted and rejected dossiers).

9.2.3 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 of the parcels; (2) photo-interpretation and (3) field document production;
- location(s) where the various phases of work will be carried out. If this will be carried out in several sites 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.

9.2.4 Project management:

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

9.2.5 Timetable (taking into account the fact that the precise location of the sites 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.

9.2.6 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).

9.2.7 Confidentiality:

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

9.2.8 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.

9.2.9 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.

9.2.10 Companies and personnel:

- description of all the participating companies, references since 1997 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.

9.2.11 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).

10 Price proposal

10.1 A summary of the tender will be supplied as set out in Annex 2 (technical part) and Annex 3 (financial part).

10.2 Unless otherwise specified by the participating Member States, the "lots" described in Annex 1 cannot be divided by the tenderer. On the contrary, the Administration may divide the work between several contractors according to criteria to its judgement: e.g. balance of volume of work, different techniques, vertical division of the tasks, regional distribution, etc.

10.3 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 site to another, but the resulting price difference should clearly be shown;
- where the Member State imposes different techniques according to the sites, each group of sites using the same technique will constitute a separated lot.

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

10.5 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 site (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.

10.6 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 3. These parameters are explained below.

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

M1	control site with satellite images only
M2	site with satellite images and 2006 aerial photographs
M3	site with satellite images and archive aerial photographs
M4	site with aerial photographs only and rapid field visits
M5	site with satellite images and rapid field visits
Mx	site with other method, to be defined

10.6.2 *Historical controls* of the reference periods (if relevant):

H1	control of the 1986-1991 reference period

10.6.3 The following parameters will be defined in the National Addendum or appear in the Annex of this document:

NSM1, NSM2, .., NSMx	number of sites with methods respectively M1, M2, ..., Mx
NSH1	number of sites with controls H1
NDM1, NDM2, .., NDMx	number of dossiers respectively in sites with methods M1, M2, ..., Mx
NDH1	number of dossiers with controls H1
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.

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

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

10.7 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 site** with methods respectively M1, M2, ..., Mx
CSR	additional fixed costs **per site** where radar images will be used
CSH1	additional fixed costs **per site** with H1 controls
CDM1, CDM2, ..., CDMx	variable costs **per dossier** in sites respectively M1, M2, ..., Mx
CDR	additional variable costs **per dossier** in sites with radar images
CDH1	additional variable costs **per dossier** with controls H1
CDD	additional variable costs **per dossier** to be input

10.7.1 In case different categories of applications or subsidy schemes (Cf. § 5.2.4) 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.

10.7.2 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 sites in respect of the type weight and if different methods are used, the weighting per site ("CDMx") shall be adapted, taking into account the various methods and dossiers types. In that event, the calculation formulas used shall be provided.

10.7.3 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.

10.8 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.

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

Supplements = FR
+ CSR*NSR + CDR*NDR
+ CSH1*NSH1 + CDH1*NDH1
+ CDD*NDD + options + alternatives.

10.10 Each price proposal (see annex 3, G.3), will mention at least the *average unit* price for:
- input one dossier (see § 3.3.5);
- one field document to be handed over to the inspector;
- one "rapid field visit" for an individual dossier (if relevant).

10.11 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.

10.12 The Administration may also require in the National Addendum several proposals following various hypotheses: different number of sites or dossiers, alternative techniques, etc. In that event, several columns with different prices should be given in Annex 3 F.

10.13 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 3.

10.14 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.

10.15 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 3.

10.16 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.

10.17 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 § 7.8, and after delivery of the documents described under § 7.5.2. 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 31.12.2006. If no interim report is delivered, another milestone may be agreed.

ANNEX 1. Volume of Work and Requirements specific to each Member State

1. Approximate number of applications and sites. Further information will be provided within the "National Addendum".

Member State	Number of sites	Number of applications	Contact point for ITT
CYPRUS	2	3000	SOTERIS MARKIDES Cyprus Agricultural Payments Organization (CAPO) 20, Michael Koustofta Str., 2000 Nicosia P.O. Box 16102, 2086 Nicosia CYPRUS Tel: +357 22557777 Fax: +357 22557755 email: smarkides@capo.gov.cy
GERMANY	13	5550	BERND JAKOBS Bundesministerium für Verbraucherschutz, Ernährung und Landwirtschaft Referat E6, Postfach 140270, 53107 Bonn, GERMANY Tel +49 228 5293758 Fax +49 228 5293436 Bernd.Jakobs@bmvel.bund.de
GREECE	3	6800	ANASTASSIOS TSAKAS Ministry of Rural Development and Food Topographic Directorate 93, Liossion St. – 104 40 Athens, GREECE Tel: + 3 210 2125847 Fax:+3 210 88 13 510, +3 210 212 58 10 e-mail: li93u002@minagric.gr
PORTUGAL	18	15000	JOÃO LOPES INGA Instituto Nacional de Intervencão e Garantia Agricola - DIC/SCS Rua Fernando Curado Ribeiro, 4G, 6°, 1649-034, Lisboa, PORTUGAL Tel: +351 217518762 Fax: +351 217518625 e-mail: manuel.simoes@inga.min-agricultura.pt
WALES, UK	1	500	COLIN CHAPMAN GI Services Branch The Old Welsh School Alexandra Road Aberystwyth SY23 1LD WALES, UK Tel: 01970 621429 Fax: 01970 611928 e-mail: colin.chapman@wales.gsi.gov.uk

2. Complementary Information (method proposed for the controls, important dates and any specific issues)

CYPRUS
More information will be found in the National Addendum issued together with the ITT documentation

GERMANY
More information will be found in the National Addendum issued together with the ITT documentation
Baden-Württemberg (4 sites), Hessen (3), Mecklenburg-Vorpommern (3), Schleswig-Holstein (2), and Bayern (1) will participate to the ITT

GREECE
More information will be found in the National Addendum issued together with the ITT documentation

PORTUGAL
More information will be found in the National Addendum issued together with the ITT documentation

WALES, UK
More information will be found in the National Addendum issued together with the ITT documentation

ANNEX 2: TECHNICAL RÉSUMÉ 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 boundary 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 (§ 4.6.3):	
Proposed method for digitizing field limits:	Place (city, country) where the digitization will be carried out:
Processing (CAPI and/or classification, see § 5.2.1):	
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
Main/Mini Frame:					
Work Stations:					
PCs:					
Tape/ CD-ROM Drives:					
Printers:					

Network details:	

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 § 10.4:
Other relevant points:

ANNEX 3: FINANCIAL RESUME 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) Sites/Methods	
(C.3) Other costs included in the **base** proposal (see E.4 below)	

(D) **Assumptions as per § 10.7.1, 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 site (base proposal, VAT not included)

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

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

Code for the different sites	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 § 10.12)

	Cost of the hypotheses applicable		
(F.1) **FIXED COSTS** (overall and per site)	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 § 10.10)			
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 31.12.2006:	
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 § 10.10)

	year 1	year 2	year 3
Base fixed costs			
Fixed costs per site			
Variable costs			
Total without options, constant 2006 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).