

Standard Summary Project Fiche

Basic Information

CRIS Number: **2003/004-979-03.02**

Title: **Provision of the Operation of the Land Parcel System**

Sector: **Agriculture**

Location: Republic of Latvia

Ministry of Agriculture

Republikas laukums 2, Riga, LV- 1981;

Ministry of Justice

Brivibas bulv*ris 36, Riga, LV-1536;

State Land Service

11 Novembra krastmala 31, Riga, LV- 1981;

The Rural Support Service

Republikas laukums 2, Riga, LV- 1981

Objectives

Overall Objective:

Implement the EU Common Agricultural Policy in Latvia

Project purpose:

Produce orthophotos of the territory of Latvia and up-date the graphical part of the Land Parcel Register to avoid incorrect and double area payments, to improve quality of Land Parcel System and IACS.

Accession Partnership and NPAA priority

Accession Partnership

Agriculture:

Upgrade the capacity of the agricultural administration and complete preparations for the enforcement and practical implementation of the management mechanisms of the common agricultural policy, in particular the integrated administrative and control system and the paying agency, as well as for the implementation and enforcement of veterinary and phytosanitary and food safety legislation.

The project objectives cover priority actions of Latvia as defined in the NPAA: to improve the capacity of the Ministry of Agriculture in respect of decision making by reinforcing the system of information and analysis and setting up an integrated administration and control system (LA – 031).

Description

Background and justification:

Upon signing the Europe Agreement the Republic of Latvia has agreed to adopt the whole *acquis communautaire* on the date of accession to the European Union. The project should be implemented according to the current plans of the Government of the Republic of Latvia, the full CAP administration should be ready for accession by 1 May 2004.

The administration of the direct payments for agriculture is supported by Integrated Administration and Control System (IACS) in the EU. IACS is a system for administration and control of EU finances, direct payments according to regulations 3508/92/EEC and 2419/01/EEC. The main elements of IACS are:

computerised database;

common identification system and register of land parcels;

common registration system of animals and the register;

aid applications;

integrated control system.

Article 3 of Council Regulation (EEC) No 3508/92 of 27 November 1992 establishing an integrated administration and control system for certain Community aid schemes says, that: 'The computerized data

base shall record, for each agricultural holding, the data obtained from the aid applications. This database shall in particular allow direct and immediate consultation, through the competent authority of the Member State, of the data relating at least to the previous three consecutive calendar and/or marketing years”.

In accordance with the EU Regulations No 3508/92 and 2419/2001 every Member State shall introduce IACS for accountancy and control of EU support payments to agriculture.

The Land Parcel Register is a constituent element of the IACS. Latvia has adopted Regulations of the Cabinet of Ministers No 540 of 27 December 2001 “*Regulations on Procedure of Setting up a Integrated Administration System Supporting Rural Territories, Agriculture, Fisheries and Forestry*” which are laying down the need to establish the Land Parcel Register (identification system and register of land parcels).

According to the IACS requirements, Land Parcel Register must be based on electronic map of high accuracy (1 pixel exceeding 1 m) and application of Geographical Information System (GIS). EU recommendations are to use orthophotos for the preparing the graphical part of land register. The orthophotomaps should not be older than 5 years. Because of possible changes in the land parcel structure, the orthophotomaps should be updated every 5 years. Some areas can be changed according to land reform, e.g. roads and passes will be changed along new boundaries of estate, etc. There will be made new melioration ditches in many places in Latvia because of specific conditions of wetness. These ditches according to methodology of digitalisation of land blocks divide blocks and are used as block boundaries.

According the recommendations from “Mission report of visit to Latvia on LPIS (Land Parcel Identification System) establishment on 6 – 7/12/2001” Mars ref: EdR/G03/M2911/01 the best alternative solution to the cadastre as reference for LPIS, consists in using simplified topographic maps at scale 1:10 000 to create easily a simple block system as an intermediate reference. This block system could integrate the digital orthophotos as background and the cadastre as ancillary information to support the farmer in locating their parcels.

All elements for establishing physical blocks as reference parcels are currently being created. The working group on implementation on IACS was created at the MoA on April, 2002. It includes representatives from MoA, Rural Support Service (RSS) and State Land Service (SLS). If it is necessary additional experts from other institutions are invited to participate in the meetings of working group. The Meetings are hold regularly, at least once per month. The task of working group is to supervise implementation of IACS, to take decisions on implementation of different elements, accept methodologies on digitalisation of land parcel blocks etc.

Background for registration and mapping of agricultural land parcels also is being prepared on the basis of existing (but outdated) digital aerial photography under the Phare 2001 twinning project LE-99/IB/OT/01 between Latvia and Netherlands. Also assistance for preparations for the technical implementation of the Integrated Administration and Control System is given under this project.

Opting for the use of the cadastre as LPIS reference system may provide a slightly faster solution in the short term, but will definitely generate problems and complexity of system in the long run. Due to the fact that the cadastre in Latvia is concerned with property rights, cadastral parcels very often do not correspond directly to agricultural parcels, which are the one required by the IACS regulations. Similar recommendations to create LPIS based on land blocks were made under the Latvian – Sweden twinning project LV2001/IB/AG/01. Therefore decision to built up the Land Parcel Register in Latvia based on land block system based on digital orthophotos and using cadastre and other cartographical maps as an additional sources was taken by the working group on implementation on IACS at Ministry of Agriculture (MoA).

The State Land Service has taken aerial photographs of the whole territory of Latvia for national purposes. Whole territory of Latvia was photographed during 5 years: 1994 – Kurzeme, 1995 – Zemgale, 1997– southern part of Vidzeme, 1998 – northern part of Vidzeme, 1999– Latgale (Annex 5). Although the whole territory of Latvia is covered with aerial photographs and the needs of the State Land Service fulfilled, photos from 1994-1997 are outdated and not accurate enough for the purposes of IACS. Most of available orthophotos are black-and-white. The scale is 1:10 000. Resolution is 1 metre. RMSE is 2 metres. Orthophotos from 2001 are in colour and at the same scale (1:10 000), resolution and RMSE as the black-and-white photos.

Approximate areas covered in the previous aerophotography and amount of orthophotos are as follows:

1994: 12 600 km², approx. 500 orthophotos;

1995: 14 300 km², approx.600 orthophotos;

1997: 14 400 km², approx.600 orthophotos;

1998: 14 200 km², approx.600 orthophotos;

1999: 9 500 km², approx.400 orthophotos.

There were no pictures made of narrow area across the Latvian – Russian border, because of lack of permissions from Russian side for crossing the border. For production of orthophotomaps in this area IKONOS satellite images with 1 m resolution (Geo 1m B&W) provided by Space Imaging were used.

IACS needs accurate data at the present moment for validation of data on applications for support. Therefore there will be a need to up-date the Land Parcel Register after its creation in order to fulfil the EU requirements on IACS. The territory of Latvia should be covered with new orthophotos until end of the year 2004, and the boundaries of the land parcel blocks should be up-dated.

Currently, there is no Land parcels register in Latvia fulfilling EU requirements. The building of Land Parcel Register began in October 2002, after the signing the agreement between RSS and SLS on October 3, 2002. SLS is responsible for preparing graphical data of land register (digitalisation of land blocks) – for 89 % of total agricultural utilised area and other part of area is being digitised by RSS. The digitalisation is planned to finish on July 1, 2003. Up to the March 1, 2003 approximately 50% of agricultural utilised area of Latvia were digitalised (about 1,22 million ha, 140 thousand blocks). It has been calculated that there will be 300 000 blocks in total for all rural territory of Latvia with an average area of 8.2 ha. Approximately 90 people from SLS are involved in digitalisation of land blocks, which are doing this task as full or part time of their daily work. And about 10 experts from RSS are doing digitalisation and controlling digitised blocks, which are delivered from SLS.

LPIS is built as a state information system according with national Law on State Information Systems of 02.05.2002. Tender procedure on LPIS development was finished on November, 2002 and contract with IT company on development of LPIS was signed on December, 2002. It is planned that development of LPIS will be finished by 01.07.2003. Under the Phare 2001 project the hardware and the software necessary for providing of operation of LPIS will be purchased in the year 2003.

To provide Land Parcel Register with updated orthophotos it is necessary to make a new aerial photography. SLS plans to start making a new aerial photography for the western and central part of Latvia in April 2003, if the weather conditions will allow it. A tendering has been organised in 2002 and a general contract was signed for years 2003-2005, the main purpose of which was to settle the price for one square kilometre of area. For each year separately a protocol of understanding will be signed which will define the area to be photographed and also terms of payment. Financing of this activity for the year 2003 is guaranteed from the national budget. But there is high risk that the resources from the national budget in the years 2004 will not be assigned at adequate amount to cover all the rest of the territory of Latvia with aerial photography in this period. Therefore there is a strong need for additional financing to finish the making of aerial photography and to cover all territory of Latvia with new orthophotos until end of the year 2004.

Within this Phare 2003 project it is planed to cover part of territory of Latvia with colour aerial photography in the year 2004, area about 47 000 km², amount of orthophotos – about 1880 orthophotos. In previous experience SLS contracted the one company for taking aerial photographs using one or two airplanes. SLS will prepare dossier of tender for 2004 which will be based on experience and calculations of taking aerial photographs in 2003, it is possible that there will be need to use 3-4 airplanes to cover remaining territory of Latvia in one year.

In years 2003 – 2004 up to date colour orthophotos covering all territory of Latvia will be produced. The scale of orthophotos will be 1:10 000, resolution – 1 metre and RMSE – 2 metres. It is planed to do pin point flights in scale 1:30 000. The places of taking photographs will be planned and GPS will be used in this process. The costs is planned using the previous experience of SLS and average prices (for scale 1:30 000) in tender 2002, which was organised for taking aerial photographs in 2003. In this tender participated companies from Sweden, Finland, Denmark, Germany and Norway. The winner of tender Swedish company "Swedesurvey" offered the price EUR 6,11 for km² (including 18% VAT). The indicative technical specification of flights is given in Annex 10. These orthophotos will be used to update the Land Parcel Register. It may happen again that there will be difficulties to obtain the flight permit near Russian border, therefore under this project it is planned to obtain black and white satellite images with 1 m resolution for the area of approximately 650 km².

Since Land Parcel Register initially is being built up on outdated orthophotos it will be necessary to make more on-the-field checks than it is required by EC regulations to update land parcel block boundaries. Therefore there is a strong need for GPS equipment which allows checking the current land parcel boundaries. It is planned that RSS will use GPS equipment in the future for the field inspection for the needs of IACS.

Under this project there will be training for SLS in digital aerial triangulation, DTM generation and orthophoto production, training in the use of satellite imagery for the control and training in the image interpretation.

Training part for RSS includes the training of on-the-spot inspectors on the control techniques and use of GPS equipment on performing on-the-field checks for the needs of control of area payments.

Planned SLS study visits to the Member States are aimed at producing cheaper orthophotos at better quality, obtaining the information on the newest technologies and methods used for producing orthophotos. Planned RSS study visits to MS are aimed at the quality control of Land Parcel Registers, the use of technologic developments in Geographical Information System (GIS) and remote sensing. The EU Member State experience on the remote sensing is crucial for increasing the capacity of administration and control of direct payments for crops under the IACS.

It is planned that most of the production of orthophotos will be carried out in SLS. The current capacity of SLS is 800 orthophotos (20 000 km²) per year. The supplies part of this project is meant to increase the capacity of production of orthophotos and updating of boundaries of land parcel blocks in SLS. The part of the software and the hardware for producing orthophotos already is available (see Annex 8), therefore this project is prepared only for supplies of extra necessary software and hardware (see Annex 7). Additional hardware and software will allow to increase the capacity of production of orthophotos in SLS from 800 (20 000 km²) to 1600 orthophotos (40 000 km²) per year. Also it is required to achieve better quality of production of orthophotos. This project is aimed to increase the capacity of SLS to make it possible to produce all necessary orthophotos by SLS, and to cover all territory of Latvia with orthophotos by the end of 2004.

Linked activities:

“Integration into EU: Law Approximation “ LE-99/IB/OT/01c

One part of this twinning project between Latvia and Sweden “Management of the reform of the Common Agricultural Policy” was aimed for development of appropriate structures and institutions for an effective implementation and enforcement related to the adoption of the acquis in the CAP area.

Project covered following activities:

analysis of the IACS-regulation in order to identify important parts that must be taken into account when preparing an administration. Collecting information regarding possible solutions for the implementation of IACS, incl. experiences, problems etc.;

analysis of the implications for Latvia to implement the IACS and preparations for pilot activities regarding agricultural blocks in Latvia;

producing a report with recommendations on the implementation of the IACS in Latvia. The report will also include an identification of registers that need to be developed in order to achieve an integrated data base;

This twinning project was the base for establishment of the Land parcel register.

“Development of the management mechanisms of the Latvian agriculture in line with the EU Common Agricultural Policy” LE 01.02.02. Twining project LV/2001/IB-AG-01 between Latvia and Netherlands is aimed to prepare background for registration and mapping of agricultural land parcels on the basis of existing (but outdated) digital aerial photography and give an assistance for preparations for the technical implementation of the Integrated Administration and Control System.

A pilot project on digitalisation of land blocks (SLS and RSS) (April - June 2002).

A pilot project on digitisation of Land Parcel Identification System (LPIS) blocks for 11 sites dispersed in the country, and representing different agricultural land structures in Latvia, was completed in mid June 2002. 1863 blocks (27,667 ha) were digitised by SLS and RSS (RSS made digitalisation in 3 municipalities). As a result of this pilot project Methodology of preparing of data for graphical part of land register was worked out by SLS.

Digitalisation of land blocks (SLS and RSS) (October 2002 – July 2003)

Digitalisation of Land blocks started on October 2002, after SLS and RSS signed an agreement. Digitalisation is made according with Methodology of preparing of data for graphical part of land register. Digitalisation is made by SLS and by RSS (in 3 districts). Up to the March 1, 2003 approximately 50% of agricultural utilised area of Latvia were digitalised (about 1,22 million ha, 140 thousand blocks). It is

planned that digitalization of territory will be finished by July 01, 2003. It has been calculated that there will be a total of 300,000 blocks with an average area of 8.2 ha.

SLS project "Aerial photography of state territory" financed from national budget. Project on aerial photography started in 2002 when several Latvian settlements were photographed in co-operation with company "J.Vitins un kompanjoni" by using a digital camera (with 20 cm pixel size). In July 2002 a tender for the aerial photography for the year 2003 was launched. As a result of the competition in September 2002 the contractors for the aerial photography for the year 2003 (for the part of Latvia, as shown in the annex 6) were established. A contract is signed with Swedish company "Swedesurvey" on the making of the aerial photography in the year 2003 for the part of Latvia for the needs of production of orthophotos at the scale 1:10 000. Apart from the aerial photography and the planning and managerial activities connected thereof, the project consists also from the planning, signalling and surveying of the ground control points.

Results:

The following results will be achieved:

Produced aerial photos of part of territory of Latvia;

Obtained knowledge about the newest remote sensing technology and improved orthophoto creation skills of personnel of SLS;

improved level of the quality control of Land Parcel Registers, obtained knowledge on remote sensing of land blocks for area based payments, and obtained knowledge on use of technologic developments in GIS;

Delivered and installed equipment for orthophotos and digitalisation;

Delivered GPS equipment for on-the-field controls.

Delivered satellite images for the territory of Latvia near the Russian border.

Delivered and installed software for orthophoto production.

Activities:

Taking aerial photos (The planned coverage by aerophotography is 47 000 km², amount - about 1880 orthophotos);

Means:

Contract 1 (Service):

Taking aerial photographs

Training for SLS (see indicative budget in Annex 12):

1. Training in digital aerial triangulation, DTM and orthophoto (2 persons x 15 days);
2. Training in use of satellite imagery for the control (2 persons x 15 days);
3. Training – seminar in the orthophoto image interpretation (32 persons x 5 days).

Training for RSS (see indicative budget in Annex 12):

1. Training of inspectors on GPS equipment (two training seminars for 40 persons x 2 weeks);
2. Training on quality control of Land Parcel Register (3 persons x 1 month);
3. Training on remote control for area – based payments (3 persons x 1 month).

Means:

Contract 2 (Service):

2 short-term experts for training of SLS (5 days each)

2 short term experts for training of RSS (3 m/m in total)

Acquisition of equipment for orthophotos and digitalisation.

Acquisition of GPS equipment for on the field control.

Acquisition of black and white satellite images with 1 m resolution.

Means:

Contract 3 (Supply):

Supply of IT (hardware and software), GPS equipment and satellite images of territory of Latvia near the Russian border

Acquisition of software.

To increase the quality of production of orthophotos it is necessary to update software already used by SLS for making an orthophotos: Socet Set (2 licenses) and Photomod (2 licenses). Therefore this will involve negotiations with producer on purchase of licenses for updating the used software (Contract 4).

Means:

Contract 4 (Supply):

Supply of the software for production of orthophotos

Lessons learned:

Following lessons have been learned during the implementation of project “Development of the management mechanisms of the Latvian agriculture in line with the EU Common Agricultural Policy” LE 01.02.02:

The co-ordination between parts involved in project is important, especially it is crucial to supervise beneficiary to be sure if the involvement of beneficiary in the implementation of project is effective enough;

The project fiche design was lacking, because at the time of drafting of fiche there was not yet detailed plan of further development of IACS system in Latvia. The implementation of project should correspond with national plans of developing the system. Therefore it is crucial to work out the detailed plan on implementation of IACS at the national level, which should be closely linked with proper activities of the project;

Detailed layout of contracts is useful. Because if one part of contract could not be completed in time, the others could be not the subjects of change. It gives a possibility to save the time on total completion of contract;

Already in the process of programming it is useful to foresee non-standard aspects, as there are the cases when it is obvious that there is no competition in the market and as well as in the cases when the project deals with further development of already existing IT systems;

Using of non-standard aspects acquiring software produced by national companies or localised for Latvian. There is limited offer of such software and it sometimes could be more expensive than the international versions of the software, but the expenses rises after original software is being translated and localised afterwards, and in the end it shows no effective use of resources. Such activities also are time consuming, but IACS needs to be implemented in time, and in the Candidate countries the implementation time is much shorter time than it was in Member countries.

Institutional Framework

The Ministry of Agriculture will be responsible for the overall co-ordination of this project. The project implementation will take place at the State Land Service in co-operation with Rural Support Service.

State Land Service is an institution under the supervision of the Ministry of Justice. Its tasks include also to develop the regulations for geodesy, photogrammetry, topography and cartography, to perform methodical leadership and supervision of these works; to perform topographical surveying and mapping; to prepare nautical and aeronautical charts, to perform continental shelf mapping of the Republic of Latvia; to develop and maintain the technical equipment of the State Land Service; to arrange and save materials in the State Land Service archive and materials of geodetic, gravimetric, photogrammetric and cartographic plans; to control land monitoring and land use.

The Cabinet of Ministers on August 8, 2002 issued an order to SLS to prepare data for graphical part of land register. SLS also is the responsible institution for making new aerial photography and processing of orthophotos.

Rural Support Service was established by the Regulation of Cabinet of Ministers No 504 “On Rural Support Service”. RSS within the scope of its competence organises and carries out the state management functions in respect to rural and agricultural development:

the State support to rural areas, agriculture, forestry and fisheries in the field of administration, payments and control; administration, payment and control of the EU pre-accession measures in agriculture and rural development.

Regulation of the Cabinet of Ministers No 540 of 27 December 2001 “*on Procedure of Setting up a Uniform Administration System Supporting Rural Territories, Agriculture, Fisheries and Forestry*” determine that RSS is responsible for implementation and keeping of the Land Parcel Register.

SLS is responsible for making an orthophotos and digitising of LPIS. RSS is responsible for implementing IACS, administration, payments, controls, also for digitising of LPIS in 3 districts.

There is a discussion still going on about responsible institution (SLS or RSS) for an updating of LPIS in working group on implementation of IACS at the MoA. The result of discussion depends on allocation of national budget.

Contractors will be responsible for flights, training and instrumentation.

Detailed Budget (in Euros)

	Phase 1: Support			National Cofinancing			Total eligible costs
	Investment Support	Institutional Support	Total Phase (=I+IB)	Eligible costs	Non-eligible costs	FI	
Contract 1: Services	247 500		247 500	82 500**	14 850		330 000
Contract 2: Framework contract, Services		67 600	67 600	23 400*			91 000
Contract 3: Supplies	523 700		523 700	174 600**	31 428		698 300
Contract 4: Supplies	33 000		33 000	11 000**	1 980		44 000
Total	804 200	67 600	871 800	291 500	48 258		1 163 300

Parallel co-financing. Parallel co-financing will be applied for covering of office costs for experts and infrastructure facilities.

Joint co-financing, excluding all taxes and duties.

Implementation Arrangements

Implementing Agency

Implementing Agency will be Central Financing and Contracting Unit, Ministry of Finance:
 PAO: Mrs Valentina Andrejeva, State Secretary, Ministry of Finance
 Address: Smilšu 1, LV –1919, Riga, Latvia
 Phone: +371 7 226 672, fax +371 7 095 503

Technical implementation will be the responsibility of the Ministry of Agriculture:

SPO: Mr Aivars Lapins, Deputy of State Secretary, Phone +371 7 027262, fax +371 7 830272, e-mail: Aivars.Lapins@zm.gov.lv.

The operational counterparts:

Ms Ginta Uzuliņa – Deputy Director, Department Agricultural Strategy, MoA: phone +371 7027454, fax +371 7830272

Mr Guntis Grabe, Director General, State Land Service

Address: 11 Novembra krastmala 31, Riga, LV- 1981

Phone: +371 7 038 600, fax +371 7 227 037

Mr Uldis Apels, Director of Information Department, Rural Support Service

Address: Republikas laukums 2, Riga, LV- 1981

Phone: +371 7 027396, fax +371 7 027385

Twinning

There will be no twinning involved under this project

Non-standard aspects

Standard procedures of the Commission in accordance with Practical Guide to PHARE, ISPA and SAPARD contract procedures will be followed under Extended Decentralised Implementation System. Prior to EDIS accreditation, DIS will be followed. EDIS will apply from the date of accession at latest.

For Contract 4 direct contract to Leica Geosystems (on Socet Set update and Imagine Professional), Racurs Co (on Photomod update) and Adobe Systems Incorporated (on Adobe Photoshop) will be used. The nearest representative of Leica Geosystems is Mr. Toivo Martinson in Estonia, (iva@ivaleon.ee) and responsible expert for East Europe market is Mr. Peter Schreiber (peter.Schreiber@gis.leica-geosystems.com).

Ratio: if during project implementation the project cost for some reasons will decrease, the Phare financing will also decrease proportionally.

Contracts

Three contracts will be tendered according to the implementation schedule, which will cover all envisaged project activities. Contracted amounts will be disbursed prospectively according to the Annex 3 of this project fiche.

Contract 1 – Service contract for taking aerial photos of territory of Latvia: 330 000 EUR (joint co-financing, excluding all taxes and duties)

Contract 2 – Framework contract for training of employees of SLS and RSS: 67 600 EUR (parallel co-financing);

Contract 3 – Supply contract for purchase of IT equipment (hardware and software) and satellite images: 698 300 EUR (joint co-financing, excluding all taxes and duties).

Contract 4 – Supply contract for purchase of software for production of orthophotos: 44 000 EUR (joint co-financing, excluding all taxes and duties).

Implementation Schedule

The expected time frame and implementation schedule after the confirmation, specification and assignment of financing of the project is planned to be the following:

	Start of tendering	Start of project activity	Completion
Contract 1	IV quarter 2003	II quarter 2004	III quarter 2004
Contract 2	IV quarter 2003	I quarter 2004	IV quarter 2005
Contract 3	IV quarter 2003	II quarter 2004	II quarter 2005
Contract 4	IV quarter 2003	II quarter 2004	II quarter 2005

Equal Opportunity

The main criteria in Tender process for the staff evaluation are professional and experience in similar assignments, but not their sex or age. There is equal opportunity for both – men and women.

Environment

N/A

Rates of return

N/A.

Investment criteria

Catalytic effect:

The project will assist in the adaptation of Latvian agriculture to the Community acquis regulations regarding Integrated Administration and Control System and paying functions.

Cofinancing:

Project will be co-financed by national budget sources in amount 0.29 MEUR

Additionality:

Phare grants will not displace other financiers as none have been identified for this present project

Project readiness and Size:

Total project cost is 1 163 300 EUR. Investment component size is 1 072 300 EUR and institutional building component size 91 000 EUR. Project is ready for implementation as soon as funds are available.

Sustainability:

Financial sustainability will be guaranteed. Latvian Government will cover future maintenance and operations costs.

Compliance with state aids provisions

State aids provisions of the Europe Agreement will be respected.

Contribution to National Development Plan

N/A

Conditionality and sequencing

Results of Twinning (LV/2001/IB-AG-01): Implementation of the Common Agriculture Policy will be available for introducing of this project.

Budgetary commitment for co-financing.

Annexes to project Fiche

Logical framework matrix in standard format

Detailed implementation chart

Contracting and disbursement schedule by quarter for full duration of programme

Reference to feasibility / pre-feasibility studies.

Orthophotos made in Latvia by years

Planned coverage of aerial photography by years

Indicative list of equipment for producing orthophotos and digitalisation

Existing equipment for production of orthophotos (SLS)

G MATRIX FOR		Program name and number	
on of the Land Parcel System		Contracting period expires	Disbursement expires
		Total 1 163 300	Phare 871 8
ve	Indicators of Achievement	Sources of Information	
on Agricultural Policy in Latvia	Latvia is able to implement the CAP according the requirements of the EU	Commission annual Progress Report	
	Indicators of Achievement	Sources of Information	Assumptions
the territory of Latvia and up-date the graphical part er to avoid incorrect and double area payments, to parcel System and IACS.	Rural Support Service administrates Land Parcel Register according the requirements of the EU by the end of project.	Commission regular report; Government official journal.	Continuing priority and commitment by the G Latvia to preparations integration;
	Indicators of Achievement	Sources of Information	Assumption
the territory of Latvia; t the newest remote sensing technology and ion skills of personnel of SLS; ity control of Land Parcel Registers, obtained sing of land blocks for area based payments, and e of technologic developments in GIS; rthophotos and digitalisation; for on-the-field controls. of territory near the Russian border duction of orthophotos	All territory of Latvia covered with aerial orthophotos no older than 5 years at the end of 2004. The boundaries of the land parcel blocks in the territory of Latvia are up-dated; Land Parcel Registers in line with EU requirements.	Government official journal. SLS annual reports	Support from other re institutions; Adequate provision fr budget
	Means		Assumption

- Inspectors on GPS equipment;
- Quality control of Land Parcel Register ;
- Remote control for area – based payments
- for producing orthophotos and digitalisation.
- Instrument for on the field control.
- for production of orthophotos.
- White satellite images with 1 m resolution.

<p>Service contract:</p> <p>Training for SLS:</p> <ol style="list-style-type: none"> 1. training of 2 persons x 15 days; 2. training of 2 persons x 15 days; 3.1. training - seminar of 32 persons x 5 days; 3.2. 2 short-term experts visit x 5 days each <p>Training for RSS:</p> <ol style="list-style-type: none"> 1. training of 40 persons x 2 weeks x 2 times; 2. training of 3 persons x 1 month); 3.1. training of 3 persons x 1 month); 3.2. 2 short term experts, 3 m/m in total; <p>Service contract;</p> <p>Supplies contract;</p> <p>Supplies contract.</p>	
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Both organizations retain adequate staff. Appropriate administrative (premises, office supplies) provided. Staff in RSS and SLS meet requirements of relevant laws and directives.

Preconditions

Results of Twinning (LV/2001/IB-AG-01): Implementation of the C
Agriculture Policy will be available for introducing of this project.
Budgetary commitment for co-financing.

Detailed implementation chart

vision of the Operation of the Land Parcel System

[illegible]

[illegible]

onal			500 49		500 82					
tract 2										
tracted total		67								
e		600 67								
oursed total		200 40		900 46		600 53			600 67	
e		200 40		900 46		600 53			600 67	
onal		900 5	800 8	700 11	000 16	600 17			400 23	
tract 3 (Supply)										
tracted total			69							
e			3 700 52							
onal			4 600 17							
oursed total			9 200 41			8 500 62			8 300 69	
e			4 200 31			1 300 47			3 700 52	
onal			4 800 10			7 200 15			4 600 17	
tract 4 (Supply)										
tracted total			44							
e			000 33							
onal			000 11							
oursed total			400 26			000 44				
e			800 19			000 33				

onal			6			11				
		600				000				

Reference to feasibility / pre-feasibility studies

1) Results of Twinning (LE-99/IB/OT/01): Implementation of the Common Agriculture Policy will be available for introducing of this project

2) “Development of the management mechanisms of the Latvian agriculture in line with the EU Common Agricultural Policy” LE 01.02.02, including twinning project LV2001/IB/AG/01 and supplies component;

3) Twinning project LV/2001/IB-AG-01 between Latvia and Netherlands is aimed to prepare background for registration and mapping of agricultural land parcels on the basis of existing (but outdated) digital aerial photography, and also to give an assistance for preparations for the technical implementation of the Integrated Administration and Control System.

Annex 5

Orthophotos made in Latvia by years

Annex 6

Planned coverage of aerial photography by years (no Phare involved)

Planned coverage of aerial photography by years (PHARE2003)

Annex 7

Indicative list of equipment for producing orthophotos and digitalisation

Contract 3

1) Equipment for production of orthophotos (SLS):

Hardware:	amount:	costs of 1 unit (EUR)	total costs (EUR)
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DVD writer	1 pieces	500	500
Workstations P4	2 pieces	2 120	4 240
GPS Trimble Pathfinder (or equivalent)	2 pieces	1 4250	28 500
Stereo glasses	6 pieces	250	1 500
Server 300Gb HDD 1	1 pieces	16 000	16 000

Software:

Orthovista (or equivalent)	1 licence	2 000	2 000
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Total (1)	52 750
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2) Up-dating of boundaries of land parcel blocks (SLS and RSS):

Hardware:

Workstations P4	10 pieces	1 500	15 000
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Software

¹ Server DELLTM PowerEdgeTM 2600 or equivalent

Microstation	10 licences	7 000	70 000
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Total (2)		85 000	
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3) Up-dating of boundaries of land parcel blocks (RSS):

GPS Trimble Pathfinder (or equivalent)	10 pieces	143 50	143 500
GPS Geo XT 512 MS (or equivalent)	53 pieces	7 020	372 060

Total (3)		515 560	
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4) Black and white satellite images with 1 m resolution for the territory near the Russian border		45 000	
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Total Contract 3 (1+2+3+4) 698 300

Contract 4:

Software necessary for production of orthophotos (SLS):

Socet Set update	2 licences	10 000	20 000
Photomod update	2 licences	3 500	7 000
Adobe Photoshop	2 licences	1 000	2 000
ERDAS Imagine Professional licence	1 licence	15 000	15 000

Total Contract 4		44 000	
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Annex 8

Existing equipment for production of orthophotos (SLS):

Hardware:

CD writer	1 piece	
Workstations Sparc Station		2 pieces
Workstations P3		3 pieces
Stereo glasses	5 pieces	
Server, 40Gb HDD available for orthophoto production		1 piece
Scanner DSW300	1 piece	

Software

Socet Set	2 licences.
Photomod	3 licences.
Scanner software	1 licence.

Necessity for new equipment for production of orthophotos:

Hardware:

DVD writer – existing CD writer is more then 3 years old, there is a need for new writer, DVD writer provides storing of more data on a disk;

2 pieces of workstations P4 – a need to change existing Sparc Stations, one of them is slow, another one – out of order. For production of orthophotos it is absolutely necessary to have more powerful up-to-date worksta tions.

2 pieces of GPS Trimble Pathfinder (or equivalent) – for survey of ground control and control of orthophoto geometric accuracy; this equipment should be used by the unit which

produces orthophotos; at present this work is done in cooperation with other units of SLS which very often is not efficient.

6 pieces of stereo glasses – the existing ones have several defects, a need to change them and to have a reserve.

Server 300Gb HDD – necessary to enlarge the hard disk space; all data necessary for orthophoto production (project data, scanned aerial images, final orthophotos etc.) could be stored on the server and available on-line for all workstations through the network, at present they are stored on hard disks of workstations which is not efficient; this server could be used only for orthophoto production needs.

Software:

2 licences of Socet Set update - necessary for change the platform from Unix based Sparc Stations to Windows based workstations;

2 licences of Photomod update – would improve the speed and quality;

2 licences of Adobe Photoshop - to improve the radiometric quality of orthophotos, to correct small defects;

Orthovista (or equivalent) – tone balancing and mosaicking

Optional: ERDAS Imagine Professional – for processing of satellite images.

Annex 9

Indicative technical specification for necessary server

	Server DELL™ PowerEdge™ 2600 or equivalent
Processor	1 x Intel® XEON 2.4GHz 512KB L2 cache 400MHz FSB processor (extendable up to 2 processors)
RAM	2GB (4*512MB) DDR ECC 200MHz (max main memory extendable up to 6GB)
Video	Error! Unknown switch argument. Integrated controller
HDD	1 x 72GB SCSI Ultra320 10000 rpm 80pin Internal 5x 72GB SCSI Ultra320 10000 rpm 80pin Internal, of which 1 disk has ensured RAID
Disk system	1.44 MB
Monitor switch	4 port monitor switch 17"
DVD-R	EIDE DVD-R
DVD±RW	Sony internal EIDE DVD±RW equipment DRU500A (10xDVD+RW matrixes) + PCI EIDE controller or alternative DVD equipment
Network map	Error! Unknown switch argument. Integrated 10/100/1000 Gigabit NIC
Manipulator	Keyboard PS/2 Lat; optical mouse PS/2
Raid controller	PERC4 Embedded Raid
Shell, casing	Tower 5U, Redundant Power Supply (2 PSU) feeding block
Disk places and I/O sockets	1" x 6 Hot-plug backplane; 7 PCI extension sockets: 2 x 64-bit/133MHz PCI-X; 4 x 64-bit/100MHz PCI-X; 1 x 32-bit/33MHz PCI

Operational system	Novell 6 25 licences, or 50 upgrade licences from Novell 4.1 to Novell 6
Uninterrupted feeding block	APC Smart-UPS 1500 VA or equivalent
Guarantee	3 years

Annex 10

Indicative technical specification for aerial photography

SECTION ONE: Summary of requirements and materials to be delivered

1.1 Areas to be photographed

The areas to be photographed stereoscopically in colour measure 47 000 km²:

1.2. Camera

The camera shall have a lens of nominal focal length of approx. 15 cm and nominal negative format of 230x230 mm.

1.3 Type of photography

1.3.1 Colour photography shall be on scale 1:30 000, which provides for full stereoscopic coverage of the area to be photographed.

1.3.2 The photography shall be of an image quality and precision suitable for photogrammetric mapping and orthophoto mapping.

1.4 Film negative

1.4.1 Storage of films

Each processed film shall be kept in roll form on a spool and in a metal or plastic container as supplied by the film manufacturer. Rejected negative shall not be removed from the roll.

Delivery of films

All films exposed on the contract shall be delivered to the State Land Service, no later than one month after completion of the photography.

1.5 Other material to be delivered

1.5.1 One set of the original photo index map on transparent medium at a scale sufficient to show the position of each flight line and the approximate relationship of individual photo exposures shall be supplied.

1.5.2 One set of colour contact prints.

1.5.3 One copy of all films reports (see clause 7.4)

1.5.4 One set of colour diapositives.

SECTION TWO: Aircraft, Camera and associated equipment

2.1 Equipment to be used

2.1.1 Aircraft

A suitable aircraft capable of meeting the flying specified in these specifications shall be used.

2.1.2 Aerial camera

A high precision metric camera with nominal focal length of approx. 15 cm shall be used for the aerial photography.

2.1.3 Navigation instruments

Aircraft shall be equipped with proper navigation aids, such as GPS equipment, which are essential for accurate navigation.

2.2 Camera format

2.2.1 The camera to be used shall be a 230x230 mm format metric survey camera with forward image movement compensation, fitted with a lens that is designed to give a residual radial distortion not exceeding 5 micrometers within 130 millimetres of the principal point. The film shall be held flat in the intended image plane during exposure to maintain sharp focus and hold image distortion.

2.2.2 The lens shall be corrected for the spectral range of film used.

2.3 Calibration

2.3.1 Each camera lens unit to be used shall have been calibrated, tested and certified by the camera manufacturer or by a calibration centre, recognised internationally or approved by the camera manufacturer. The certificate will show that the camera has been calibrated within two years at commencement of the photography.

2.3.2 The Contractor shall hold a valid calibration certificate before commencement of work and copy of which shall have been included in the tender documents.

2.3.3 The calibration certificate shall contain the following information:

Name and address of the calibration centre

Date of calibration

Camera manufacturer's serial number of the lens unit

Calibrated focal length (principal distance) of the lens unit

Radial distortion in micrometers at intervals not exceeding 10 millimetres along each of the four semi - diagonals referred to the axis of the axis of best symmetry (for calibration system using fixed arrays of autocollimators, the intervals shall not exceed 25 millimetres)

Distances between fiducial marks -sides and diagonals or their c-ordinates in a rectangular reference system

Position of the principal point of auto-collimation or of best symmetry with respect to the fiducial centre.

Radial and tangential resolution figures for the lens unit issued by the manufacturer at the time of manufacture or after optical readjustment of the lens unit.

Measured reseau coordinates (if any) in a rectangular reference system.

2.3.4 The measured distortion shall fall within the limit defined by the manufacturer for the lens type.

2.4 Camera mounting

The camera shall be installed in a mounting, which attenuates the effects of aircraft vibration.

2.5 Filters

2.5.1 Only optical filters provided by the lens manufacturer or meeting the same optical specification shall be used.

2.5.2 The light fall off in cameras having an angle of view larger than 60 degrees, shall be compensated by a graded filter.

2.6 Camera windows

2.6.1 Any camera window used shall be checked, to ensure that it will not adversely affect lens resolution and distortion and that it is substantially free from veins, striation and other inhomogenities.

2.6.2 The camera window shall be mounted in material eliminating mechanical stress to the window.

SECTION THREE: Flying and photographic coverage

3.1 Photographic coverage, altitude and direction.

3.1.1 The area shall be covered by approximately straight runs (strips) of near vertical photographs at the approximate altitude required to produce the desired scale.

3.1.2 The direction of flight lines and spacing shall be planned by the Contracting Authority and Contractor so as to satisfy the overlap requirements specified in 3.1.3 and 3.1.4.

3.1.3 The forward overlap (forelap) between successive exposures in each run shall be ~64 percent (base ~2500 m).

3.1.4 The lateral overlap (sidelap) between adjacent strips should be ~27.5 percent (distance between strips ~5000 m).

3.1.5 Where a run crosses a shoreline, the forward overlap shall be increased to nominal 90 percent subject to the constraints imposed by the camera cycle time .The increase in overlap shall include at least three photo -centres on land.

3.1.6 Runs that would fall along a shoreline may be repositioned to reduce the proportion of water covered provided the coverage extends beyond the limit of any land feature by at least 10 percent of the run width.

3.1.7 Where the ends of runs of photography join the ends of other runs flown in the same general direction, there shall be an overlap of at least two stereoscopic models, which if the scale of photography is different, shall be at the smaller photo-scale.

3.1.8 Crab shall not exceed 5° when measured between the base line and a line parallel to the frame of the negative nor create gaps in the stereoscopic coverage.

3.1.9 Tilt shall not normally exceed 2°. However, isolated exposures with up to 4° may be permitted.

3.1.10 Where a few exposures in a long run are rejected because of cloud, quality or inadequate overlap, there may be a short run providing an overlap of at least two stereoscopic models at both ends.

3.2 Flying conditions

Photography shall be taken at any suitable solar altitude above 30 degrees, except where specified otherwise.

3.2.2 Photography shall only be flown in conditions when the visibility does no significantly impair the tone reproduction in the negative. Relevant details shall not be lost as a result of atmospheric haze or dust.

3.2.3 Photography shall be substantially free from cloud, dense shadow or smoke. Cloud, dense cloud shadow or smoke shall not lie over the principal point of any photograph or its homologous in adjacent photographs. Nor shall any single mass of cloud, dense cloud shadow, or smoke, obscure more than three percent of the total area of negative. Nor shall the aggregate of cloud, dense cloud shadow and smoke obscure more than five percent of the total area of a photograph.

3.2.4 Isolated area of cloud, dense shadow or smoke shall not be cause for rejection of the photography provided the intended use is not impaired.

SECTION FOUR: Aerial film and image quality of negative

4.1. Aerial film

4.1.1. The type of film to be used shall be colour aerial film.

4.1.2. The emulsion shall be coated on stable base

4.1.3 The condition of the film stock to be used shall be such that when unexposed film is processed it shall be free of stain discoloration, or brittleness that can be attributed to ageing or improper storage.

4.2 Exposure

4.2.1 A shutter speed shall be chosen that meets the requirements of minimal image movement, at an adequate lens aperture for the prevailing illumination conditions or where cameras with forward image movement compensation are used,

The uncompensated forward image movement shall not exceed 10 micrometers; and for photography at 1/5000 scale and larger, and turbulent conditions, shutter speeds shall not be longer than 1/250 of a second in order to reduce image movement caused by rotations.

4.3 Filters

The Contractor, shall select filters to provide suitable tone reproduction, except where the filters to be used are specified.

4.4 Processing and drying

4.4.1 Equipment used for processing and drying of the film shall be capable of achieving consistent negative quality without causing deformation of the film.

4.4.2 Processing and drying of the film shall be carried out without affecting its dimensional stability.

4.4.3 All processed negatives shall be substantially free of blisters, bubbles, inclusions, coating, coating lines, stress or static bar marks, pin holes, abrasions, streaks, stains, chemical marks, drying marks or scratches on both the emulsion side and the base side, apparent either in diffuse or specular light. Some tolerances shall be allowed where processing has to be carried out in sub standard conditions, provided the intended purpose of the negatives is not impaired.

4.5 Metric quality of negatives

The original negatives or contact diapositive derived from them shall not contain residual y - parallaxes after relative orientation in excess of 20 micrometers anywhere in the model.

4.6 Image quality of negatives

4.6.1 All fiducial marks shall be clearly visible and sharp on every negative.

4.6.2. The camera panel of instruments recorded on the film should be clearly legible on all processed negatives. Failure of instrument's illumination during a sortie shall not be cause for rejection of the photography except where specified below.

SECTION FIVE: Photographic products

5.1 Photo-index plots

Photo-indices plot shall be supplied as specified 1.5.1 to show the relative position of all accepted photography.

The index plots shall contain the following information:

Area designation

Period of photography

Scale of index

Scale of photography

Indication of north

Camera type and focal length

Film numbers and run (strip) numbers at both edges of each sheet and where changes occur within a sheet

Photo numbers

Position of every exposure

5.2 Paper prints

Contact prints shall be made on an automatic dodging printer.

5.3 Diapositives

Diapositives shall be produced on a stable base film using an automatic dodging printer.

SECTION SIX: GPS data

6.1 Post-processed GPS coordinates

DGPS coordinates shall be obtained for each photo centre stored and delivered on floppy discs.

SECTION SEVEN: Documentation and annotation

7.1 Film annotation

The following information shall be supplied as leaders at the start and the end of each film: start or end (as appropriate) :

Project number and /or area designation

Where parts of more than one project or area are recorded on the film, all areas shall be mentioned

Films number

Year, month and day of photography

Nominal scale of photography

Camera type

The principal distance or calibrated focal length of the lens unit.

7.2 Negative numbering (photo numbering) and print annotation

Numbering of negative shall be carried out using automatic methods. Each negative to be used shall be provided with the following annotation, which shall appear on all the contact prints and diapositives:

Contractor's identification

Project number and/or area designation

Photo number

Year, month, and day of photography

Nominal scale of photography

Principal distance or calibrated focal length of the lens unit.

7.3 Film container annotation label

The outside of each film container shall clearly show:

Project number and /or area designation

Where parts of more than one project or area recorded on the film, all areas shall be mentioned.

Year, month, and day of photography.

Run numbers and photo numbers

Nominal scale(s) of photography

Camera type

Focal length of the lens.

7.4 Film report

A report shall be included in the film container with each film giving the following information:

Contractor

Film number

Camera and number, lens type number and focal length

Filter type and number

Magazine number or cassette holder unit number

Film type and manufacturer's emulsion number

Lens aperture and shutter speed (exposure time)

Run number and flight direction

Year, month, and day of photography

Aircraft type and identification

Names of pilots, navigators and photographer

Start time for each run in local time

Photo numbers of all offered photography

Computed altitude above mean sea level (true altitude)

Nominal scale of photography

Whether conditions – cloud type, degree of haze and turbulence etc.

Date of processing

Method of development

Developer used and dilution

Time and temperature of development or film transport speed

General comment on quality.