Geodetic Chamber of Commerce

Polish Commercial Geodesy
Employers Association of Geodetic and Cartographic Firms

Geodetic Performance in Projects of the Agency for Restructuring and Modernisation of Agriculture

Author:

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KRAKÓW 2009

Introduction

1. Geodetic Chamber of Commerce and Polish Commercial Geodesy - leading role in companies for geodesic performance in relation to LPIS. Shares of both companies in the enterprise:

   - 170 companies,

   - 1500 licensed geodesists,

   - 5500 employees.

2. We run our businesses convinced that what present and future generations of Poles need are systemic solutions that favour balanced development as well as combining the economic growth with the increase of employment and civil activities, where nobody is discriminated nor excluded .

   We are an important partner of geodetic administration, not only when realising the duties of geodetic service, but also when finding solutions to present problems and creating modern legal regulations on geodesy and its related fields.

   Polish geodetic performance has included completion of an enormous number of tasks faced by our country and resulting from the common agricultural policy of the European Union.

Course of Works - LPIS

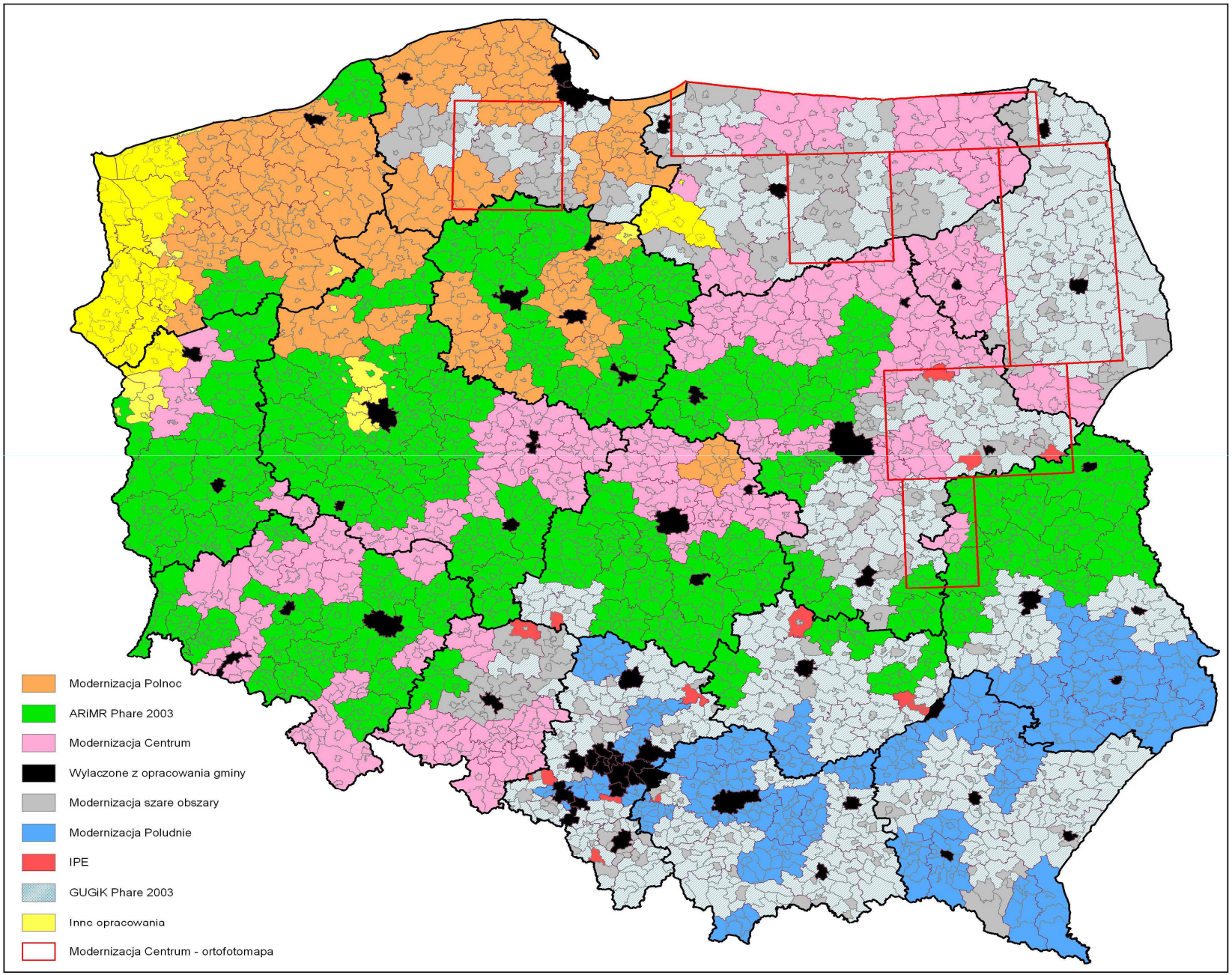
3. According to the EU and Polish legal regulations, the Agency for Restructuring and Modernisation of Agriculture was to create and keep updating a system for managing financial resources that would also consist of LPIS - Land Parcel Identification System. The system would include descriptive and vector data of land registry, database of subjects (with an assigned farm number), an orthophotomap and vector layer of development fields (areas not entitled to subsidies).

One of the actions necessary to create the Land Parcel Identification System it was to prepare a whole-country-wide digital orthophotomap as well as vector layer of cadastral borders of non-arable lands for subsidies that is development fields.

Course of Works - LPIS

4. As for Poland, such a territorial scope of the task and such a scale of using new technologies (e.g. stereoscopic interpretation of aerial photos for charting so-called development fields) were unprecedented. Also, which is probably the most important, the projects were developed under enormous pressure of time and precision. All of those caused some problems for the companies in the very beginning, however, as the works progressed, everything went right to end up with a success .

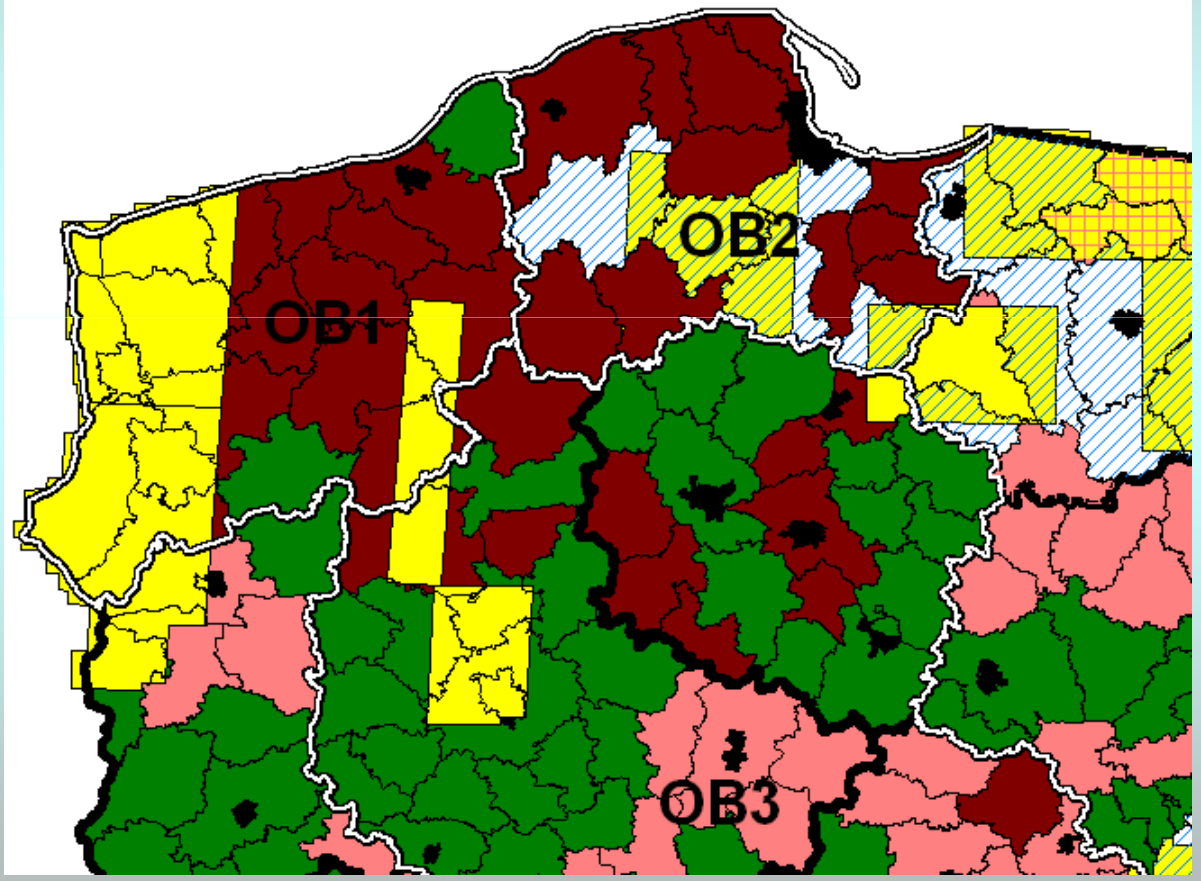
“Vectorisation” Divided into the ARMA’s Projects



The ARMA's Projects Completed within 2006-2008

Modernisation and Creation of Databases for the Land Parcel Identification System (LPIS) – THE NORTH

- three areas - three agreements
- 1.5 million cadastral parcels (33 thousand km^2)
- completed: 2nd quarter of 2006

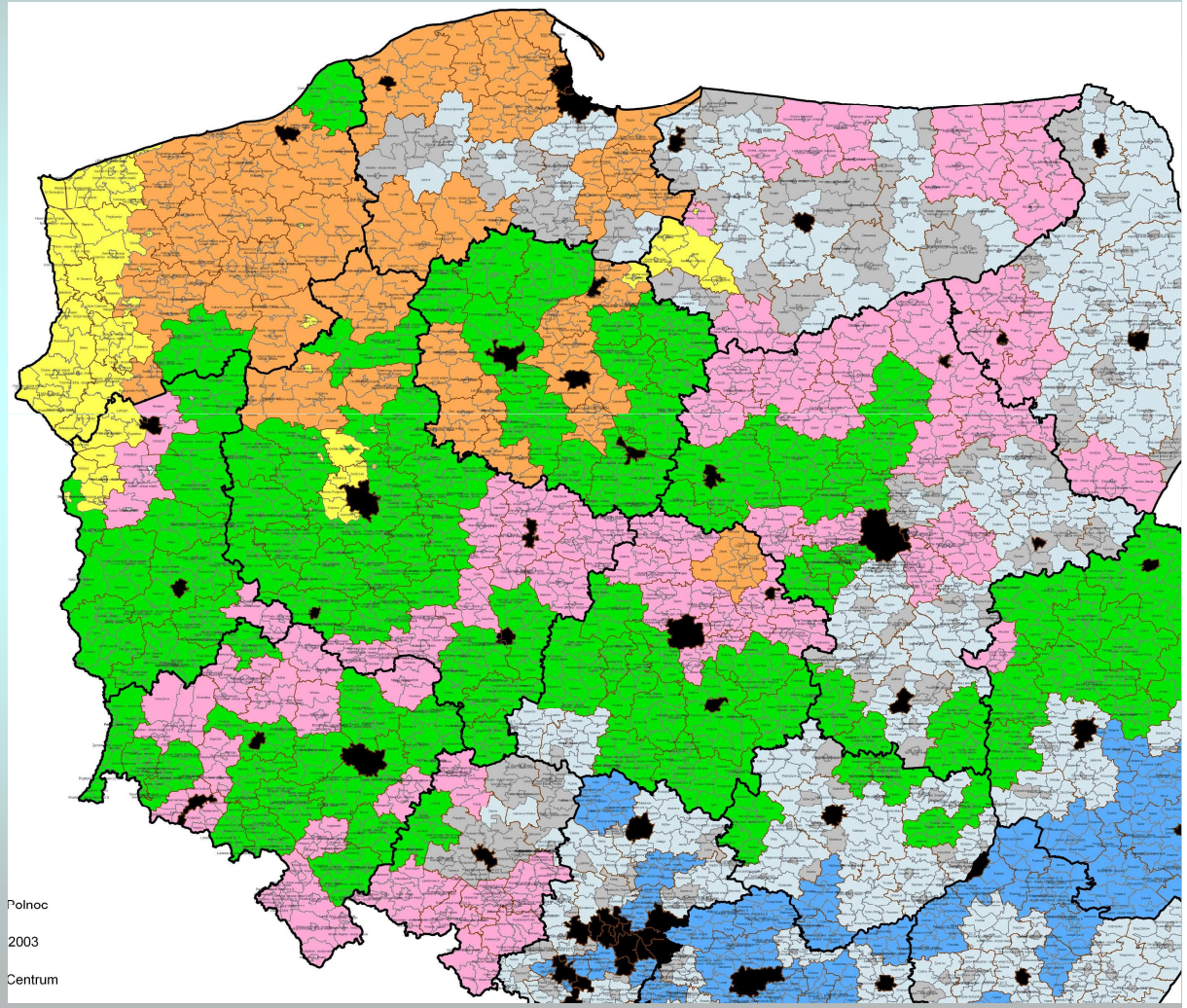


- 270 cadastral units included in the project

The ARMA's Projects Completed within 2006-2008

Modernisation and Creation of Databases for the Land Parcel Identification System (LPIS) – THE CENTRE

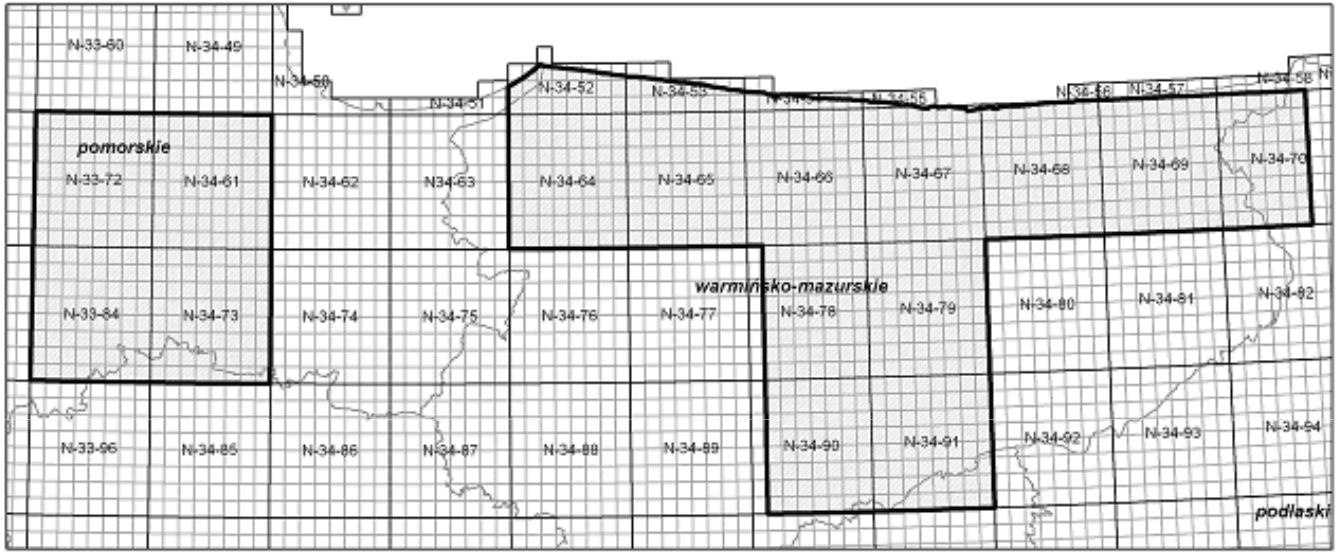
- six areas - six agreements - three products
- Product I –orthophotomap,
- Product II – vector layer of borders of cadastral parcels and development fields,
- Product III – centroids = task completed
- 44.2 million cadastral parcels (52 thousand km^2)
- completed: 4th quarter of 2006

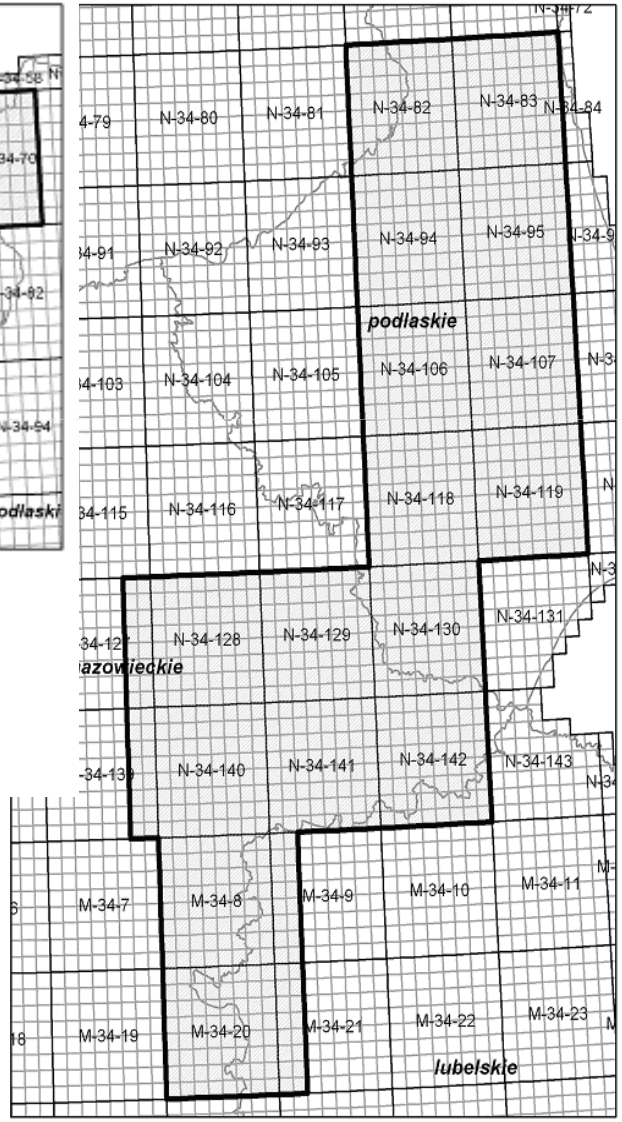


- 500 cadastral units included in the project

The ARMA's Projects Completed within 2006-2008

Modernisation and Creation of Databases for the Land Parcel Identification System (LPIS) – THE CENTRE





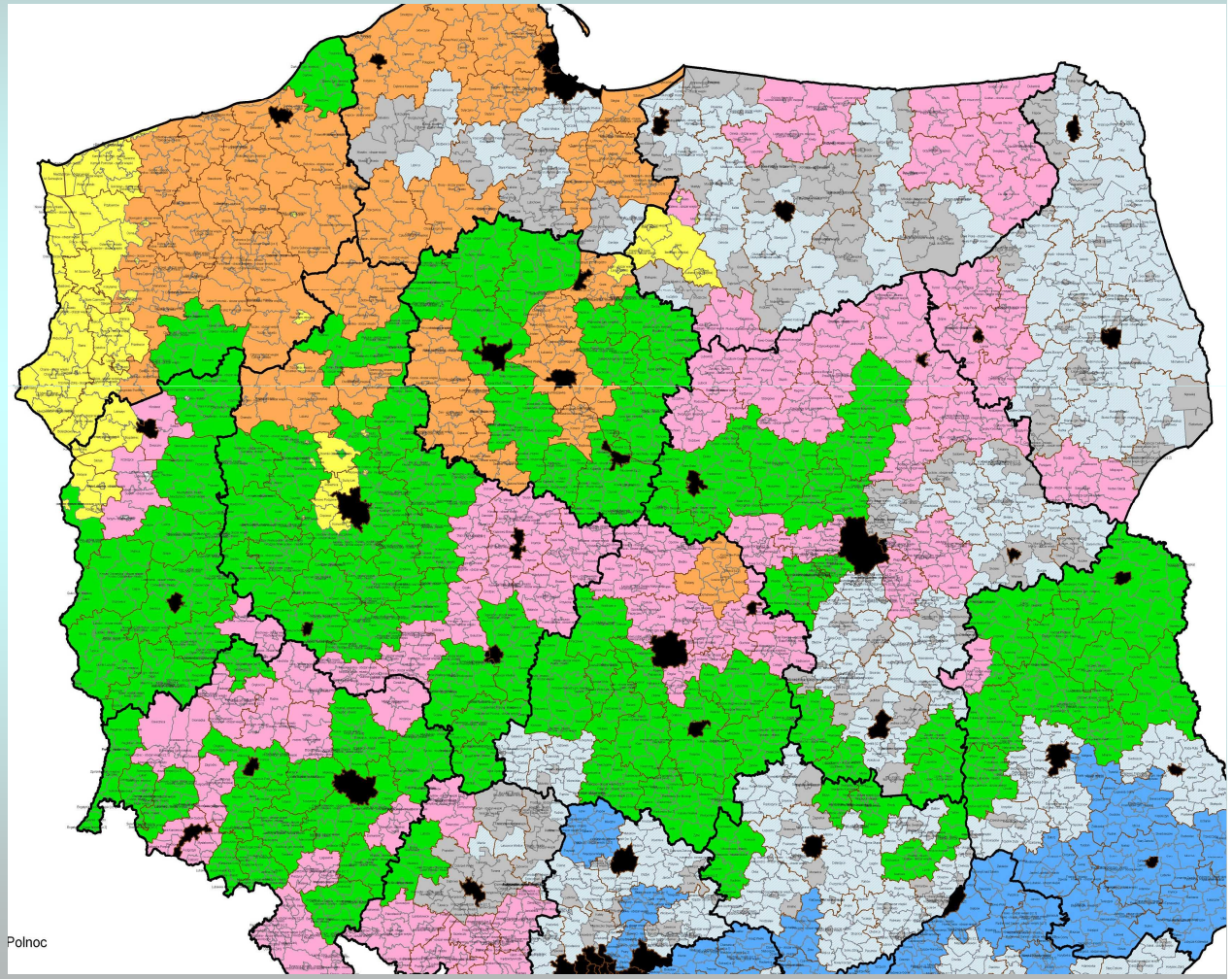
PRODUCT I – Updating a digital orthophotomap - over 2000 sheets. Photos - autumn 2005 / spring 2006. The orthophotomap prepared for the whole area of project (ca. 40 thousand km²)

Completing all the works: 4th quarter of 2006

The ARMA's Projects Completed within 2006-2008

Obtaining Cadastral Data and Areas Qualified for LPIS within Phare Project Phare 2003/005-710.04.05.01 – PHARE 2003

- seven areas - seven agreements
- 8 million cadastral parcels (87 thousand km²)
- completed: 1st quarter of 2007

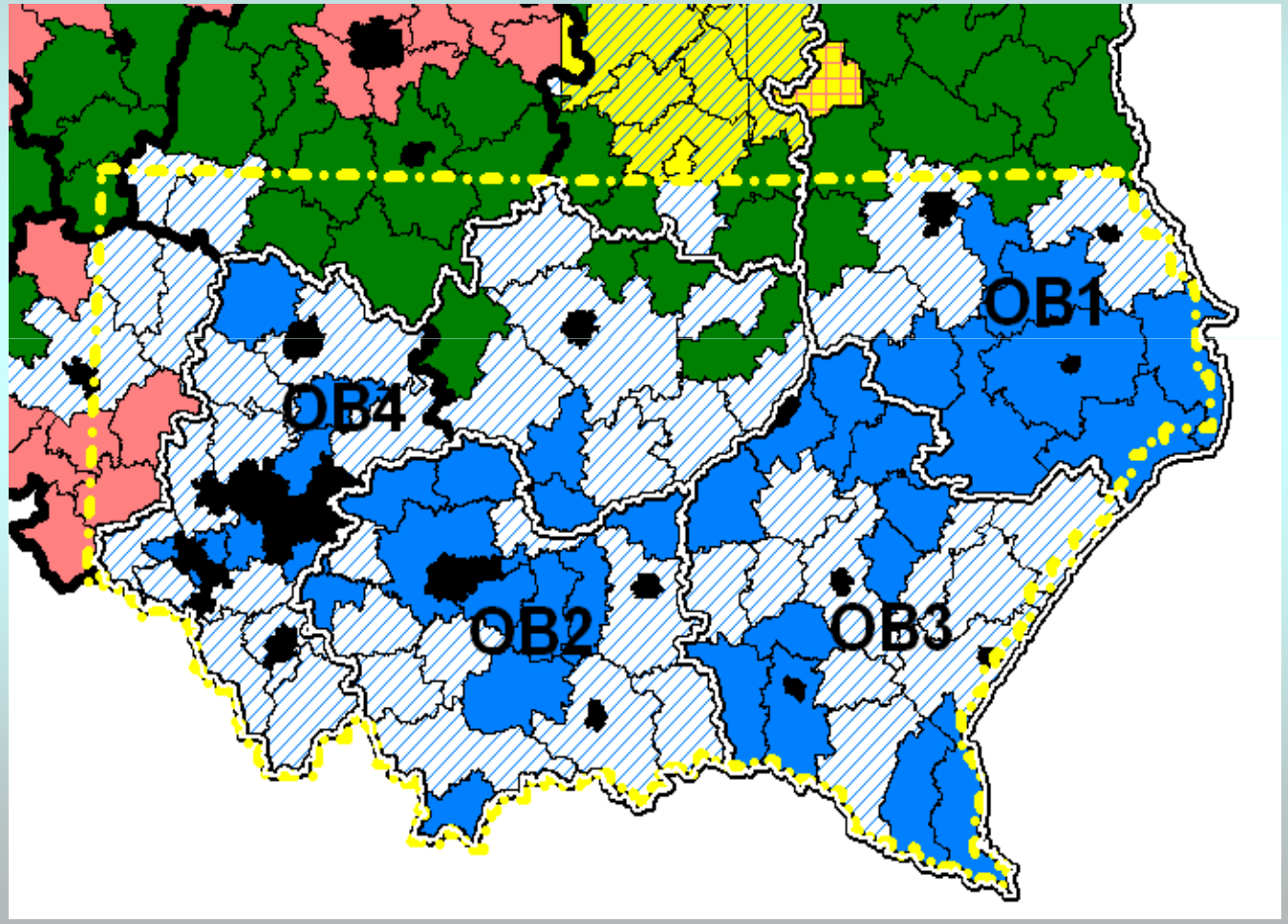


- 906 cadastral units included in the project

The ARMA's Projects Completed within 2006-2008

Modernisation and Creation of Databases for the Land Parcel Identification System (LPIS) – THE SOUTH

- four areas - four agreements
- 4.8 million cadastral parcels (27 thousand km^2)
- completed: 2nd quarter of 2007

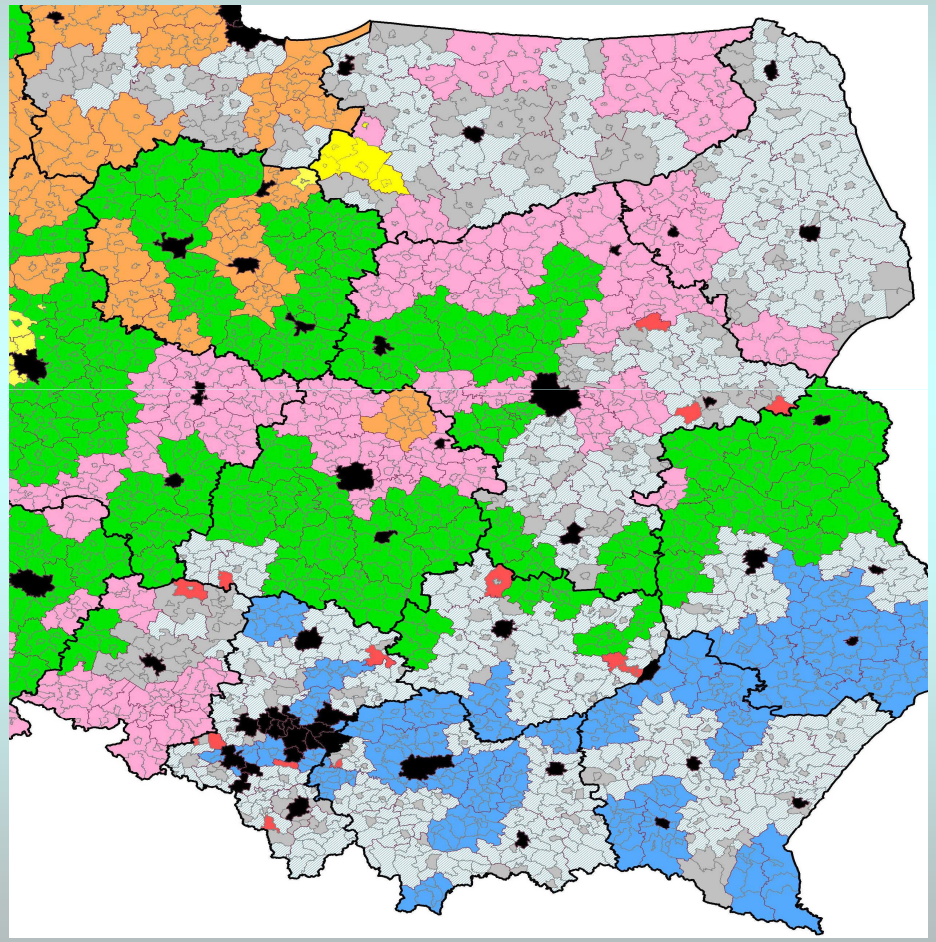


- 326 cadastral units included in the project

The ARMA's Projects Completed within 2006-2008

Modernisation and Creation of Databases for the Land Parcel Identification System (LPIS) Including the Verification of Cadastral Parcels' Borders and the Design of Development Fields – The GREY AREAS Modernisation

- six areas - six agreements
- 3 million cadastral parcels (30 thousand km^2)
- completed: 1st quarter of 2008

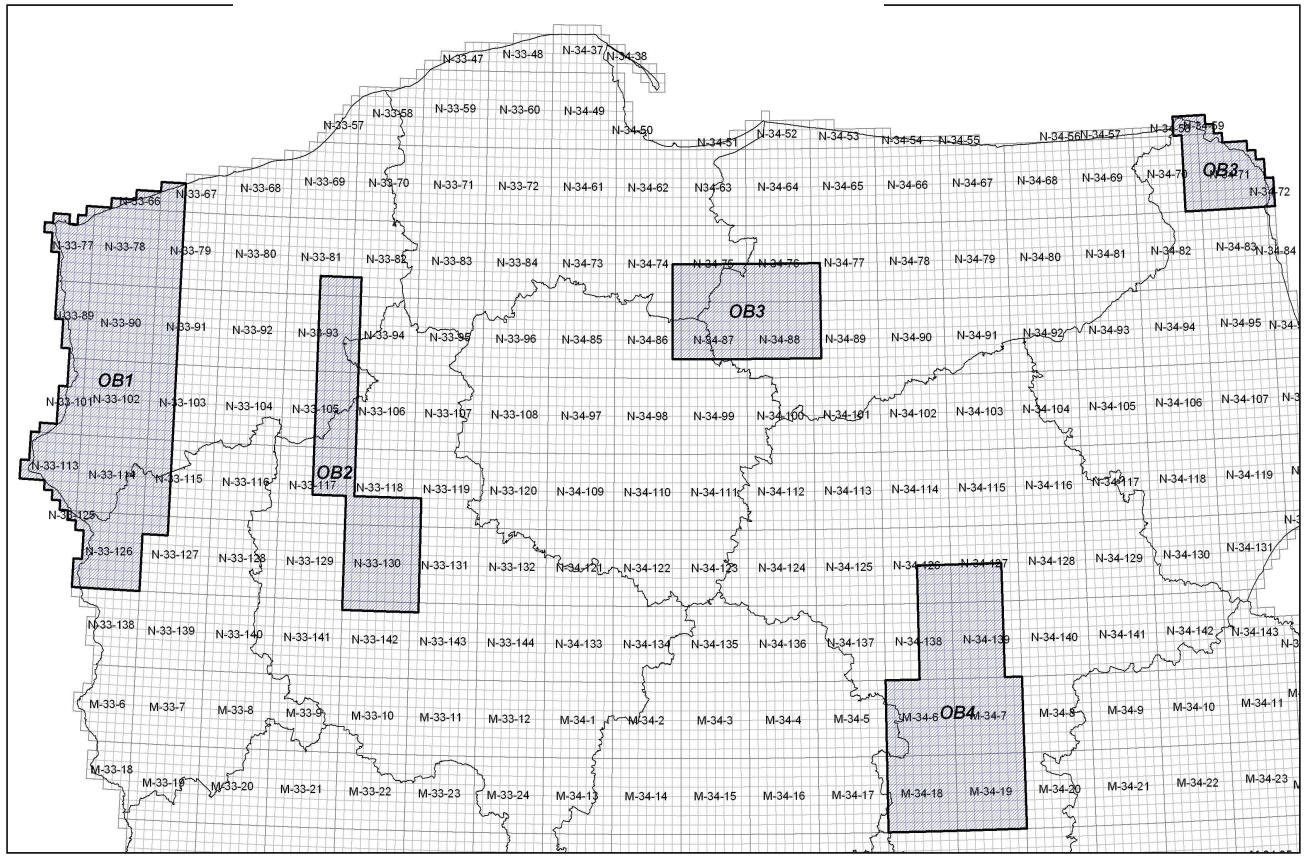


- 327 cadastral units included in the project

The ARMA's Projects Completed within 2006-2008

Modernisation and Creation of Databases for the Land Parcel Identification System (LPiS) Including the Development of an Orthophotomap and a Vector Form of Graphic Data and Their Integration with a Descriptive Part - The ORTHO Update: 28 thousand km^2

- four areas - four agreements
- colourful photos in the scale of 1:26000; an orthophotomap with a pixel = 0.5m; ca. 1500 sheets in the scale of 1:10000; updating the PZs for ca. 28 thousand km^2
- completed: 1st quarter of 2008

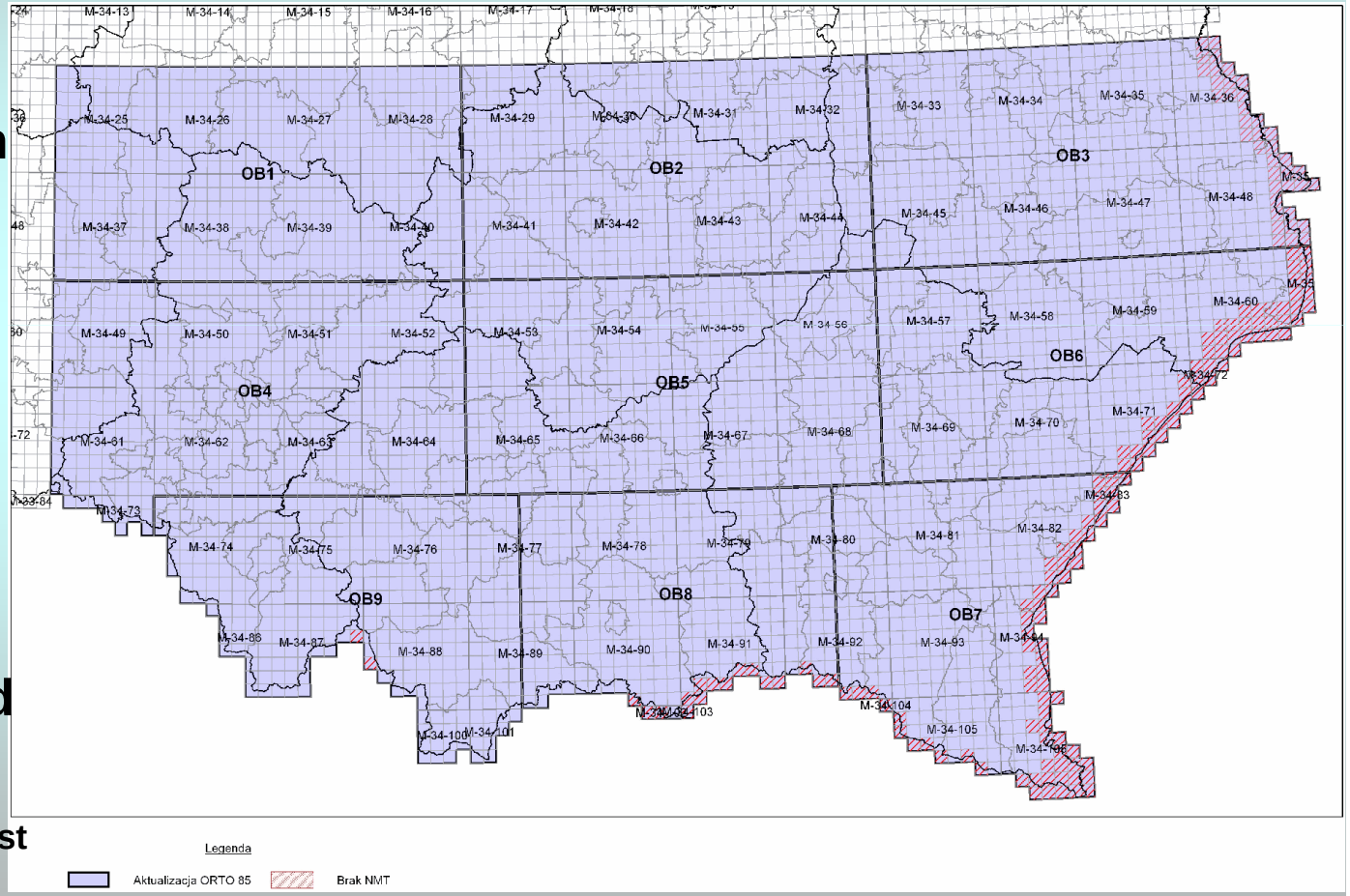


Forthcoming Projects by the ARMA

The ARMA's Project in Progress

Modernisation and Creation of Databases for the Land Parcel Identification System (LPIS) Including the Development of an Orthophotomap and a Vector Form of Graphic Data and Their Integration with a Descriptive Part for the Area of ~85 thousand km²

- nine areas - nine agreements
- colourful photos in the scale of 1:14000; an orthophotomap with a pixel = 0.25m; ca. 3780 sheets in the scale of 1:10000; updating the PZs for ca. 85 thousand km²
- to be completed: 1st quarter of 2010

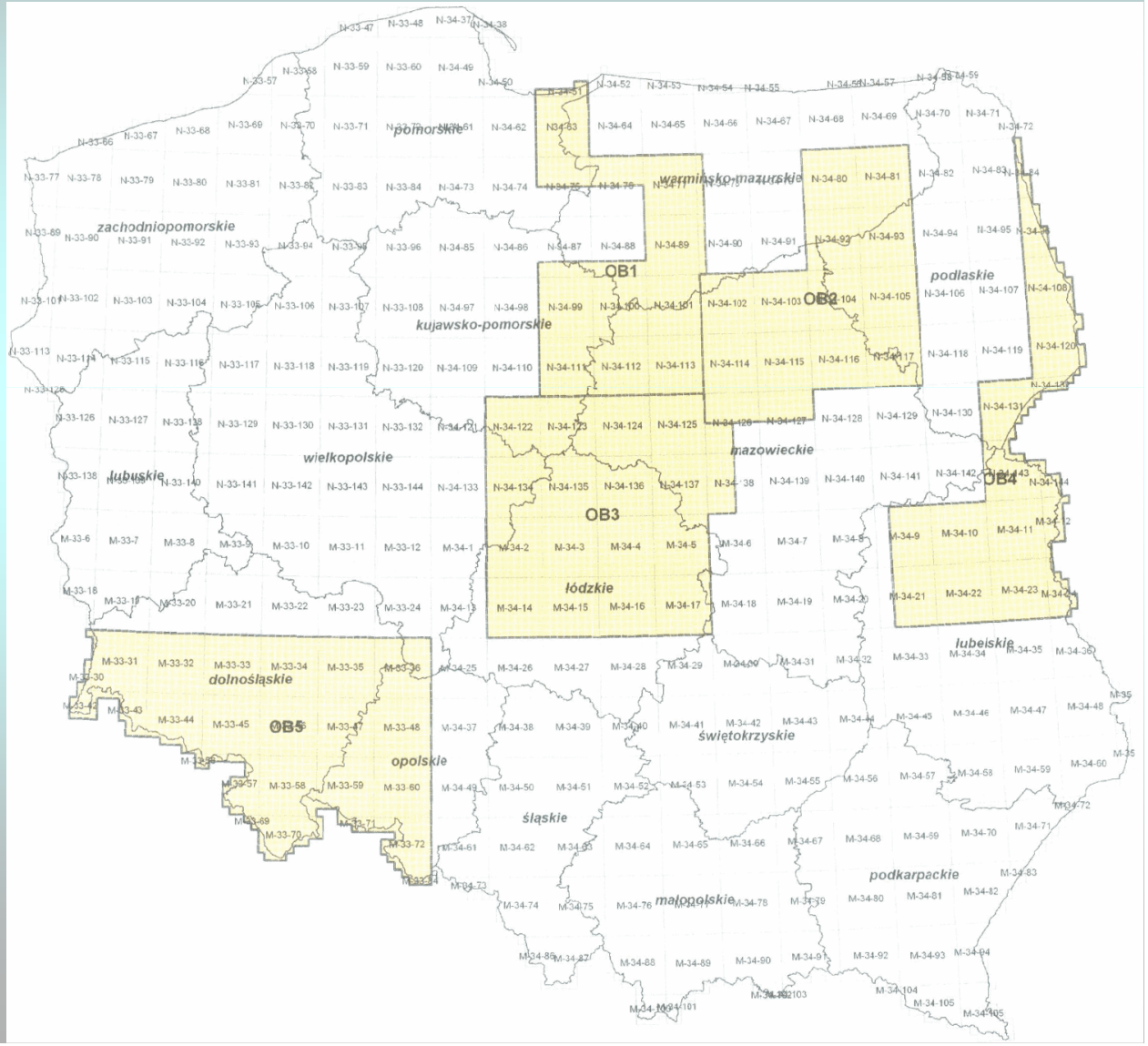


- 949 cadastral units included in the project

The ARMA's Project in Progress

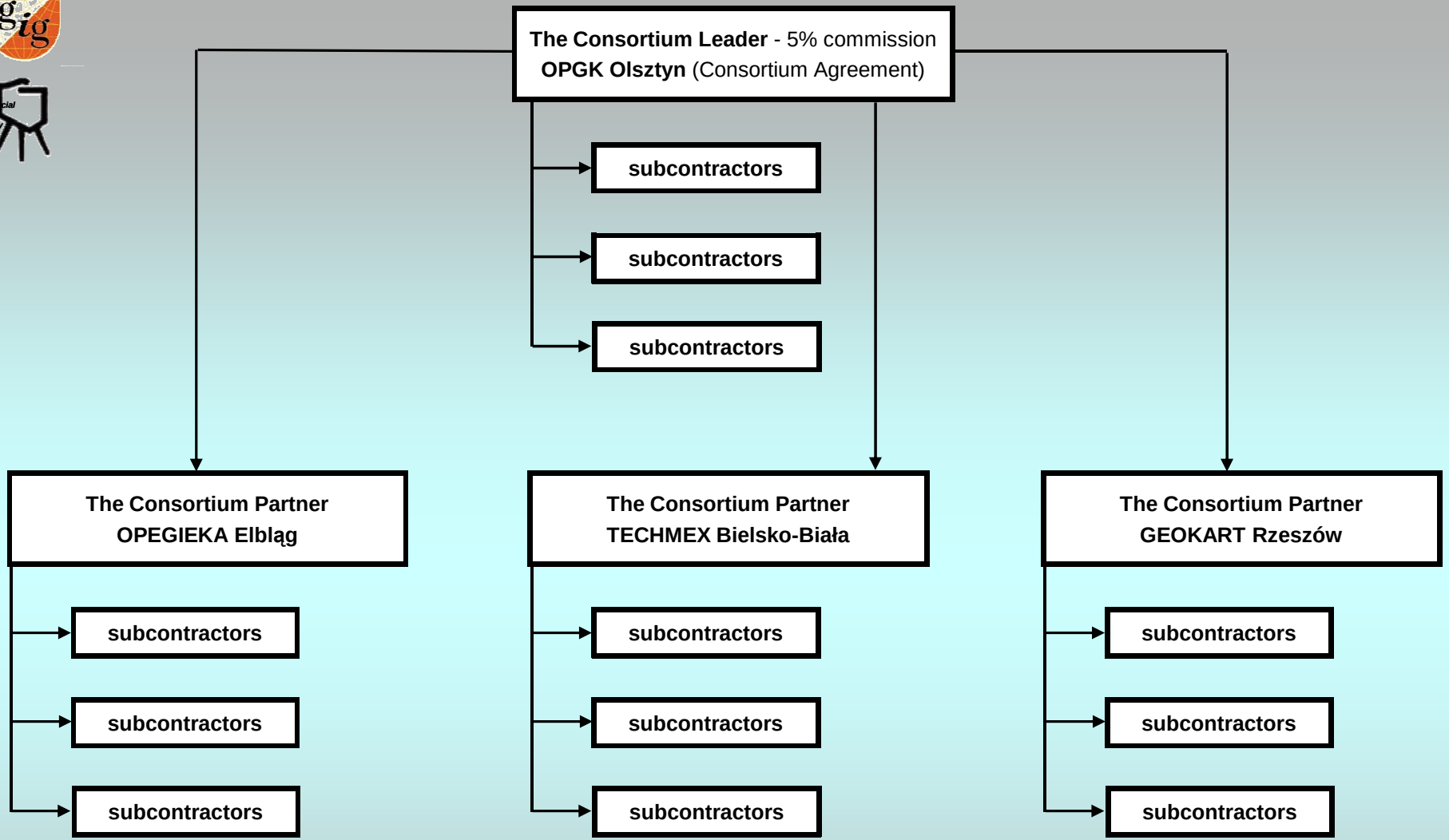
Modernisation and Creation of Databases for the Land Parcel Identification System (LPIS) Including the Development of an Orthophotomap and a Vector Form of Graphic Data and Their Integration with a Descriptive Part for the Area of ~86 thousand km²

- five areas
- colourful photos in the scale of 1:26000; an orthophotomap with a pixel = 0.50m; ca. 4354 sheets in the scale of 1:10000; updating the PZs for ca. 85 thousand km²
- approximate number of cadastral units to be worked out: 942 (7.5 million parcels)



Preparation of the Orthophotomap and the Vector Data in Numbers

- **100%** - of the Poland's area covered by the orthophotomap
- **~171 thousand km²** - the area of the orthophotomap subjected to updates in 2009 – 2010
- presently, there are **9** agreements in progress (ca. 30 contractors)
- **2342** – the number of cadastral units for which "vector" was completed until 2008 within the following projects:
  - Agency for Restructuring and Modernisation of Agriculture: THE CENTRE, THE SOUTH, THE NORTH, PHARE 2003, THE GREY AREAS
  - Head Office of Geodesy and Cartography: PHARE, IPE
- **~171 thousand km²** - the area included in the development of projects updating the development fields in 2009-2010
- **~21.5 million** - cadastral parcels to be updated in 2009 - 2010



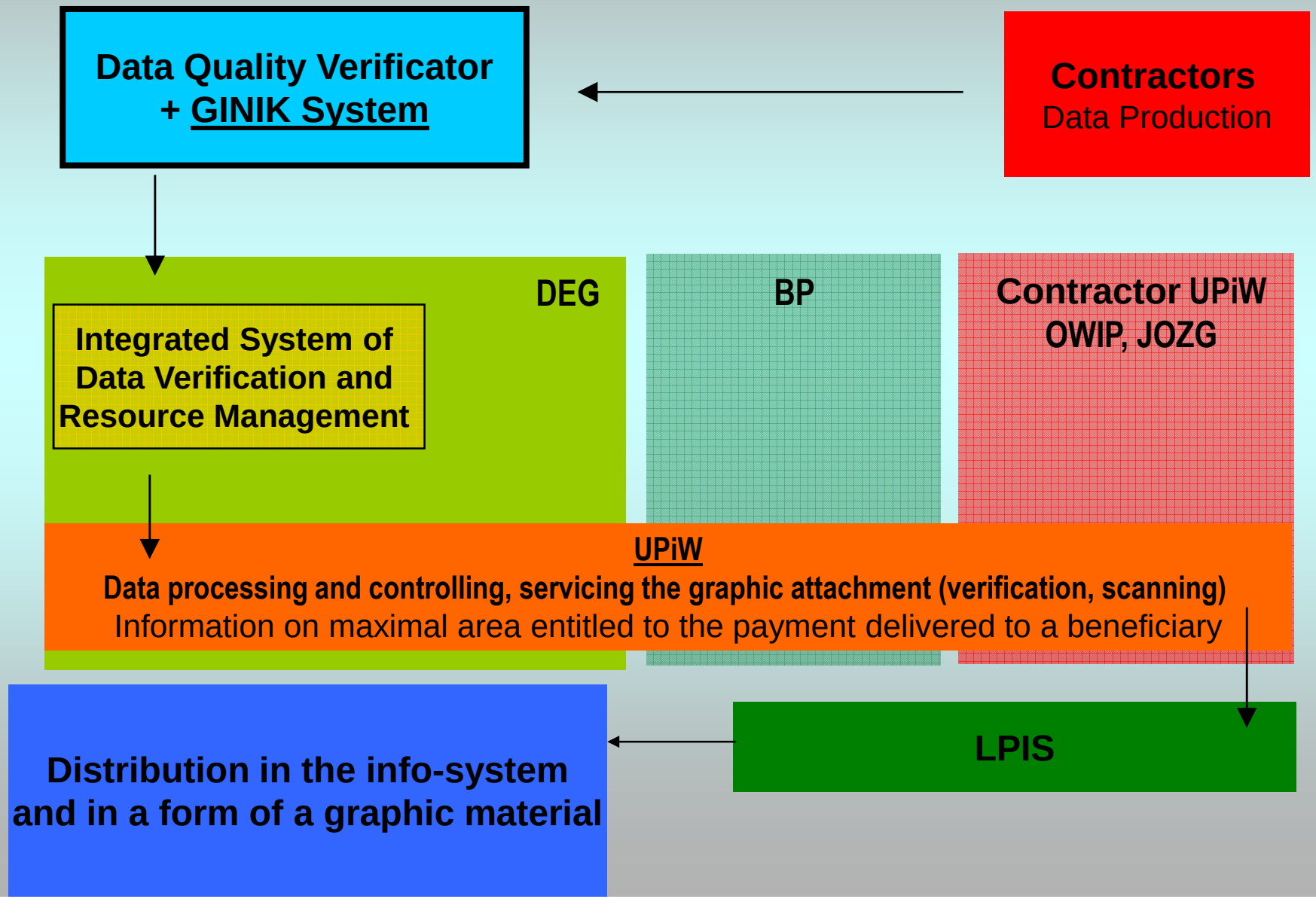
30 consortia have performed the modernisation of the LPIS databases this is about 120 geodetic companies and 9 IT ones.

Plus, circa 150 small sub-contracting companies and individual geodesists running their own business activities.

It may be estimated that totally circa 6000 geodesists have participated in the projects.

The ARMA's Projects - Management and Quality Control System

Data Management



Scheme of Project Management by the Contractor

THE CONSORTIUM LEADER
OPGK Sp. z o.o. Olsztyn
e-mail: opgk@opgk.olsztyn.pl
tel.: (089) 527-27-53

THE CONSORTIUM PARTNER
OPEGIEKA Sp. z o.o. Elbląg
e-mail: poczta@opegieka.com.pl
tel.: (055) 237-60-00

THE CONSORTIUM PARTNER
OPGK Sp. z o.o. Białystok
e-mail: opgkbial@opgkbial.com.pl
tel.: (085) 748-47-14

THE CONSORTIUM COUNCIL
Includes: Chairman: **mgr inż. Waldemar Klocek - CEO of OPGK Olsztyn**
and the Presidents of the Companies - Consortium Partners

MANAGEMENT OF THE CONTRACT			
Function in the realisation of the project	A MANAGER from OPGK Sp. z o.o. Olsztyn	A MANAGER from OPEGIEKA Sp. z o.o. Elbląg	A MANAGER from OPGK Sp. z o.o. Białystok

Function in the realisation of the project	**MANAGER OF THE PROJECT - LEADER**	- coordination and daily management of the project, - preparing basic assumptions of the project (Project Realisation Plan) - designing schedules, - contacting the Fund, the ARMA and WJD, - reporting the works, - coordinating the partners.
Function in the company	Manager of OPGK Olsztyn e-mail: opgk@opgk.olsztyn.pl	

Scheme of Project Management by the Contractor

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Function in the company	Manager of OPGK Olsztyn e-mail: opgk@opgk.olsztyn.pl	

Function in the realisation of the project	**Manager of Works** performed by **OPGK Olsztyn**	Function in the realisation of the project	**Manager of Works** performed by **OPEGIEKA Elbląg**	Function in the realisation of the project	**Manager of Works** performed by **OPGK Białystok**

- **Registering Labs**
- **Photogrammetric Labs**
- **IT and Controlling Labs**

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IT and Controlling Services for the Contract

Quality Control System

Controlling Units in the Company

1. The contractor's internal controlling.
2. Data Quality Verificator - organisation as well as quantitative and qualitative data control.
3. Controlling during data import to the LPIS database performed by the ARMA employees supported with systemic controls.
4. Internal audits at the contractors and WJD's control in terms of accordance with the technical conditions defined by ARMA.
5. Data transfer to Regional Centres of Geodetic and Cartographic Documentation.

The Contractor's Internal Controlling

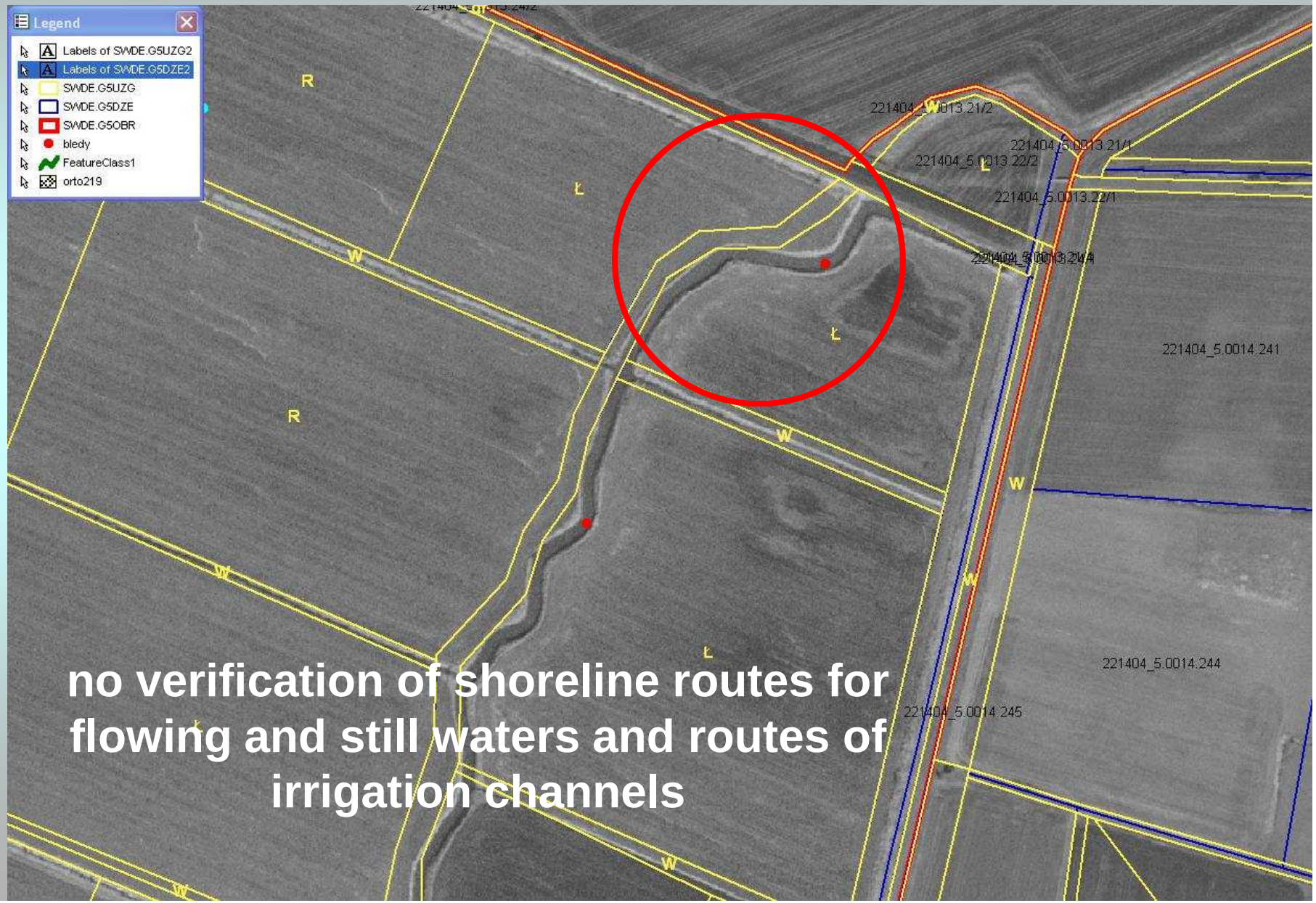
1. Each of the stages of the Project is submitted in full cadastral units to the Leader by the Consortium Partners.
2. To obtain internal acceptance the Consortium Partners are obliged to provide the Leader with particular stages of the Project in no later than 5 days before the date specified in the Schedule of Realisation and Acceptance of Works.
3. Providing of particular stages of the Project is deemed done on the day of their receiving by the Leader.
4. The Project performed according to the procedures of quality control implemented by the Consortium and subjected to the final control with positive result is allowed for the internal acceptance.
5. The Consortium appoints a Team consisting of a representative of the Project and a Manager of the Controlling and IT Services to perform the acceptance.
6. The Team draws a protocol of the internal acceptance procedures.
7. On obtaining a positive protocol of internal acceptance, the Project is passed to the Orderer (the ARMA).

The ARMA Projects - Results of Controlling, Mistakes and Defects

Polish Commercial Geodesy

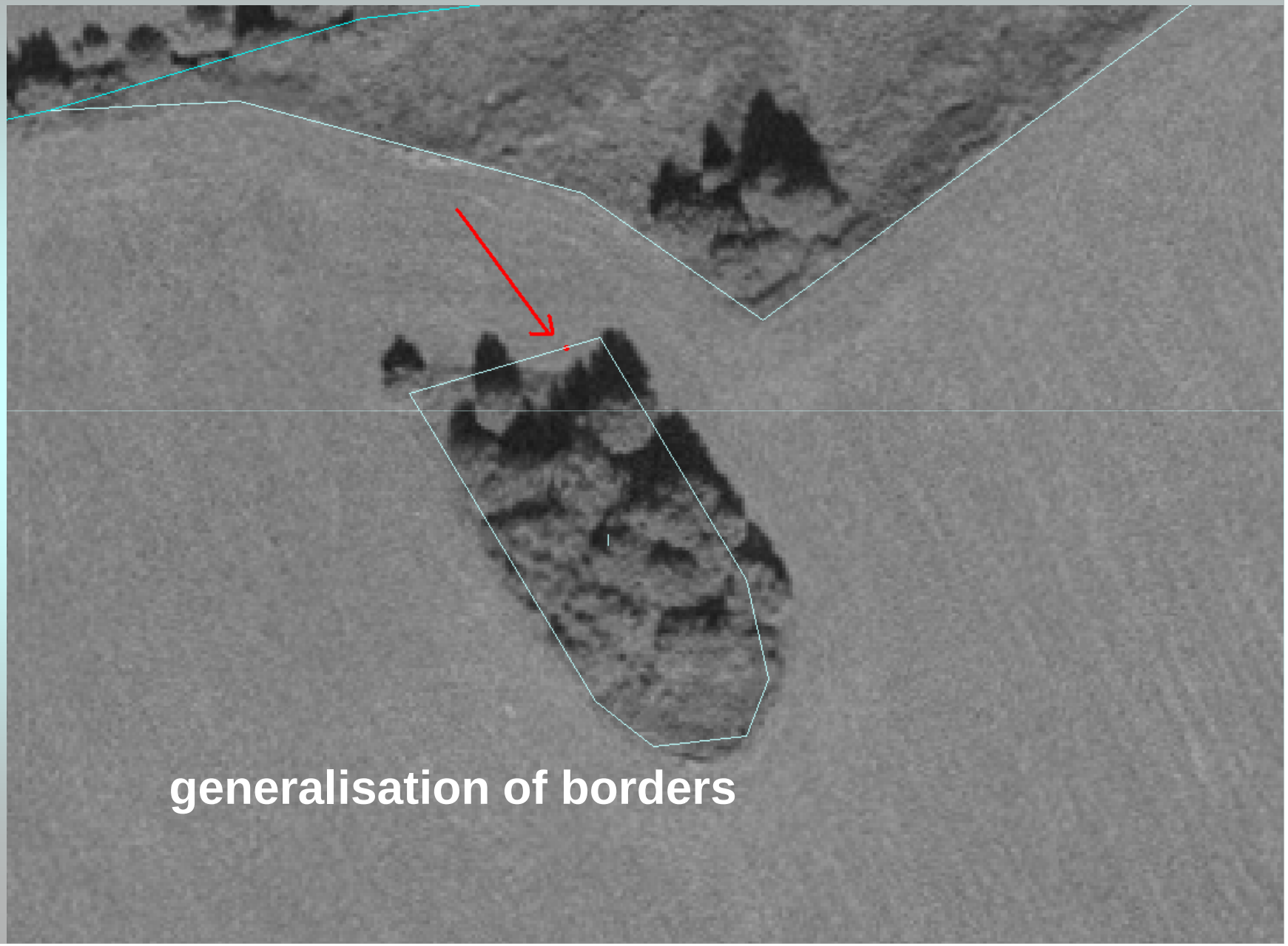
no disclosure of new woodlands, forested areas, orchards

no verification of road routes for organised roads



no verification of shoreline routes for flowing and still waters and routes of irrigation channels

improper interpretation


generalisation of borders

improper vectorisation

improper development field - the whole parcel is not entitled

S
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L
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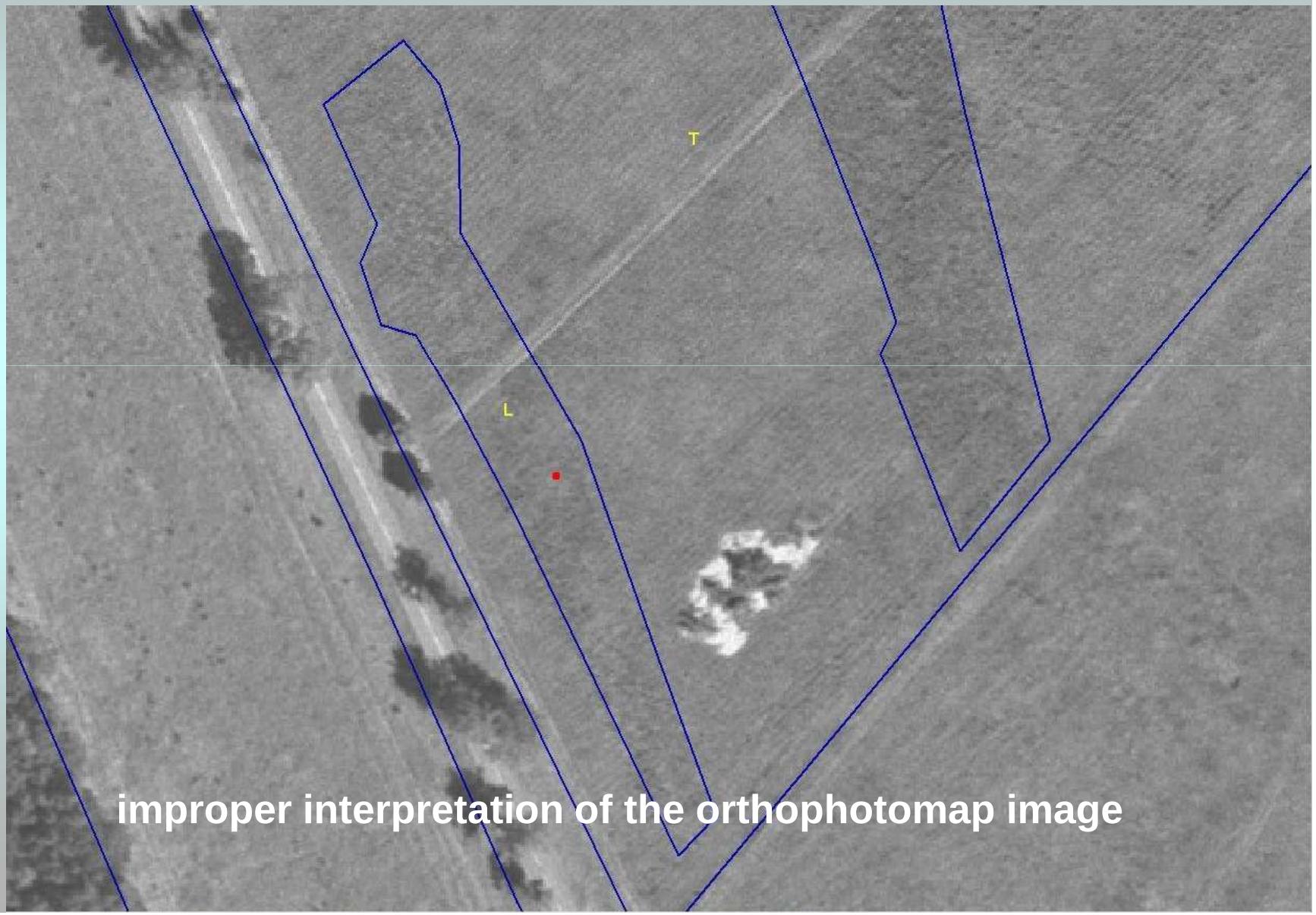
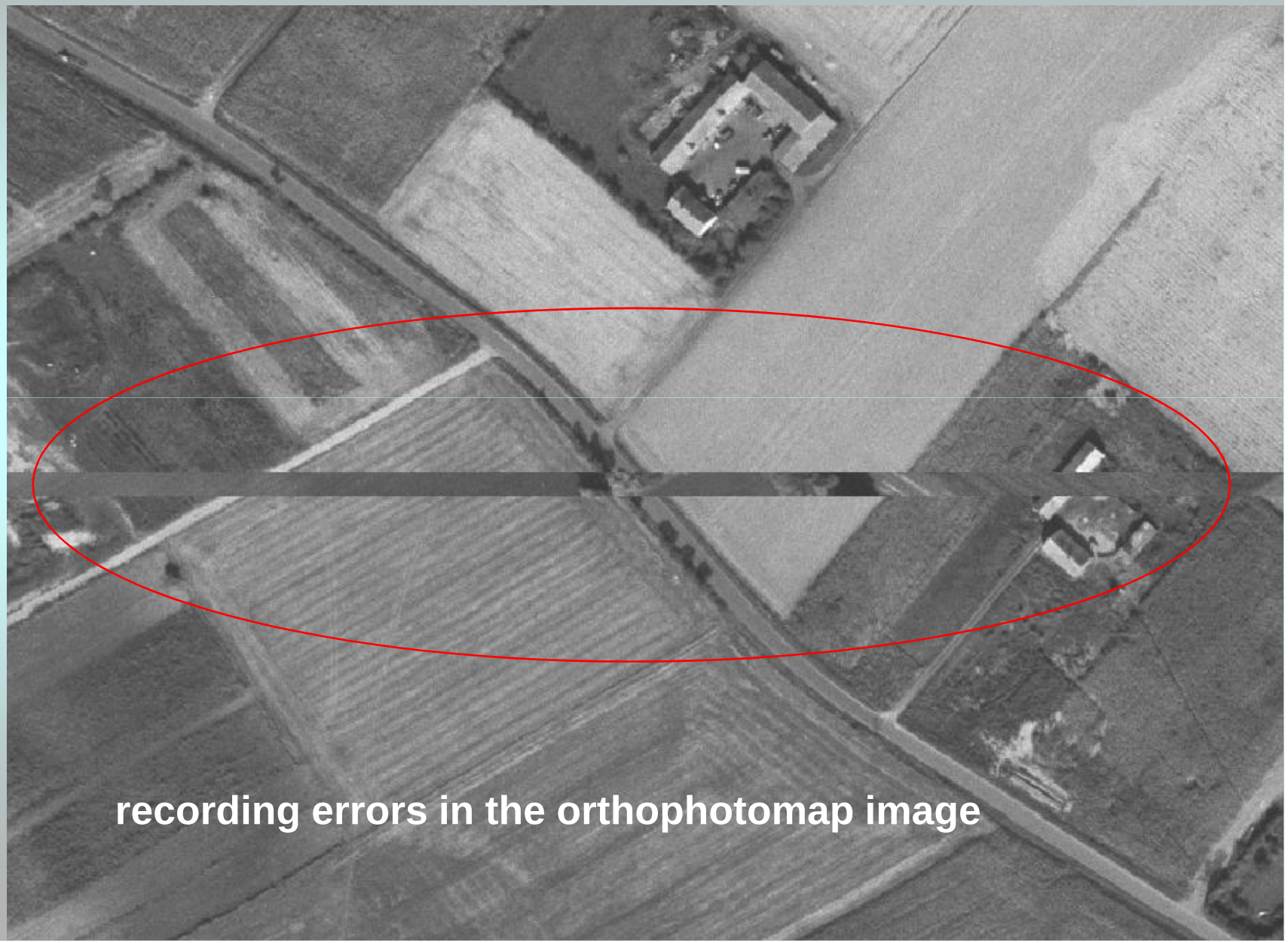
no exclusion



improper interpretation of the orthophotomap image

Polish Commercial Geodesy

Polish Commercial Geodesy



Problems Influencing the Realisation of the ARMA's Projects

1. Complicated character of works, large territorial scopes and short times of realisation
2. Lack of effective work coordinators within one consortium
3. Varied technical state and contents of the land and building registry documents
4. Staff shortages in Regional Centres of Geodetic and Cartographic Documentation (extended time of obtaining source materials, time of clarification and entering the discrepancies into the land and building registry documents)
5. Technical problems connected with land registry (varied software technical abilities, arrears in entering the data into the land and building registry, running the registry in varied layouts)
6. Difficulties with the interpretation of development fields

The Course of Works - LPIS

Most of the companies participating in that enterprise are members of our two organisations. The organisations were aiding all of their colleagues not only in preparing their offer for tenders, but also - together with ARMA - formed a Council that often helped to settle disputes between the General Inspector of Supervision and Control and contractors, between ARMA and contractors, or between contractors themselves.

Polish
Commercial
Geodesy

THANK YOU FOR YOUR ATTENTION