

National Report of Croatia

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1. Introduction

The report should give a brief review of activities which have been done in Croatia since the last EUREF meeting. Croatia is about to establish new geodetic datums and cartographic projections in accordance with the new Law on State Survey and Real-Estate Cadastre, which was proclaimed on 5th November 1999.

2. Review of activities in 1999/2000

2.1 Levelling

New levelling network was established in the period between 1970-1973 and it is known under the title Second Precise Levelling - II.NVT. The works were executed systematically and in accordance with scientific and professional standards. However, due to financial, technical, organisational and other conditions, the processing of measurements elongated up to the beginning of the nineties. Therefore, the data and the results of this levelling have not been officially used so far. Moreover, the data of lower orders levellings are not connected with the new reference.

At the beginning of nineties systematic works on ordering of the geodetic height system based on the II. NVT were carried out. Only small parts of the territory of Croatia were not embraced, but preparation works on their execution are being made. Data publishing has started through publishing of two special publications in edition of the State Geodetic Administration, which are related to the II. and III. levelling figures of the II. NVT. In 1999/2000 the third connection to the Hungarian levelling network has been measured.

According to the treaty "Proposal for the Official Height Datum of the Republic of Croatia (FEIL and ROŽIĆ, 2000) made at the Faculty of Geodesy, the II. NVT should be the reference for defining a new height system of the Republic of Croatia.

2.2 GPS activities

The project *Restoring of the Trigonometric Network of the II. Order and Establishing the Homogenous Field in Croatia*, which foresees revising of the trigonometric network of the II. order and including all trigonometric points suitable for GPS measurements into the homogenous field of GPS points with raster 10 x 10 km, has been carried out on about 50 % of the territory of the Republic of Croatia so far.

The work on the project is planned to be continued this year, i.e. the agreements with the contractor are in the process of being signed, and it is planned that the project for the entire territory of the Republic of Croatia should be finished next year.

2.3 Participation in UNIGRACE project

The Republic of Croatia has entered in UNIGRACE (UNification of GRAvity system in Central Europe) project with two points: Dubrovnik and Osijek. The points have been selected according to the criteria for the selection of absolute gravimetry points that can be found in the publication DGK, Series B, Volume 254.

The measurements planned for the year 1998 have been cancelled due to the instrumental problems of the Italian team. The measurements for the year 1999 have been therefore planned in collaboration with the team EOST, University Strasbourg, France. The first measurement was successfully made in the period between 26. and 29. August 1999, with absolute gravity meter FG5-206 in Dubrovnik. The measurements on the absolute gravimetry point Osijek with the French team have been planned for the summer 2000. The first measurement was processed, and the results presented in special publication "Connecting the Republic of Croatia onto the World Absolute Gravimetric Network" (ČOLIĆ et al.).

The other series of measurements on the point Dubrovnik was made in the period from 6. to 9. April 2000 with the team from Bundesamt für Kartographie und Geodäsie (BKG) by means of absolute gravimeter FG5-101. The measuring results will be available after the processing in BKG in Frankfurt a. M. The measurements on the point Osijek to be carried out by the team from BKG are planned for July this year.

3. New legal and organisational frame

3.1 New Law of State Survey and Real Estate Cadastre

The House of Representative of the Croatian National Parliament made at its meeting on 5. November 1999 the decision about proclaiming the Law of State Survey and Real Estate Cadastre. After the transition period necessary for passing the Book of Ordinances that was indispensable for the work of the state administration and for the new Law to start being applied, the Law of State Survey and Real Estate Cadastre began to be applied on 1. March 2000.

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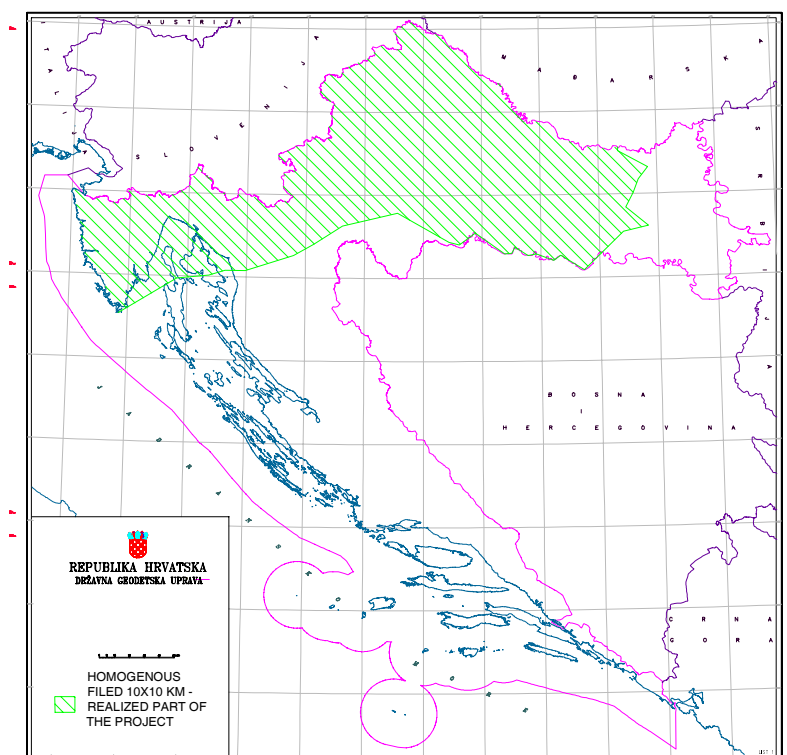


Figure 1.: Homogenous field 10x10 km - realised part of the project

The Law of State Survey and Real Estate Cadastre regulates state survey, real estate cadastre, spatial units register, supply lines cadastre, geodetic works for special purposes, competence and execution of state survey and real estate cadastre works, and the establishment of the State Geodetic Administration, and it is also applied in founding public institution for execution of state survey and real estate cadastre works – Croatian Geodetic Institute.

Croatian Geodetic Institute

In the Republic of Croatia there had never been such an institution, and the realisation of such professional jobs had been under the competence of Military and Geographic Institute in Belgrade until Croatia became independent. The entire information geodetic and spatial base of the Republic of Croatia remained usurped in that Institute today.

Within the frame of its activity the Institute will perform the following jobs:

1. conduct fundamental geodetic works
2. establish topographic, cartographic and cadastral bases
3. conduct topographic survey
4. establish and keep records of geographic names
5. conduct survey and marking of state border
6. conduct developing and research projects
7. work on standardisation of geodetic works and procedures.

The Croatian Geodetic Institute is expected to start working during the year 2000.

New establishment of the State Geodetic Administration

State Geodetic Administration and local cadastral offices are being united by the Law of State Survey and Real Estate Cadastre, i.e. a unique system of jobs associated with state survey and cadastral survey is established. According to the old Law of Surveying and Land Register, local cadastral offices were functioning under the authority of local self-government units which has resulted in variety and lack of uniformity in the activities connected with land register. According to the new Law and organisation, there will be 104 cadastral offices functioning within the frame of the State Geodetic Administration, so that the number of employees has grown from 36 to 1100.

In the State Geodetic Administration, administrative and normative jobs will be separated from professional jobs. After its establishment, the Croatian Geodetic Institute will do the professional jobs, and the State Geodetic Administration will take care of the jobs connected with decree regulations and ordinances, with proposals for working program, with making the transfer procedures from land register into real estate cadastre uniform, with establishing Land Data Base and with the control of implementing the Law of State Survey and Real Estate Cadastre.

The State Geodetic Administration will also perform, together with local offices and their branches, the jobs connected with the state survey and real estate cadastre,

which will lead to uniformity and standardisation in the procedures of conducting the cadastre at the entire territory of the state, as well to security in implementing the Law.

The decree about the inner organisation of the State Geodetic Administration passed at the Government meeting on 6. April 2000, the inner organisation of the Central Office (Fig. 2.) and local offices was defined.

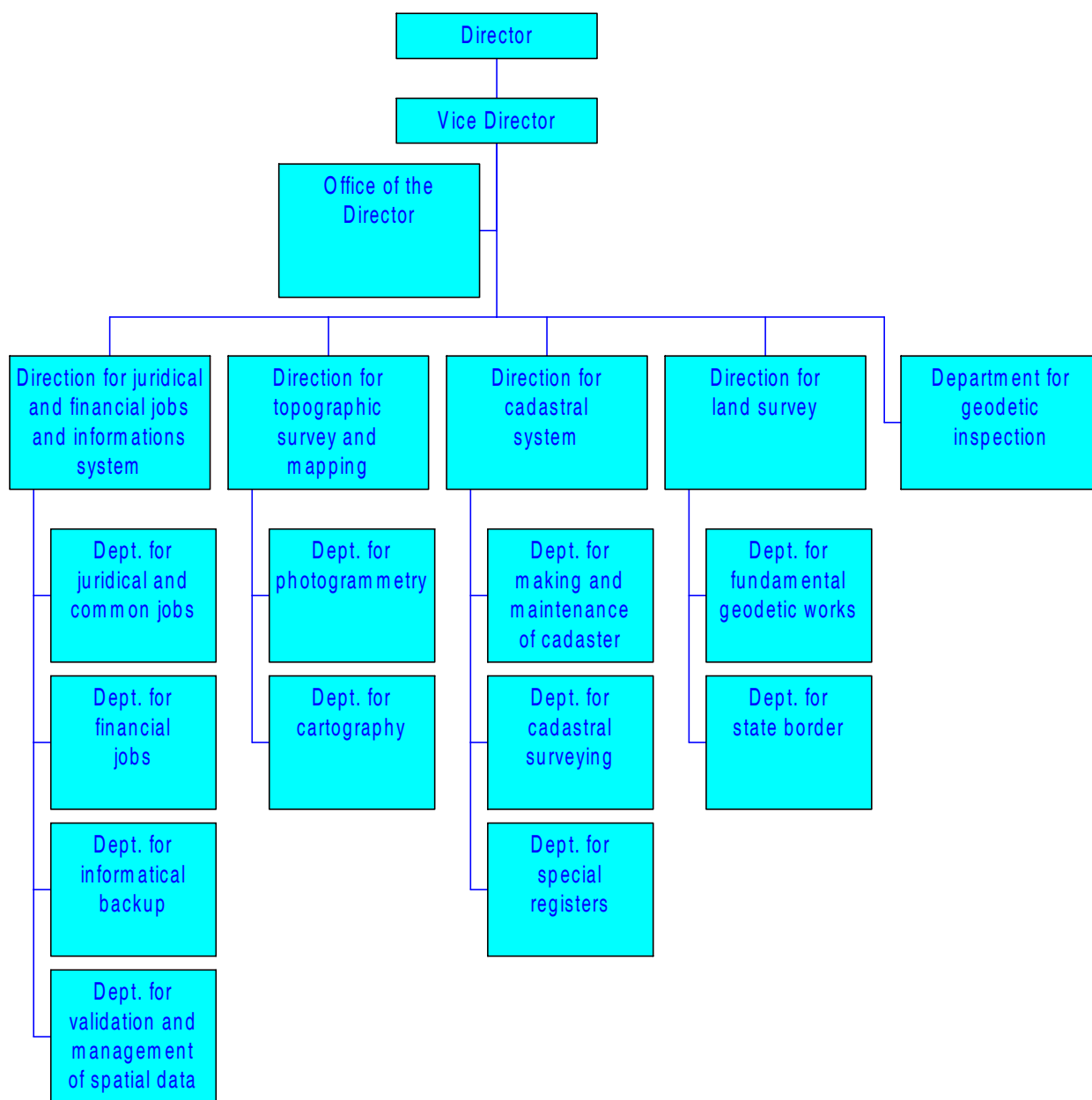


Figure 2. Inner organisation of the State Geodetic Administration Central Office

3.2 Proposal for new geodetic datums and map projections

The Law of State Survey and Real Estate Cadastre has also opened the possibility to propose the adoption and putting new modern geodetic datums, i.e. plane map projections into operation.

Thus, the reference of geodetic and spatial system of the Republic of Croatia according to the criteria for establishing, maintenance and development of such system in European

countries has been defined. The State Geodetic Administration has taken the responsibility and obligation to pass the Books of Ordinances and decrees necessary for establishing such a system.

The task to define official geodetic datums (positional, height and gravimetric) and map projections demands the engagement of international advisers who would help in the process of solving this task on the basis of experiences from their home countries. The purpose of the effort would

be to find the solution that would be based on generally known references and standards of international geodetic and cartographic bodies, organisations and on the references of European Union, as well as to make these solutions maximally adjusted to the needs of the Republic of Croatia.

The entire work is divided into 4 phases:

- compilation of the proposals for new datums and map projections of the Republic of Croatia was contracted with the Faculty of Geodesy at the University of Zagreb, has been already made and handed in to SGA (Bašić 2000, Lapaine 2000, Feil and Rožić 2000).
- verification of the appointed Commission and international advisers
- public debate
- preparation of final proposal.

4. Strategy in the 21. century

The political changes in Croatia at the beginning of the year 2000 and accelerated approach to the EU have encouraged the work on the Strategy of the Development of the Republic of Croatia "Croatia in the 21. century". SGA suggested two topics:

1. Land register book and cadastre reform as the basic factor for legal security of the ownership of real estate and for the transfer into the market economy.
2. Geodetic spatial system – information service in the function of spatial politics of the Republic of Croatia.

The materialisation of the suggested topics in the period of five years – 2001 to 2005 – can be encompassed through the realisation of four strategic projects:

- 1. phase of the land register book and cadastre reform,
- Establishment and completion of fundamental state survey geodetic bases,

- Realisation of multi-purpose spatial information system aiming to support the spatial management of state authorities and public services (reference farming land register)
- Technical and personnel outfit of SGA for the purpose of more successful implementation of planned tasks (the first three projects).

A medium-term program 2001-2005 would encompass among others also the works on the recovery of fundamental geodetic networks (three-dimensional GPS, levelling, gravimetric and magnetometric - declinations).

5. Conclusion

Our purpose is to define and finish all mayor networks till the end of the year 2001 and establish such system that will be able to support forthcoming cadastral reform.

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