NATIONAL REPORT

INTRODUCTION

This national report gives a brief layout of the fundamental geodetic works in the Republic of Croatia having been carried out since the last EUREF meeting.

As mentioned in the last report, the Republic of Croatia still trying to establish and introduce new geodetic data and map projections in accordance with the Law of State Survey and Real Estate Cadaster.

GPS ACTIVITIES

The Project on the reconstruction of trigonometric network of the second order was not continued because of some administrative difficulties in the year 2000. The project includes the revision of trigonometric network of the second order as well as the revision of all the existing trigonometric points convenient for GPS observations into a homogenous GPS-point-network with the grid of 10x10 km.

Around 50 percent of Croatian territory has been encompassed by this project. Some preparations for the continuation of this project are still to be made. The Project will be completed in 2002.

The activities on establishing homogenous fields of GPS points in cities and other areas of special state interest have been continued recently. The homogenous fields of the cities Našice, Koprivnica and Rab have therefore been created with around 1000 GPS points of 1-point-density at each 25 ha.

GRAVIMETRY

Participation in the UNIGRACE Project

The Republic of Croatia is included into the **UNIGRACE** (Unification of Gravity System in Central Europe) project with six points: Zagreb, Zagreb-Puntijarka, Pula, Makarska, Dubrovnik and Osijek. The Dubrovnik point was measured in August 1999 as well as in April 2000 while the measurements at the Osijek point were carried out throughout the year 2000.

Gravimetric measurements at the Osijek point were made in the first series with the absolute gravimeter FG5-101 by the German BKG (Bundesamt für Kartografie und Geodäsie) crew while the other measurement series was made with the absolute gravimeter FG5-206 by the French EOST (Ecole et Observatoire des Sciences de la Terre) crew from the University of Strasbourg. Our experts made all of the necessary preparations and provided conditions for an undisturbed work as well.

The measuring results were presented in the report “Connection of the Republic of Croatia to the World Absolute Gravimetric Network – the second phase of the UNIGRACE project” made by the Institute of Geomatics at the Faculty of Geodesy, University of Zagreb.

Basic gravimetric network

The first phase in the establishing of the basic gravimetric network of the Republic of Croatia is to be realized in the next three years. It has been initiated on the basis of adopting new geodetic data of the Republic of Croatia and of the “Study about Condition and Proposals of the New Basic Gravimetric Network of the Republic of Croatia (Bašiæ, 2001).

NEW GEODETIC DATA

According to the Law of State Survey and Real Estate Cadaster the SGA is to put a proposal to the Government of the Republic of Croatia referring to official geodetic data and plane map projection. The reasons for it are similar in all of the European countries and they do not need to be explained in details.

Taking the studies as starting points in which new geodetic data and plane map projection were suggested (Bašiæ 2000, Feil and Rož iæ 2000, Lapaine 2000), the State Geodetic Administration has engaged international advisors using the World Bank funds to perform a high-quality work on the above-mentioned proposals.

The following gentlemen were therefore chosen as international advisors respecting the World Bank procedures:

Dr. Elmar Brockmann, Switzerland, for the positional datum and plane map projection,

Dr. Johannes Ihde, Germany, for the height and gravimetric datum,

Bjorn Geirr Harsson, Norway, for the Book of Rules on Fundamental Geodetic Works,

Dr. Thomas Wehrli, Switzerland, for the Book of Rules on Topographic Survey and Official Maps, and

Gerhard Muggenhuber, Austria, for the real estate cadaster

In their reports the international advisors positively estimated the Proposals for Official Geodetic Data and Map Projection for the Republic of Croatia made by the Faculty of Geodesy, University of Zagreb.

As the next step in the realization of the whole project the works on the "Production of the Documentation Necessary in the Process of Adopting the Proposals for Official Geodetic Data and Map Projection of the Republic of Croatia" have been agreed upon with the Faculty of Geodesy, University of Zagreb, with T. Bašiæ, L. Feil and M. Lapaine as their holders.

These professional and scientific projects encompass the formulation of official geodetic data and map projection, global plan of introducing new geodetic data with dynamic plan of measures and procedures, the study of expenses and the implementation of solutions in accordance with the Book of Rules and standards. The deadline for the completion of these projects is September 2001.

At the beginning of this year the works on the production of the Book of Rules on Fundamental Geodetic Rules were also intensified. All of the works were supervised by the international advisor, Mr. B. G. Harsson. The adoption of official geodetic data should go simultaneously with the completion of the Book of Rules, which will become effective at the end of this year.

Conclusion

The State Geodetic Administration makes special efforts to establish such a system that will make the reform of the cadastral system possible through the realization of the first program to be accepted soon in the Croatian National Parliament.

References

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Feil, L., Rož iæ, N.: Prijedlog služ benog visinskog datuma Republike Hrvatske (Proposal for Official Height Datum of the Republic of Croatia), Faculty of Geodesy, University of Zagreb 2000.

Lapaine, M.: Prijedlog služ benih kartografskih projekcija Republike Hrvatske (Proposal of Official Map Projections of the Republic of Croatia), Faculty of Geodesy, University of Zagreb 2000

Medak, D: Prikljuèenje Republike Hrvatske u svjetsku gravimetrijsku mrež u – II. faza projekta UNIGRACE (Connection of the Republic of Croatia to the World Gravimetric Network – Second Phase of the UNIGRACE Project), Faculty of Geodesy, University of Zagreb 2001

Bašiæ, T.: Studija stanja i prijedlog nove osnovne gravimetrijske mrež e Republike Hrvatske (Study about Condition and Proposal of the New Basic Gravimetric Network of the Republic of Croatia), Faculty of Geodesy, University of Zagreb 2001

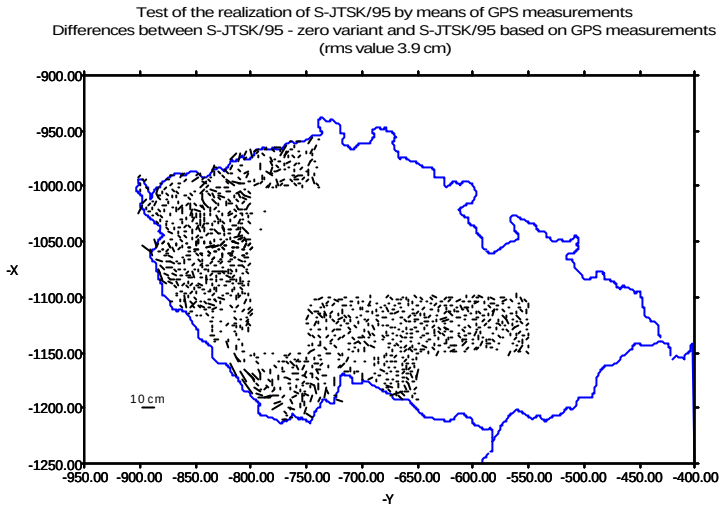

Figure 1

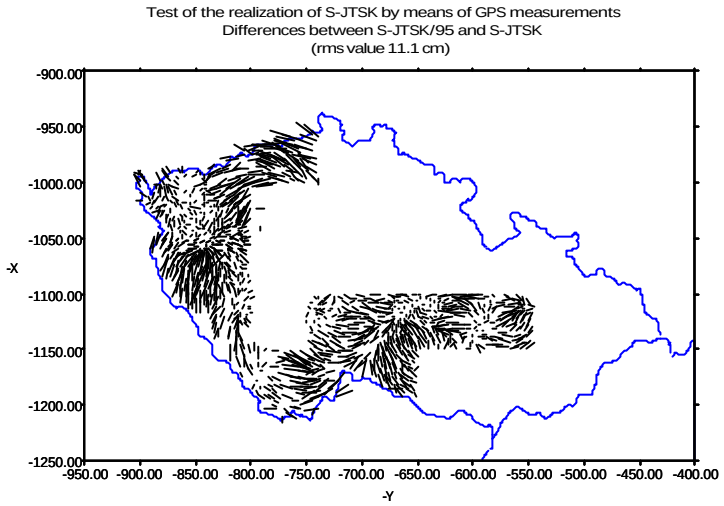

Figure 2

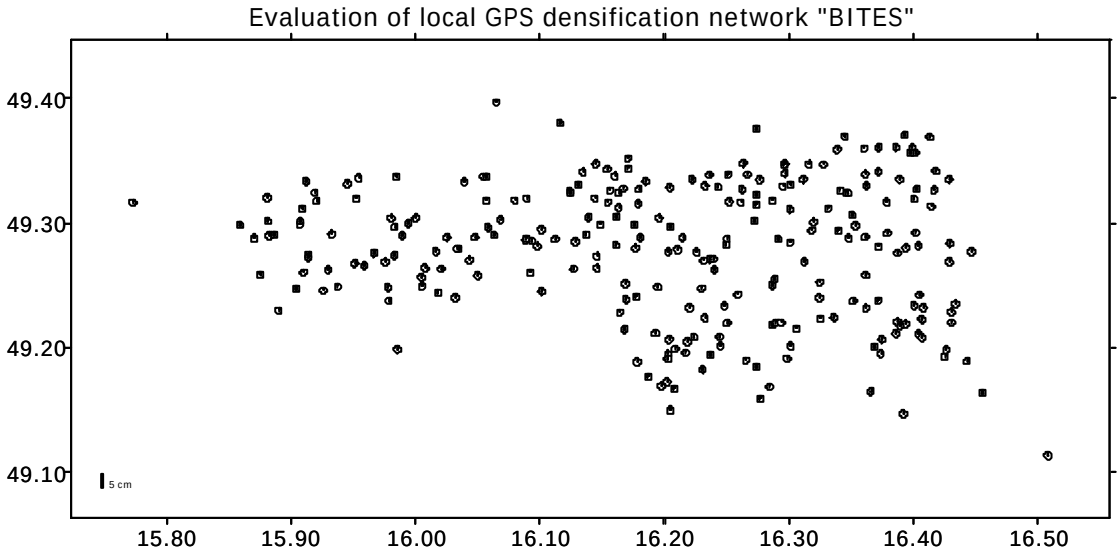

Figure 3

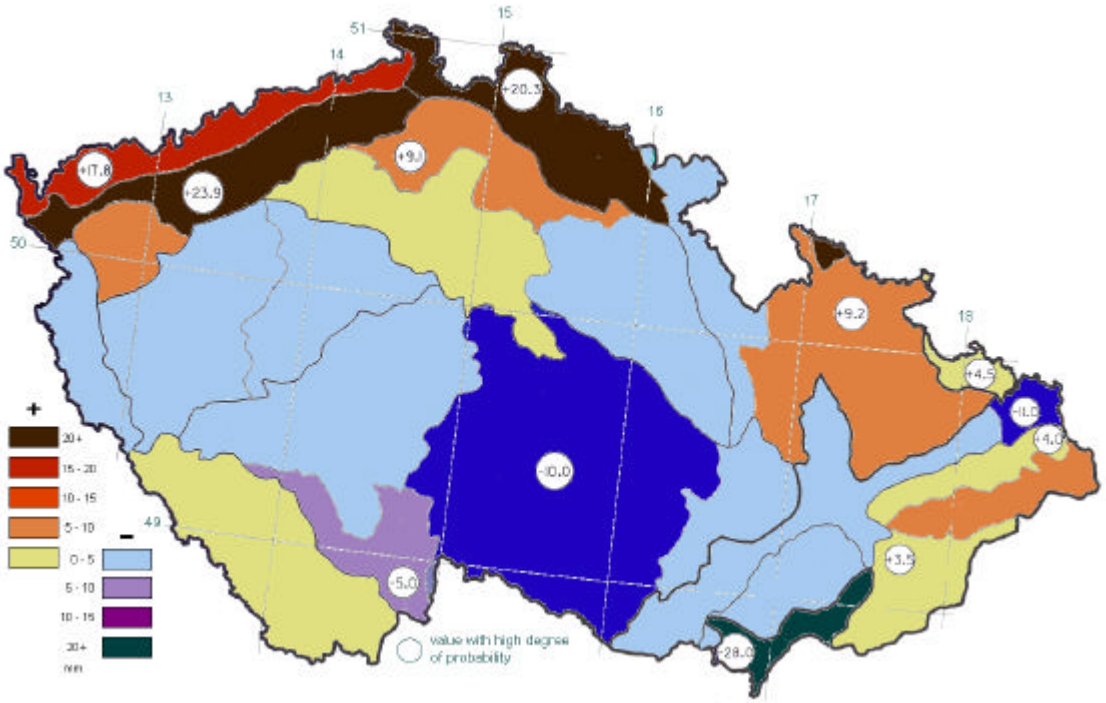

Figure 4

Differences between heights
of quasigeoid CR2000 and (GPS-levelling) determined quasigeoid
(contour lines in cm, rms value 3.1 cm)

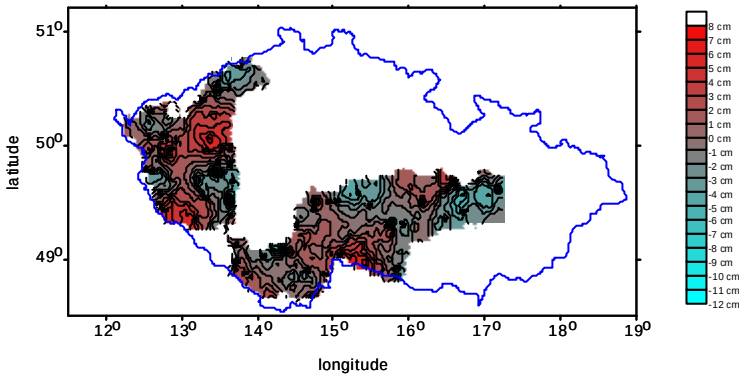

Figure 5

Differences between heights
of quasigeoid VUGTK95 and (GPS-levelling) determined quasigeoid
(contour lines in cm, rms value 4.9 cm)

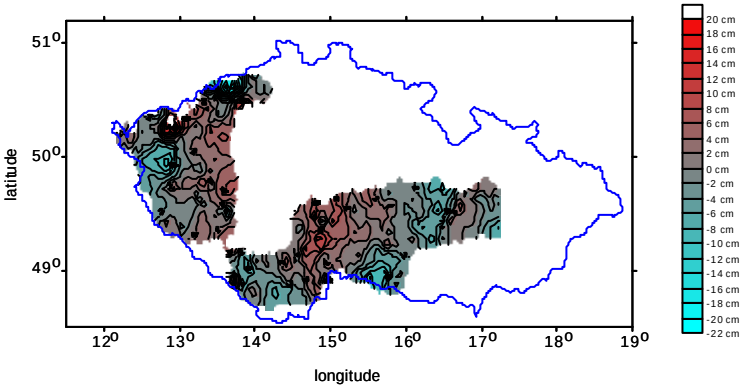

Figure 6