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DICTIONARY OF CARTOGRAPHY AND GEOINFORMATION

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Abstract
The paper gives an introduction to the project *Dictionary of Cartography and Geoinformation*, *Phase* 1, which started at the beginning of 2009 as a part of the *Creation of Croatian Professional Terminology* project financed by The National Foundation for Science, Higher Education and Technological Development of the Republic of Croatia. The accepted fundamental principles of terminological work are listed, the history of the project explained, and the work on the dictionary described.

1. Introduction

The Croatian Parliament established the National Foundation for Science, Higher Education and Technological Development of the Republic of Croatia in 2001. The Foundation's primary mission is to promote science, higher education and technological

development in the Republic of Croatia with the fundamental goal of ensuring economical development and stimulate employing.

The Foundation ensures the support of scientific, higher education and technological programs and projects and also stimulates international collaboration in higher education. The support also includes help in realization of scientific programs of special interest in fields of fundamental, applied and developmental research (URL1).

Creation of Croatian Professional Terminology – Phase 1 was the project *Croatian Professional Terminology – Coordination Project* (Croatian acronym STRUNA) that was carried out at the *Institute for Croatian Language and Linguistics* (IHJJ) in 2008. The head of the project was Milica Mihaljević. The goal of the project was to establish a coordination system of terminological activities in all professions in Croatia. The proposed project supported all strategic values of the Foundation and fit in two fundamental areas of the National Science Strategy (development of information technology, and social and cultural transition from an industrial society to a knowledge society). The project is going to contribute to quality and efficiency of higher education and scientific-research work because it strives to develop equal and verified terminology serving all professionals, as well as the interested public. Furthermore, it establishes a research terminological network and scientific collaboration between numerous institutions concerned with various aspects of terminological work. In order to reach those goals, principles were conceived to establish and select adequate terminology, workshops were organized to educate and train young talented experts for terminological work, a database was conceived for entering terminology from all professions, synonyms in Croatian and equivalents in several European languages according to unique principles (Hudeček et al., 2009). Terms and definitions of individual professions are going to be added by professionals who are going to enter the second project phase, and IHJJ is going to provide lexicographic and Croatian language verification and support of proposed terms. Such a conceived project is going to enable a natural course of knowledge, scientific achievements and information in Croatian into all parts of the society, which is a requirement for survival of Croatian as a standard language, which is going to become one of the official languages of the European Union.

Fundamental principles of terminological work are as follows (Hudeček et al., 2009):

1. Terminology is the part of Croatian standard language
2. Experts in individual professions and linguists are to participate in terminology development
3. Linguists are to participate in all professions' terminology development, and experts in terminology development of their profession
4. Terminology of various professions are to be harmonized
5. Synonymy in terminology is not desirable, so relations between synonyms are to be established (recommended term, allowed term, illicit term, archaic term, slang term)

6. In order to develop a terminological system, all the terms are to be defined.

Creation of Croatian professional terminology – Phase 2 consists of three projects financed by the National Foundation for Science, Higher Education and Technological Development of the Republic of Croatia, and which are being carried out in 2009. They are:

- Systematization and standardization of the fundamental Croatian aeronautical terminology, head Maja (Marija) Bratanić, Faculty of Traffic and Transport Sciences of the University of Zagreb
- Dictionary of Cartography and Geoinformation, Phase 1, head Miljenko Lapaine, Croatian Academy of Engineering
- Creation of Croatian Chemical Terminology, head Lidija Varga-Defterdarović; Ruđer Bošković Institute.

2. Introduction to the Dictionary of Cartography and Geoinformation project

The project is headed by Miljenko Lapaine, professor at the Faculty of Geodesy of the University of Zagreb, the vice-president of the Croatian Cartographic Society and the vice-president of the Croatian Academy of Engineering. He has published several dictionaries and papers concerning terminology (Frančula, Lapaine, 2003a,b, 2008; Frančula et al., 1995; Husak, Lapaine, 2007; Lapaine, 1995, 1996, 2001, 2002, 2004, 2006; Lapaine, Frančula, 2001; Lapaine et al., 1995; Lapaine, Fučkan-Držić, 1994; Tutić, Lapaine, 1997).

The increasing application of geodesy and geoinformation in various forms of human activities, as well as the effect of the general development of science and techniques on geodesy and geoinformation, have significantly expanded the volume of language used. The lack of a dictionary containing terminology used nowadays has been felt for some time in Croatian geodesy, cartography and geoinformation, in scientific, educational and professional work.

Therefore, in 1995, the State Geodetic Administration of the Republic of Croatia was faced with a proposal of producing the *Geodetic Dictionary*, which was supposed to be a pilot-project intended to determine and research problems faced in editing linguistic material, so that, one day, we could start a much more comprehensive project – production of a multi-volume and multilingual geodetic dictionary. Work on the dictionary was started in 1996 and was planned to be finished in three years. However, work took additional time and the manuscript was submitted to the State Geodetic Administration in 2003. Prof. Nedjeljko Frančula, PhD was the project head, M. Lapaine was the main collaborator, and numerous professors and assistants of the Faculty of Geodesy worked on the dictionary, as well as some outside collaborators.

Despite the manuscript of the *Geodetic Dictionary* was submitted to the State Geodetic Administration in 2003, we continued working on professional terminology. It is completely clear there is no end to such work. The fact is supported by general development of techniques, and therefore geodesy as well. The increasing application of new technologies has led to change in content and names of studies at the Faculty of Geodesy. One no longer studies geodesy, but geodesy and geoinformation. Thus, the original manuscript title was changed to *Dictionary of Geodesy and Geoinformation*, and its content was supplemented accordingly. The dictionary was published at the beginning of 2008.

Continuing to work on professional terminology, we wished to explore cartography in detail, it being a branch of geodesy, according to the official categorization of sciences in Croatia.

Let us mention the fact that as early as 1971, German geodesists produced a geodetic dictionary with 18 books concerning individual fields, i.e. branches.

The *Multilingual Cartographic Dictionary* was published in 1977. It was prepared by former professors of the Institute for Cartography of the Faculty of Geodesy, University of Zagreb (Borčić et al., 1977). The dictionary is going to serve as a basic source for the field of cartography, but it certainly needs to be updated with contemporary cartography and geoinformation terms. There have been other cartographic dictionaries neither in Croatia, nor in the territory of former Yugoslavia.

The criterion for selecting collaborators to work on the project was simple: leading Croatian experts in cartography and geoinformation and linguistic experts. In addition, there is a geographer who collaborated in editing the large geographic dictionary (Cvitanović, 2002), and who is at the same time also a cartographic expert within geography. An interdisciplinary approach and collaboration planned by the *Creation of Croatian Professional Terminology* project was realized in this way.

3. Work on the Dictionary

A systematic approach to the research of cartography and geoinformation terminology was secured on the basis of 13 years of experience in producing the *Dictionary of Geodesy and Geoinformation*. Terminological problems occurring in the research are resolved in workshops organized in collaboration with linguists.

The *Multilingual Cartographic Dictionary* published at the Faculty of Geodesy of the University of Zagreb in 1977 was chosen as the basic terminological source. Additional sources are dictionaries, monographs and textbooks from the library of the Institute for Cartography (Chair of Cartography and Chair of Geoinformation) of the Faculty of Geodesy, University of Zagreb, as well as Internet sources.

Considering the experiences from the *Dictionary of Geodesy and Geoinformation*, it was clear the entire cartography and geoinformation dictionary could not be produced and completed in one year, but should be a multiannual project. Thus "Phase 1" was attributed to the project title.

Phase 1 was going to consist of following parts:
1. Introduction with terminological principles, terminological database and terminological manual (1st workshop in Zagreb)
2. Abecedarium (List of terms)
3. Processing of a selected subset of cartography and geoinformation terms
4. Analysis of processed material (2nd workshop in Zadar)
5. Continuation of work on the dictionary
6. Final evaluation of project work (3rd workshop in Zagreb and a project work presentation of results at the International Cartographic Conference in Chile in November 2009).

During the first half of 2009, some changes in the planned activities appeared. Namely, four workshops were organized instead of the two planned for the period.

The first and the third workshops were organized by IHJJ. They were organized for collaborators on all three projects (Systematization and Standardization of the Fundamental Croatian Aeronautical Terminology, Dictionary of Cartography and Geoinformation, Phase 1, and Creation of Croatian Chemical Terminology) and included lectures and discussions about terminological subjects common to different professions such as:
- Basic terminological terms and expressions
- Relation between scientific terminology, terminology belonging to other functional styles of the standard language and the scientific slang
- Origins of new terms
- Terminological principles
- Lexicography and terminography
- Database for dictionary needs
- Some typical linguistic errors.

The second and fourth workshops were organized within the project *Dictionary of Cartography and Geoinformation, Phase 1*.

The second workshop was held at the Headquarters of the Croatian Academy of Engineering in Zagreb in May of 2009. After getting familiar with the Academy, some basic principles were discussed. The following was arranged on:
- Not to included names and abbreviations in the basic corpus of the dictionary, but make them separate chapters
- To supplement the dictionary with a list of measuring unit abbreviations used in cartography

- To provide singulars of terms, if possible
- To write foreign-language terms with original spelling and in italic
- To follow one of the principles of the Committee for Standardization the Croatian Standard Language (established by the Ministry of Science, Education and Sport in 2005, URL 3), which means to always replace a foreign word with a Croatian word. Of course, this is not always possible. For example, magnetic declination (Croatian: *magnetska deklinacija*). The solution should be decided by experts in collaboration with linguists.
- To consider terms of some new devices, for example to different terms for photoplotter in Croatian – *fotoploter* and *fotocrtač* and *fotocrtalo*
- To distinguish between some terms sometimes considered synonyms, for example information – data, or *geografija – zemljopis* in Croatian.

This was followed by a discussion of the abecedarium (alphabetic list) proposed by N. Frančula and M. Lapaine. J. Faričić proposed certain changes and made an observation about toponym systematization, explaining that some types of toponyms (regionym, territorionym, marionym) are not the most suitable solution. The conclusion of the workshop was to consider everything and discuss further at the next workshop in Zadar.

The fourth workshop was held at the Centre for Adriatic Onomastic Research of the University in Zadar in June 2009 (URL 2). First, the abecedarium was discussed in detail. For some terms which have synonyms, discussions were made about which term to prefer. Discussions were also made about whether to write compound words with a hyphen (e.g. web cartography or web-cartography). There was no final conclusion.

Subsequently, definitions proposed by N. Frančula and M. Lapaine were discussed. Length of the definitions was discussed first. Some definitions were too detailed. The conclusion was to apply definitions consisting of one or two sentences, but that they can be longer if necessary. Furthermore, individual definitions were considered thoroughly, some were modified, and additional opinions of other experts would be sought in some cases.

4. Project Results

Expected results of the project work are the complete alphabetic list of terms, about 500 processed terms and prepared guidelines for work continuation. During the first six months of project work, guidelines for terminological work were determined, the alphabetic list agreed on and individual term processing started.

The IHJJ database enables the following data for each term:
- Subfield
- Subentry
- Abbreviation
- Synonym

- Antonym
- Equivalent (English, German, Latin, French, Russian)
- Definition
- Example
- Notes
- Source
- Status (recommended, not recommended or not allowed, allowed, archaic, slang)
- Gender (masculine, feminine, neuter)
- Number (singular, plural).

Work on the project continues and is going to end in January, 2010.

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