

THE NATIONAL REPORT  
The Romanian Society of Photogrammetry  
and Remote Sensing  
Commission No. VI

This Report submitted to the 17<sup>th</sup> ISPRS Congress held in Washington D.C. presents the technical-scientific, educational-training activities within the Romanian Society of Photogrammetry and Remote Sensing covering its involved branches, during 1988-1992, in Romania.

Key Words: National Report, Photogrammetry, Remote Sensing, Educational, Training

INTRODUCTION

Romania is represented within ISPRS by the S.R.F.T. (The Romanian Society of Photogrammetry and Remote Sensing). The S.R.F.T. activity is carrying out within its seven Technical Commissions very akin to ISPRS Technical Commissions. The S.R.F.T. includes all Photogrammetrists and Remote Sensing specialists in our country. According to its Statutes and depending on its possibilities, obviously, it is an important progress element.

THE PHOTOGRAMMETRIC DEVELOPMENT

The most important activity related to the topographic and cadastral map compilation covering, nowadays, more than 85 per cent of the whole country territory, using photogrammetric procedures and equipment has been completed during this inter-congresses period.

At the same time, scientific and technological concerns have focussed on the interactive photogrammetric system development to be used both in analytical aerial triangulation and analytical cadastral mapping. An analytical photogrammetric station consists in an analytical plotter, i.e. either a Stereocomparator, a Stecometer or a Dikometer and a PC computer for aerial photograph plotting. About six stations are coupled to a minicomputer (Host Computer); an automatic drawing configuration is, also, connected to that minicomputer.

A present-day important concern is the analogical plotter upgrading, that is, to be supplied with digitizers and microcomputers. Topographical mapping, both graphical and digital, as well as, DTM are to be developed.

A comprehensive study required by The Centre of the Saxon Studies in Gundelsheim-Germany - covering 243 Transylvanian settlements inhabited by Saxon and Romanian people, emphasizing the Saxon historical

monuments, has been carried out, based on 1956-1992 photogrammetric data and information.

Terrestrial photogrammetry has been extensively applied both to some important engineering works to monitor their behaviours, such as : bridges (over the Danube River) viaducts, dams, and to archaeology, especially, to some church and various religious and historical memorial rebuildings.

THE REMOTE SENSING DEVELOPMENT

In Romania, the Remote Sensing applications have been carried out by various Remote Sensing laboratories related to some fields of activity, viz.: (1) I.G.F.C.O.T. (The Institute of Geodesy, Photogrammetry, Cartography and Land Management) on cartographic matters and environmental monitoring; (2) D.T.M. (The Army Topographical Division) on medium and small scale map updating; (3) I.N.M.H. (The National Institute of Meteorology and Hydrology) on hydrological matters; (4) I.S.P.I.F. (The Institute for Land Improving Studies and Designing) on special-subject matters; (5) I.G.G. (The Institute of Geology and Geophysics) on geological matters; (6) I.C.B. (The College of Civil Engineering-Bucharest), within the Geodetical chair.

Undoubtly, Remote Sensing knows a large application range: cadastral, topographic and thematic map updating, photomap compilation, image processing, manifold researches over the Danube Delta and wet areas, underground resource inventory and monitoring, atmospheric investigations, water resource evaluation, land improvement, forestry conservation and improvement, investigations on environment and water pollution sources over the whole country territory, land planning, urbanism and archaeology, just to mention some.

There have been concerns aiming at a proper technical upgrading on analogical and digital processings; during 1988-1990, the first half inter-congress period, the East-European countries and the internal production have been the only sources; since 1990, some restricted equipment of the specialized companies from the Western countries has been coming into use. The Remote Sensing approaches have been mostly focussing on researching activities, and not so much on common applications.

That researching activity has covered the

following branches :

- an Automatic Remote Sensing Multispectral Data Processing System has been developed;
- some test fields have been established to calibrate aerial and spatial data using soil information, which the terrestrial, aerial and space platforms had taken;
- areas with moisture in excess, salt lands and erosion-damaged ones have been established and used to solve some designing land improvement requirements;
- some land fund concern monitoring (mining, industrial and domestic waste material deposits, lands put under crop located over surface mining areas, built-in area development monitoring, soil pollution monitoring over areas adjacent to industrial sites, hydromeliorative system behaviour monitoring in the course of time);
- manifold studies over the Danube Delta;
- pasture inventory and monitoring;
- environmental monitoring;
- topographic and thematic map compilation and updating.

It is worth mentioning our concern to develop a Romanian manifold Remote Sensing system in cooperation with some international organisations. Thus, a National Remote Sensing Centre is to be established to support the required technical basis carrying out some usual approaches related to various fields of activity.

#### GIS AND DIGITAL MAPPING DEVELOPMENT

Manifold researches over the Danube Delta and wet areas have been carried out within the I.C.B., to:

- investigate morphological changes and environmental features thoroughly for some land improving applications;
- monitor some morphological changes over the Danube Delta and the Black Sea coastal areas;
- establish indices monitoring environmental elements within the fish breeding ponds;
- collect and evaluate the Remote Sensing thematic data proper to a deltaic area, to establish the environmental parameters, as well as, to integrate them into the Land Information System - the Danube Delta;
- make operational an information system based on satellite and aerial Remote Sensing data over the Danube Delta and the Black Sea coastal areas.

In the last two years, the I.G.F.C.O.T. has managed the cooperation with other specialized institutes on a LIS/GIS - the Danube Delta achievement, using a 1:10,000 scale photomap, as the future requirements could not be based only on classical cartographic products. The information capacity to be used within LIS/GIS - The Danube Delta amounts to 4.10<sup>6</sup>.

A Danube Delta Pilot Project for scales smaller than 1:10,000 is to be carried out by I.G.N. France International, I.G.F.C.O.T. (Romania) and SCOT Conseil (France). This pilot project is to compile the Danube Delta 1:50,000 scale map using digital SPOT multispectral image processing. That map is to be used in land cover classification and evaluation, and as a digital map for LIS/GIS - the Danube Delta, as well.

#### EDUCATION AND RESEARCH

Owing to the present-day concerns of some Commission VI specialists, as well as, to our production state during this inter-congress period, the main S.R.F.T. objectives have envisaged: (1) our photogrammetrist and remote sensing operator training, especially on terrestrial photogrammetry; (2) tests on photogrammetry-remote sensing subjects; (3) technology for photogrammetry - remote sensing.

During 1989-1992, the researching activity has focussed on some experimental works based on national and regional topics: (1) Photomap compilation for land fund and environmental researching activities (1989, 1990, 1991, 1992); (2) Pollution effect monitoring over the agricultural areas adjacent to some industrial works (1989); (3) Study on the methodology establishing forestry cover within pastures (1990); (4) A Remote Sensing study on irrigation systems (1990); (5) Aerial and space multispectral images in establishing agricultural lands with moisture in excess (1990); (6) Thematic mapping using space photographs (1991); (7) A LIS/GIS-The Danube Delta development (1991, 1992); (8) Photomap regarded as an instrument restoring the land fund (1992).

It is worth mentioning the periodical scientific meetings: (1) the 3-rd Geodetic Meeting (Bucharest, 1988); (2) The Romanian and French Symposium (Bucharest, 1991); (3) Yearly I.G.F.C.O.T. and D.T.M. Meetings (1989-1992). Among S.R.F.T. meetings, in which researchers, teaching staff, photogrammetrists and Remote Sensing specialists have taken an active part, we can mention: The 12-th and the 13-th Commission V Symposia (held in Bucharest, 1989 and Suceava, 1991) on "Special Photogrammetric Application Efficiencies" and "Photogrammetric and Remote Sensing Technics in Environmental Engineering", respectively.

Several subjects approached within these last symposia are given below: non-metric aerial camera calibration; photogrammetry and remote sensing in forestry applications; architectural photogrammetry and urbanism; photogrammetry in hydropower construction and management; photogrammetric and remote sensing applications in land improvement; environmental engineering and rural planning; photogrammetric procedures in communication ways; open and underground mining based on photointerpretation, photointerpretation related to historical monuments, settlements and sites.

Besides the above mentioned activities we can also mention the followings: (a) The Romanian Commission of the Architectural Photogrammetry has been established; (b) A cooperation with the Italian Photogrammetric Commission in Bari has been agreed upon.

We have been concerned to further input data into I.G.F.C.O.T. GEOBIB data base for bibliographical information retrieval.

SCIENTIFIC AND PROFESSIONAL  
ASSOCIATIONS

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C.R.F.A. (The Romanian Commission of the  
Architectural Photogrammetry) - 70528  
București, Str. Enăchiță Văcărescu 16,  
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PUBLICATIONS

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(30 Years of I.G.F.C.O.T. Activity);

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Teodorescu, C. et al., 1988. Sateliții arti-  
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