

INTERNATIONAL SOCIETY FOR PHOTOGRAMMETRY AND REMOTE SENSING
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M E M B E R R E P O R T

of

THE ROMANIAN COMMITTEE OF PHOTOGRAMMETRY AND REMOTE SENSING

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Romania is represented by The Romanian Committee of Photogrammetry and Remote Sensing (RCPRS) within ISPRS. Its activity is carried on within seven Technical Commissions having the same concerns as ISPRS Technical Commissions.

RCPRS joins specialists within photogrammetry and remote sensing fields of activity, and paves the way for various meetings and symposia, where the specialists concerns and achievements are presented, thus stimulating their activities.

1. Technical Works

The basic topographical map and the cadastral one are still the most important and the largest achievements compiled photogrammetrically.

The basic topographical map at 1:2,000 and 1:5,000 scales, having a 0.50 - 5 m contour interval, is compiled based on some compulsory national technical norms within a cooperative action among four departmental enterprises and several district units, the last ones carrying out some ground works (minor control point network, ground control points, photo interpretation in the field). According to these norms the technological basic topographical mapping methods depend on: the equipment existing in each unit, the area features under study, the previous geodetic and topographic works.

Besides the general contents mentioned in the national technical norms (including necessary elements in the basic topographical mapping), the topographical maps compiled by some units also contain elements related to: (1) agricultural and soil meliorative land reclamation and water management works, (2) geological prospecting and development works, and (3) forestry.

Some "state-of art" specifications are worthy to be mentioned:

- the photogrammetric planimetric control points are surveyed. 90 per cent, using analytical aerial triangulation on blocks of photographs;
- the photogrammetric height control points are surveyed, using

both analytical aerial triangulation on strips or blocks of photographs when the relief is represented by a 2.5 - 5 m contour interval, and geodetic and topographic surveyings in the field, when the relief is represented by a 0.5 - 1 m contour interval. Some programmes to obtain height control points based on aerial triangulation, using strips or small blocks of photographs, when the relief is represented by a 0.5 - 1 m contour interval are going to be implemented;

- as regards the photogrammetric work stage, using stereoplottting, engraving method on an emulsion plastic base has been improved, giving the opportunity to get a diapositive as quick as possible.

As a matter of fact, the cadastral maps are derived from the basic topographical ones.

An analytical photogrammetric method is used to compile cadastral maps over areas having a systematized topographical configuration. A hardware configuration containing more stereometers equipped with displays and computers (a data collecting station), a minicomputer (main station) and a plotter is used in the method mentioned above. Photogrammetric aerial triangulation could be carried out, as well, based only on some equipment of this configuration. The special computation programme packages have been developed in these work supports.

Digitized topographical maps compiled photogrammetrically are used to obtain cadastral maps. Digital data so obtained and data resulted from analytical photogrammetry applications are elements of the land and geographical information systems (LIS/GIS), at district and national levels.

Among the close-range photogrammetric applications, we can mention: (1) communication way designing and development applications (route interactive mathematic modelling; tunnel and underground gauge surveyings; curve profile achievement control and the road visibility study); (2) open-pit mining designing and development applications (effective monitoring of the pit working face and stability analogical models for the refuse heap); (3) photogrammetrical monitoring of the building works and their stability (the dynamic embankment monitoring for Bucharest-Danube Canal; infrastructure monitoring of the bridges over the Danube river; the sliding vector procedure of the industrial rectifying tooling - a technological process supervised photogrammetrically); (4) bio-medical applications (statistic-correlative study on the dynamic bio human - ecologic medium impact indices, using remote sensing data; stereo cavity organ visualizations; metric thermography and ecography aspects).

Researches on remote sensing applications, using both space analogical and digital imagery and aerial photographs, have entailed colour composite products. Our concerns have been enlarged and extended in various fields of activity: topographic and thematic mapping, hydrology and meteorology; geology, environmental monitoring, agriculture, forestry, a.s.o. Corresponding to these activities, several remote sensing laboratories have been developed to solve some special problems, such as: topographic and thematic map compilation and updating; hi-

drology and water quality control; complex investigations over wet areas (the Danube Delta); geology and mineral resources; agriculture and land reclamation works.

Aerial photographs to be used photogrammetrically are taken by only one specialized enterprise over the whole country. The terrestrial photographs are taken by each unit specialized in such works.

All aerial photographs and space images to be used photogrammetrically are employed by the specialized units from the various national economic branches.

Landsat imagery, Soviet satellite photographs, aerial conventional and images taken in various spectral bands are used in remote sensing.

To carry out these works, we use: (1) aerial and terrestrial survey cameras manufactured by VEB Carl Zeiss Jena and Wild Heerbrugg; (2) stereoplotters (VEB Carl Zeiss Jena - Stereometrograph, Topocart, Topoflex, Stecometer, as well as Wild Heerbrugg - Autograph and Aviograph); (3) Rectimat-rectifier, precise Coordinatographs and other supplementary instruments; (4) remote sensing equipment (VEB Carl Zeiss Jena - MSK 4 multispectral cameras, Sweden - Hasselblad cameras and amateur photographic cameras); (5) remote sensing image processing equipment (VEB Carl Zeiss Jena - MSP 4 multispectral projector, Robotron configuration FEAG 200, and the existing photogrammetric equipment).

Programmes for radiometric and geometric corrections, processing, registration and change detection have been developed.

Engineers and technicians graduating of High School Institutes and State Colleges are working within the photogrammetric and remote sensing fields of activity.

2. Research and Development

As regards ISPRS and RCPRS Technical Commission cooperation, we can mention our participation in the Working Group III/4 experimental test; RCPRS Commission III data have been presented to the Working Group meeting held in Stuttgart (Germany) in September 1987.

The researching activities are carried on by the Institute of Geodesy, Photogrammetry, Cartography and Land Management, the College of Civil Engineering, and other institutes, as well. The main researching aim is the technological development.

Equipment aiming at the existing technical process automation and the latest image processing technology introduction have been developed in our country.

Computation programmes for the basic and applicative aerial and space data processing have been implemented as a software concern.

3. Education

The geodetic engineers are graduating of the Faculty of Geodesy within the College of Civil Engineering - Bucharest, which professors and lecturers are concerned with educational and researching matters.

The faculty has photogrammetric and remote sensing laboratories at its disposal, proper for a thorough and complete education of the Romanian and foreign students (the last being especially from the developing countries).

The training concerns are carried on through the agency of some postgraduated courses and Ph.D. theses. Besides, it is worth to mention the every year training courses within each Institute and Enterprise having a photogrammetric and remote sensing division, wherein the latest photogrammetric methods and technologies, as well as the proper computation and automated drawing procedures are assimilated.

4. Publications

"Analele Institutului de Geodezie, Fotogrammetrie, Cartografie și Organizarea Teritoriului" (The Annals of the Institute of Geodesy, Photogrammetry, Cartography and Land Management) volumes 5,6,7 and 8 are a periodical issue containing photogrammetric and remote sensing papers.

In 1984, a Remote Sensing Course has been edited for high educational purposes, by the Faculty of Geodesy.

During 1984-1987, the following Ph.D. theses have been prepared:

- "Reambularea cadastrului prin teledetecție. Contribuții la problema registrării în vederea detectării schimbărilor" (Remote Sensing in Cadastral Updating. Contributions to Registration Problem Aiming at Change Detection);
- "Elaborarea cu ajutorul tehnicilor de teledetecție a prognozelor apelor mari de primăvară" (Remote Sensing in Spring High Water Prognosis).

The papers published between the 15th and 16th Congresses are mentioned in the appendix.

Among the scientific meetings and symposia, we can mention:

- every year scientific session of the Institute of Geodesy, Photogrammetry, Cartography and Land Management, circumstantial scientific sessions of the other Institutes, and the every month lectureships sponsored by specialized photogrammetric and remote sensing Institutes and Departments, wherein photogrammetric and remote sensing papers have been presented.
- RCPRS Commission V Symposia on "Special Photogrammetric Applications"(1984), and "Photogrammetric Applications and Their Economic Efficiency"(1986).

GEOBIB data base within the Institute of Geodesy, Photogrammetry, Cartography and Land Management is to be mentioned as a system retrieving bibliographical information.

5. Professional

The Romanian Committee of Photogrammetry and Remote Sensing is under the Ministry of Agriculture leadership and is ruled by a President, two Vice-Presidents and a Secretary. Its seven Technical Commissions have a Chairman and a Secretary each.

A Geodetic Division including six Commissions, among which Commission III being the Photogrammetry and Remote Sensing one, belongs to the National Council of Engineers and Technicians.

6. Adresses

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PAPERS PUBLISHED DURING 1984-1987

- Albotă, M., Anton, M.D., 1984, Urmărirea depozitelor cu deșeuri industriale și urbane cu mijloace fotogrammetrice (Aerial Photogrammetry in Industrial and Town Waste Deposit Monitoring), Simpozionul Comisiei V a CRFT, Caiet de referate.
- Albotă, M., Ioanid, G., Galbură, G., 1984, Sistem de clasificare și vizualizare tematică a datelor digitale de teledetecție (Thematic Classification and Visualization System for Digital Remote Sensing Data), Analele IGFCOT, V, 99-103.
- Albotă, M., Botzan, M., 1985, Fotograma aeriană evidențiază drumul civil roman dintre Sucidava și Romula (The Roman Civilian Road between Sucidava and Romula, visible on Aerial Photographs), Analele IGFCOT, VI, 75-81.
- Albotă, M., Ioanid, G., 1985, Teledetecția ca sistem cibernetic (Remote Sensing - A Cybernetics System), Analele IGFCOT, VI, 83 - 87.
- Albotă, M., 1986, Fotograma aeriană, instrument pentru urmărirea unor probleme ale fondului funciar (Aerial Photograph - A Useful Tool in National Land Resource Monitoring), Simpozionul Comisiei V a CRFT, Caiet de referate.
- Albotă, M., 1986, Urmărirea unor surse de degradare a mediului înconjurător pe imagini din satelit (Satellite Imagery in the Environmental Degradation Source Monitoring), Analele IGFCOT, VII, 103-112.
- Albotă, M., Hanu, M., 1986, Cu privire la materialele fotografice românești produse pentru fotogrametrie (On the Romanian Photographic Materials to Be Used in Photogrammetry), Simpozionul Comisiei V a CRFT, Caiet de referate.
- Anton, D.M., 1987, Studii și cercetări fotogrammetrice pentru urmărirea evoluției morfologice a cordonului litoral (Photogrammetric Studies and Investigations Monitoring Morphological Evolution Along the Coastline), Analele IGFCOT, VIII, 105-109.
- Balotă, O., 1987, Cu privire la raportul dintre benzile spectrale ale înregistrărilor digitale (On the Digital Recording Spectral Band Ratio), Analele IGFCOT, VIII, 119-130.
- Boș, N., Ciortuz, I., Kiss, A., Chițea, G., 1984, Cercetări preliminare privind posibilitățile de utilizare a fotogramelor aeriene în amenajarea pajiștilor din regiunea de munte (Preliminary Researches on the Possible Aerial Photograph Uses in Mountains Grassland Management), Simpozionul Comisiei V a CRFT, Caiet de referate.
- Boș, N., Ciortuz, I., Kiss, A., Chițea, G., 1986, Cercetări privind aplicarea fotogrammetriei în amenajarea pășunilor și pajiștilor alpine (Researches on the Photogrammetry Uses in Alpine Pasture and Grassland Management), Simpozionul Comisiei V a CRFT, Caiet de referate.
- Boș, N., Kiss, A., Clințiu, I., Chițea, G., 1986, Fotogramele aeriene în sprijinul lucrărilor de amenajare a bazinelor hidrografice torrențiale (Torrential Hydrographic Basin Management Works Based on Aerial Photographs), Simpozionul Comisiei V a CRFT, Caiet de referate.

Botea, C., Breban, T., 1984, Noi variante-programe pentru întocmirea automată a suportului de exploatare fotogrammetrică (New Variants-Programmes Used to Compile Photogrammetric Sheet Automatically), Analele IGFCOT, V, 77-84.

Corcodel, G., 1984, Aerotriangulația analitică în IGFCOT (Analytical Aerial Triangulation in IGFCOT), Analele IGFCOT, V, 55-68.

Corcodel, G., Botea, C., Breban, T., 1984, Sistem interactiv de culegere, prelucrare și reprezentare a datelor fotogrammetrice (Interactive System for Photogrammetric Data Collection, Processing and Display), Analele IGFCOT, V, 69-75.

Corcodel, G., 1985, Prelucrarea simultană a măsurătorilor fotogrammetrice și geodezice în aerotriangulația analitică (Simultaneous Photogrammetric and Geodetic Measurement Processing in Analytical Aerial Triangulation), Analele IGFCOT, VI, 57-66.

Coțovanu, E., 1984, Lucrări fotogrammetrice pentru proiectarea și urmărirea execuției canalului Dunăre-Marea Neagră (Photogrammetry in the Danube-Black Sea Canal Designing and Implementation Monitoring), Simpozionul Comisiei V a CRFT, Caiet de referate.

Coțovanu, E., Fusoi, D., 1986, Teledetecția la amplasarea și proiectarea autostrăzilor (Remote Sensing in Highway Designing and Location), Simpozionul Comisiei V a CRFT, Caiet de referate.

Donisă, I., 1984, Teledetecție și geografie (Remote Sensing and Geography), Terra, 2, 18-25.

Dumitrescu, M., 1986, Utilizarea fotografiei aeriene la controlul fondului funciar în incinta Pardina din Delta Dunării (Aerial Photography in the National Land Resource Monitoring over Pardina Zone in the Danube Delta), Analele IGFCOT, VII, 113-119.

Gheorghiu, D., Barbu, A., 1986, Considerații privind modul de structurare a informațiilor din "Baza de date pentru planurile cadastrale digitale realizate fotogrammetric" (How to Structure Digital Cadastral Map Information in a Data Base Using Photogrammetric Methods), Simpozionul Comisiei V a CRFT, Caiet de referate.

Ghiță, I., 1984, Aplicațiile teledetecției în supravegherea calității apelor (Remote Sensing in Water Quality Monitoring), Simpozionul Comisiei V a CRFT, Caiet de referate.

Guțu, A., 1984, Determinarea reperajului fotogrammetric în fotogrammetria terestră, cu aparate automate (Ground Control Points in Terrestrial Photogrammetry Using an Automated Equipment), Simpozionul Comisiei V a CRFT, Caiet de referate.

Guțu, A., Chindea, N., 1986, Tehnologia de urmărire a execuției terasamentelor prin măsurători fotogrammetrice asistată de calculator (Computer-Assisted Photogrammetric Measurements in Road Embankment Implementation Monitoring), Simpozionul Comisiei V a CRFT, Caiet de referate.

Ionescu, M., 1984, Utilizarea cuplelor aeriene în lucrări de relevu a traseelor feroviare (Detailed Surveying in Rail Lines Based on Pairs of Aerial Photographs), Simpozionul Comisiei V a CRFT, Caiet de referate.

Leu, I. N., Negoescu, I., 1984, Studii fotogrammetrice privind colmatarea lacurilor de acumulare prin aportul alunecărilor de teren (Photogrammetric Studies on Storage Basin Colmatage Caused by Land Slides), Simpozionul Comisiei V a CRFT, Caiet de referate.

Şalariu, G., 1987, Utilizarea parametrilor adiţionali la compensarea în bloc a reţelelor de aerotriangulaţie (Additional Parameters Used in the Block Adjustment of Aerotriangulation Nets), Analele IGFCOT, VIII, 87-96.

Şalariu, I., 1984, Proces tehnologic integrat optimizat de teledetecţie pentru întocmirea fotohărţilor (Remote Sensing Optimized Integrated Technological Process Used in Photomap Compilation), Analele IGFCOT, V, 105-119.

Şalariu, I., Turdeanu, L., Şalariu, G., 1984, Exploatarea stereoscopică a fotogramelor cosmice prin metode analogice (Space Photograph Stereoscopic Plotting, Using Analogical Methods), Analele IGFCOT, V, 85-98.

Tolea, A., 1984, Metode neconvenţionale de exploatare a fotografiilor (Non-Conventional Photographs Investigation Methods), Simpozionul Comisiei V a CRFT, Caiet de referate.

Tolea, A., 1986, Aspecte ale eficienţei economice în cadrul unui colectiv de fotogrammetrie (Economic Efficiency Aspects Related to a Photogrammetric Division), Simpozionul Comisiei V a CRFT, Caiet de referate.

Tolea, A., Popescu, G., 1986, Un limbaj de fotointerpretare feroviară asistată de calculator (A Computer-Assisted Language Used in Railroad Photo Interpretation), Simpozionul Comisiei V a CRFT, Caiet de referate.

Vîlsănescu, E., 1986, Urmărirea evoluţiei excesului de umiditate în incinte amenajate hidroameliorativ, folosind o metodologie fotogrammetrică (Photogrammetric Methodology in the Humidity Excess Monitoring Within Hydroameliorative Developed Zones), Analele IGFCOT, VII, 85-94.

Zegheru, N., 1984, Folosirea aerotriangulaţiei cu fascicule pentru întocmirea planurilor topografice la scări mari (The Bundle Aerial Triangulation in Large Scale Topographic Map Compilation) Analele IGFCOT, V, 49-54.

Zegheru, N., 1985, Evoluţie, tendinţe şi perspective în fotogrammetrie (Evolution, Trends and Perspective in Photogrammetry), Analele IGFCOT, VI, 47-55.

Zegheru, N., Corcodel, G., 1985, Prelucrarea imaginilor şi grafica interactivă în fotogrammetrie şi teledetecţie (Image Processing and Interactive Graphics in Photogrammetry and Remote Sensing), în lucrarea "Calculatoarele electronice, grafica interactivă şi prelucrarea imaginilor", Editura Tehnică, 268-326.

Zegheru, N., 1986, Cu privire la eficienţa fotogrammetriei analitice în măsurătorile cadastrale (On Analytical Photogrammetry Efficiency in Cadastral Survey), Analele IGFCOT, VII, 75-83.

Zegheru, N., 1986, Land resource use monitoring in Romania, using aerial and space data, Proceedings of the Seventh International Symposium on Remote Sensing for Resources Development and Environmental Management, ISPRS Commission VII/Enschede, 953-956.

Zegheru, N., Fusoi, A., Galbură, G., 1986, O aplicaţie a fotogrammetriei în domeniul cadastrului (A Photogrammetric Approach in Cadastre), Simpozionul Comisiei V a CRFT, Caiet de referate.

Zegheru, N., Stănescu, V., 1987, Recunoaşterea formelor în fotogrammetrie şi teledetecţie (Shape Reconnaissance in Photogrammetry and Remote Sensing), Analele IGFCOT, VIII, 111-118.

- Leu, I.N., Negoescu, I., 1986, Construcții flexibile speciale pentru lucrările din domeniul îmbunătățirilor funciare; studii fotogrammetrice (Special Flexible Structures in Land Reclamation Works; Photogrammetric Studies), Simpozionul Comisiei V a CRFT, Caiet de referate.
- Marin, Ș., Boldog, F., Calotită, M., 1986, Considerații generale asupra lucrărilor executate de colectivul de fotogrametrie terestră de la ICITPLCIM Deva (General Remarks on Works Carried-Out Using Terrestrial Photogrammetry within ICITPLCIM Deva), Simpozionul Comisiei V a CRFT, Caiet de referate.
- Neguț, N., Dron, A., Căplescu, L., Bălănescu, P., Săvulescu, C., 1984, Folosirea produselor obținute utilizând fotogrammetria terestră pentru cartarea geologică a taluzelor la canalul Dunăre-Marea Neagră (Terrestrial Photogrammetry in Mapping of the Danube-Black Sea Canal Embankment), Simpozionul Comisiei V a CRFT, Caiet de referate.
- Neguț, N., Mihaiu, G., Bălteanu, D., Căplescu, L., Bălănescu, P., 1985, Studii asupra proceselor de modelare a versanților, cu metode fotogrammetrice, în Subcarpații Buzăului (Studies on the Slope Modelling in Buzău sub-Carpathian Zone Based on Photogrammetry), Universitate-IG-ISPIF, București.
- Olteanu, E., 1984, Studiu fotogrammetric privind zona de alunecare Mătășari-Jilț (A Photogrammetric Study on Mătășari-Jilț Land Slide Zone), Simpozionul Comisiei V a CRFT, Caiet de referate.
- Popescu, V., Olteanu, E., 1984, Posibilitățile de utilizare a calculatorului electronic pentru determinarea reperajului în fotogrammetria terestră (Ground Control Point Establishment in Terrestrial Photogrammetry Using An Electronic Computer), Simpozionul Comisiei V a CRFT, Caiet de referate.
- Rada, M., Cochină, N., 1985, Localizarea a două așezări antice prin aerofotointerpretare (Location of Two Ancient Sites by Interpretation of Aerial Photographs), Analele IGFCOT, VI, 67-74.
- Rada, M., Cochină, N., Corcodel, G., 1986, Cetăți antice identificate prin fotointerpretare (Photointerpretation in the Ancient Fortress Identification), Analele IGFCOT, VII, 95-101.
- Rada, M., Cochină, N., Corcodel, G., 1987, Vicina își dezvăluie urmele pe fotografia aeriană (Vicina - As Seen on an Aerial Photograph), Analele IGFCOT, VIII, 97-103.
- Rădulescu, I., 1984, Fotogrammetria terestră aplicată la modelarea fizică tridimensională în prospecțiunea electrică în curent continuu (A Terrestrial Photogrammetric Approach in BD Physical Modelling in D.C. Electric Investigation), Simpozionul Comisiei V a CRFT, Caiet de referate.
- Rusu, A., Chițea, G., Cu privire la reflectanța spectrală a arborilor și rolul ei în fotointerpretare-teledetecție (On the Three Spectral Reflectance and Its Part in Photo Interpretation-Remote Sensing), Simpozionul Comisiei V a CRFT, Caiet de referate.
- Sion, I.G., 1987, Utilizarea fotogrammetriei și teledetecției la întocmirea hărții mediului (Photogrammetry and Remote Sensing in Environmental Mapping), Analele IGFCOT, VIII, 73-85.
- Șalariu, G., 1985, Studiu asupra elementelor de proiectare a fotografiilor din Cosmos (Study on Designing Elements of Space Photographs), Analele IGFCOT, VI, 89-99.

