

The Canadian Remote Sensing Society



CODE OF ETHICS OF THE CANADIAN REMOTE SENSING SOCIETY

Honesty, justice, and courtesy form a moral philosophy which, associated with mutual interest among people, should be the principles on which ethics are founded. Each person who is engaged in the use, development, and improvement of the remote sensing and mapping sciences Photogrammetry, Remote Sensing, Geographic Information Systems, and related disciplines should accept those principles as a set of dynamic guides for conduct and a way of life rather than merely for passive observance. It is an inherent obligation to apply oneself to one's profession with all diligence and in so doing, to be guided by this Code of Ethics. Accordingly, each person in the remote sensing and mapping sciences profession shall have full regard for achieving excellence in the practice of the profession. Each person shall maintain the highest standards of ethical conduct in responsibilities and work for an employer, all clients, colleagues and associates, and society at large, and shall:

1. Be guided in all professional activities by the highest standards and be a faithful trustee or agent in all matters for each client or employer.
2. At all times function in such a manner as will bring credit and dignity to the remote sensing and mapping sciences profession.
3. Not compete unfairly with anyone who is engaged in the mapping sciences profession by
 - a. Advertising in a self-laudatory manner,
 - b. Monetarily exploiting one's own or another's employment position;
 - c. Publicly criticizing other persons working in, or having an interest in, the mapping sciences; and/or
 - d. Exercising undue influence or pressure, or soliciting favours through offering monetary inducements.
4. Work to strengthen the profession of mapping sciences by:
 - a. Personal effort directed toward improving personal skills and knowledge;
 - b. Interchange of information and experience with other persons interested in and using remote sensing and mapping science, with other professions, and with students and the public;
 - c. Seeking to provide opportunities for professional development and advancement of persons working under his or her supervision; and
 - d. Promoting the principle of appropriate compensation for work done by persons in their employ.

5. Undertake only such assignments in the use of mapping sciences for which one is qualified by education, training, and experience, and employ or advise the employment of experts and specialists when and if appropriate to ensure that clients' or employers' interests will be best served thereby.
6. Give appropriate credit to other persons and/or firms for their professional contributions.
7. Recognise the proprietary interests and rights of others.

APPENDICES

APPENDIX A

PROFESSIONAL ASPECTS OF PHOTOGRAMMETRY (Classification Chart for Photogrammetry and Mapping Sciences)

The Canadian Remote Sensing Society accepts without change the definitions used in the ASCE report [Journal of the Surveying and Mapping Division ASCE, ASCE Proceedings dated Sept. 1959 (No. 2166).] for professional level and technician level work as follows:

Professional Level: Work that involves the exercise of professional judgement, frequently based on knowledge acquired through higher learning, generally non-routine in character. The term implies one who can plan, perform and/or direct all such operations in the category; this person is responsible for work performed by those under them.

Technician Level: Work that is primarily routine, of a technical nature, often demanding a high degree of skill, done under the direction of a professional person who is responsible for its outcome. Such work is pre-professional when performed by a professional trainee who, having completed courses of specialised intellectual instruction and study, is seeking to attain professional status. In the classification chart that follows, work listed under the heading of Technical Level also includes work that is pre-professional as defined above. In the classification chart, several professional-level activities are listed, such as geographer, geologist, forester, and archaeologist, in which it is intended to connote that photogrammetry, and/or mapping science is used in this particular activity in a professional manner by a professional person. (The occupations mentioned are examples only and the list is not to be considered as comprehensive.) A practitioner in one of these disciplines may acquire professional competence in photogrammetry and the mapping sciences, and only when they possess this competence is their use of photogrammetry and the mapping sciences to be construed as professional.

CLASSIFICATION CHART FOR PHOTOGRAMMETRY

I. Education in Photogrammetry

- a. Administration of instruction in Photogrammetry
- b. Undergraduate teaching
- c. Graduate teaching
- d. Technical writing

Professional Level: Dean, department chairman, professor, technical writer.

Technician Level: Teaching assistant

II. Research and Development

- a. Materials: Photographic emulsions and bases, chemicals, and drawing and reproduction materials
- b. Instruments and equipment: Lenses, cameras, sensors, platforms, rectifiers, enlargers, printers, measuring and plotting instruments, automation hardware and calibration devices.
- c. Systems: Mapping system photographic and other image interpretation systems. (Development of an integrated series of functions and techniques to produce a given result using photogrammetric principles.)
- d. Investigations and research: Operations research, concept determinations, cost effectiveness studies, techniques studies and investigations.

Professional Level: Research chemist, research physicist, research engineer, technical writer, cartographer, mathematician, electro-optical systems design engineer.

Technician Level Laboratory or shop assistant, test technician.

III. Manufacturing

- a. Materials: Photographic emulsions and bases, chemicals, and drawing and reproduction materials
- b. Instruments and equipment: Lenses, cameras, camera and other sensor platforms; rectifiers, enlargers, printers, sensor systems; viewing, measuring and plotting instruments; automation hardware; software and calibration devices.

Professional Level: Manufacturing engineer, quality control engineer, electro-optical systems engineer, physicist, chemical engineer.

Technician Level Shop technician, drafter.

IV. Photography includes aerial, terrestrial, underwater, space photography and electronic imagery

- a. Technical planning: Flight or exposure station parameters; photography specifications; camera calibration.

- b. Procurement and inspection: Technical negotiations; technical administration of contracts; inspection and acceptance.
- c. Photographic mission: Operation of camera-bearing vehicles; maintenance and operation of cameras; – flight or course navigation.
- d. Photographic processing: Development, inspection and re-flight requirements.

Professional Level: Planning engineer, aerospace engineer, photographic scientist, photographic engineer.

Technician Level: Drafter, inspector, photographer, laboratory technician.

V. **Engineering Surveys for Location Design and Construction, (Utilising photogrammetric technology)**

- a. Location and design data surveys: Control, basic and supplemental (horizontal and vertical); culture and topography; profile and cross sections; measurement and digitization of topography and other vital detail
- b. Construction survey; Location surveys, and staking on the ground of the designed facilities and/or structures; quantity and measurement surveys; "as built" surveys; utility surveys; etc.
- c. Surveys for plans: Architectural (building sites); tax maps, as constructed sites.

Professional Level: Engineer, survey engineer, geodetic surveyor

Technician Level: Stereoscopic instrument or plotter operator, operator of other photogrammetric equipment, computations technician, drafter, field survey assistant (instrument, tape, rod).

VI. **Topographic and Planimetric Mapping**

- a. Project planning.
- b. Control, basic and supplemental (horizontal and vertical): Analogue procedures, analytical methods, instrumental methods; field measurement methods, global positioning systems.
- c. Map compilation: Orientation of plotting instruments, delineation of planimetry and contours; measurement of spot elevations, profile and cross sections, and other terrain data; identification and annotation of principal topographic features and cultural details.
- d. Field edit and completion surveys.

Professional Level: Planning engineer, topographic engineer, geodetic engineer, production engineer, mathematician, cartographer

Technician Level: Stereoscopic instrument or plotter operator, operator of other photogrammetric equipment, laboratory technician, computations technician, drafting, field survey assistant, computer operator.

Space Surveys

- e. Geodetic surveys: Figure of the earth and control extension from satellite triangulation, from ballistic camera photography of earth satellites, and from earth satellite-borne synoptic photography; documentation of results.
- f. Planetary surveys: Surveying and mapping of planets using data derived from space photography and space probes; reporting and/or documenting data.

Professional Level: Geodetic engineer, geodetic space scientist, topographic engineer, mathematician, cartographer.

Technician Level: Stereoscopic instrument or plotter operator or operator of other photogrammetric equipment, laboratory technician, computations technician.

VII. Special Applications

- a. Photographic maps: photographic maps with contours, digital orthophotos, photographic mosaics.
- b. Operations and maintenance: Surveillance; elimination of hazards; condition and inventory surveys; quantitative measurements and evaluation.
- c. Close-range photogrammetry: Architecture; biomedical applications including conventional and x-ray stereo-photogrammetry, photogrammetric solution of biological problems; hydrography, structural engineering; oceanography, geography; police work including crime detection, traffic and accident surveys
- d. Lasers and holography.

Professional Level: Cartographer, physicist, physician, dentist, archaeologist, geographer, oceanographer, architect, engineer, hydrographer.

Technician Level: Stereoscopic instrument or plotter operator, operator of other photogrammetric equipment, laboratory technician, drafter.

CLASSIFICATION FOR MAPPING SCIENTISTS

I. REMOTE SENSING AND INTERPRETATION

- a. Instrumentation selection and operational planning: Instrument-carrying vehicles; space platforms; radar and thermal infrared sensors; scintillometers, radio-meters, magnetometers; multi- and special- sensor combinations; viewing and scanning equipment; image enhancement and image data processing systems; operation and maintenance of sensor systems; preparation of imagery for end use.
- b. Interpretation for general purposes and mapping: conventional mensuration and interpretation of photographic and other imagery pattern recognition; reporting and documenting results.
- c. Interpretation for specific purposes and disciplines: geology, forestry, agriculture, land use, archeology, water resources, meteorology, mineral and aggregate resources, urban planning, industrial development, transportation facilities, volcanic and

earthquake surveys and investigations, environmental and pollution surveys; reporting and documenting results.

- d. Military intelligence.

Professional Level: Cartographer, electro-optical systems engineer, geologist, forester, archaeologist, hydrologist, planner, engineer, agronomist, soil scientist, materials Engineer, resources scientist and engineer, earth scientist, environmentalist, analyst, etc.

Technician Level: Interpretation technician, laboratory technician, image analyst, drafter.

II. GEOGRAPHIC INFORMATION SYSTEM (GIS)

- a. System design: Designs basic GIS systems structures including mapping requirements and all operational software.
- b. System application: Designs and/or integrates various application software packages to solve user requirements.
- c. System maintenance: Consults with clients having existing systems and advises on update procedures and new system characteristics and specifications.

Professional Level: Manager of GIS, GIS department manager, systems analyst, computer systems manager, graphics manager, programmer analyst.

Technician Level: Data processor, data input technician, equipment operator, digitizer, drafter.