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COLLEGIATE ***GEOSPATIAL INTELLIGENCE*** CERTIFICATE  
ACCREDITATION GUIDELINES – 2011



United States Geospatial Intelligence Foundation  
2325 Dulles Corner Boulevard, Suite 450  
Herndon VA 20171

Office 703-793-0109  
Fax 703-793-9069

## STEPS IN USGIF ACCREDITATION PROCESS

- School engages conversation with USGIF academic director to initiate program review

Dr. Max Baber  
Director of Academic Programs  
max.baber@usgif.org  
703-793-0109 x112

- USGIF academic director visits school to observe learning environment
- USGIF academic director provides guidance towards certificate program development
- School prepares/submits a *Self-Study Report* for evaluation by USGIF accreditation panel
- USGIF accreditation panel evaluates *Self-Study Report* and provides criteria-specific review
- USGIF academic director may request additional information from school based on review
- USGIF academic director presents review results to USGIF executive officers
- USGIF academic director informs school of accreditation outcome

## ABOUT COLLEGIATE CERTIFICATE PROGRAMS IN GEOSPATIAL INTELLIGENCE

Geospatial intelligence (GEOINT) is a rapidly evolving discipline. USGIF accreditation provides assurance that programs meet or exceed established disciplinary standards and competencies, to serve a growing GEOINT community of government and industry partners. These certificate programs share the following characteristics.

- Broad strengths in geospatial science and technology
- Enhanced focus on GEOINT contributions to discipline
- Introduction to constituent elements of GEOINT community
- Integration of multidisciplinary learning environment
- Distinctive faculty/program strengths and resources
- Teamwork in GEOINT problem-solving activities
- Emphasis on critical thinking and spatial reasoning

USGIF awards a *Certificate in Geospatial Intelligence* to those students who complete requirements in accredited programs. Academic institutions document the achievement of a *Certificate in Geospatial Intelligence* on student transcripts with other artifacts of academic progress (degrees, honors, courses).

## DEFINING GEOSPATIAL INTELLIGENCE

### TITLE 10 UNITED STATES CODE §467

*The term “geospatial intelligence” means the exploitation and analysis of imagery and geospatial information to describe, assess, and visually depict physical features and geographically referenced activities on the Earth. GEOINT consists of imagery, imagery intelligence, and geospatial information.*

### JAMES R CLAPPER JR – *PATHFINDER* (2004)

*GEOINT is about more than pictures. GEOINT makes possible in-depth assessments and judgments based on the information that is gleaned from visual depictions. In short, GEOINT is more than imagery, maps, charts and digital displays showing where the bad guys are. GEOINT at its best is the analysis that results from the blending of all of the above into a dynamic, composite view of features or activities – natural or manmade – on Earth.*

### KEITH MASBACK – *GEOSPATIAL INTELLIGENCE FORUM* (2010)

*Ask 10 people to define “geospatial intelligence,” and you are likely to get 10 different answers. Words you might hear would include imagery, photogrammetry, geography, cartography, geographic information systems, analysis and remote sensing – and the list could go on longer. [The] legal definition paints with a broad brushstroke an idea of the width and depth of GEOINT. Geospatial Intelligence can’t be defined by a particular program or product.*

### TODD BACASTOW & DENNIS BELLAFFIORE – *AMERICAN INTELLIGENCE JOURNAL* (2009)

*Geospatial intelligence is actionable knowledge, a process, and a profession. It is the ability to describe, understand, and interpret so as to anticipate the human impact of an event or action within a spatiotemporal environment. It is also the ability to identify, collect, store, and manipulate data to create geospatial knowledge through critical thinking, geospatial reasoning, and analytical techniques. Finally, it is the ability to present knowledge in a way that is appropriate to the decision-making environment.*

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## PREAMBLE

*Geospatial Intelligence* (GEOINT) is a specialized field of practice within the broader *Intelligence* profession. The GEOINT discipline encompasses all activities involved in the planning, collection, processing, analysis, exploitation, and dissemination of spatial information in order to gain intelligence about the national security or operational environment, visually depict this knowledge, and fuse the acquired knowledge with other information through analyses and visualization processes.

GEOINT encompasses more than systems, technology, and processes. Highly skilled professionals with a broad range of educational backgrounds and domain expertise advance the discipline, collectively possessing a dynamic and rapidly expanding body of knowledge and operating principles developed over many years of experience. These GEOINT professionals represent and are drawn from a wide range of occupations comprising the GEOINT tradecraft. GEOINT tradecraft is the application of skills, leadership, continuing education, mentoring, special experiences, and knowledge of GEOINT in one or more occupational specialties.

*Geospatial Intelligence* integrates an array of science, technology, engineering, and mathematics (STEM) disciplines in support of national security interests. The academic foundations of GEOINT include *Geography, Remote Sensing, Photogrammetry, Engineering, Cartography, Geographic Information Science, and Statistics*. Location is a fundamental characteristic of human activity, and GEOINT articulates the spatial context associated with a wide range of data gathered by the intelligence community, data derived into valuable information by professional analysts using the tools and methods of *Geospatial Technology*.

The United States *Department of Labor* (DoL) ranks *Geospatial Technology* among a short list of targeted industries in its *High Growth Job Training Initiative*. Acknowledging a need for professional standards in this industry, the DoL *Employment and Training Administration* promoted development of the *Geospatial Technology Competency Model* (GTCM), a multi-tiered approach that places industry competencies atop a professional development pyramid built on personal effectiveness, academic fundamentals, and common workplace skills. Following a decade of development, the GTCM is publicly available summer 2010 via the DoL *Competency Model Clearinghouse* website. The *United States Geospatial Intelligence Foundation* (USGIF) references this model within its accreditation process, acknowledging comprehensive input from numerous geospatial organizations spanning government, industry, and academia.

Surveys of GEOINT industry partners conducted by USGIF in 2009 and again in 2010 confirm that demand of the rapidly growing geospatial enterprise is outpacing the supply of suitably educated personnel. To address this growing demand USGIF is accrediting collegiate *Geospatial Intelligence certificate programs*, assuring the geospatial capabilities of students entering the field and providing valuable continuing education opportunities for professional development. USGIF curriculum guidelines ensure that learning objectives requisite to the GEOINT tradecraft are taught in accredited *Geospatial Intelligence certificate programs*. USGIF accreditation provides external review and quality assurance for academic programs preparing students for *Geospatial Intelligence* careers.

## CURRICULUM FRAMEWORK

While there are many components in addition to the curriculum that are essential in quality certificate programs, the content of the curriculum distinguishes those programs that are specifically focused on Geospatial Intelligence. This section outlines the curriculum framework that must be fulfilled by *Geospatial Intelligence certificate programs* accredited by USGIF. The framework builds upon the competency model concept used by the US Department of Labor, Employment and Training Administration, as well as many other human resource organizations.

### DEFINING USGIF'S GEOSPATIAL INTELLIGENCE COMPETENCY MODEL

A competency model is “a collection of competencies that together define successful performance in a particular work setting” (DOLETA, 2010). The Geospatial Technology Competency Model (GTCM) outlines a set of knowledge, skills and abilities that provides a foundation from which a Geospatial Intelligence curriculum can be articulated. The competency model is defined as a set of tiers.



The lowest three tiers describe *Foundation Competencies*. The first tier contains *Personal Effectiveness* Competencies that are essential life skills normally learned at home or in the community. Included here are such competencies as interpersonal skills, integrity and initiative. The second tier identifies general *Academic Competencies* that should be acquired through general education foundations within collegiate programs. In the GTCM, these include reading, writing, mathematics, geography, science and engineering, communication, critical and analytical training, and basic computer skills. The third foundation tier is *Workplace Competencies* that address skills and abilities that allow individuals to function in an organizational setting. These include teamwork, creative thinking, planning and organizing, and problem solving and decision making.

Within the Curriculum Framework for the USGIF Accreditation program, it is expected that the necessary knowledge, skills and abilities in the first three tiers have already been acquired by students before they enter the program, or that they will have successfully acquired them through participation in the

program. While it is recognized that these competencies are essential for all workers in the Geospatial Intelligence domain, since they are foundational, the Self-Study Questionnaire asks applicants to explain how the program will establish that students graduating from the program will have achieved these competencies.

The next two tiers describe *Industry-Related Competencies*. They are those tiers at which the USGIF Curriculum Framework is focused. Tier 4 describes desired *Industry-wide Technical Competencies*. These are general competencies that all workers within the Geospatial industry should have, no matter their specific focus or application domain. Thus they define core geospatial competencies. The Curriculum Framework outlines these core competencies in general terms since they should form the bulk of the content of all Geospatial Technology-related programs. All certificate programs accredited under the USGIF must offer courses that collectively address all of these general topics.

In the general competency model, Tier 5 focuses on Industry-Sector Technical Competencies. In the USGIF Curriculum Framework this is the tier that articulates Geospatial Intelligence-specific competencies. Thus, accreditation through the USGIF focuses predominantly on competencies defined at Tiers 4 and 5. The next sections provide more detail on these USGIF required competencies.

Tiers 6 through 9 are *Occupation-Related Competencies*. Since these are focused on individual workplace functions, they represent precisely defined competencies that can be used to measure performance in the workplace, to design competency-based curricula and to articulate the criteria for occupational credentials. Due to their occupation specificity, these are not addressed in the USGIF Curriculum Framework.

Tiers 2-5 of the GTCM define the bounds of the USGIF *Geospatial Intelligence certificate* curricular framework. While the coursework requirements of the certificate program focus principally on industry-wide (Tier 4 – core geospatial science and technology) and industry-sector (Tier 5 – Geospatial Intelligence) competencies, these tiers are built upon a broad multidisciplinary academic foundation like GTCM Tier 2, and culminate in a capstone experience that synthesizes and applies newly acquired knowledge and skills in a workplace approach (GTCM Tier 3) to realistic GEOINT problem solving.

## MULTIDISCIPLINARY ACADEMIC COMPETENCIES (TIER 2)

*Geospatial Intelligence* integrates large volumes of data from a variety of sources, a list that includes but is not limited to topography, hydrography, land use/cover, and population (numerous artifacts of human activity), and geospatial analysts derive meaningful information from this data. GEOINT is inherently multidisciplinary, and it's important for students to develop a broad academic foundation in preparation for GEOINT careers. Competencies in reading, writing, mathematics, geography, science/engineering, communication, critical and analytical thinking, and basic computing are fundamentally important for successful completion of program requirements. Requirements for integrating these competencies within a given program are managed as prerequisites, conserving course credit hours for geospatial requirements. Universities are further encouraged to design *Geospatial Intelligence certificate programs* that provide opportunities for multidisciplinary engagement, integrating courses from an array of disciplines connected via common application of geospatial science and technology.

## CORE GEOSPATIAL COMPETENCIES (TIER 4)

In 2006, the University Consortium for Geographic Information Science published the first edition of the Geographic Information Science and Technology (GIS&T) Body of Knowledge (BoK) (UCGIS, 2006). Intended to comprehensively outline all knowledge that might be considered within the GIS&T domain, it provides a source from which collections of competencies can be organized to articulate what is needed by workers in specific fields and application areas. As such it provides an excellent foundation for the identification of the necessary Core Geospatial Competencies needed by Geospatial Intelligence workers. The following table summarizes the required Core Competencies and relates them to units in the Body of Knowledge where more information and detailed objectives can be found.

#	Name	Description	BoK ref
CORE1	Spatial thinking	Concepts of space, representation, spatial reasoning, map use	CF3, CF4
CORE2	Fundamentals of geographic information	Geodesy, map projections, location and coordinate systems, direction, scale, generalization, data quality	GD1, GD3, GD4, GD5, GD6,
CORE3	Remotely sensed imagery	Electromagnetic radiation, passive and active sensor systems, visual interpretation, photogrammetry, digital image analysis	GD10, GD11
CORE4	Geospatial information systems	Spatial data models, spatial data quality, data capture, surface models, database design and management	DA4, DM2, DM3, DM4
CORE5	Spatial analysis	Geometric measures, Basic analytical operations, basic analytical methods	AM3, AM4, AM5, DN1
CORE6	Quantitative information communication	Cartographic symbolization, map layout and design, reference and thematic mapping, dynamic and interactive visualization	CV3, CV4
CORE7	Legal and ethical issues		GS1, GS6, OI5, OI6

## GEOSPATIAL INTELLIGENCE COMPETENCIES (TIER 5)

In addition to the Tier 4 competencies, there are a number of competencies that must be specifically addressed within the Geospatial Intelligence domain. While this is a constantly evolving collection, the following are specific topics that must be treated in some depth in all USGIF accredited programs.

#	Name	Description
GEOINT1	GEOINT History	Pre-computer GEOINT technologies for surveillance, targeting, and navigation, aerial photos, early computer GEOINT technologies
GEOINT2	Remote Sensing for GEOINT	GEOINT-relevant sensors and satellites, full motion video, UAVs, sensor networks, tasking, link sensor characteristics to appropriate INT problem solving
GEOINT3	Photogrammetry for GEOINT	GEOINT applications in photogrammetry

#	Name	Description
GEOINT4	GEOINT data	Interoperability and standards, data integration, data from other INTs, INT data and imagery portals, INT data quality assurance
GEOINT5	Geodesy	Establishment and maintenance of WGS084
GEOINT6	GPS	Development and maintenance of the geodetic positioning system
GEOINT7	The Intelligence process	Information exploitation, standard intelligence methodologies (e.g. Geospatial Intelligence Preparation of the Environment (GPE) ), threat and hazard evaluation, making and presenting predictive analytic conclusions, situational awareness and common operational picture, the Intelligence Community/who are the players?
GEOINT8	GEOINT analysis	Data mining, data fusion, geovisualization, feature extraction
GEOINT9	GEOINT products and communication	Standardized cartographic products, interactive and dynamic products, intelligence briefs, imagery reports, area reports
GEOINT10	GEOINT applications	Military applications, national security special events, disaster relief, evacuations, national security requirements
GEOINT11	Emerging GEOINT technologies and techniques	New cartographic representations, new visualization techniques, mobile devices, Virtual and augmented reality

### GEOINT WORKPLACE COMPETENCIES (TIER 3)

This Curriculum Framework identifies those essential components within the geospatial sciences that will provide students with knowledge and skills requisite for effective Geospatial Intelligence problem solving. USGIF accreditation further requires a capstone experience to give students opportunity to engage a real-world national security problem or scenario (see Appendix A for details). This capstone experience will challenge student abilities to engage teamwork, creative thinking, planning & organizing, problem solving & decision making, working with tools & technology, and quality control & assurance.

### REFERENCES

DOLETA, 2010. Geospatial Technology Competency Model. Education and Training Administration, United States Department of Labor, Washington DC. [www.careeronestop.org/competencymodel/](http://www.careeronestop.org/competencymodel/).

UCGIS, 2006. Geographic Information Science & Technology Body of Knowledge. University Consortium for Geographic Information Science and Association of American Geographers, Washington, DC.

## ACCREDITATION CRITERIA

All applicants for accreditation will be evaluated in accordance with the following criteria.

### CRITERION 1 – STUDENTS

The quality and performance of the students are important considerations in the evaluation of *Geospatial Intelligence certificate program*. The institution must articulate their procedures and metrics for evaluation, advising, and monitoring student progress towards completion of the Certificate Program.

### CRITERION 2 – PROGRAM EDUCATIONAL OBJECTIVES

The Geospatial Intelligence Certificate program for which an institution seeks accreditation or reaccreditation must:

- ▶ Have in place detailed published Program educational objectives that are consistent with the mission of the institution and that align with the USGIF Curriculum Framework.
- ▶ Have in place a curriculum and processes that ensure the achievement of these objectives
- ▶ Have in place a system of ongoing program evaluation that demonstrates achievement of these objectives and uses the results to improve the effectiveness of the program

### CRITERION 3 – STUDENT COMPETENCIES AND ASSESSMENT

Geospatial Intelligence programs must demonstrate that graduates have:

- ▶ An ability to apply knowledge of remote sensing, geographic information science & technology, computer science, and analytic processes
- ▶ An ability to find and interpret data
- ▶ An ability to function in a collaborative environment
- ▶ An awareness of professional and ethical responsibility
- ▶ An ability to communicate effectively
- ▶ An ability to use the techniques, skills, and tools necessary to solve geospatial intelligence problems

The institution seeking accreditation for a *Geospatial Intelligence certificate program* must show that a process for measuring student achievement of Program outcome objectives exists.

### CRITERION 4 – CURRICULUM

The curriculum framework specifies topics of particular relevance to Geospatial Intelligence but, other than the capstone experience, does not prescribe specific courses. The program must include a combination of college level courses that collectively cover all the topics in Tiers 4 and 5 of the UCGIS Curriculum Framework. This includes:

- ▶ A combination of college level remote sensing, geospatial information technology, and computer science fundamentals appropriate to the discipline

- ▶ Geospatial intelligence-related topics (can be case studies)
- ▶ A suitable array of prerequisites to establish a broad multidisciplinary foundation
- ▶ Analytic and communications components that complements the technical content of the curriculum and is consistent with the program and institution objectives
- ▶ A capstone experience that brings the technical, geospatial intelligence domain, and analytic and communications components together in an applied exercise

The range of semester credit hours required for the certificate must be between 16 and 21 (3 credit hours roughly equates to 40 hours of classroom instruction), with a cumulative B average in all core and elective Program courses, and no grade lower than a C on any single program course.

### CRITERION 5 – FACULTY

The faculty is the heart of any educational program. The faculty must be of sufficient number as determined by student enrollment and the expected outcome competencies of the program. There must be sufficient faculty to accommodate adequate levels of student-faculty interaction, including classroom (physical or virtual) teaching, capstone project supervision, student advising and counseling, and research, as well as non-student interactions in collegiate service activities, professional development, and interactions with industrial and professional practitioners, as well as employers of students.

The faculty must have sufficient qualifications and must ensure the proper guidance of the program and its evaluation and development. The overall competence of the faculty may be judged by such factors as education, diversity of backgrounds, applicable experience, teaching performance, ability to communicate, enthusiasm for developing more effective programs, level of scholarship, participation in professional societies, and applicable certifications, registrations, or licensures.

### CRITERION 6 – FACILITIES

Classrooms, technologies, and associated equipment must be adequate to accomplish the program objectives and provide an atmosphere conducive to learning. Appropriate facilities must be available to foster faculty-student interaction and to create a climate that encourages professional development and professional activities. Programs must provide opportunities for students to learn the use of modern geospatial instruments and equipment. Computing and information infrastructures must be in place to support the scholarly activities of students and faculty and the educational objectives of the institution.

### CRITERION 7 – INSTITUTIONAL SUPPORT AND MONETARY RESOURCES

Institutional support, monetary resources, and constructive leadership must be adequate to assure the quality and continuity of the Geospatial Intelligence Certificate program. Resources must be sufficient to attract, retain, and provide for continued professional development of a well-qualified faculty. Resources also must be sufficient to acquire, maintain, and operate facilities and equipment appropriate for the program. In addition, support personnel and institutional services must be adequate to meet program needs. Planning demonstrates sustainability over time.

## SELF-STUDY APPLICATION

The USGIF accreditation process is designed to support and facilitate *Geospatial Intelligence certificate program* development. You are encouraged to contact the USGIF Director of Academic Programs for questions you might have regarding application prior to submission.

### SELF-STUDY REPORT FRAMEWORK

To apply, each institution seeking accreditation from USGIF must complete a self-study report. The Self-Study Report is a qualitative and quantitative assessment of the strengths and limitations of the institution and program. Institutions determine how they will conduct their Self-Studies, but they must follow the specific outline given here. Subdivisions of this Self-Study Report articulate the Accreditation Criteria outlined in Section 3 of this document.

#### TITLE PAGE

- ▶ Name of Institution
- ▶ Name of Program
- ▶ Primary Contact:
  - Name
  - Position
  - Mailing Address
  - Telephone Number
  - E-Mail Address

#### TABLE OF CONTENTS

- ▶ Page references for document sections
- ▶ Include headings and sub-headings

#### BACKGROUND

- ▶ Summary of Organizational Structure (use text and/or show individually or collectively using organizational charts)
  - Program structure
  - Administrative unit structure
  - Administrative unit within the Institutional structure
- ▶ Summary of Program Delivery Modes (e.g., days, evenings, weekends, co-op, off-campus, distance/on-line)

#### STUDENTS

- ▶ Summary of admission requirements and selection process for students entering the Geospatial Intelligence Certificate Program
- ▶ Summary of administrative and faculty advisement and guidance of students in this Program

#### PROGRAM EDUCATION OBJECTIVES

- ▶ List the published program outcomes.
- ▶ Describe how your program’s objectives complement the education objectives of the USGIF as reflected in the goal statement and curriculum framework.
- ▶ Describe your process for ongoing program evaluation that ensures achievement of these objectives and explain how the results are used to improve the effectiveness of the program
- ▶ Explain how the institution stays or plans to stay current with geospatial intelligence trends

#### STUDENT COMPETENCIES AND ASSESSMENT

- ▶ Summary and description of process to assure student outcomes and successful completion of the Capstone Course

#### CURRICULUM

- ▶ Narrative that explains how the courses collectively fulfill the required USGIF Curriculum Framework. Include information explaining how Tiers 1-3 are addressed.
- ▶ Articulation of a Capstone course (see Appendix A).
- ▶ Matrix of courses against USGIF Curriculum Framework to demonstrate coverage of all required competencies (see Appendix B).
- ▶ Course syllabi for all courses forming the Certificate program, including course description, detailed list of topics covered, required texts or readings, list of assignments, overview of lab exercises assigned, course assessment. Indicate whether each course is current or proposed.

#### FACULTY

- ▶ Summary and description of the size and composition, credentials, experience, and workload of faculty that support the Geospatial Intelligence Certificate Program
- ▶ Abbreviated faculty curriculum vitae (maximum 3 pages each)

#### FACILITIES

- ▶ Summary and description of (including availability and adequacy for the Program)
  - Classroom (physical or online) space
  - Laboratory space
  - Computer (hardware, software) resources
  - Learning and Content Management System (if available)
  - Other relevant equipment (E.g. spectrometer, network analyzer, etc.)
- ▶ If distance learning program, also include summary and description of, where applicable:
  - Course management system
  - Video conferencing
  - Student access to e-mail
  - Other relevant technologies

#### INSTITUTIONAL COMMITMENT

- ▶ Statement of commitment by Administration (e.g. letter(s) of support signed by Dean, President, Provost, etc.)

#### APPENDICES

- ▶ Supporting documents, including but not limited to:
  - Course syllabi
  - Faculty curriculum vitae

#### SITE VISIT

After the Self-Study Report has been received, the USGIF Director of Academic Programs will schedule a campus visit to tour facilities and meet with program faculty and collegiate administrators. This site visit serves to confirm and validate information provided in the Self-Study Report, and site visit observations will be included within the final review process.

#### ACCREDITATION PANEL REVIEW

Program evaluation is performed by a three person panel selected from members of the USGIF Academic Advisory Board. Panelists will review materials provided in the Self-Study Report as well as notes and observations collected during the site visit. The accreditation panel will submit a recommendation to the USGIF Director of Academic Programs for administrative action.

## POLICIES AND PROCEDURES

### INTRODUCTION

#### PURPOSES

Geospatial Intelligence certificate programs accredited by the United States Geospatial Intelligence Foundation (USGIF) introduce students to a broad set of technical knowledge and critical thinking skills requisite for establishing and developing careers in the Geospatial Intelligence (GEOINT) profession. USGIF accredited Geospatial Intelligence certificate programs offered by institutions of higher learning will

- ▶ Complement a college degree
- ▶ Support career development
- ▶ Provide professional recognition

USGIF accreditation of collegiate Geospatial Intelligence certificate programs endeavors to meet the following objectives.

- ▶ Identify GEOINT industry-specific standards and competencies and maintain guidelines for collegiate *Geospatial Intelligence certificate programs*.
- ▶ Support and facilitate development of *Geospatial Intelligence certificate programs* at institutions of higher learning.
- ▶ Provide independent external review of collegiate *Geospatial Intelligence certificate programs* for quality assurance.
- ▶ Support scholarly exploration and promote intellectual development among those interested in the Geospatial Intelligence tradecraft.

#### RESPONSIBILITIES

Collegiate *Geospatial Intelligence certificate program* accreditation is managed by the USGIF Director of Academic Programs, with collegiate program evaluations performed independently by accreditation review panels selected from members of the USGIF Academic Advisory Board. The Director of Academic Programs is charged with the following responsibilities:

- ▶ The Director of Academic Programs shall propose policies, procedures, and criteria to the USGIF President and Vice President of Operations for approval. These USGIF executive officers (referred hereafter as USGIF Executive) shall review policies, procedures, and accreditation criteria, and may specify changes as appropriate.
- ▶ The Director of Academic Programs shall administer the accreditation process based on policies and procedures approved by USGIF Executive, and render accreditation results based on evaluations presented by accreditation review panels.

Procedures and decisions on all appeals to accreditation actions shall be the responsibility of the USGIF Executive and the Director of Academic Programs.

Accreditation decisions are based solely on official criteria, policies, and procedures as published by USGIF. Other documents published by USGIF or member organizations are advisory in nature.

#### OBJECTIVES OF ACCREDITATION

In keeping with the broad purposes of USGIF academic programs, accreditation is intended to accomplish the following objectives:

- ▶ To identify to the public, prospective students, student counselors, parents, educational institutions, professional societies, potential employers, and governmental agencies specific programs that meet minimum accreditation criteria.
- ▶ To provide guidance for development of educational programs in Geospatial Intelligence.
- ▶ To stimulate growth in Geospatial Intelligence education in the United States.

#### ACCREDITATION POLICIES

##### INSTITUTIONS

Accreditation of Geospatial Intelligence Certificate programs is accomplished under the following general policies.

- ▶ Programs will be considered for accreditation if they are offered by an institution of higher learning that is a member of an accrediting body for regional institutions in the US, or similarly recognized bodies in other countries also are eligible to apply for accreditation from the USGIF.
- ▶ The educational institution must show they have a credible approach to their *Geospatial Intelligence certificate program* capstone project.
- ▶ An educational institution may partner with other institutions in order to meet all of the accreditation requirements, but only one program applies for accreditation.

##### PROGRAMS

*Geospatial Intelligence certificate programs* – rather than institutions or departments – are accredited.

Program Title – The title of an accredited *Geospatial Intelligence certificate program* may not be used to identify both an accredited program and a non-accredited program.

*Geospatial Intelligence certificate program* is an organized educational experience that consists of a cohesive set of courses or other educational modules sequenced so that a comprehensive demonstration of applied knowledge in the Geospatial Intelligence

tracraft as defined by the USGIF *Geospatial Intelligence certificate program* curriculum guidelines is clearly evident in the program's capstone course.

Programs to be considered for accreditation by the USGIF Academy are college level programs that include an appropriate combination of learning objectives in the fundamentals of geographic information science, photogrammetry and remote sensing, cartography, spatial analysis and statistics, computer science, critical thinking and spatial reasoning, written and oral communications, and ethics.

Program Breadth – Broad programs that will prepare a student to take advantage of as many different career opportunities as possible in the geospatial intelligence field are encouraged. All core areas of the USGIF *Geospatial Intelligence certificate program* curriculum guidelines must be included for accreditation consideration, and will provide the minimum breadth considered important for success in the Geospatial Intelligence career field. Incorporation of the elective areas of the guidelines is encouraged to create a potential differentiator among programs for some students.

The USGIF accreditation panel is prepared to examine, for approval, any programs that appear likely to satisfy the USGIF criteria.

An institution that wishes to have its *Geospatial Intelligence certificate program* considered for accreditation may submit a request directly to the USGIF Director of Academic Programs. Following USGIF acceptance of the request for accreditation, the institution should begin completing the Self-Study Report as described in the *Self-Study Application* section of this accreditation guidelines document.

The accreditation process is voluntary. Institutions are invited to submit their *Geospatial Intelligence certificate programs* without persuasion or pressure. Programs are considered for accreditation action only at the written request of the institution.

Initial Evaluation – An evaluation using the Self-Study Report will be carried out and provisional accreditation will be granted if it is determined that the program meets the criteria defined by the USGIF accreditation guidelines. Provisional accreditation includes accrediting programs that have completely described their course offerings to the satisfaction of the USGIF accreditation panel for meeting the minimum criteria, but may or may not yet have had students take one or more of the courses that are included in the program. A program under provisional accreditation must resubmit for full accreditation within three years after receiving their provisional accreditation in order to continue offering a USGIF accredited *Geospatial Intelligence certificate program*. Reaccreditation will be required every five years once full accreditation is received.

#### INTERPRETATION OF CRITERIA

Definitions – While USGIF recognizes and supports the prerogative of institutions to use and adopt the terminology of their choice, it is necessary for the USGIF accreditation

panel to have a consistent understanding of terminology. With that purpose in mind, the USGIF Academy panel will use the following basic definitions:

- ▶ Program Educational Objectives – Program educational objectives are broad statements that describe the career and professional accomplishments that the program is preparing graduates to achieve.
- ▶ Program Outcomes – Program outcomes are narrower statements that describe expectations regarding student learning and performance by time of graduation, relating to skills, knowledge, and behaviors students acquire through the program.
- ▶ Assessment – Assessment is one or more processes that identify, collect, and prepare data to evaluate the achievement of program outcomes and program educational objectives.

Considerable latitude in the choice and arrangement of subject matter in the curriculum is allowed. The general principles outlined in the criteria will be checked closely by analyzing each particular curriculum. The coverage of basic information rather than the offering of specific courses is the important criterion.

#### EVALUATION

Evaluations are conducted to verify that the program under review is in compliance with the appropriate accreditation criteria. The evaluation of a program will include assessment of both qualitative as well as quantitative factors in the process leading to an accreditation decision.

Self-Study Report – An institution’s educational programs will be evaluated on the basis of data submitted by the institution to the USGIF accreditation panel in the form of a Self-Study Report.

A review is required to establish or continue the accreditation of a program. A review addresses all applicable criteria and consists of:

- ▶ Review of a Self-Study Report prepared by the institution
- ▶ Preparation of a report by the evaluation team.

Reviews must be conducted for an accredited program at intervals no longer than five years for continuous accreditation, and three years after an initial interim accreditation.

A Draft Statement to the institution will be prepared for each evaluation conducted. The institution will have an opportunity to submit a due process response to this draft statement. The draft statement will be revised to correct errors in fact or observation and any other information provided by the institution prior to the accreditation action. This revised statement will be the Final Statement to the institution.

The statement to the institution will generally include statements of the following types:

- ▶ Statements of fact – example: This program has five full-time faculty members whose primary commitment is to the program.
- ▶ Statements of compliance – example: The curriculum satisfies the applicable criteria.
- ▶ Statements of concern – A concern indicates that a program currently satisfies a criterion, policy, or procedure; however, the potential exists for the situation to change such that the criterion, policy, or procedure may not be satisfied.
- ▶ Statements of weakness – A weakness indicates that a program lacks the strength of compliance with a criterion, policy, or procedure to ensure that the quality of the program will not be compromised. Therefore, remedial action is required to strengthen compliance with the criterion, policy, or procedure prior to the next evaluation.
- ▶ Statements of deficiency – A deficiency indicates that a criterion, policy, or procedure is not satisfied. Therefore, the program is not in compliance with the criterion, policy, or procedure.
- ▶ Statements of observation – An observation is a comment or suggestion which does not relate directly to the accreditation action but is offered to assist the institution in its continuing efforts to improve its program.

#### ACCREDITATION ACTIONS

The final decision on accreditation rests with the USGIF Director of Academic Programs, acting on recommendations made by the USGIF accreditation review panel.

Accreditation of a program is granted for a specific period, typically five years (three years for instances where an interim accreditation is granted). The term of accreditation is subject to review for cause at any time during the period of accreditation. Accreditation is granted if current conditions are judged to be meeting or exceeding the minimum requirements. If for any reason the future of a program appears precarious or clear weaknesses exist, accreditation may be granted for a shorter term. Factors which might limit the period of accreditation include uncertainty as to financial status, uncertainty due to the nature of the administrative organization, a need for additions to or improvements in staff or equipment, a new or changing curriculum, undue dependence upon a single individual, etc.

Accreditation for a full term of five years (three years for an interim accreditation) indicates that a program satisfies the published criteria of USGIF.

USGIF does not rank programs. Programs are either accredited or not accredited.

If an evaluation indicates that the future of a program appears precarious or that definite weaknesses or deficiencies exist, accreditation may be granted for a shorter period of time followed by an interim review.

The following actions are available to the USGIF Director of Academic Programs.

- ▶ *Next Review* – This action indicates that the program has no deficiencies or weaknesses. This action has duration of five years.
- ▶ *Interim Approval* – This action indicates that the program has no apparent deficiencies or weakness, but no student has yet completed some or all courses. This action has duration of three years.
- ▶ *Interim Report* – This action indicates that the program has one or more weaknesses. A report focusing on the remedial actions taken by the institution will be required. This action has a typical duration of two years.
- ▶ *Report Extended* – This action indicates that satisfactory remedial action has been taken by the institution with respect to weaknesses identified in the prior IR action. This action is taken only after an IR evaluation. This action extends accreditation to the next general review and, thus, has a typical duration of three years.
- ▶ *Show Cause* – This action indicates that the program has one or more deficiencies. An on-site visit will be required to evaluate the remedial actions taken by the institution. This action has a typical duration of two years.
- ▶ *Show Cause Extended* – This action indicates that satisfactory remedial action has been taken by the institution with respect to all deficiencies and weaknesses identified in the prior SC action. This action is taken only after an interim SC evaluation. This action typically extends accreditation to the next review and, thus, has a typical duration of three years.
- ▶ *Not to Accredite* – This action indicates that the program has deficiencies such that the program is in continued non-compliance with the applicable criteria. This action is usually taken only after a SC evaluation or the evaluation of a new, unaccredited program. Accreditation is generally not extended as a result of this action.

A “not to accredit” action under “show cause” is effective as of the beginning of the academic year closest to September 30 of the calendar year following the year of the “not to accredit” decision by USGIF accreditation review or appeal. The notification to the institution shall indicate: (a) that the termination supersedes the accredited status listing of the program in the USGIF website and (b) that USGIF expects the institution to formally notify students and faculty affected by the termination of the program’s accredited status, not later than September 30 of the calendar year of the “not to accredit” action.

Reevaluation of an institution’s *Geospatial Intelligence certificate program* will be held at intervals not exceeding five years.

A list of programs which have been accredited by the USGIF is prepared bi-annually and published on the USGIF website. The accreditation status of a program listed on the USGIF website applies to all graduates who completed the program during the preceding year.

The USGIF has no authority to impose any restriction or standardization upon educational programs, nor does it desire to do so. On the contrary, the USGIF aims to preserve the independence of action of individual institutions and, thereby, to promote the general advancement of geospatial intelligence tradecraft and education.

## APPEALS

Appeals and requests for reconsideration may be made only in response to not-to-accredit actions. Further, appeals or requests for reconsideration may be based only upon grounds that the not-to-accredit decision of the USGIF was inappropriate due to errors of fact or failure to conform to USGIF's published criteria, policies, or procedures.

In lieu of an immediate appeal, an institution may first request reconsideration. If such a request is denied, the institution may appeal the original not-to-accredit action. Requests for reconsideration must be made in writing to the USGIF Director of Academic Programs within 30 days of receiving notification of the not-to-accredit action.

Appeals must be made in writing to the USGIF Director of Academic Programs within 30 days of receiving notification of the not-to-accredit action or notification of the denial of a request for reconsideration or an immediate revisit.

The USGIF Director of Academic Programs is available for consultation to determine the best course of action for the institution. Such consultation is strongly encouraged.

### Reconsideration

- ▶ A program that has received a not-to-accredit action may be a candidate for reconsideration if it can demonstrate that there were major, documented errors of fact in the information used by the USGIF accreditation panel in arriving at the not-to-accredit decision. In such cases, the institution must submit a written request for reconsideration to the USGIF Director of Academic Programs within 30 days of receiving notification of the not-to-accredit action. This request must be accompanied by a report specifying major documented errors of fact and how such errors contributed to the not-to-accredit action, along with substantiating documentation.
- ▶ The USGIF Director of Academic Programs shall accept or deny the institution's request for reconsideration of the not-to-accredit decision within 15 days of USGIF's receipt of the institution's request for reconsideration. This action will be based solely on the report and supporting documentation supplied by the institution in accordance with the nature of the deficiencies which led to the not-to-accredit action.
- ▶ If the USGIF Director of Academic Programs judges that reconsideration is not warranted, the request for reconsideration will be denied with a statement of

reasons and a reiteration of the institution's right to pursue an appeal of the not-to-accredit action.

- ▶ When reconsideration is granted by the USGIF Director of Academic Programs, the institution shall be deemed to have waived its right to appeal either the original not-to-accredit action or the action resulting from the reconsideration.
- ▶ If following reconsideration the USGIF Executive and Director of Academic Programs, upon unanimous vote, judges that the institution is correct in its claim of such error leading to an erroneous conclusion by the USGIF accreditation panel, the aforementioned USGIF Executive may overturn the not-to-accredit decision and grant whatever accreditation action it deems appropriate, from among the standard array of USGIF accreditation options.

### Appeal

- ▶ Only not-to-accredit actions may be appealed. A notice of appeal must be submitted in writing by the institution's director of the *Geospatial Intelligence certificate program* to the USGIF Director of Academic Programs within 30 days of receiving notification of a not-to-accredit action. This submission must include reasons why a not-to-accredit decision of the responsible accreditation panel is inappropriate because of either errors of fact or failure of the accreditation panel to conform to USGIF's published criteria, policies, or procedures.
- ▶ Upon receipt of a notice of appeal, the USGIF Executive along with the Director of Academic Programs will serve as an appeal panel.
- ▶ The appeal panel will be provided with copies of all documentation that has been made available to the institution during the different phases of the accreditation cycle, including the institution's due process response and other materials submitted by the institution or the USGIF accreditation panel.
- ▶ The institution is required to submit a response (normally one page) to the accreditation panel's executive summary previously sent to the institution. The institution may also submit other material it deems necessary to support its appeal. However, such materials must be confined to the status of the program at the time of the accreditation action of the USGIF accreditation panel and to information that was then available to the accreditation panel.
- ▶ It is emphasized that improvements made to a program subsequent to the review by the accreditation panel will not be considered by the appeal committee.
- ▶ The accreditation panel may submit written materials beyond the statement to the institution and executive summary for clarification. Such materials must be provided to the institution and appeal panel at least 60 days prior to the date of the panel's meeting. Any rebuttal by the institution must be submitted to the committee at least 30 days prior to the appeal panel meeting.
- ▶ The appeal committee will meet and consider only the written materials submitted by the institution and the accreditation panel in determining its

recommendation. Representatives from the institution and the accreditation panel may not attend this meeting. The appeal committee's decision is limited to the options available to the accreditation panel responsible for the not-to-accredit determination. The decision rendered by the appeal committee is the final decision of USGIF.

- ▶ The institution and the accreditation panel will be notified in writing of this decision, and the basis for the decision, by the USGIF Director of Academic Programs within 15 days of the final decision.

## COMPLAINTS

It is the policy of USGIF to review all complaints received from any source, including students, against either an accredited program or USGIF itself that are related to compliance with USGIF's standards, criteria, or procedures and to resolve any such complaints in a timely, fair, and equitable manner. Furthermore, it is the policy of USGIF to retain all documentation associated with any such complaint received against an accredited program for a period of not less than one accreditation cycle (typically five years), and for a period of not less than five (5) years for any complaints received against USGIF itself.

Accredited programs must maintain a record of student complaints and upon written request make that record available to USGIF.

USGIF will not pursue complaints that are not in writing or that are anonymous. Receipts of all complaints will be acknowledged within fourteen (14) days.

USGIF cannot assume authority for enforcing the policies of programs or institutions regarding faculty, professional staff, or student rights. USGIF does not adjudicate, arbitrate, or mediate individual grievances against a program or institution.

Complaints will be reviewed initially by the USGIF Director of Academic Programs. If the complaint is not within the purview of USGIF, the complainant will be notified and no further action will be taken. If the complaint appears to warrant further investigation the Director of Academic Programs will forward a copy of the complaint to the USGIF Executive within fourteen (14) days of receipt of the complaint. The complainant will be notified within fourteen (14) days of the receipt whether the complaint falls within the purview of USGIF and the next steps in the investigative process.

### Complaints against an Institution or its programs

- ▶ If the complaint appears to warrant further investigation, the USGIF Director of Academic Programs will forward a copy of the complaint to the USGIF Executive and to the principal administrative officers of the institution with a request for an institutional response within thirty (30) days. The institutional response will be

reviewed by the USGIF executive officers within thirty (30) days of receipt of the institutional response.

- ▶ If USGIF determines that the institutional response satisfactorily addresses the issue or issues raised in the complaint, the matter will be considered closed. Within fourteen (14) days of the determination, the complainant will be informed in writing of the results of the determination.
- ▶ In the event that an institutional response is not received by USGIF within thirty (30) days of the request for the response, or if the response is not deemed to have satisfactorily resolved the issue, USGIF may initiate further proceedings as circumstances warrant, up to and including revocation of accreditation.
- ▶ If the institution has released incorrect or misleading information regarding the accreditation status of the institution or program, or the accreditation action taken by USGIF, the institution will be required to make a public correction.

#### Complaints against USGIF

- ▶ If the complaint is concerned with USGIF's criteria, policies, or procedures or with the implementation of these, the Director of Academic Programs will forward a copy of the complaint to the USGIF Executive within fourteen (14) days of receipt.
- ▶ If it appears that a USGIF representative or an individual working on behalf of USGIF may have violated USGIF's criteria, policies, or procedures, that individual will be asked to respond to the issues raised in the complaint within thirty (30) days. USGIF Executive will make its determination within thirty (30) days of receipt of the response. The complainant will be notified of the final action of the USGIF Executive in writing within fourteen (14) days of the determination.
- ▶ If USGIF determines that a violation has occurred, USGIF will counsel the responsible party and may take further action as circumstances warrant, up to and including termination as an USGIF representative. If USGIF finds that a violation of its policies or procedures has occurred which may have had an effect on the accreditation action, USGIF may initiate further proceedings as circumstances warrant, up to and including an immediate revisit to the institution.
- ▶ Complaints against USGIF employees will be handled in accordance with the USGIF Employee Manual and may result in actions up to and including termination of employment.

#### CONFIDENTIALITY OF INFORMATION

Information supplied by the institution is for the confidential use of USGIF and its agents, and will not be disclosed without the specific written authorization of the institution concerned.

The contents of all materials furnished for review purposes and discussion during accreditation panel meetings are considered privileged information.

The contents of those documents and the accreditation actions taken may be disclosed only by USGIF staff and only under appropriate circumstances. All communications between institutions and evaluators regarding final accreditation actions must be referred to USGIF headquarters.

#### CONFLICT OF INTEREST

Service as a USGIF accreditation panel member creates situations that may result in conflicts of interest or questions regarding the objectivity and credibility of the accreditation process. The USGIF Executive expects these individuals to behave in a professional and ethical manner, to disclose real or perceived conflicts of interest, and to recuse themselves from discussions or decisions related to real or perceived conflicts of interest. The intent of this policy is to:

- ▶ maintain credibility in the accreditation process and confidence in the decisions of the accreditation panel
- ▶ assure fairness and impartiality in decision-making;
- ▶ act impartially and avoid the appearance of impropriety.

Individuals representing USGIF must not participate in any decision-making capacity if they have or have had a close, active association with a program or institution that is being considered for official action by USGIF. Close, active association includes, but is not limited to:

- ▶ current or past employment as faculty, staff, or consultant by the institution or program;
- ▶ current or past discussion or negotiation of employment with the institution or program;
- ▶ attendance as student at the institution;
- ▶ receipt of an honorary degree from the institution;
- ▶ an institution or program where a close, family relative is a student or employee; or
- ▶ an unpaid official relationship with an institution, e.g., membership on the institution's board of trustees or industry advisory board.

A record of real or perceived conflicts of interest will be maintained for all those involved in the accreditation process. Each individual will be provided with a copy of this record annually for the purpose of updating this record. Copies of the conflict of interest records will be provided to the individuals responsible for selection of team chairs and program evaluators.

All individuals representing USGIF must sign a conflict of interest and confidentiality statement indicating that they have read and understand these policies. The policies on conflict of interest and confidentiality will be reviewed at the start of each commission and board of directors meeting.

Individuals must absent themselves from any portion of a USGIF meeting in which discussions or decisions occur for which they have a real or perceived conflict of interest. Real or perceived conflicts may occur if there is:

- ▶ a close, active association with a program or institution;
- ▶ a financial, or personal interest; or
- ▶ any reason that the individual cannot render an unbiased decision.

The names of individuals who have recused themselves during a meeting for conflicts of interest will be recorded.

#### PUBLIC RELEASE OF ACCREDITATION INFORMATION

Institutions are required to represent the accreditation status of programs accurately and without ambiguity.

Accreditation is based on satisfying minimum educational criteria. As a measure of quality, it assures only that an accredited program satisfies the minimum standards. The various periods or terms of accreditation do not represent a relative ranking of programs in terms of quality. At no point is an institution allowed to publish or imply the term or period of accreditation. Public announcement of the accreditation action should only relate to the attainment of accredited status. No implication should be made by an announcement or release that accreditation by the USGIF applies to any programs other than the *Geospatial Intelligence certificate program*.

Direct quotation in whole or in part from any statement by USGIF to the institution is unauthorized. Correspondence and reports between the USGIF and the institution are confidential documents and should only be released to authorized personnel at the institution. Any document so released must clearly state that it is confidential. Wherever institution policy or state or federal laws require the release of any confidential documents, the entire document must be released.

Information on the *Geospatial Intelligence certificate program* published for students, prospective students, and the general public should provide sufficient definition of the program to show that it meets the appropriate USGIF accreditation criteria.

If accreditation is withdrawn or discontinued, the institution may no longer refer to the program as being accredited.

USGIF will publish on its web site a list of accredited programs. Information as to whether a program or institution not listed among accredited programs was reviewed for USGIF accreditation will not be made publicly available.

The institution must make a public correction if misleading or incorrect information is released regarding the items addressed in this *Public Release of Accreditation Information* section.

## APPENDIX A. GEOSPATIAL INTELLIGENCE PROGRAM CAPSTONE

The *Geospatial Intelligence certificate program* capstone experience should be created around a national security problem or scenario. Ideally, the scenario unfolds over time throughout the course. As it unfolds, the students are required to use the knowledge and skills learned from their earlier course work and personal experience to identify new sources of information, acquire that new information, and apply it to the problem(s) they are faced with solving.

### GENERAL OBJECTIVES

Demonstrate the ability to apply the technical, communications and analytic principles outlined in the curriculum guidelines. Collaborate through peer review to define, clarify, illustrate, and categorize a problem statement and provide knowledge of the situational conditions and actionable recommendations based on analysis for decision makers. Communicate findings in a professional manner to an appropriate audience.

### ANALYTIC THINKING

Demonstrate the ability to identify key intelligence issues and knowledge gaps and the ability to draw logical conclusions using reasoning, reporting and appropriate analytic tools and methodologies.

- ▶ Identifies key questions addressing national security threats, and develops implications for the United States.
- ▶ Identify assumptions and gaps in information, tools, and procedures; identify sources that hold or can collect relevant information to fill gaps.
- ▶ Demonstrates an ability to weigh all information for relevance and reliability, and accurately characterizes evidence and formulates persuasive, well-supported arguments from the evidence.
- ▶ Demonstrates an ability to think logically and creatively without undue influence from personal biases and with the use of appropriate structured analytic techniques (brainstorming, alternative hypotheses, devils advocacy, etc.)
- ▶ Understand socio-cultural factors of those areas of the world that the analyst sees from remote sensing sources and/or other geospatial information, and apply that knowledge to understanding the “meaning” of the observation.

### REAL WORLD PROBLEM SOLVING

Demonstrate the ability to accurately identify a problem and solve it using spatial thinking concepts and methods

- ▶ Define the problem, understand the foundation issues and information needs
- ▶ Develop an information collection/acquisition strategy that leverages a diverse set of resources in geospatial and remote sensing capabilities

- ▶ Define or describe how the principles of GI S&T and RS can be used to address issues of concern or interest (historical trends applied to current activities to predict future events) within a specific domain
- ▶ Create a methodology or process flow diagram that includes GI S&T and RS techniques to solve problems in multiple situations

### RESEARCH SKILLS AND METHODS

Demonstrate ability to utilize geospatial tools and methodologies for deriving meaningful information from acquired data.

- ▶ Identify tools, techniques and work procedures
- ▶ Apply tools, techniques and work procedures
- ▶ Analyze results of the application

### INTERPERSONAL SKILLS/PARTICIPATION

Demonstrate the ability to work well in teams, to share ideas, use technology where appropriate, and leverage different perspectives in order to solve problems.

### COMMUNICATIONS

Be able to restate previous findings; place them into context; translate unique technical terminology for the user, and verbally, written and visually summarize findings succinctly in the context of the domain problem

## APPENDIX B. EXAMPLE TABLE FOR CURRICULUM MATRIX

	Course 1	Course 2	Course 3	Course 4	Course 5	etc
Core1						
Core2						
Core3						
Core4						
Core5						
Core6						
Core7						
GEOINT1						
GEOINT1						
GEOINT3						
GEOINT4						
GEOINT5						
GEOINT6						
GEOINT7						
GEOINT8						
GEOINT9						
GEOINT10						
GEOINT11						