



GIS Certification Institute

GISP Certification Update Initiative

**Proposal for Revised Certification
Requirements and Procedures**

January 21, 2011

AUTHORING AND DISTRIBUTION

This document was created at the request of the GISCI Board of Directors by members of the GISCI Certification Committee's Core Competencies Working Group, including Daniel Ferstenberg, GISP (chairperson); Keri Brennan, GISP; Rodney Jackson, GISP; Tim Leach, GISP; Rakesh Malhotra, GISP; Tom Mueller, GISP; Grahame Ross, GISP; Steven P. Santovasi, GISP; and Geney Terry, GISP; and also including GISCI Executive Director Sheila Wilson, GISP; President David DiBiase, GISP; Vice President Ed Arabas, GISP; Secretary Michael Vanhook; and Board member Dave Hansen, GISP.

This version of the document is for public distribution and comment.

You can find it on the web at <http://www.gisci.org>.

1 EXECUTIVE SUMMARY

On June 30, 2010, GISCI's Board of Directors charged the Certification Committee's Core Competencies Working Group to prepare "a serious proposal that enables informed discussion and decision-making about the prospect of more-rigorous GISP certification." With the Certification Committee's endorsement, the Working Group delivered a proposal to the Board on December 15, 2010. On January 5, 2011, the Board voted unanimously to release a version of the proposal for public comment. The Core Competencies Working Group via the Certification Committee respectfully submits four unanimous recommendations:

1. Though portfolio-based certification was appropriate for its first decade of operations, GISCI should plan now to implement more rigorous certification requirements as soon as possible after its second decade begins in 2014. In particular, the lack of a mandatory examination component undermines the effectiveness and perceived value of GISP certification as a means to promote competent and ethical practice. Especially in light of authoritative competency specifications issued recently by the U.S. Department of Labor (DOL) and others, we conclude that professional certification based solely on a peer-reviewed applicant-supplied portfolio is no longer defensible.
2. To strengthen the value of voluntary certification to GISPs, as well as its positive impacts on the profession and the geospatial field, the Working Group recommends that GISCI develop a mandatory competency-based examination. New applicants should be awarded the GISP upon successful completion of both the exam and a peer-reviewed portfolio that documents experience, education, and contributions to the profession. To maximize its credibility, as well as to differentiate the GISP from competing software-specific credentials, both the exam and the portfolio criteria should be grounded solidly in the DOL Geospatial Technology Competency Model and related competency specifications.
3. Plans for the new examination requirement should be announced three years in advance of its effective date in order to allow sufficient time for a methodical and robust exam development process. This advance notice will provide a finite period for qualified prospective GISPs to submit their application materials under the existing certification method (portfolio-only). All GISPs certified prior to the effective date should be exempt from the exam requirement.
4. To ensure that a valid and reliable exam is developed in a timely manner, GISCI should consider retaining the services of a reputable private firm or individual with exam development experience. We suggest that the Board charge a new Examination Working Group (EWG) to prepare a scope of work statement and a request for proposals that will provide exam preparation project management and quality assurance services.

GISCI's Board of Directors invites public comment on each of the four recommendations above. Do you agree with the recommendations? Why or why not? The Board will consider comments received between February 1-28, 2011. To submit your comments for consideration, please go to <http://www.gisci.org/> for full instructions.

2 THE OPPORTUNITY

The purpose of GISP certification is to advance the GIS profession by promoting competent and ethical professional practice. Applicants currently earn certification by assembling a peer-reviewed portfolio that documents professional experience, educational achievement, and contributions to the profession that meet or exceed minimum thresholds. GISCI's certification criteria provide a sound professional development strategy for current professionals, as well as for the predicted 150,000 additional practitioners that the U.S. Department of Labor predicts will be needed over the next ten years (Department of Labor 2009 a & b).

Members of the URISA Certification Committee devised GISP certification criteria and procedures between 1998 and 2003. Portfolio-based certification made sense when GISCI was founded in 2004, since no comprehensive specification of geospatial competencies existed at that time. Since then, however, substantial progress has been made in identifying core competencies. Recognizing this, in October 2008 GISCI's Board of Directors charged the Certification Committee to conduct a review of certification criteria and procedures that would lay the groundwork for a proposal to revise GISP certification requirements accordingly. In response, the Certification Committee established the Core Competencies Working Group. After considerable work on the part of the Working Group, the Board charged the Working Group on June 30, 2010 to prepare this proposal. The Core Competencies Working Group via the Certification Committee submitted these recommendations to the Board on December 15, 2010.

2.1 Current Situation

Recent developments in the geospatial field now provide the industry-validated competency specifications that had yet to be defined in 2004. These include the U.S. Department of Labor's Geospatial Technology Competency Model (GTCM) (DiBiase *et al* 2010) and new occupation titles and descriptions for Geospatial Information Scientist and Technologist and GIS Technician (U.S. Department of Labor 2009a and b), as well as DACUM job analyses for GIS Technicians prepared by the National Geospatial Technology Center (Johnson 2010). These resources, in combination with the *GIS&T Body of Knowledge* (UCGIS 2006), now provide an authoritative basis upon which an updated and more rigorous GISP certification process may be devised. In light of these developments, GISCI's Board determined in June 2010 that the time had come to prepare "a serious proposal that enables informed discussion and decision-making about the prospect of more-rigorous GISP certification".

With nearly 5,000 certified GIS Professionals, the GIS Certification Institute is the leading credentialing body in its field. Seven U.S. states and the National Association of Counties have already endorsed GISP Certification, and certification procedures have been licensed to a partner organization (Surveying and Spatial Sciences Institute (SSSI)), which certifies professionals in Australia and the Asian Pacific region. However, the impact of GISP certification on the GIS profession has not yet achieved its full potential.

2.2 Impact

GISCI has a solid market position and ability to promote professionalism in the field. Although successful, GISCI's Board recognizes that the current portfolio-based GISP credential is not sufficiently valued by employers and, therefore, has not yet realized its full potential value to current and prospective GISPs. A common concern is that GISP certification fails to assure basic geospatial competence because it does not include a competency-based examination component in the certification process.

Emerging software credentials are another factor motivating the proposed update to the examination process. Although software certification is not intended or promoted as a substitute for GISP certification, it may still be considered by some employers to be more valuable and rigorous with examination requirements.

The following statements can be made regarding the current GISP credential:

- Advances the profession;
- Promotes ethical standards of practice by GISPs;
- Identifies a minimum level of experience required to be a GISP;
- Provides the GISP with a sense of pride and professional accomplishment;
- Demonstrates an individual's commitment to the profession through work, continuing education, and contributions of the profession; and,
- Is not associated with any one specific GIS Software vendor or associated technology.

To maintain credibility in the current environment, GISCI must be able to make the following additional claims (Durley 2005) regarding the GISP credential:

- Establishes standards for professional knowledge, skills, and ethical practice;
- Assures consumers that professionals have met standards of practice;
- Is consistent with the latest definitions of scope of practice and/or body of knowledge as defined by the GTCM and the GIS&T BoK; and
- Clearly reflects an individual's attainment of knowledge and skills.

In the following section, four options are considered for addressing the current situation. These options are: (1) Change nothing; (2) Add an examination to existing portfolio requirements; (3) Create a tiered (vertically-differentiated) certification program; and (4) Create a topical (horizontally-differentiated) certification program.

3 PROPOSED SOLUTION

3.1 Options

Option 1: Change nothing; maintain the existing portfolio-based certification process.

- **Benefits:** No tangible costs incurred to modify requirements or communicate changes. Current process remains in place without changes to marketing/outreach efforts undertaken by GISCI and its Executive Director. The community of GIS practitioners is familiar with this process for certification, and it has been a successful when no authoritative competency specifications were available.
- **Costs:** No additional financial outlay is associated with the “change nothing” option. However, there may be in-kind volunteer costs incurred to bring the current portfolio into compliance with the GTCM, as well as costs associated with revamping application materials and manual for applicants.
- **Risks:** Portfolio-based GISP certification remains the subject of critiques in favor of competency examination and minimally supports GTCM specifications, potentially deflating the perceived value of the GISP in the professional community. Applications for initial GISP certification and renewals could potentially plateau or decline as other credentialing processes gain currency.

Option 2: Add an examination to existing portfolio requirements. Applicants will be required to fulfill portfolio requirements AND pass an examination to earn GISP certification. Applicants who fulfill either the portfolio or examination requirement may be granted “provisional” certification until they complete all requirements (EDU, CON, EXP, and Exam).

- **Benefits:** Alignment with the Department of Labor GTCM will differentiate the GISP from software-specific certifications. Increased rigor associated with an examination is likely to enhance the perceived value of the GISP if promoted effectively. Provisional certification may appeal to current college students and recent graduates. Alignment of the GISCI applications (initial portfolio and renewal) to the GTCM will lend credibility to the certification for professionals and their organizations.
- **Costs:** Substantial costs are related to examination development, validation, and maintenance; training material preparation, maintenance, and on-going open access; and marketing and promotion of the testing component and “provisional” certification process. Cost estimates will ultimately depend on the roles of GISP volunteers versus consultants. Test and training materials must be maintained for the foreseeable future, at some cost to GISCI. GISCI’s staff and its Applicant Review Committee may face increased workloads during an application surge (under the existing portfolio-only certification process) prior to the new program effective date.

- **Risks:** Risks of examination difficulty, additional effort for preparation, or unsuccessful evaluation may discourage applicants. GISCI study materials released under a Creative Commons License would provide open access and opportunity for exam preparation.

In coordination with expected periodic updates to the Department of Labor's GTCM, GISCI's examination questions and responses will need to be continuously monitored and updated. Exams must be legally defensible as testing the application of specialized knowledge that is required to perform and/or explain a task, rather than theory, so as to conform to legal precedent that prevents discrimination in the testing process against those not having a theoretical education foundation (Durley, 2005).

- **Grandfathering:** The Working Group recommends that GISPs who earned certification under the existing portfolio-only process be exempt from the examination requirement. In other words, GISPs certified prior to the effective date of the examination requirement *should not* subsequently be required to pass an exam to qualify for renewal of certification after the effective date.

Option 3: Create a tiered (vertically-differentiated) certification program. This option requires an examination for certification at Tier 1 (the GISP credential) and an examination and portfolio at Tier 2 (the Master GISP credential).

- **Benefits:** Same as Option 2, plus tiered certification could strengthen the GISP credential's effectiveness as a professional development roadmap.
- **Costs:** Same as Option 2, although a more complex certification scheme may generate more uncertainty in the market place and thus require more extensive outreach and marketing efforts.
- **Risks:** Same as Option 2, plus a more complex certification scheme.
- **Grandfathering:** GISPs certified prior to the effective date of tiered certification (Option 3) will be required to pass an examination to earn the Master GISP designation. GISPs certified prior to tiered certification who fail or decline to take the examination will remain certified as (Tier 1) GISPs.

Option 4: Create a topical (horizontally-differentiated) certification program that evaluates and recognizes expertise in various specialized application areas using both portfolios and examinations.

- **Benefits:** Recognizes the diversity of expertise required for specialized application areas.
- **Costs:** The cost of **each** specialized area exam developed under this scenario is likely to be equivalent to the exam development cost for Option 2, with the potential to be higher due to the need for additional expertise relative to each specialty area beyond the GTCM and GIS&T BoK. May also require different portfolio applications as well to address differences in educational criteria.

- **Risks:** Prospective applicants in specialties that are not addressed by GISCI may be discouraged from applying, even if a “generalist” certification is offered. This option negates the proposition that there is a core set of knowledge, skills and abilities relative to GIS functionality that must be mastered regardless of the field in which it is being applied.
- **Grandfathering:** GISPs certified prior to the effective date of topical certification (Option 4) will be eligible for renewal of certification as a “generalist” GISP without having to pass an examination. GISPs certified prior to topical certification who wish to earn certification in an area of specialization will be required to pass the requisite exam for that specialty.

GISCI’s Board of Directors invites public comment upon the four options described above in Section 3: Proposed Solution. Are there other options, or variations on the four included, that should be considered? How should grandfathering provisions be applied in each option? The Board will consider comments received between February 1-28, 2011. To submit your comments for consideration, please go to <http://www.gisci.org/> for full instructions.

3.2 Recommended Option

The Core Competencies Working Group and the GISCI Certification Committee recommends OPTION 2. The desired outcome is to increase value and strengthen the GISP credential and advance the GIS profession, by:

1. Adding a required examination that tests relevant geospatial competencies identified by U.S. Department of Labor and related efforts;
2. Modifying portfolio requirements to align with the GTCM;
3. Adding opportunities for provisional certification which extend the value of GISP requirements as a roadmap for continuing professional development.

The Working Group recommends that the proposed changes be implemented within three years following Board approval, ideally no later than 2014.

Finally, with regard to the question of grandfathering, **the Working Group recommends that GISPs certified prior to the effective date of the examination requirement should not subsequently be required to pass an exam** to qualify for renewal of certification. In other words, the new examination requirement should apply only to GISPs initially certified after the new requirement takes effect.

GISCI’s Board of Directors invites public comment on the following questions:

- **Do you support the recommended option, Option 2? Do you agree that an**

examination should be added to GISP certification requirements?

- **Do you agree that GISPs certified prior to the effective date of a new examination requirement should be grandfathered? In other words, should GISPs certified by portfolio review only be allowed to renew their certification without passing an exam?**
- **Do you agree that applicants who successfully complete an examination, or a portfolio, but not both, should be granted "provisional" certification?**

The Board will consider comments received between February 1-28, 2011. To submit your comments for consideration, please go to <http://www.gisci.org/> for full instructions.

4 REFERENCES

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