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GISCI & GISP Certification

History, Process, and Future Directions

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CERTIFICATION HISTORY

GISCI began providing GIS professional certification in 2003 and launched the GISCI Core Technical Knowledge Exam® as an addition to the GISP certification in 2015.

Why certify?

- Professional certification is a process by which a person shows that she has acquired the knowledge, experience, and skills to perform a specific profession.

- How do we move from the birth of an industry to certification?

Idea → Technology → Industry → Profession → Certification → Continued Industry Growth
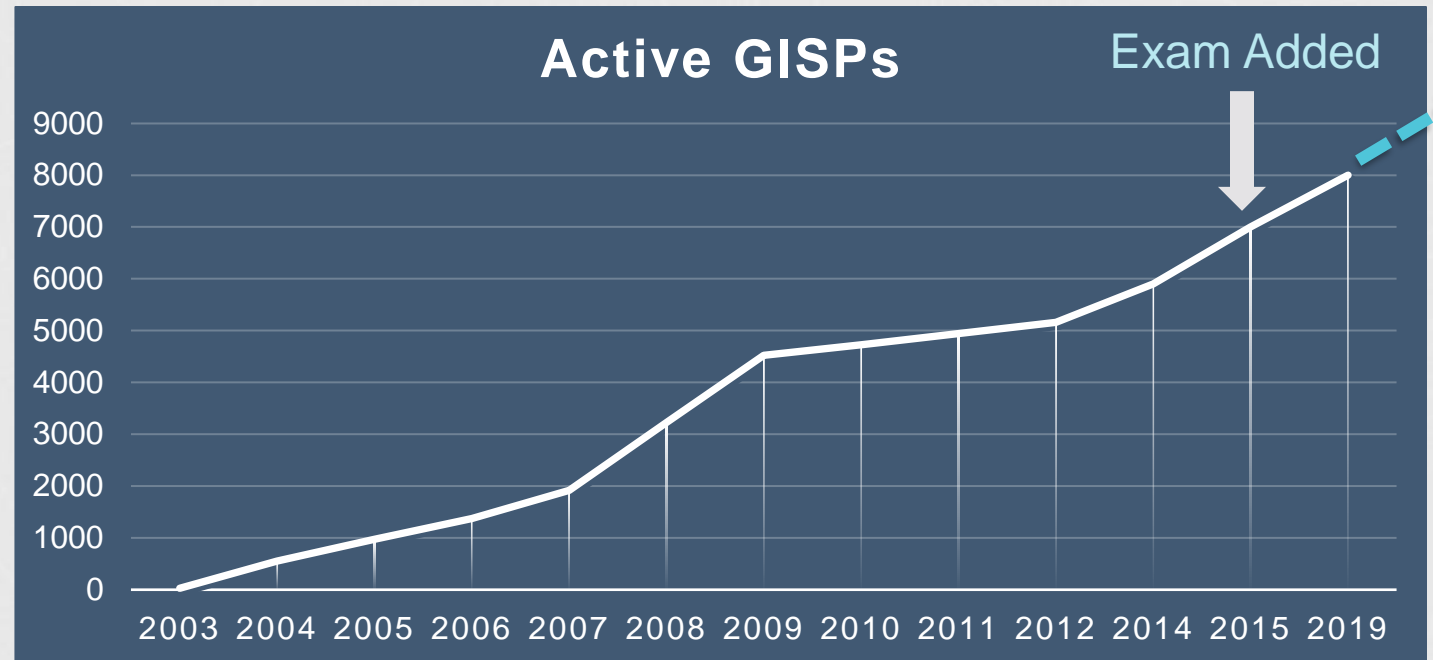
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Certification vs. Licensure

- Over 1,600 types of certifications exist across a myriad of industries

- In 2019, approx. 17% of civilian, noninstitutional workers held a certification or license. *(Bureau of Labor Statistics 2019)*

- There are four certifications available to geospatial professionals.
  - ASPRS – Remote Sensing
  - USGIF – GEOINT (geospatial intelligence)
  - Esri – Technical Certifications – ArcGIS products
  - **GISCI - GISP**

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Active GISPs – History & Trends

- Since its inception, the number of GISPs has expanded from 29 in 2003. Over 10,500 around the world have held the GISP.

- New website registrations – 200/month

- 2020 & beyond: How many GISPs by 2024 ?

Active GISPs

Exam Added

9000	
8000	
7000	
6000	
5000	
4000	
3000	
2000	
1000	
0	

2003 2004 2005 2006 2007 2008 2009 2010 2011 2012 2014 2015 2019

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Who certifies?

- Since the addition of the exam, GISP demographics are changing:

New Potential GISPs - Characteristics

Professional Sector	% of Exam Candidates
Consulting Firms	50%
Government (all levels)	35%
Academia (Faculty & Staff)	9%
Other (Tribal, Nonprofit)	5%
Students	< 1%

EXAM CREATION & PREPARATION

Exam Creation, Content, and Study Resources

Why an Exam?

- Provides for a measurable competency level
- Provides increased visibility for GISP Professional Certification
- Builds upon the established, successful, recognized GISP Portfolio
- Industry shows increased use of GISP as a preferred credential in job descriptions
- Provides for increased participation for students and early career professionals
- Provides a basis for a move to more specialized certifications

- **It continues to advance and consolidate the profession**

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GISP Exam Overview

Exam Creation:

- Written by GISPs for GISP Certification

- Composed at a 4 Year Experience Level

- Centered on Applied Knowledge

- Based on the jobs performed by the interviewed GISPs – 45 KSAs* were selected for exam coverage

- KSAs divided into 10 Content Areas

Knowledge, Skills, Abilities

Exam Process/Calendar:

- Two exam offerings each year in early June & December

- Exam can be taken at any time in a person's career

- Students can test at the time they graduate or before

- There is a 6-year window to complete all parts of the Certification process. The 6-year clock starts once you either pass the exam or get a Portfolio approved.

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Selection of Exam Knowledge Areas

- Started with the GISP community

- Used a combination of job analysis, DACUMs, and focus groups to examine major tasks used in the GISP community

- The total number of GIS Knowledge areas exceeds 400+, as defined by the GIS&T Body of Knowledge

- GISCI found approximately 10% of total GIS knowledge areas relevant to a GISP professional across the range of GIS certified professionals

- 45 KSAs (knowledge, skills, abilities) were identified for exam coverage

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GISP Exam Blueprint

10 Knowledge Categories

1. Conceptual Foundations	10%
2. Geospatial Data Fundamentals	15%
3. Cartography & Visualization	10%
4. Data Acquisition	11%
5. Data Manipulation	11%
6. Analytical Methods	11%
7. Database Design & Management	10%
8. Application Development	7%
9. Systems Design & Management	7%
10. Professional Practice	8%

GISP Exam Blueprint

10 Knowledge Categories break down into 45 KSAs, for example:

1. **Conceptual Foundations**   10%
   * **101** Understanding of datums, coordinate systems, & projections
   * **102** Understanding of representation of discrete features & continuous phenomena in GIS
   * **103** Knowledge of earth geometry & its approximations
   * **104** Knowledge of basic geomatics and relationships to GIS

2. **Geospatial Data Fundamentals**   14 %
   * **201** Understanding of spatial data models & their associated planar geometries
   * **202** Understanding of spatial data relationships
   * **203** Understanding of data quality
   * **204** Understanding of data resolution
   * **205** Understanding of data validation & uncertainty
   * **206** Understanding of metadata
   * **207** Knowledge of temporal data
   * **208** Knowledge of spatial data standards, including ISO, FGDC, and OGC

3. **Cartography and Visualization**   10%
   * **301** Understanding of graphic representation techniques and implications
   * **302** Understanding of map design principles and essential map elements
   * **303** Understanding of surface interpretation and representation
   * **304** Understanding of 2D and 3D visualization

4. **Data Acquisition**   11%
   * **401** Understanding of digitization & other manual data collection & conversion methods
   * **402** Knowledge of field data collection
   * **403** Knowledge of automated data collection and conversion methods
   * **404** Knowledge of remotely sensed data sources and collection methods
   * **405** Knowledge of acquisition, use, & limitations of crowdsourced & open source data & services

Exam Environment

- The exam is taken at an official testing center (PSI)
- It is composed of 100 scored multiple choice or multiple response questions.
- Additional non-scored questions are on the exam to be tested for possible use on future exams. (generally 80-90)
- You do not receive your results at the completion of the exam. You will receive your results from GISCI approximately 1 month later after our formal exam review.

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FUTURE DIRECTION OF GISCI

What's next?

Ongoing Efforts & Future Directions

GISCI continues to work to promote the field of GIS and its professionals.

- Exam maintenance & updating – every 3-4 years
- Increasing communication with and involvement in the broad geospatial community
- Expanding our footprint within the geospatial community
- Increase our growth with international professionals
- Considering creation of entry level exam for prospective GISPs graduating from college

Ongoing Efforts & Future Directions

GISCI continues to work to promote the field of GIS and its professionals.

- Grow our involvement in monitoring legislative issues that impact the profession
- Greater student outreach and engagement
- New designation for retired GISPs

GISCI Member Organizations

GISCI is composed of a group of Member Organizations representing the range of the geospatial community. One of the strengths of GISCI has been strong and diversified Board representation.

NSGIC AND THE GISP

What's next?

Working With NSGIC

GISCI continues to work to promote the field of GIS and its professionals.

- Increase knowledge and engagement of GISP Program to NSGIC Members, especially at the Board level
- Work together to find value to the GISPs in your state
- Work together on advocacy.

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Thoughts for GIOs

The GISP Certification may not be right for you, but it likely is for your state enterprise staff.

- GISPs have a documented dedication to the profession; these are the folks that you want to consider for employment and advancement
- Work with your HR folks to make the GISP a requirement or desirable condition of employment
- Use the GISP Certification as a tool to grow and develop staff in house

Closing Thoughts

"Money better spent on beverages"

- Becoming a GISP takes a long-term investment
- Maintaining your GISP also required an investment
- GISPs are active in their profession and go to conferences where the beer is free

It reinforces behaviors that enrich the profession.

William F. Johnson - Carpe Geo Evangelist, Applied Geographics, Inc (AppGeo)