



GIS CERTIFICATION INSTITUTE

GISP 2018: The Road To and Through an Exam

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SCAUG
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GISP – An Updated Perspective



Certification

GISP Certification History

GISP Current Process

Exam Creation

Future Direction



GISP – An Updated Perspective

Why does certification exist for any industry?

Any existing certification follows a similar path:



HOW DO WE MOVE FROM THE BIRTH OF AN INDUSTRY TO CERTIFICATION?





One certification leads to another

**Managerial
Certification**

**Higher Level
Certification**

**Entry Level
Certification**

**General
Certification**

**Provisional
Certification**



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GISP – An Updated Perspective

CERTIFICATION vs LICENSURE

Over 1,600 Certifications Exist

The GISP is our only one!



GISP – US Employment 2009

The geospatial occupations

Occupation	Employment (2008)	Projected Growth (2008-18)	Growth Rate (2008-18)
Geospatial Information Scientists and Technologists*	209,000	72,600	Average (7-13%)
Geographic Information Systems Technicians*	209,000	72,600	Average (7-13%)
Remote Sensing Scientists and Technologists*	27,000	10,100	Average (7-13%)
Remote Sensing Technicians*	65,000	36,400	Average (7-13%)
Precision Agriculture Technicians*	65,000	36,400	Average (7-13%)
Geodetic Surveyors*	58,000	23,300	Faster than average (14-19%)
Surveyors	58,000	23,300	Faster than average (14-19%)
Surveying Technicians	77,000	29,400	Much faster than average ($\geq 20\%$)
Mapping Technicians	77,000	29,400	Much faster than average ($\geq 20\%$)
Cartographers and Photogrammetrists	12,000	6,400	Much faster than average ($\geq 20\%$)
Totals	857,000	339,900	

* New occupations established late 2009

Source: U.S. Department of Labor, Employment & Training Administration O*NET Online access June 20, 2010

... Does not include geospatial software programmers



Geospatial Certifications

GISCI - GISP

ASPRS – Several Remote Sensing

USGIF – GeoIntel

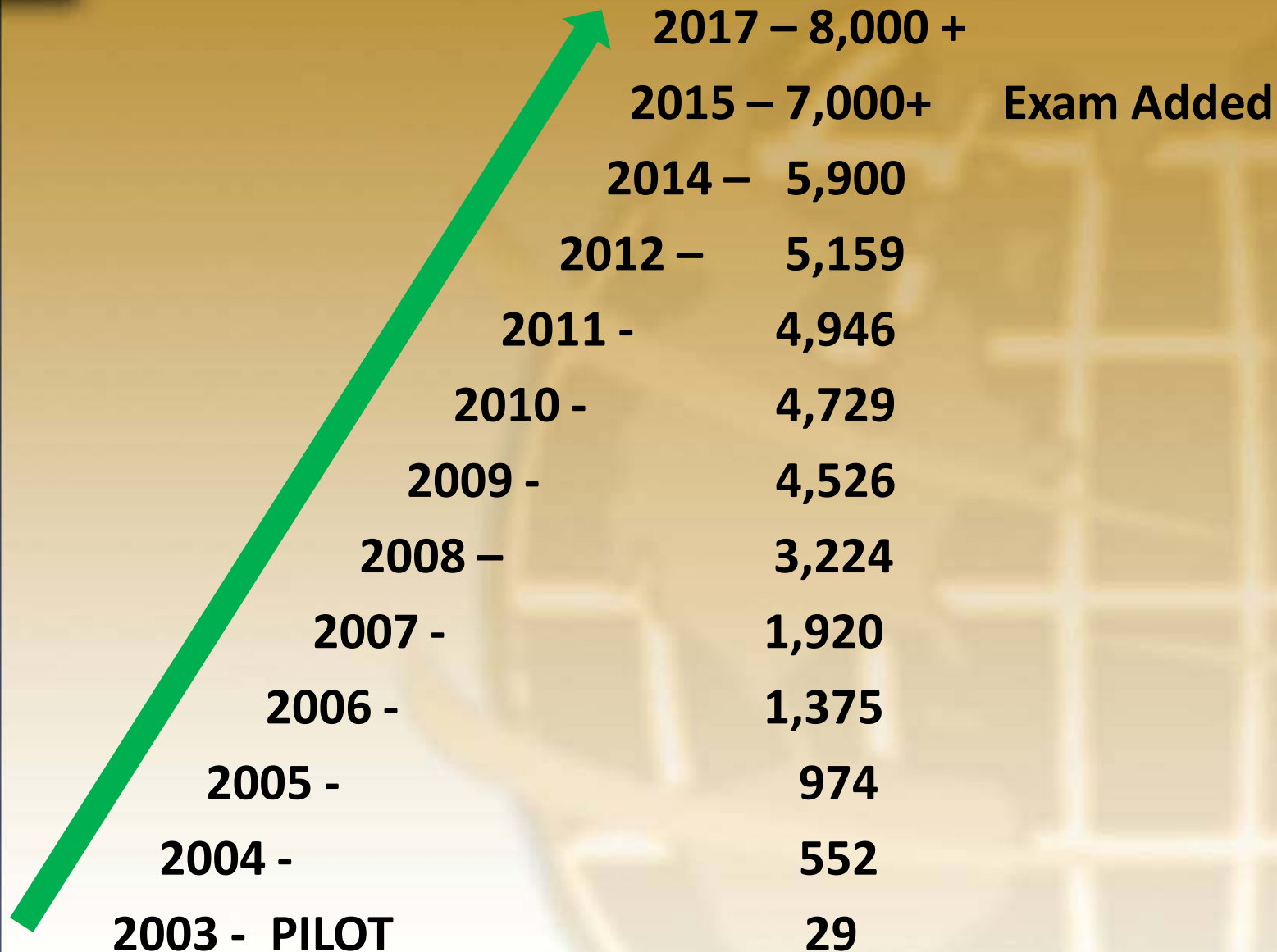
Esri – ArcGIS Desktop & Server

IAAO – Cadastral Mapping Specialist



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ACTIVE GISPs: CERTIFICATION HISTORY





ACTIVE GISPs: CERTIFICATION HISTORY

2004 - 2017 - 8,000 + Active GISPs

2015 - 2018 - 12,000+ Potential GISPs have registered on the GISCI site to start/explore the process

2018 & beyond – 20,000 GISPs + by 2024 ?



Board Members

One of the strengths of GISCI has been the strong and diversified Board representation over the years!

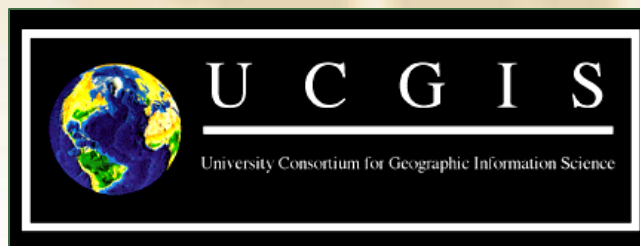
Our current Board makeup reflects that same passion, experience, and service.

GISCI is composed of Member Organizations & Strategic Partners



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Member Organizations





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Strategic Partners 2015





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GISP Current Process

Initial GISP: Portfolio Requirement + Exam

- Ethics Statement
- 4 Years Min Geospatial Experience
- Portfolio Application
 - Education, Experience, Contributions
 - Minimum Points Req in Each Category
- **GISCI Geospatial Core Technical Knowledge Exam Required**



GISP Current Process

Recertification: Portfolio Requirement

- Education & Contributions Required
- Experience Optional
- Exam Not Required for Recertification

- Online Application
- 3 Year Recertification Period



GISP Current Cost

Initial GISP Cost:

- Application Fee - \$ 100
- Portfolio Review Fee - \$ 100
- Exam Fee - \$ 250 North America
- Exam Fee - \$ 300 International
- Annual Maintenance Fee - \$ 95/yr
- 3 Year Certification Period



GISP Current Cost

Recertification Cost:

- Annual Maintenance Fee - \$ 95/year or \$ 285 as one payment
- No Exam Required
- 3 Year Certification Period
- Recertification Application Online



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Exam Creation

- Board Started Exam Development in 2012
- First Exam Administered in Fall 2015

Exam Tenants:

- Written by GISPs for GISP Certification
- Composed at a 4 Year Experience Level
- Centered on Applied Knowledge
- Open to all with no prerequisites



Exam Creation Considerations

MAJOR CONSIDERATIONS

- **The Exam is required in addition to the Portfolio Process**
- **Two Exam offerings each year in early June and 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 Certification process**



Exam Creation

Exam Component Selection – Started with GIS&T Body of Knowledge

GIS&T Body of Knowledge: 400+ KSAs

Knowledge Area	Units	Topics
Analytical Methods	12	59
Conceptual Foundations	6	30
Cartography & Visualization	6	27
Design Aspects	7	32
Data Modeling	5	23
Data Manipulation	3	14
Geocomputation	9	40
Geospatial Data	12	47
GIS&T Society	7	21
Organizational & Institutional Aspects	6	32



Exam Creation

After utilizing existing DACUMS, and a job analysis, focus groups, and surveys with existing GISPs, GISCI selected the final Blueprint Component.



Exam Creation

EXAM BLUEPRINT: Exam Components

Knowledge Category

	KSA*	Exam Contribution
Conceptual Foundations	5	12%
Cartography & Visualization	6	14 %
GIS Design Aspects & Data Modeling	13	29%
GIS Analytical Methods	8	17%
Data Manipulation	6	15%
Geospatial Data	6	13%

Based on 100 scored items in a 4 hr exam with 175-195 questions total

*KSA – Knowledge, Skill, Ability

Exam to be offered every 6 months – Summer & Fall Testing Windows



Exam Creation

EXAM BLUEPRINT: Exam Components

Knowledge Category

Conceptual Foundations

12%

- 101 - Knowledge of spatial relationships
- 102 - Knowledge of standard spatial data models (vector, raster, object-related models)
- 103 – Understanding the conceptual foundations
- 104 - Knowledge of Earth geometry
- 105 - Knowledge of georeferencing systems, including coordinate systems

Cartography & Visualization

14%

- 206 - Knowledge of contour mapping
- 207 - Knowledge of basic physical geography
- 208 - Knowledge of how data collection methods influence map design
- 209 – Knowledge of graphic representation
- 210 - Knowledge of principles of map design
- 211 - Understanding of how data classification techniques affects the thematic map



Exam Creation

EXAM BLUEPRINT: Exam Components

Knowledge Category

GIS Design Aspects & Data Modeling 29%

- 312 - Knowledge of data exchange procedures
- 313 - Knowledge of security restrictions on data
- 314 – Knowledge of database administration
- 315 - Knowledge of systems architecture & design
- 316 - Knowledge of the enterprise environment
- 317 - Knowledge of schemas and domains
- 318 – Knowledge of digital file management
- 319 – Knowledge of database design
- 320 - Knowledge of database general structure
- 321 – Knowledge of geospatial data structure
- 322 – Understanding of desktop, server, enterprise, and hosted applications
- 323 - Working knowledge of GIS hardware and software capabilities
- 324 – Knowledge of data models, including vector, raster, grid, TIN, etc.



Exam Creation

EXAM BLUEPRINT: Exam Components

Knowledge Category

GIS Analytical Methods

17%

- 425 - Knowledge of overlay analysis
- 426 - Knowledge of planar geometry (e.g., Points, lines, polygons)
- 427 - Knowledge of algebra
- 428 - Knowledge of statistics
- 429 - Knowledge of basic programming
- 430 – Knowledge of raster/vector principles
- 431 – Knowledge of scales (e.g., visual, verbal, relative, absolute)
- 432 – Knowledge of units of measurement (e.g., conversion & angular vs. metric)



Exam Creation

EXAM BLUEPRINT: Exam Components

Knowledge Category

Data Manipulation

15%

- 533 - Knowledge of selection queries
- 534 - Knowledge of different data types (e.g., shp, GDB, coverage, DGN, TXT, IMG)
- 535 – Knowledge of different field types
- 536 - Knowledge of data relationships
- 537 - Knowledge of data collection
- 528 – Knowledge of data quality, including accuracy, precision

Geospatial Data

13%

- 639 - Knowledge of metadata and standards
- 640 – Understanding of the difference between geospatial QC & QA
- 641 - Knowledge of date archiving and retrieval
- 642 - Knowledge of differences among join, merge, union, clip, intersect
- 643 - Knowledge of basic field data
- 644 – Knowledge of basic field data collection



Exam Creation


PREPARE FOR AN EXAM

- **Download and study the Exam Candidate Manual from GISCI's site**
 - Concentrate on the 44 KSAs identified
- Examine the GIS&T Body of Knowledge for reference material
- Examine URISA's site for Exam Preparation Workshop Info
- Visit the **Updated Unofficial GISCI Exam Study Guide**
- https://drive.google.com/file/d/0B_GWZqeJMvb9ZFA1WFFsRWp0dmc/view
- Search the web for individual KSA materials and references
- Refer to your own textbooks and class materials



Exam Creation

PREPARE FOR AN EXAM

- Visit the GeoTech Center website –
 - www.geotechcenter.org
-  Take the Personal Assessment Tool Online Survey
- GISCI Practice Exam 1 – now on the web site:
<https://www.gisci.org/ExamInfo/ExamCandidateInformation.aspx>
- URISA now has a one day Exam Prep Workshop
- Visit the GISCI Exam Preparation Information page
<https://www.gisci.org/ExamInfo/ExamCandidateInformation/ExamPreparationInfo.aspx>
- TeachMeGIS - GISP Test Prep Courses
<http://www.teachmegis.com/Default.aspx?tabid=96>

The key is to focus on the 44 KSAs covered – NOT the entire geospatial world!



Exam Creation

ADVANTAGES OF AN EXAM

- Provides for a Measurable Level of Competency
- Provides Increased Visibility for GISP Professional Certification
- Builds Upon The Established, Successful GISP Portfolio
- Provides for Increased Student Participation
- Provides An Entry Goal For Students Early In Their Careers
- Provides A Basis For A Move To More Specialized Certifications
- It Continues To Advance And Consolidate The Profession

More companies are recognizing the GISP as a preferred credential



Exam Creation

ADVICE TO A STUDENTS & ASPIRING PROFESSIONALS

- Start a profile on LinkedIn & maintain it
- Plan to take the GISCI Exam as a means to differentiate yourself
- Join an association while in school and remain active
- Attend a local GIS User Group
- Start planning to become a GISP in the future
- **Show an employer you are looking to the future**



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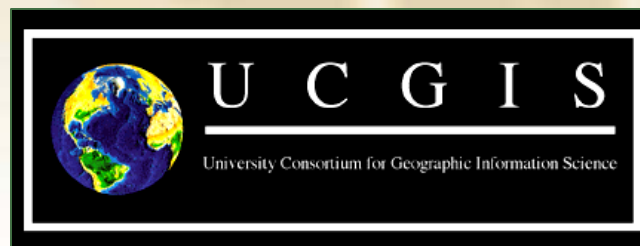
Future Direction

- **Continued Exam Maintenance & Updating**
- **GISP Certification Specializations Possible**
- **Increased International Growth**
- **New Member Organizations ?**
- **Increased participation - 20,000 GISPs by 2024?**



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Member Organizations





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THANK YOU!

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www.gisci.org

