

Ten-Year Remote Sensing Industry Forecast - Phase VI

Introduction

Thank you for participating in Phase VI of the ASPRS 10 Year Remote Sensing Industry Forecast. The Forecast has provided important information to the remote sensing/geospatial community and other interested parties since 2000.

The Forecast has proven to be a useful source of analysis and information to individuals and organizations on technology trends, financial conditions and workforce requirements. This is your opportunity as a member of the professional community to have your voice heard.

The entire survey can be completed in approximately fifteen to twenty minutes. You may return to the survey to complete or modify responses but timely completion will ensure your responses are included in our analysis. Responses will only be published in summary form. If you are uncertain on an answer to a question, please give your most informed response.

Sincerely,

Charles Mondello
ASPRS Chair 10 Year Industry Forecast

For more information on the forecast: <http://www.asprs.org/news/forecast/>
Email: forecast@asprs.org

Education and Professional Development

***Is your primary residence in the U.S. or its territories?**

- Yes
- No

***What is your highest level of education?**

- High school or less
- 2 year college
- Technical training
- Undergraduate degree
- Postgraduate Certificate
- Masters degree
- Ph.D.

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In what discipline is your degree/certificate? Check all that apply.

- | | |
|---|---|
| <input type="checkbox"/> Agriculture | <input type="checkbox"/> Geography |
| <input type="checkbox"/> Civil Engineering | <input type="checkbox"/> Geology |
| <input type="checkbox"/> Computer Science | <input type="checkbox"/> GIS |
| <input type="checkbox"/> Environmental Science | <input type="checkbox"/> Photogrammetry |
| <input type="checkbox"/> Forestry | <input type="checkbox"/> Physics |
| <input type="checkbox"/> Geodetic Science | <input type="checkbox"/> Remote Sensing |
| <input type="checkbox"/> Other (please specify) | |

In which of the following Sectors and Sub-Sectors do you PRIMARILY work? (select one)

- | | |
|---|--|
| <input type="radio"/> Agriculture | <input type="radio"/> General Mapping |
| <input type="radio"/> Civil Govt. | <input type="radio"/> National/Global Security/Defense |
| <input type="radio"/> Entertainment / Media | <input type="radio"/> Real Estate |
| <input type="radio"/> Environmental | <input type="radio"/> Telecomms |
| <input type="radio"/> Exploration / Resources | <input type="radio"/> Transportation |
| <input type="radio"/> Forestry | <input type="radio"/> Utilities |
| <input type="radio"/> Insurance | <input type="radio"/> Business/Demographics |
| <input type="radio"/> Other (please specify) | |

Workforce

How many years of remote sensing experience do you have?

- <1 year
- 1-3 years
- 4-7 years
- 8-10 years
- 11-20 years
- >20 years

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*What is your PRIMARY job function? Please select one.

- DATA PRODUCER (a person who creates data/information to be used by others)
- EDUCATOR/STUDENT (a person employed in Academia or a full-time student)
- END-USER (a person whose primary job entails the use and analysis of remotely sensed or other geospatial data/information)
- MANAGER (a person who's primary job is managing the productivity of others in your organization and who can purchase/acquire remotely sensed or other geospatial data/information)
- TECHNICAL SUPPORT (a person who supports the data, software and technology needs of the end user or manager)

Additional Information - Manager

How many employees do you manage/supervise?

- 0 - 5
- 6 - 10
- 11 - 15
- 16 - 20
- > 20

Workforce Development

Does your Employer invest in continuing training and education programs that help improve your job skills? If so, how often are those programs made available?

- No
- Yes - monthly
- Yes - quarterly
- Yes - semi-annually
- Yes - annually or less often
- Yes - continuous

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For your Employer's needs, which level of education is most appropriate for the MAJORITY of your workforce?

- High school
- 2 year college
- Technical training
- Undergraduate
- Certificate
- Master
- Ph.D.

Workforce Skills

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Please rank the four most critical knowledge areas/technical skills needed by your employees for the future?

	Most Critical	2nd Most Critical	3rd Most Critical	4th Most Critical
Applications science	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Applications GIS tools	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Cartography/visualization	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Computer programming	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Develop new algorithms	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Hyperspectral expertise	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Algorithm development	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Improve GIS algorithms	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Lidar expertise	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Mathematics	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Geodetic Science	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Multi-lingual skills	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Multi-sensor fusion	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Multispectral expertise	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Photogrammetry	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
SAR expertise	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Sensor operations	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Spatial database understanding	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Spatial statistics/analysis	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Verbal and written communication skills	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Web programming	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Other (please specify)

Workforce Requirements

*** Does your Employer perform work that requires governmental SECURITY CLEARANCES?**

- Yes
- No
- Don't Know

Security Clearance Requirements

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Does your employer (or do your contractors) have difficulty recruiting workers who can meet SECURITY CLEARANCE requirements?

- Yes
- No
- Don't Know

If Yes, please explain what you believe to be the primary reasons:

Workforce Recruitment

***Has your Employer experienced greater difficulty recruiting TECHNICALLY well qualified applicants in the last five years than in previous years?**

- Yes
- No
- Don't Know

Workforce Expertise

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Please indicate the area(s) of expertise for which your employer experienced increased difficulty recruiting qualified applicants in the past two years? Please check all that apply.

- | | |
|--|--|
| <input type="checkbox"/> Applications science | <input type="checkbox"/> Multi-lingual skills |
| <input type="checkbox"/> Applications GIS tools | <input type="checkbox"/> Multi-sensor fusion |
| <input type="checkbox"/> Cartography/visualization | <input type="checkbox"/> Multispectral expertise |
| <input type="checkbox"/> Computer programming | <input type="checkbox"/> Photogrammetry |
| <input type="checkbox"/> Develop new algorithms | <input type="checkbox"/> SAR expertise |
| <input type="checkbox"/> Hyperspectral expertise | <input type="checkbox"/> Sensor operations |
| <input type="checkbox"/> Algorithm development | <input type="checkbox"/> Spatial database understanding |
| <input type="checkbox"/> Improve GIS algorithms | <input type="checkbox"/> Spatial statistics/analysis |
| <input type="checkbox"/> Lidar expertise | <input type="checkbox"/> Verbal and written communication skills |
| <input type="checkbox"/> Mathematics | <input type="checkbox"/> Web programming |
| <input type="checkbox"/> Geodetic Science | |
| <input type="checkbox"/> Other (please specify) | |

Workforce Mobility

Our previous studies have indicated that many professional and technical staff leave the remote sensing/geospatial field within 5 years after their initial employment. Please suggest and rank 3 reasons this might be happening:

Primary reason	<input type="text"/>
Secondary reason	<input type="text"/>
Tertiary reason	<input type="text"/>

Education/Research

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What are the technical focus areas for your organization's educational and/or research programs in the remote sensing/geospatial areas for the next five years? Please indicate all that apply.

- | | |
|---|--|
| <input type="checkbox"/> Applications of remote sensing science | <input type="checkbox"/> Multi-lingual skills |
| <input type="checkbox"/> Applications GIS tools | <input type="checkbox"/> Multi-sensor fusion |
| <input type="checkbox"/> Phenomenology | <input type="checkbox"/> Multispectral |
| <input type="checkbox"/> Cartography/visualization | <input type="checkbox"/> Photogrammetry |
| <input type="checkbox"/> Computer science foundation | <input type="checkbox"/> SAR expertise |
| <input type="checkbox"/> Geodetic Science | <input type="checkbox"/> Sensor operations |
| <input type="checkbox"/> Hyperspectral | <input type="checkbox"/> Spatial database understanding |
| <input type="checkbox"/> Algorithm development | <input type="checkbox"/> Spatial statistics/analysis |
| <input type="checkbox"/> Improve GIS algorithms | <input type="checkbox"/> Verbal and written communication skills |
| <input type="checkbox"/> Lidar | <input type="checkbox"/> Web services/programming |
| <input type="checkbox"/> Mathematics | |
| <input type="checkbox"/> Other (please specify) | |

Geospatial Data Layers

For the following question, the terms are defined as:

Base Map - Includes scanned maps, thematic symbols and cartographic elements. Nationwide base map products include scales of 1:25,000, 1:100,000, 1:250,000, and 1:1,750,000. Cities and other special areas at additional scales

Cadastral - Primarily collected at neighborhood scales using survey techniques. At the neighborhood level, the parcel is the primary mapping unit. City and county level representations are important to identify and distinguish city blocks and to highlight government and private lands.

Elevation - Resolution that can be used for 2-foot contour nation-wide. In low-lying, flat areas such as along coastal areas of the Southeastern U.S., finer resolution DEM's supporting up to 1 foot contours should be collected and maintained.

Emergency Operations - Operations features should be collected at the appropriate scale for each specific activity or incident. GPS field collection or interpretation from imagery preferred for data capture. Grid map location descriptions are also useful.

Environmental - Three primary information sets: 1) physiographic and landform features, 2) environmental events and hazards, and 3) weather. Collected at city levels or 1:25,000 map scales. Vertical integration of landform polygons is important to ensure consistency in environmental classification and modeling.

Geocode Addresses & Names - Address and name information will be associated with features collected at neighborhood extents for building entrances, structures, parcels, and landmarks. Addresses and names will also be collected for addressable features such as street centerlines and place name locations.

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Geodetic Control - Control points, networks. Geodetic control provides the basic reference for other data according to NGS specifications for identification and capture.

Govt Units - Political boundaries, census tracts, High accuracy required. Units can span across a range of map scales from 1:10,000 or 1:25,000 in cities and up to 1:250,000 in regions and states. Must be vertically integrated with the base features they are derived from, along with other governmental units.

Hydrography - Stream segments, shorelines, bathymetric contours-Regional, state, and national analysis at 100k resolution to 25k resolution. Local needs dictate better than 25k resolution, especially in flood prone or coastal areas. Hydrologic network and channel representations are important to support analytical use.

Imagery Other - Ground and Aerial Oblique imagery should be collected for populated areas

Imagery - Orthoimagery should be collected for populated areas at 6 inch to 1 foot resolution every two years using the same control as the cadastral data. Statewide coverage should be collected at 1 meter or better resolution every three to five years.

Land Use/Land Cover - Collected at city levels as attributes on parcels and administrative land units using APA Landbase Classification System. Collected as raster data at scales of 1:50,000 or smaller using classification system, this classification should integrate with environmental layers.

Soil Subsurface - Soil survey, geologic units maps- 1:24,000- 100,000 map scales

Structures - Building footprints, entrances, complexes, driveways, etc. High accuracy required for neighborhood and city level maps. Should be captured and represented to fit on the orthoimagery base.

Transportation - Centerlines for addressing and navigation purposes, larger scale representations provide more detailed infrastructure and network characteristics. Roads should follow a simple centerline with address range approach at local and state levels.

Utilities - Accurate relative to cadastral and transportation data. Typical data capture scales are from 1:2,500 to 1:6,000. Accurate, shared local/state land base required for integration with other GIS Datasets.

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Which of the following are the three MOST important geospatial data layers that you currently use?

	Most Important	2nd Most Important	3rd Most Important
Base Map	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Cadastral	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Elevation	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Emergency Operations	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Environmental	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Geocode Addresses & Names	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Geodetic Control	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Govt. Units	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Hydrography	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Imagery - Ortho	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Imagery Other (ground & oblique)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Land Use/Land Cover	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Soil Subsurface	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Structures	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Transportation	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Utilities	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Remote Sensing Requirements

For your typical remote sensing requirements, please rank the following characteristics, from most important (1) to the least important (4).

	1 (Most)	2	3	4 (Least)
Spatial Resolution	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Geo-locational accuracy	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Elevation (vertical) accuracy	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Data currency	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

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What levels of Spatial Resolution do you currently WORK WITH today?

What levels of Spatial Resolution do you NEED most to do your job?

(Could be the same - check all that apply)

	Data Used Today	Data Needed in the Future
Less than 5 cm	<input type="checkbox"/>	<input type="checkbox"/>
Between 5cm and 15 cm	<input type="checkbox"/>	<input type="checkbox"/>
Between 15cm and 50 cm	<input type="checkbox"/>	<input type="checkbox"/>
Between 50cm and 1 meter	<input type="checkbox"/>	<input type="checkbox"/>
Between 1m and 10 m	<input type="checkbox"/>	<input type="checkbox"/>
Between 10m and 20 m	<input type="checkbox"/>	<input type="checkbox"/>
Greater than 20 m	<input type="checkbox"/>	<input type="checkbox"/>

What levels of geo-locational accuracy do you currently WORK WITH today? What levels of geo-locational (horizontal) accuracy do you NEED most to do your job? (Could be the same - check all that apply)

	Data Used Today	Data Needed in the Future
Less than 15 cm	<input type="checkbox"/>	<input type="checkbox"/>
Between 15cm and 50 cm	<input type="checkbox"/>	<input type="checkbox"/>
Between 50cm and 1 meter	<input type="checkbox"/>	<input type="checkbox"/>
Between 1m and 10 m	<input type="checkbox"/>	<input type="checkbox"/>
Between 10m and 50 m	<input type="checkbox"/>	<input type="checkbox"/>
Greater than 50 m	<input type="checkbox"/>	<input type="checkbox"/>

What levels of elevation (vertical) accuracy do you currently WORK WITH today? What levels of elevation (vertical) accuracy do you NEED most to do your job? (Could be the same - check all that apply)

	Data Used Today	Data Needed in the Future
Less than 15 cm	<input type="checkbox"/>	<input type="checkbox"/>
Between 15cm and 50 cm	<input type="checkbox"/>	<input type="checkbox"/>
Between 50cm and 1 meter	<input type="checkbox"/>	<input type="checkbox"/>
Between 1m and 10 m	<input type="checkbox"/>	<input type="checkbox"/>
Between 10m and 50 m	<input type="checkbox"/>	<input type="checkbox"/>
Greater than 50 m	<input type="checkbox"/>	<input type="checkbox"/>

Characteristics of Remotely Sensed Data (Continued)

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What image/sensor types do you currently WORK WITH today? What image types do you NEED most to do your job? (Could be the same - check all that apply)

	Data Used Today	Data Needed in the Future
Digitally captured B/W or Panchromatic	<input type="checkbox"/>	<input type="checkbox"/>
Digitally captured Color	<input type="checkbox"/>	<input type="checkbox"/>
Digitally captured IR	<input type="checkbox"/>	<input type="checkbox"/>
Pan Film analog captured	<input type="checkbox"/>	<input type="checkbox"/>
Color Film analog captured	<input type="checkbox"/>	<input type="checkbox"/>
Color IR Film analog captured	<input type="checkbox"/>	<input type="checkbox"/>
LIDAR	<input type="checkbox"/>	<input type="checkbox"/>
SAR/IFSAR/INSAR	<input type="checkbox"/>	<input type="checkbox"/>
Multispectral	<input type="checkbox"/>	<input type="checkbox"/>
Hyperspectral	<input type="checkbox"/>	<input type="checkbox"/>

How current are the PRIMARY data sets that you WORK WITH? How current do you NEED your data to be?

	Data Used Today	Data Needed in the Future
Under 24 hours old	<input type="checkbox"/>	<input type="checkbox"/>
Under 1 week old	<input type="checkbox"/>	<input type="checkbox"/>
Under 1 month old	<input type="checkbox"/>	<input type="checkbox"/>
Under 1 year old	<input type="checkbox"/>	<input type="checkbox"/>
Over 1 year old	<input type="checkbox"/>	<input type="checkbox"/>

How current are the SECONDARY data sets that you WORK WITH (if any)? How current do you NEED your data to be?

	Data Used Today	Data Needed in the Future
Under 24 hours old	<input type="checkbox"/>	<input type="checkbox"/>
Under 1 week old	<input type="checkbox"/>	<input type="checkbox"/>
Under 1 month old	<input type="checkbox"/>	<input type="checkbox"/>
Under 1 year old	<input type="checkbox"/>	<input type="checkbox"/>
Over 1 year old	<input type="checkbox"/>	<input type="checkbox"/>

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What proportion of your remote sensing data/information is collected by aerial platforms vs. space-based collection?

Your responses must add to 100%

Satellites	<input type="text"/>
Aerial platforms	<input type="text"/>
Other (such as ground based systems)	<input type="text"/>

Government Policies

In your opinion, how do government policies at various levels affect the U.S. geospatial community?

	Positive impact	Negative impact	No impact at all	No opinion
Federal	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
State	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Local	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Please explain:

***Do you find geospatial work being performed or procured more frequently outside of the U.S. now than 10 years ago?**

- Yes
- No
- No opinion

Work Outside the U.S.

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Is this geospatial work **PRIMARILY** using:

- Foreign-based resources for U.S. projects
- U.S. based resources for foreign projects

Please explain the type of work and which foreign areas

U.S. Leadership

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From your experience, please rate each of the following areas in terms of whether the U.S. is leading, equivalent or behind other nations' capability:

	Leading	Equivalent	Behind	No Opinion
Remote sensing tools	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Applications GIS tools	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Feature extraction	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Cartography/visualization	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Computer science algorithms	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Change detection	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Hyperspectral expertise	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Consumer mapping	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Geodetic science	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Software as a service	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Lidar expertise	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Mathematics	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Multi-lingual skills	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Multi-sensor fusion	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Multispectral expertise	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Photogrammetry	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
SAR/IFSAR/ INSAR expertise	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Aerial data capture	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Spatial database understanding	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Spatial statistics/analysis	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Verbal & written communication	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Web programming	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Satellite data capture	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Other	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Please explain Other:

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In which area do you see the single greatest expertise shortfall in the U.S. in the future?

- Remote sensing tools
- Applications GIS tools
- Feature extraction
- Cartography/visualization
- Computer science algorithms
- Change detection
- Hyperspectral expertise
- Consumer mapping
- Geodetic science
- Software as a service
- Lidar expertise
- Mathematics
- Multi-lingual skills
- Multi-sensor fusion
- Multispectral expertise
- Photogrammetry
- SAR/IFSAR/ INSAR expertise
- Aerial data capture
- Spatial database understanding
- Spatial statistics/analysis
- Verbal & written communication
- Web programming
- Satellite data capture
- Other

Please explain Other:

Customer Base

What was/is/will be your organization's PRIMARY customer base?

	Commercial	Local government	State government	Federal government	Academic
10 years ago:	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Currently:	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
5 years from now:	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

What types of data do you use in your work? (Please check all that apply.)

- Licensed Data
- Owned Data
- Authoritative data or services certified by a licensed professional
- Visualization products not certified by a licensed professional

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Please comment on any benefits or detriments to your employer's data preference as identified in the previous question:

What three specific areas do you see having the greatest shortcomings in U.S. geospatial capabilities in the next 10 years?

1)

2)

3)

Demographic Information

What is your annual base salary?

- Not currently employed
- < \$25,000
- 25,001 - 50,000
- 50,001 - 75,000
- 75,001 - 100,000
- 100,001 - 125,000
- 125,001 - 150,000
- > \$150,000
- Prefer not to answer

***In which of the following Sectors or Sub-Sectors do you work? Please select one:**

- Academic - University
- Academic - Community College (2 year program)
- Commercial (research, product development and support, marketing, sales, production, consulting, etc.)
- Government (Federal, Regional, State, Local, Tribal)
- NGO (non-profit)

Demographic Detail - Academic

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What is your PRIMARY job? Please pick one.

- Academic Administrator
- Professor
- Assistant Professor
- Associate Professor
- Instructor
- Adjunct Faculty Member
- Laboratory Director
- Research Staff
- Student
- Other (please specify)

Academic continued

What degrees does your academic unit offer? Please check all degrees offered.

	Undergraduate	Masters	Ph.D.
Agriculture	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Cartography	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Civil Engineering	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Computer Science	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Environmental Science	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Forestry	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Geodetic Science	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Geography	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Geology	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
GIS	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Photogrammetry	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Physics	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Remote Sensing	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Other	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Please identify Other:

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What Certificates does your academic unit offer?

- GIS
- Remote Sensing
- Geospatial Intelligence
- Other (please specify)

Approximately how many degrees/certificates per year are granted by your program?

Undergraduate	<input type="text"/>
Graduate (Masters and Ph.D.)	<input type="text"/>
Certificates	<input type="text"/>

Academic continued

Approximately what percentage of the students in your respective programs are foreign students?

Undergraduate	<input type="text"/>
Graduate (Masters and Ph.D.)	<input type="text"/>
Certificates	<input type="text"/>

In your experience, is the percentage of foreign students in your program

- Increasing
- Decreasing
- Not changing
- Don't know

Of the foreign students in your program, please estimate the % who are likely to remain in the U.S. for employment after graduation, and the % likely to leave the U.S.

Percentages must add to 100%

Remaining in the United States, %	<input type="text"/>
Leaving the United States, %	<input type="text"/>

Please comment on the cause(s) of the recent trend for students remaining in the U.S. after graduation. In your opinion, what are the major factors in this trend?

Ten-Year Remote Sensing Industry Forecast - Phase VI

Academic Focus Areas

What are the three greatest limitations on student recruiting, retention, and graduation in remote sensing/geospatial programs that your unit faces over the next five years, in rank order?

- 1)
- 2)
- 3)

Demographic Detail - Commercial

What is your PRIMARY job? Please select one.

- President
- Top Level Manager
- Owner
- Senior Manager
- Sales Manager
- R&D Manager
- Marketing Manager
- Product Manager
- Manager
- Analyst
- Engineer
- Technician
- Other (please specify)

Demographic Detail - Government

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What is your PRIMARY job? Please select one.

- Executive Director/Senior Manager
- Research/Scientist
- Program Staff
- Technician
- Other (please specify)

Demographic Detail - NGO

What is your PRIMARY job? Please select one.

- Executive Director/Senior Manager
- Research/Scientist
- Program Staff
- Technician
- Other (please specify)

Government/NGO Hiring Plans

***Does your organization plan to replace those employees who retire in the next five years?**

- Yes
- No
- Don't Know

Government/NGO Hiring Plans continued

In terms of your organization's hiring plans, how many employees will likely be hired in the next five years, and in what fields:

Number:

Fields:

Ten-Year Remote Sensing Industry Forecast - Phase VI

Please describe your plans for recruiting

Thank You

If you wish to discuss this survey or the broader Forecast effort in further detail, or wish to provide specific information that can be incorporated into the Forecast analysis, please email comments to Forecast@asprs.org.

For further information on past Forecast activities, please see: <http://www.asprs.org/news/forecast/>

Thank you for your time and interest.