



# SPACE GENERATION ADVISORY COUNCIL

In Support of the United Nations  
programme on Space Applications

# INTRODUCTION OF YGNSS AND RESULTS FROM THE SPACE GENERATION CONGRESS

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- Future of YGNSS
  - Ongoing and Future Projects
  - Benefits of YGNSS

# CONCEPT OF THE “SPACE GENERATION” AND SGAC ORIGINS

# SGAC Origins

- Conceived at the Third United Nations Conference on the Exploration and Peaceful Uses of Outer Space (UNISPACE III) in Vienna in 1999
- 160 students and young professionals invited to contribute
- Product was the Vienna Declaration where the States resolved:

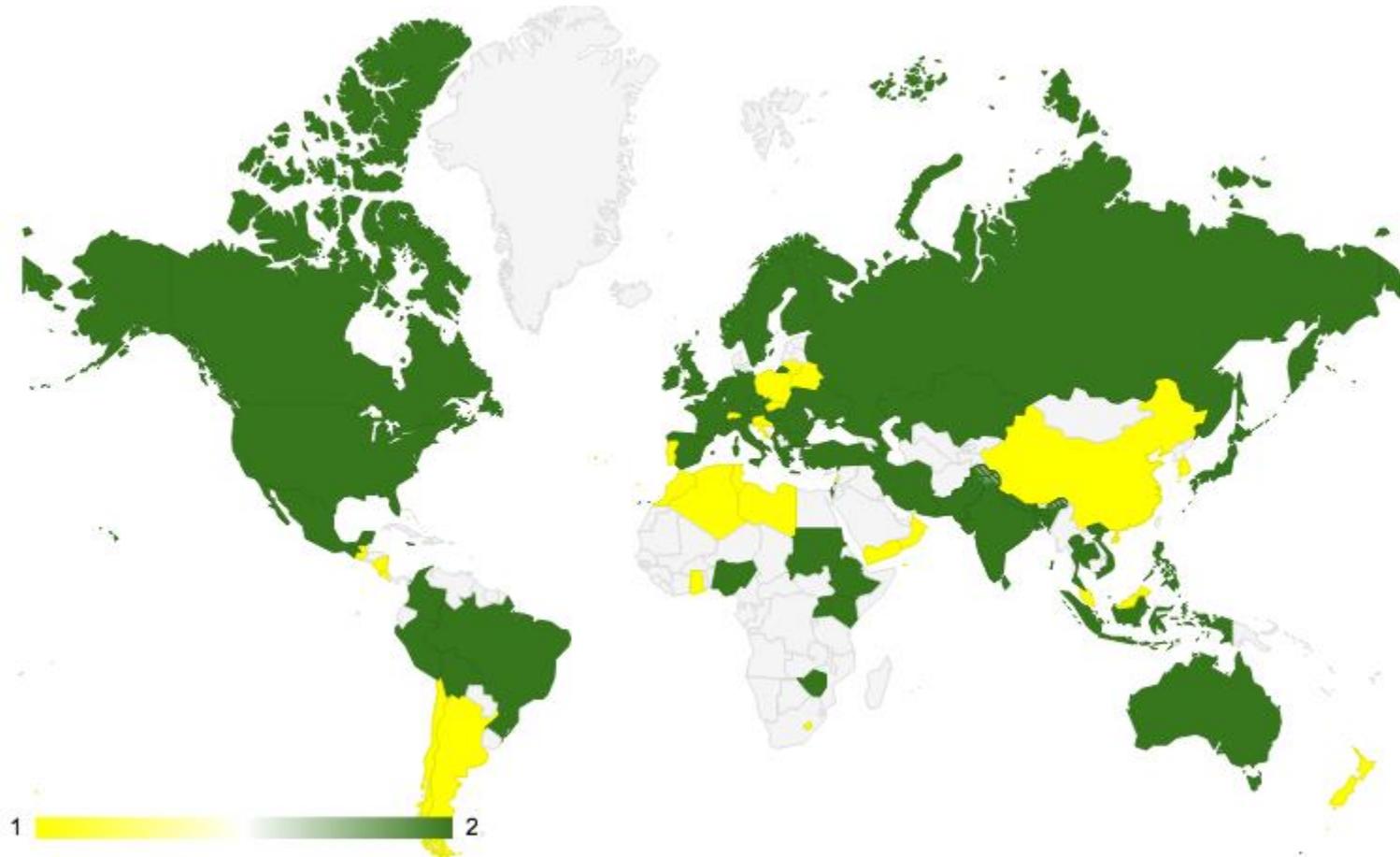
*“To create, within the framework of the Committee on the Peaceful Uses of Outer Space, a consultative mechanism to facilitate the continued participation of young people from all over the world, especially young people from developing countries and young women, in cooperative space-related activities...”*

# SGAC Purpose

- Create a global volunteer base of university students and young professionals in the space sector who have a passion for making a difference in the space sector and a commitment to action
- Connect them to peers and top space professionals from various organisations
- Give the next generation of space sector leadership opportunities and a voice in global space policy



# SGAC Network



6 Regions, 100+ Countries, 4,000+ Members

# Example SGAC Products

- Conferences
  - Space Generation Congress (SGC)
  - Space Generation Fusion Forum
- Year-round Projects
- Pragmatic Policy Suggestions
  - Reports to United Nations Committee on the Peaceful Uses of Outer Space
  - Recommendations from Space Generation Congresses
- 70+ Scholarships Offered in 2014
- Special Projects & Other Events
  - Satellite 2014
  - Young Professionals in Europe Workshop
  - IAA Study Groups
  - European Space Expo
  - Regional Space Generation Workshops



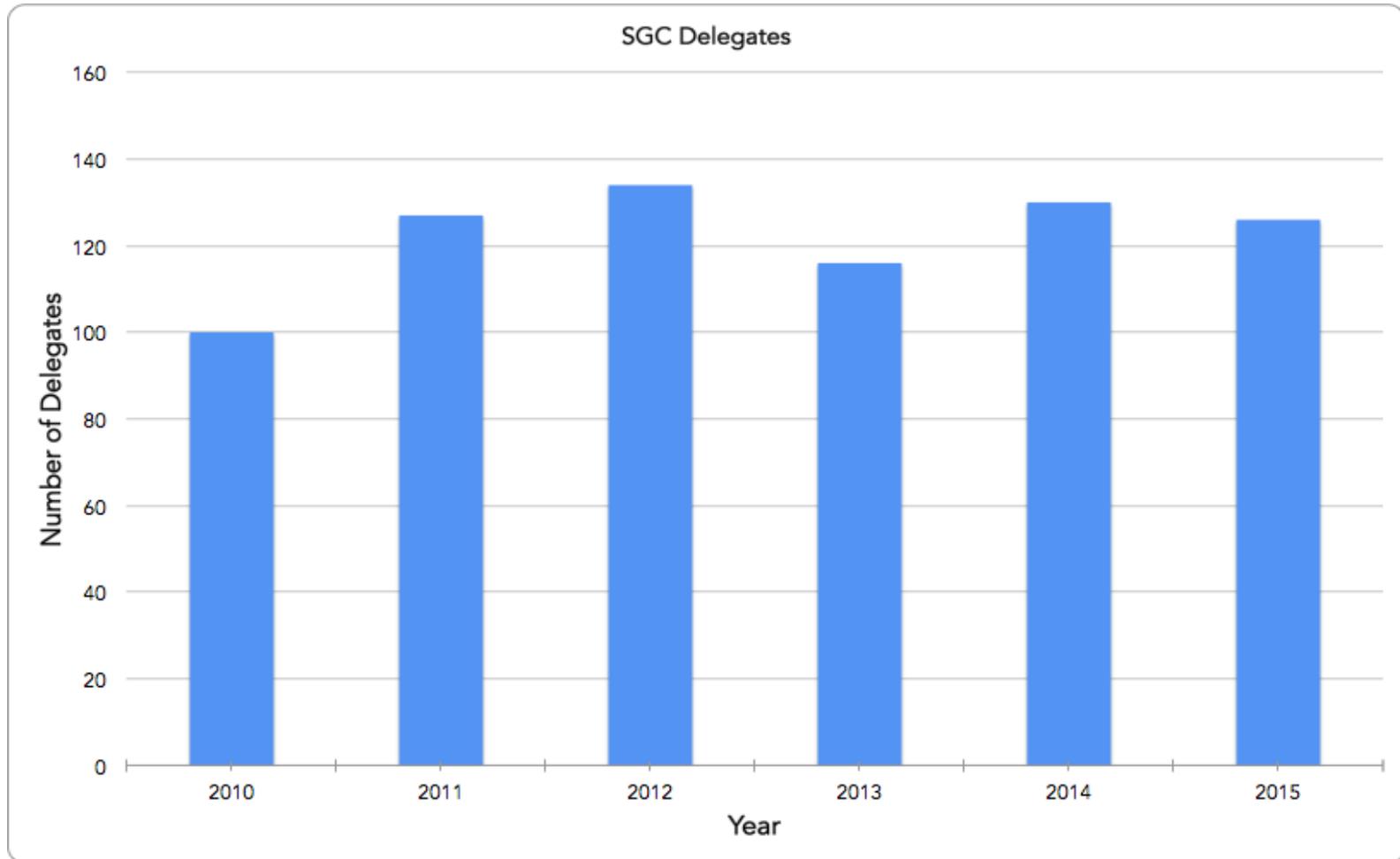
# Space Generation Congress

The 14<sup>th</sup> edition of SGC was held (8-10<sup>th</sup> October 2015) in Jerusalem, Israel

- Official associated event held in conjunction with the IAC

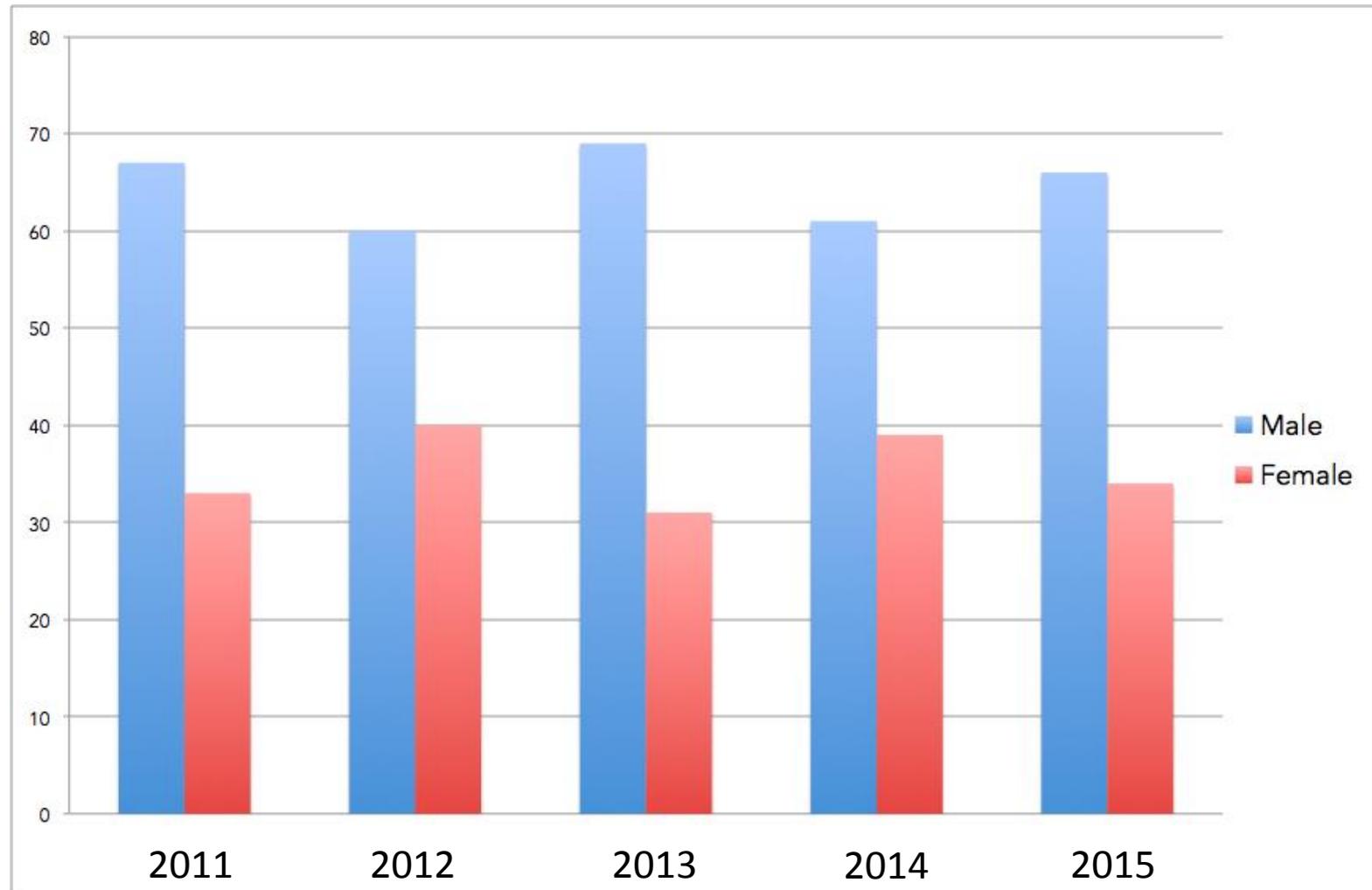


# Space Generation Congress Statistics



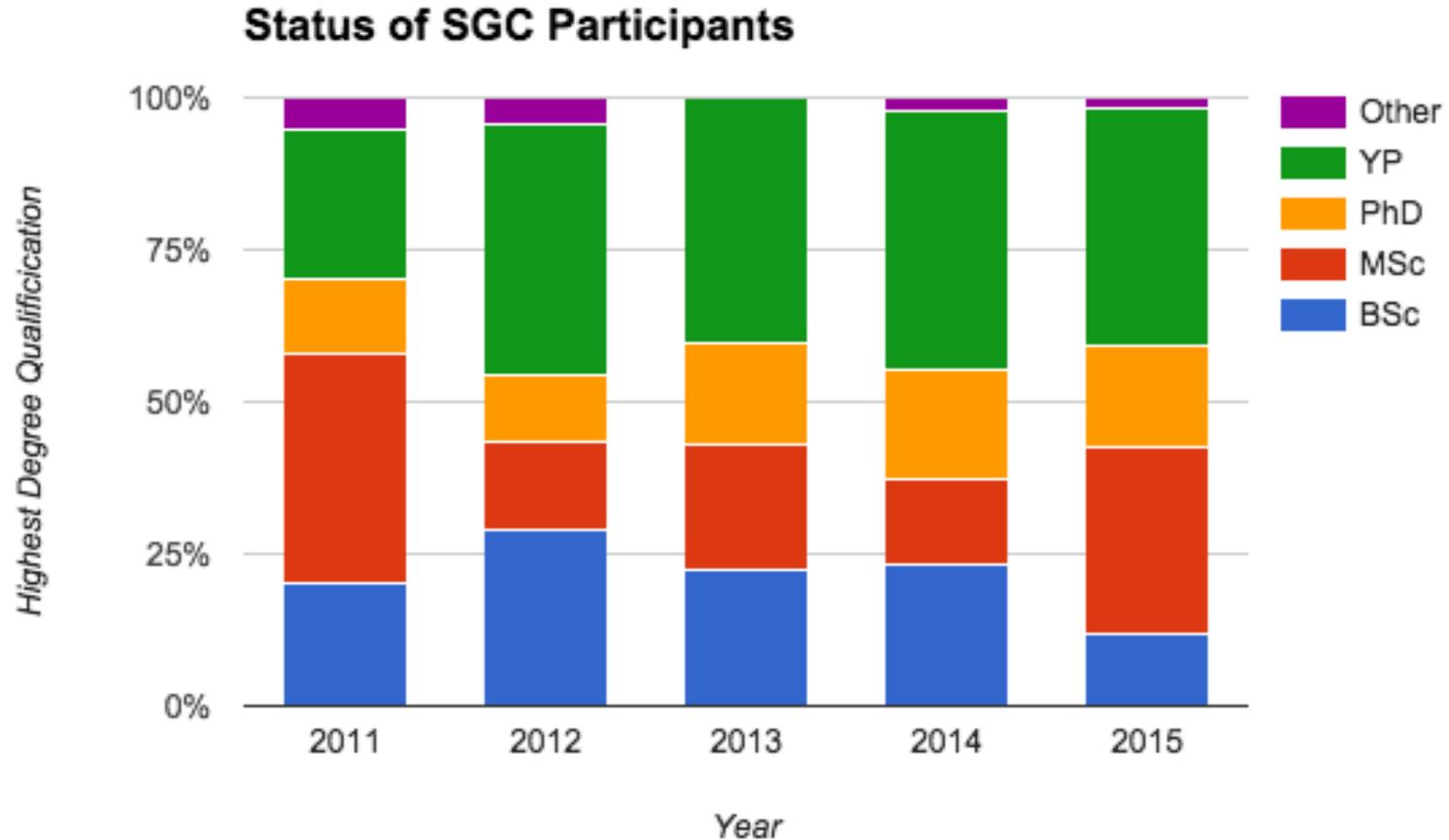
**Trend:** Between 120-140 delegates

# Space Generation Congress Statistics



**Trend:** Between 30% – 40% Females  
High for space industry

# Space Generation Congress Statistics



**Trend:** Highest Qualification shifting higher  
More MSc, PhD, and YP  
Higher quality work group results

# YGNSS BACKGROUND AND ACTIVITIES

# Youth for Global Navigation Satellite Systems (YGNSS)

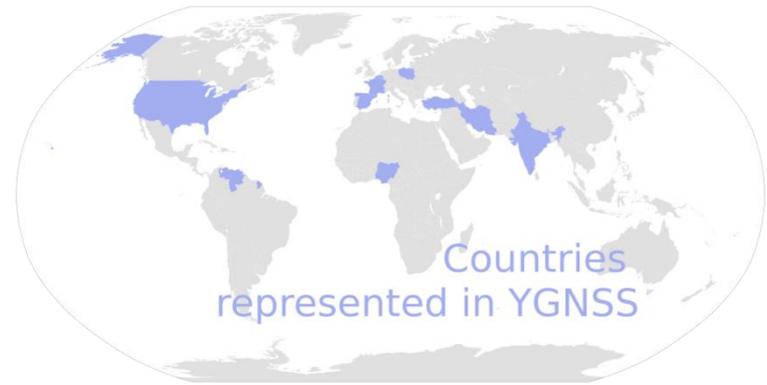
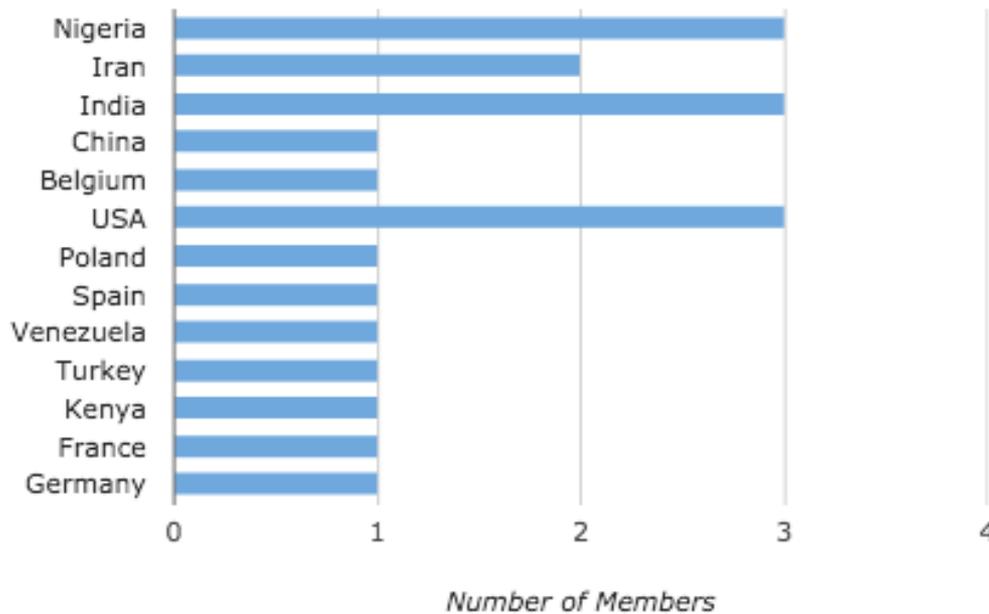
- Background
  - GNSS is embedded in our daily life (mobile phones, GPS...), and now almost every country in the world has satellites on orbit to provide data to the users. However, there is a huge lack of information in the society about them.
- Key Objectives
  - Input to ICG : education and public outreach
  - Promote all GNSS systems
  - Reach out to the new Generation of Engineers and GNSS Professionals
  - Connect the actors of tomorrow from their beginnings

# YGNSS Structure

- Young professionals and students aged 18-35
- Multi-national team of 12 members with different backgrounds:
  - Satellite Navigation Graduates
  - Electrical Engineering
  - Meteorology
  - Aerospace Engineering
- 100% volunteers

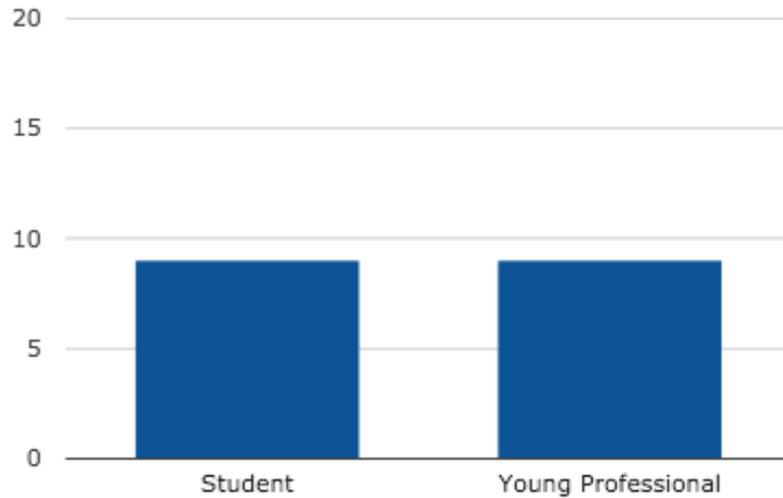
# YGNSS Structure

## Nationality

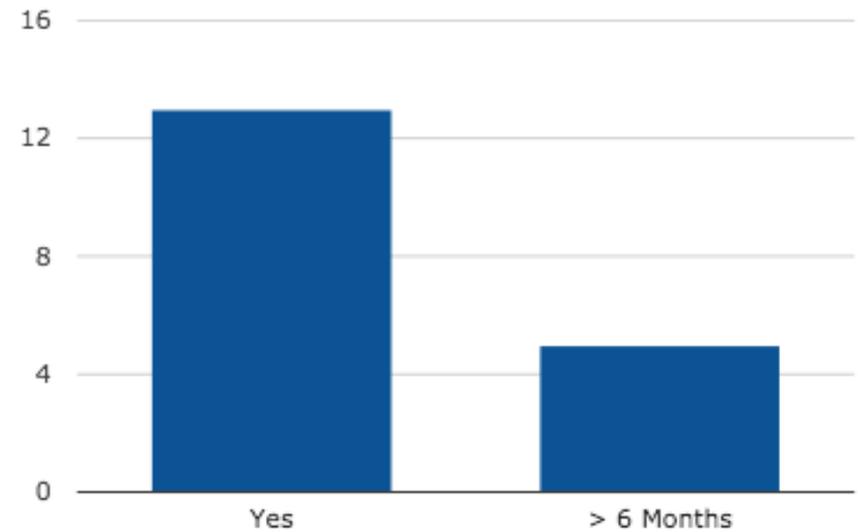


# YGNSS Structure

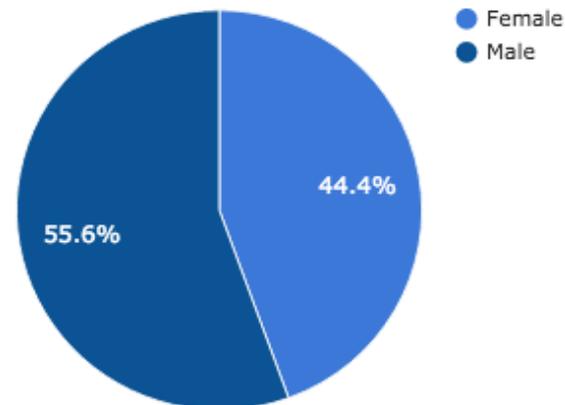
### Highest Qualification



### Active

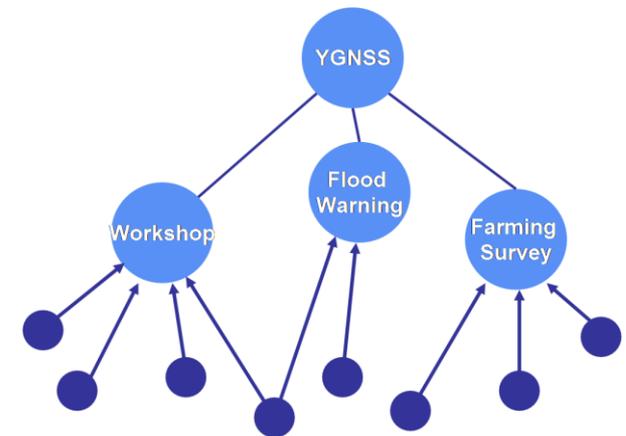


### Gender



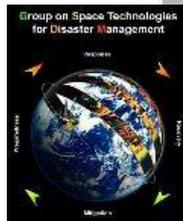
# YGNSS Operation

- YGNSS co-leads coordinate the team and act as liaison with SGAC
- Regular Skype meetings
- Working groups around projects
- Projects selected according to :
  - YGNSS premises
  - Interest of the particular members
- Support from SGAC in “lateral needs” : web, IT support, communications, etc



# YGNSS Achievements

- 2013 - GNSS and EO for Disaster Management Workshop
  - Collaboration with STDM Project
  - ≈25 attendees from 15 countries
  - Set the basis for 2015 workshop
- 2015 – YGNSS Workshop on Interoperability and International Cooperation
  - Collaboration with UNAVCO and the University of Colorado in Boulder and sponsored by Lockheed-Martin.
  - 35 participants from 9 countries subscribed
  - Addressing relevant issues of the current GNSS landscape

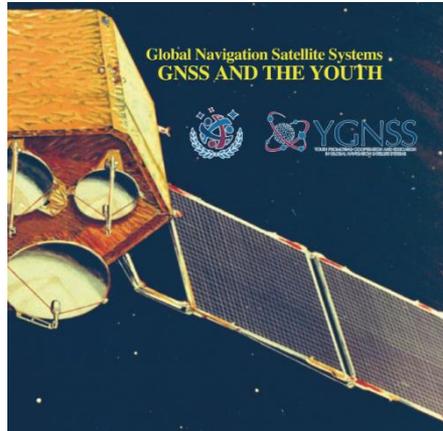


# Workshop Example

- **GNSS and Earth Observation for Disaster Management Workshop (22 Sept 2013)**
  - Held after SGC, and prior to IAC in Beijing, China
  - Collaboration with Space Technology for Disaster Management Project
  - **Result:** ~25 students and young professionals from 15 countries attended
  - Learned more about GNSS technologies and implementation into their fields
  - Focused on background of GNSS and EO technology and hands on learning (ArcGIS)
  - Sponsorship from **Lockheed Martin** for several students to attend.
  - **Speakers:** UN SPIDER, George Washington University Space Policy Institute, Beihang University, Mexican Space Agency



# Other Achievements



- Conference Paper : “Challenges Faced by GNSS Today”
  - Group Publication presented in IAC 2014 Toronto
  - Review of the frontiers in GNSS research today : input for YGNSS decisions on future projects
  - Translated to Spanish, French and Chinese
- GNSS and the Youth Brochure

# YGNSS Present and Future Projects Roadmap

International Cooperation	Outreach	Use of GNSS	Development of members
<ul style="list-style-type: none"> <li>• ICG Observer status petition</li> </ul> <p><b>NOW</b></p>	<ul style="list-style-type: none"> <li>• Brochure</li> <li>• GNSS and DM Workshop</li> </ul> <p>↓</p> <ul style="list-style-type: none"> <li>• Interoperability Workshop</li> </ul>		<ul style="list-style-type: none"> <li>• IAC 2014 communication</li> </ul>
<ul style="list-style-type: none"> <li>• ICG Observer status petition</li> </ul>		<ul style="list-style-type: none"> <li>• Flood Warning App</li> <li>• GNSS &amp; Farming Survey</li> <li>• GPS-Gal Interop</li> </ul>	<ul style="list-style-type: none"> <li>• GNSS Masters 2016</li> </ul>

# Future Projects

- Flood Warning App
  - Badagry is one of the most vulnerable places to flooding in Nigeria.
  - Develop an app that uses GNSS and Meteorology Data to foresee Floods and advise the safe exit route
- Farming Survey
  - Define an action vector for the GNSS-aided develop of farming in developing countries and the increase of efficiency in developed countries
- GPS-Galileo Interoperability Tutorial
  - Integration of Galileo & GPS in a mission planning tool
  - Educate on benefits/Issues of GNSS multisystem scene



<http://lagostoday.blogspot.fr>



<https://commons.wikimedia.org>

# Conclusion

- GNSS is an enabling technology
- Tomorrow : Multi GNSS+SBAS World
- Next generation -> Connected, international, cultural sensitive
- YGNSS (& equivalents) : seed for future collaboration bridges
- Complement to technical training
- Seek GNSS full potential