

# Introduction to Activities of UNISEC-Japan

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**University Space Engineering Consortium**

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4<sup>th</sup> UNISEC-Global Meeting



# History

- Established in 2002
  - University Satellite Consortium
  - Hybrid Rocket Group
- Non-Profit Organization 2003
- Formation of UNISON (student group) in 2003
- Formation of UNISAS (alumni group) in 2006
- UNISEC International Committee in 2011
- UNISEC International Advisory Board in 2012
- UNISEC-Global in 2013



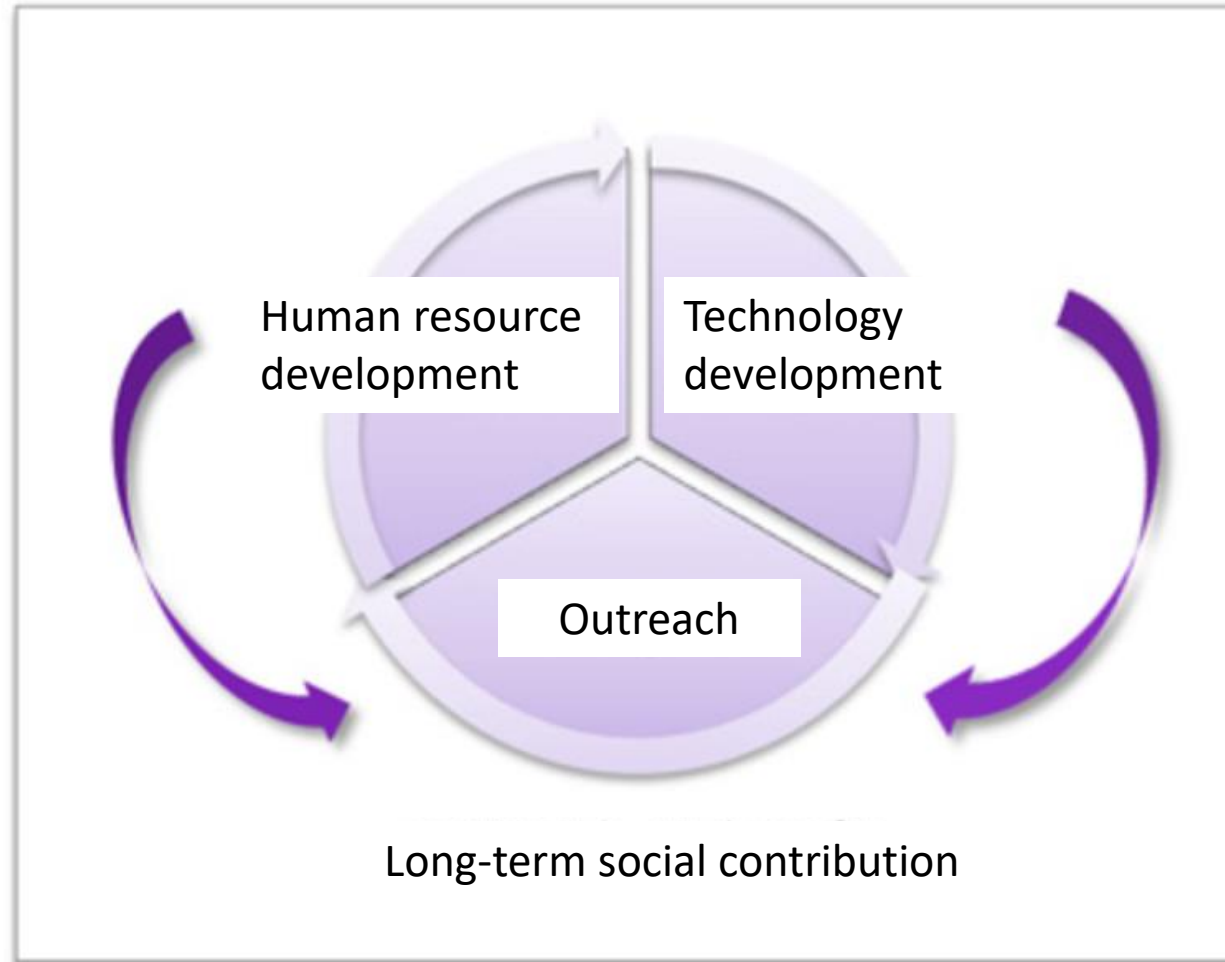
# Mission

- Facilitate/promote university level students' practical space development activities, such as designing, manufacturing and launching small satellites and hybrid rockets.



# UNISEC Concept

**U**nique  
**N**ever-give-up  
**I**nnovative  
**S**incere  
**E**nergetic  
**C**hallenging



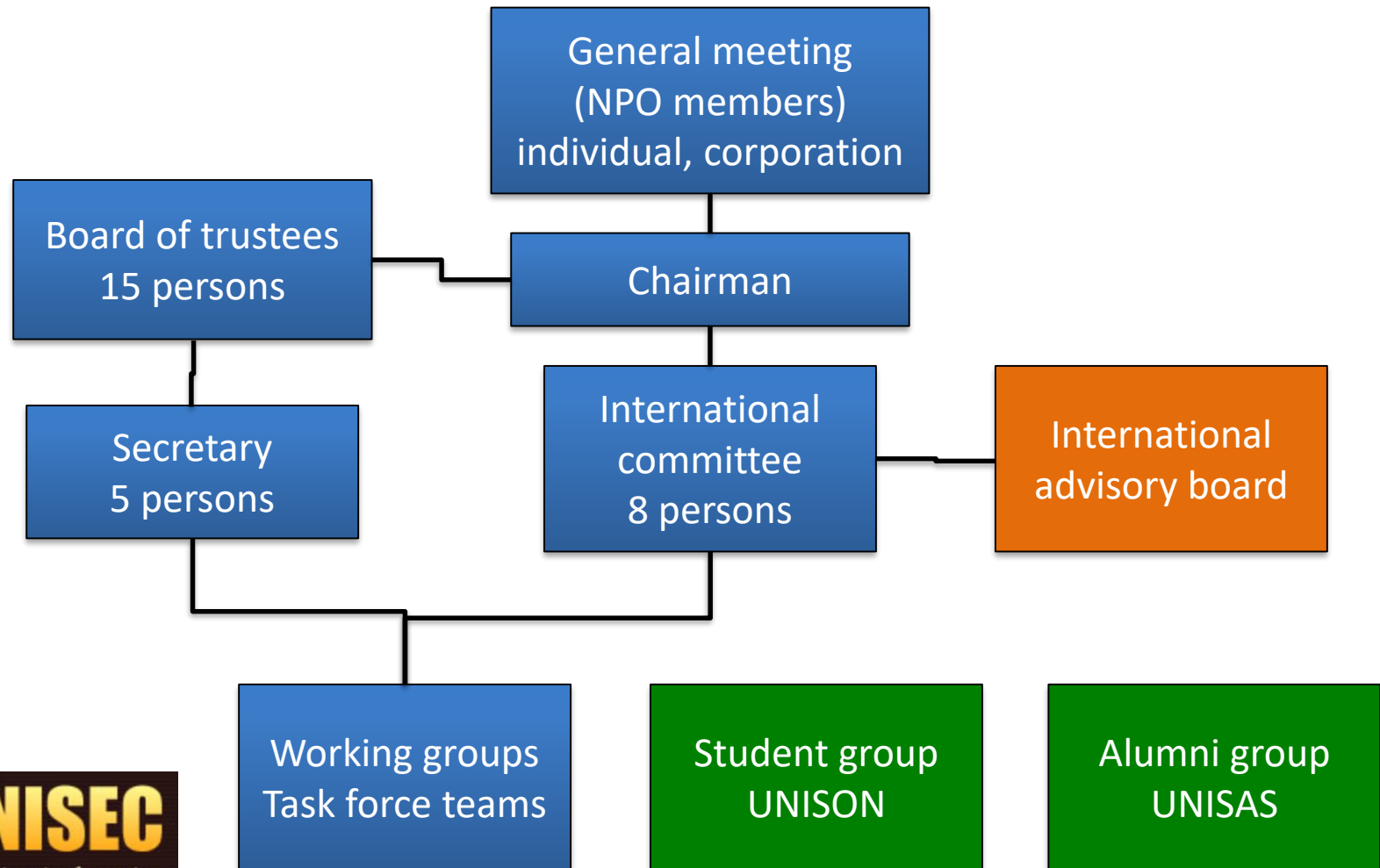
# Organization

50 universities (70 groups)

17 corporation, 265 individual members

870 student members

As of June, 2016



# Status of space engineering education in Japan

Item	Numbers	Note
Undergraduate student enrollment (per year)	1600	27 university*
Graduate student enrollment (per year)	500	20 university*
UNISEC student member	870	50 university
JSASS student member	960	FY 2015
JSASS regular member	3362	FY 2015
Space industry employment	7978	FY 2013 not including JAXA
Total employment in Japanese space sector	10,000	Including JAXA
Job demand every year	300 ~ 400	

Total employment in aircraft industry 28,474名 (FY2014 Source: SJAC)

JSASS: Japan Society for Aeronautical and Space Sciences

\*

# Activities

- Distribution of funding from space agencies and others
- Consulting
- Safety issues
- UNISEC Aerospace Lectures
- International activities
- Frequency, legal issues
- Finding launch opportunities
- Promotion of member body activities
  - Workshops & symposium for activity reports, information exchange
  - Joint procurement & development
  - Competition, e.g. Noshiro Space Event, ARLISS
  - Outreach
  - Working groups on ground station network, satellite, rocket, CanSat,
  - Others



# Student activities



UNISEC Student Organization



UNISEC Alumni Society



# Achievements

More than 39 university satellites launched in 13 years



From CanSat to CubeSat, Nano-Satellite

From Educational purpose to Practical application

# Achievements

## (human resource development)

- Provide many engineers/researchers who have
  - Project management skills
  - Proficient knowledge of satellite/rocket and their subsystem design and manufacturing
  - Systems engineering and integration
  - “Guts” to tackle challenging problems
- To Japanese space sector as well as **many other technological areas** such as automobile, aircraft, plants, electronics, construction, etc.

# What enabled the Achievements of UNISEC?

- UNISEC provided university students with a
- Platform - **opportunities to observe and exchange**;  
What other universities achieved and how, leading to
  - strong motivation (we can do something similar!!)
  - hints of achieving something (rocket, satellite, CanSat,--)
  - competitive feeling (if they can do it, we can do it better !!)
- Highly motivated leading persons (such as professors) continually have had to consider what they can achieve even without enough resources.

# What are needed now?

- Development of human resource who can contribute to the worldwide space activities
  - Participate in UNISEC-GLOBAL
  - Be international and inter-cultural
  - Going abroad & working abroad
- Keep spirits high to aim at going to space
  - Don't be satisfied with CanSat
  - Don't be satisfied with making friends

# Conclusion

- Since 2002, UNISEC has been successful to provide valuable engineering talents to Japanese society
- Supported by individual, corporations, government, agency
  - But most of all, students
- UNISEC is still struggling
  - Time to grow one step higher
  - Challenge continues