Innovative Autonomous Airship

- R&D Plan -

March 2018

Yasumasa MUTOH

Airvehicle Space Association, Japan

1. R&D Plan Overview

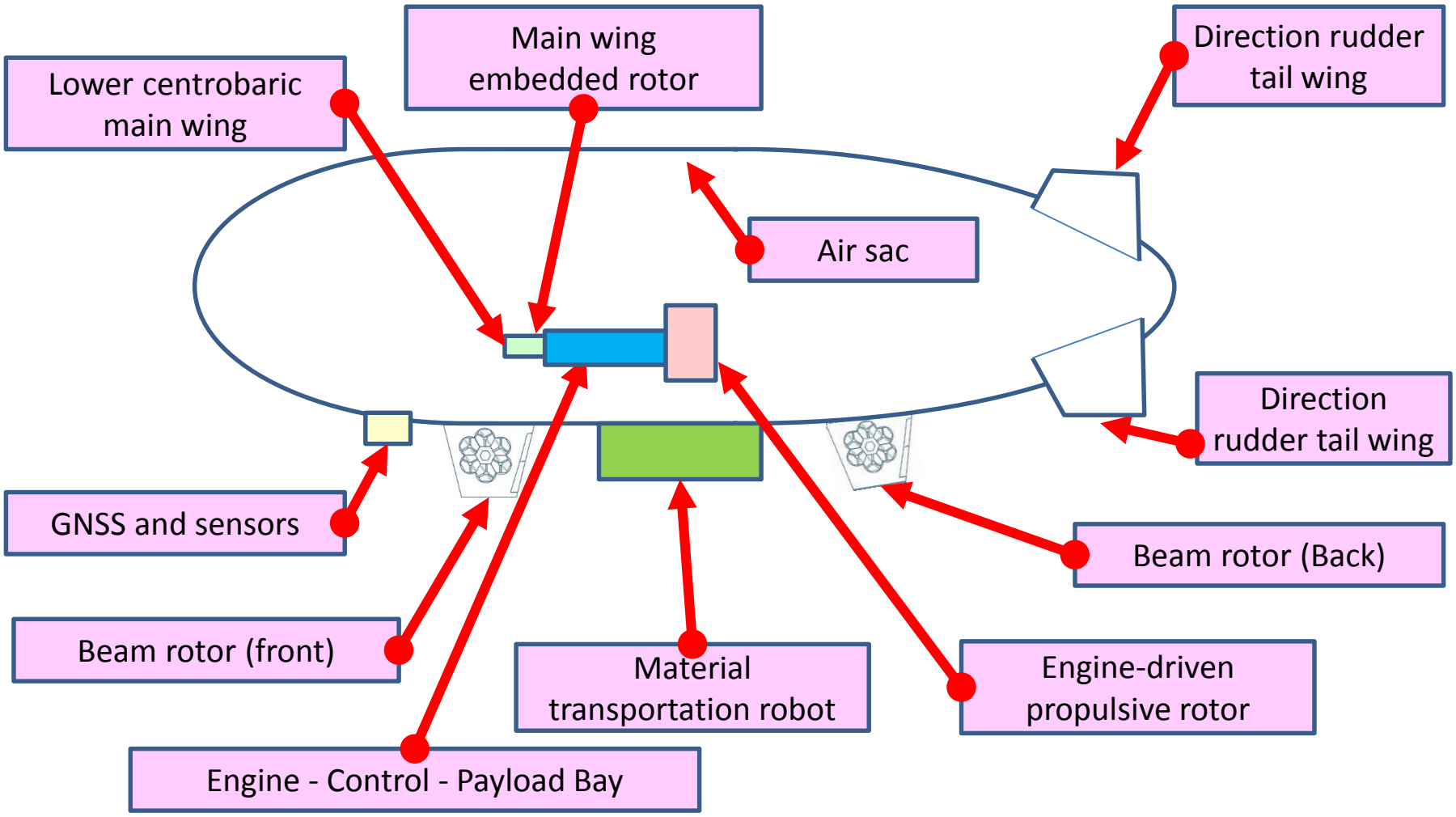
No	Item	System	Scheme
1	Large-scale airship equiped innovative autonomous pilot	75m-class airship	EU and Japan
2	long-time and low-altitude airship with IoT observation and UAV subsystem	20m-class airship and UAV	Japan and International
3	long-time and low-altitude airship with IoT observation system	12m-class airship	Japan and International
4	Autonomous Pilot Core System with AI-applied attitude control	All-class airship	Core Developers

EU : European Union, IoT : Internet of Things, UAV : Unmanned Aerial Vehicle

2. Airship Concept

AVSA

An Example



3. Topic Technologies

Innovative Autonomous Pilot
- AI-applied altitude control
- Application of the latest robot control technology
- GNSS centimeter navigation

Biological Super-Silk for Air Sac
- By genetic modified silkworm
- Stronger and lighter then carbon fiber sheet

Roomed Air Sac for Stratospheric Airship
- Present expansion and enable flight in high-altitude and low-pressure environment

Long-time Battery and Non-contact Charger
- Lithium-ion secondary battery
- Electromagnetic induction

VTOL: Vertical Take-off Landing Aircraft

Non-blocking Communication

Camera and Radar Remote Sensing

Compact Airship Robotic Control

4. Schedule

JPY*	2018	2019	2020	2021	2022	2023
Communication & Power Source	Plan, Design	Prototype	Experiment Production			
GNSS & Sensor	Plan, Design Prototyping	Prototype Experiment	Production			
Controller AI & BI	Plan, Design	Prototype	Experiment	Production		
Controller EV & VTOL	Plan, Design	Prototype	Experiment	Production		
Airship Body & Sac	Plan, Design	Prototype	Experiment	Production	Production & Sales	
Service					Service	
Education		Engineers & Servicers				
Order Entry & Reservation (M$)	0	1	5	30	70	150

AI : Artificial Intelligence
BI : Brain Information

EV : Electric Vehicle
VTOL : Vertical Takeoff Landing aircraft

[NOTE] JPY : Japanese Fiscal Year (from April to Next Year March)

5. Proposal Item

Would you please join us as our international partner ?

- Your Benefits
  - Share information on the R&D achievement of AVSA
  - Join to EU-Japan Joint Project (trial aftertime)
  - Bridge to Japanese companies

- Your defrayment
  - Free of charge

- Your obligation
  - None before concrete project contract

Appendix

AVSA

Airvihecle Space Association

- Purpose and Organisation -

March 2018

Airvehicle Space Association
Japan

1. Overview

The Airvehicle Space Association, as an R&D support entity, aims to promote unmanned aerial vehicle usage in society and the development of the industry through supporting research and development, technology, human resource development, and promotional activities in Japan.

Through the vision on 'Innovative Autonomous Unmanned Flight Robot R&D', logistics, observation and airship systems and by utilising GNSS technologies to the fullest, we strive to create new industries and to acquire market share.

[Note] GNSS : Global Navigation Satellite System

2. Organisation Scheme

Japan National Strategic Specific District
Authorized Promoter

General Assembly

Board

Secretariat

Committees

Development & Demonstration
- R&D Support
- Technological Support

Coordination for business

Promotional Activities
- Abroad / Broadcast / VR / AR

Industry-government-academia Alliance

Human Resource Development
- Operator Training
- Organizer Education
- Trainer Education
- Disaster Manager Education

Event Support

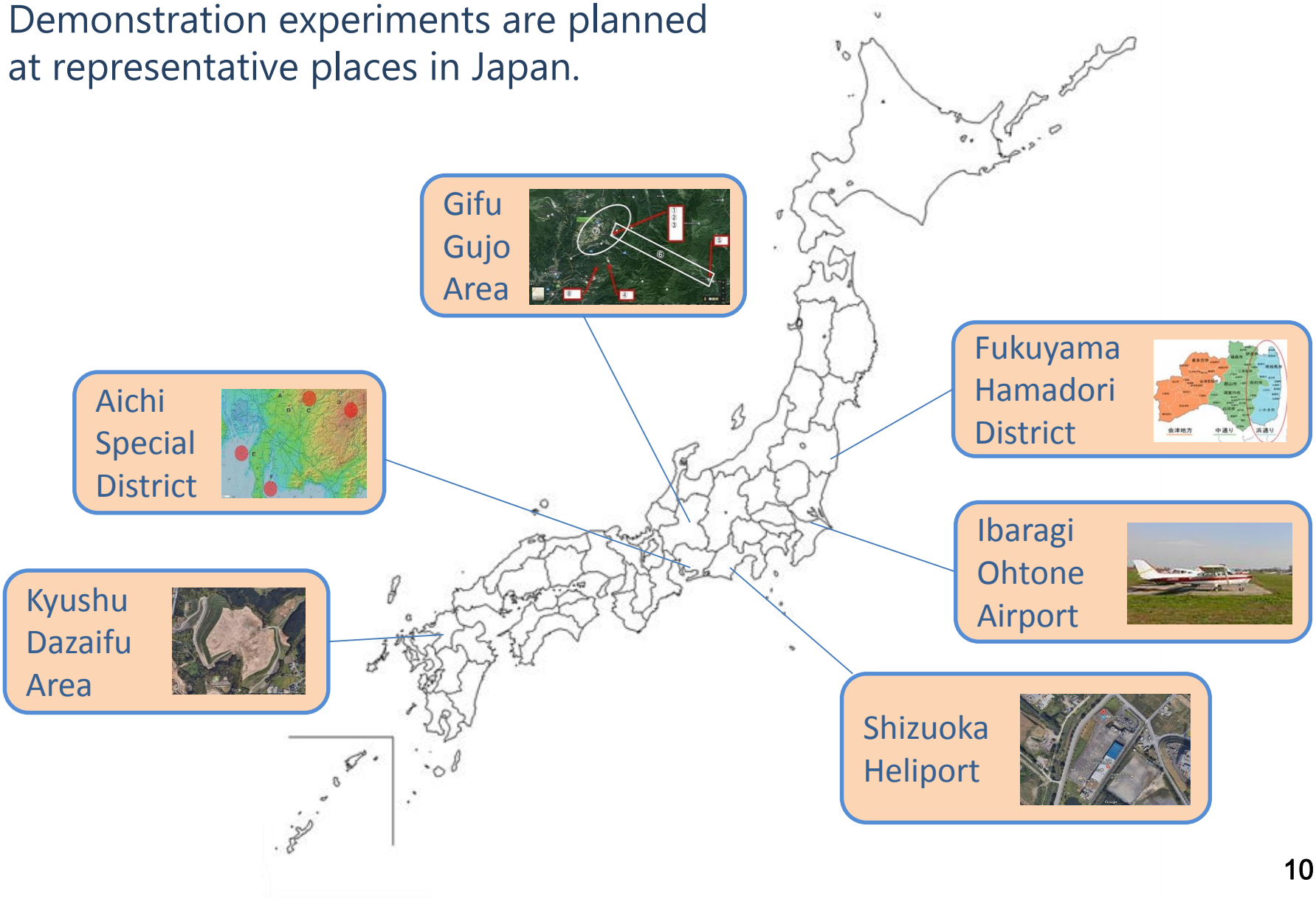
UAV Pilot License

Finance

[Note] AR: Augmented Reality, R&D: Research and Development,
UAV: Unmanned Aerial Vehicle, VR: Virtual Reality

3. Experimental Fields

Demonstration experiments are planned at representative places in Japan.



4. Organisation Profile

Organisation Name	**Airvehicle Space Association**
Organisation Type	Japan's general incorporated association
Certification	National Strategic Specific District Authorized Operator
Founding Date	15th December, 2016
President	Yasumasa MUTOH
Nationality	Japan
Address	3465 Ayutate, Takasucho, Gujo, Gifu
Postcode	501-5304
Specialty	Airvehicle Enterprise Incubation Autonomous Airvehicle Technology Connected Control Technology
Enterprises	Airvehicle Enterprise Planning Research and Development Promotional Activity Human Resource Development UAV Pilot School Management Contribution to local communities