



Introduction of QZSS and application

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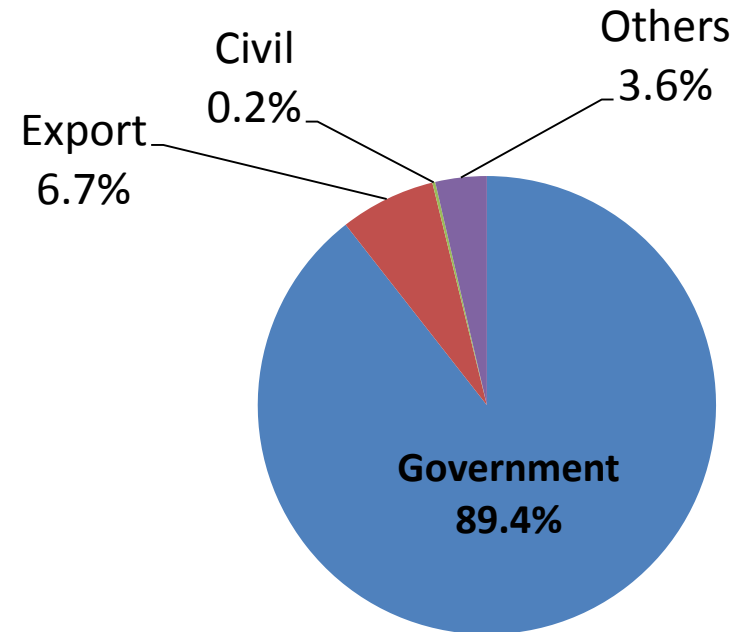
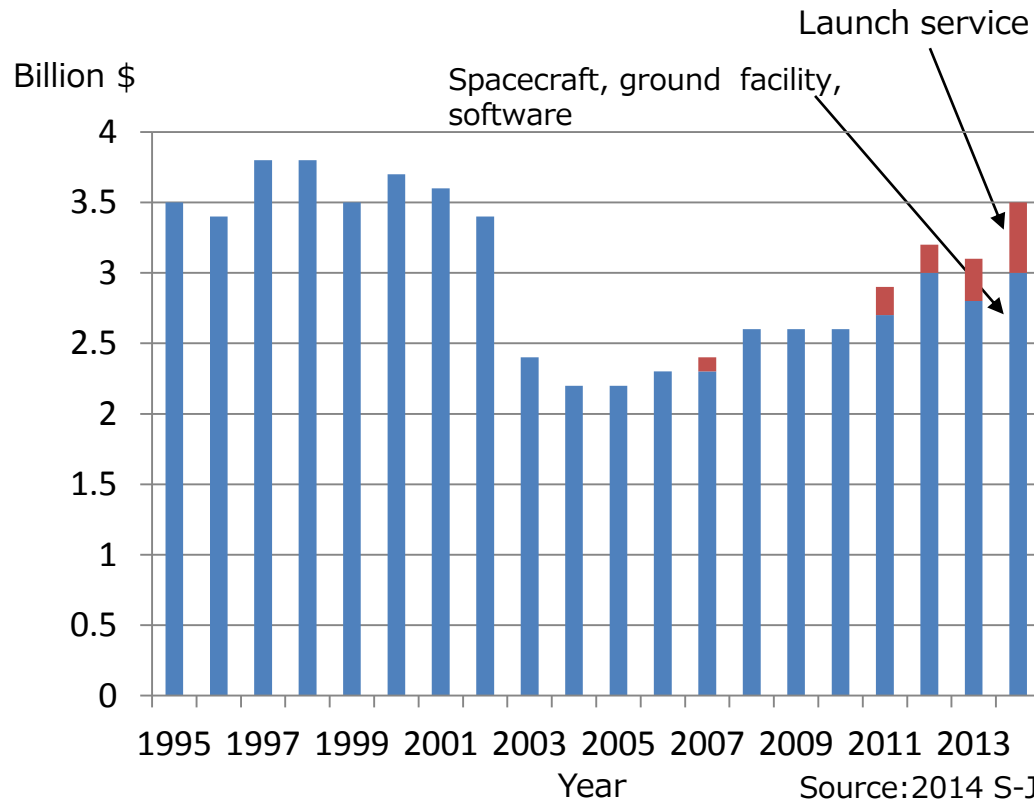
Ministry of Economy, Trade and Industry (METI)

Current situation of the Space Industry in Japan

- Sales amount has steadily increased, but,,, still not big
- Heavily depends on government mission

Trend of Sales (machinery, equipment, etc)

Sales Structure in Japanese Space Industry (2014)



⇒ Expansion of the user business(application) is the key

1. Policy Direction(1)

- The space industry in the “Connected Industries”/ Society 5.0 / 4th Industrial Revolution -

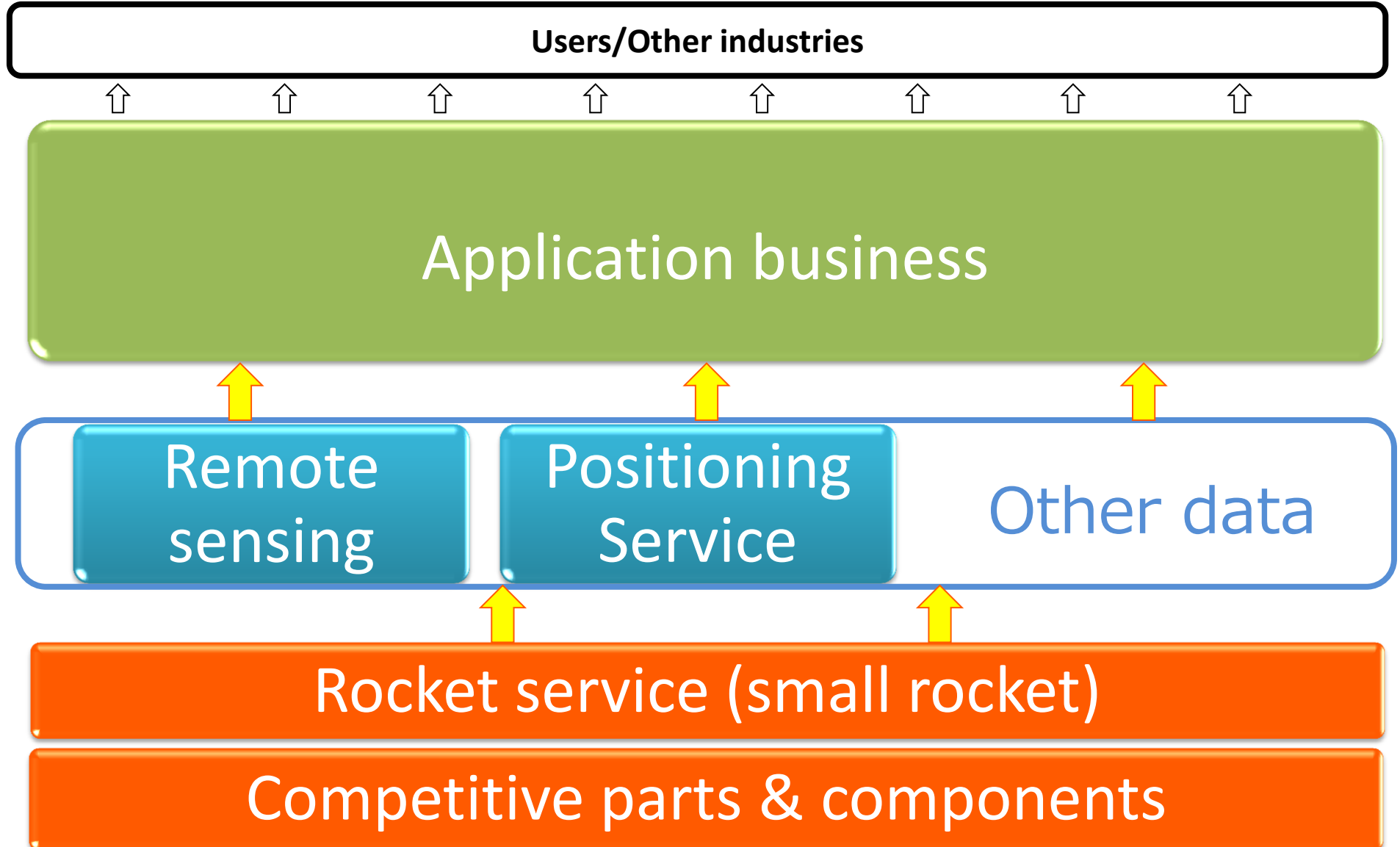
- The quality and quantity of the data derived from space are improving dramatically.
 - Positioning : high-precision positioning service
 - Earth Observation : high resolution, high frequency data brought by small satellite constellation
- AI/deep learning is good at analyzing huge amount of satellite data.
- Application business which will provide the solution for user industries is expected to develop rapidly, by integrating ground data and “space data.”
- “Space Industry Vision 2030”&“Growth Strategy 2017”



“Space Industry” can be positioned as “big data” industry.

1. Policy Direction(2)

- The space industry in the “Connected Industries”/ Society 5.0 / 4th Industrial Revolution -



QZSS Overview –Development Status-

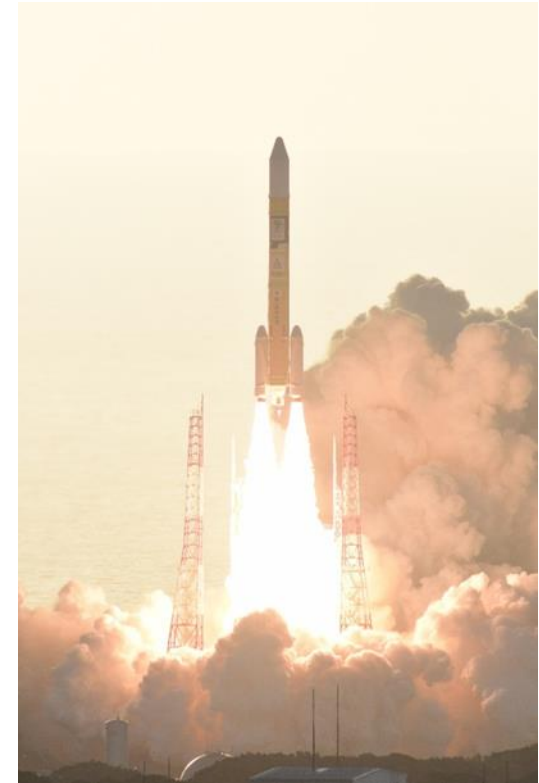
Three consecutive launches and preparing service-in!



#2 satellite: Jun. 1, 2017
00:17:46(UCT)



#3 satellite: Aug. 19, 2017
05:29:00(UTC)



#4 satellite: Oct. 9, 2017
22:01:37 (UTC)

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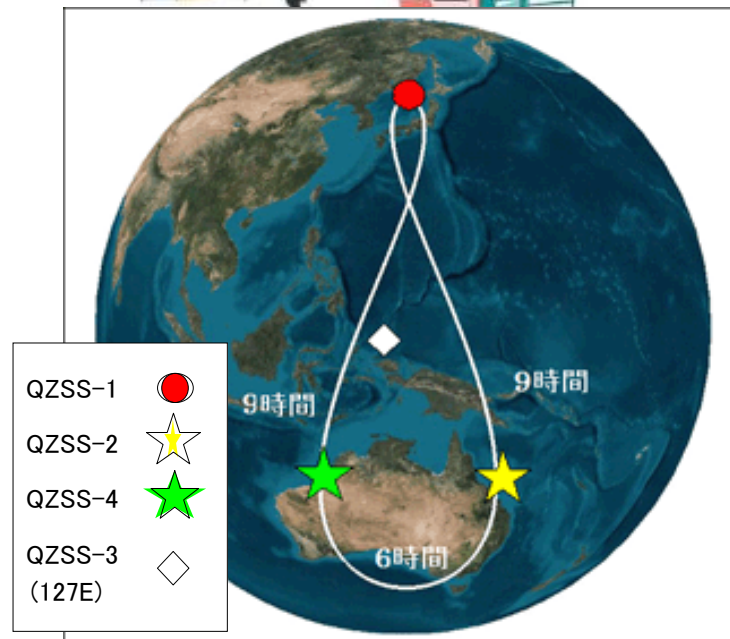
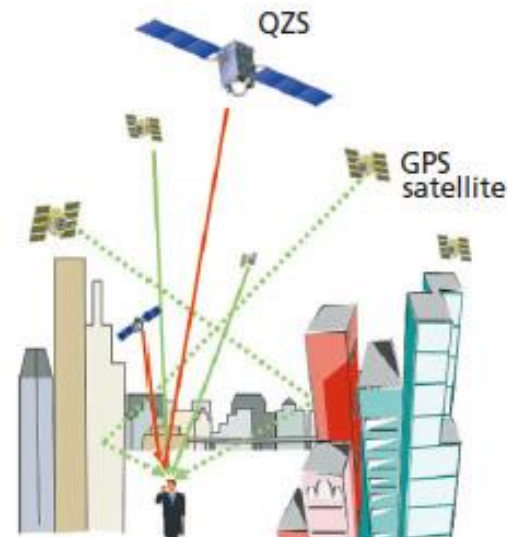
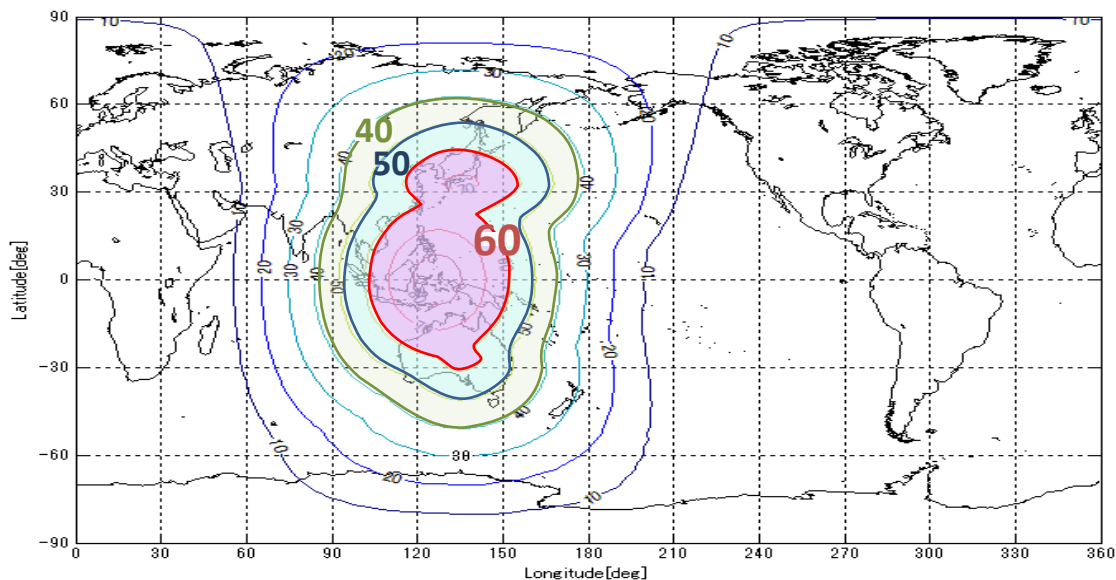
Quasi-Zenith Satellite System (QZSS) Overview

-Services-

● **Functional Capability:**

- GPS Complementary
- GNSS Augmentation
- Messaging Service

● **Coverage:** Asia and Pacific region



QZSS Overview – Services-

GPS Complementary

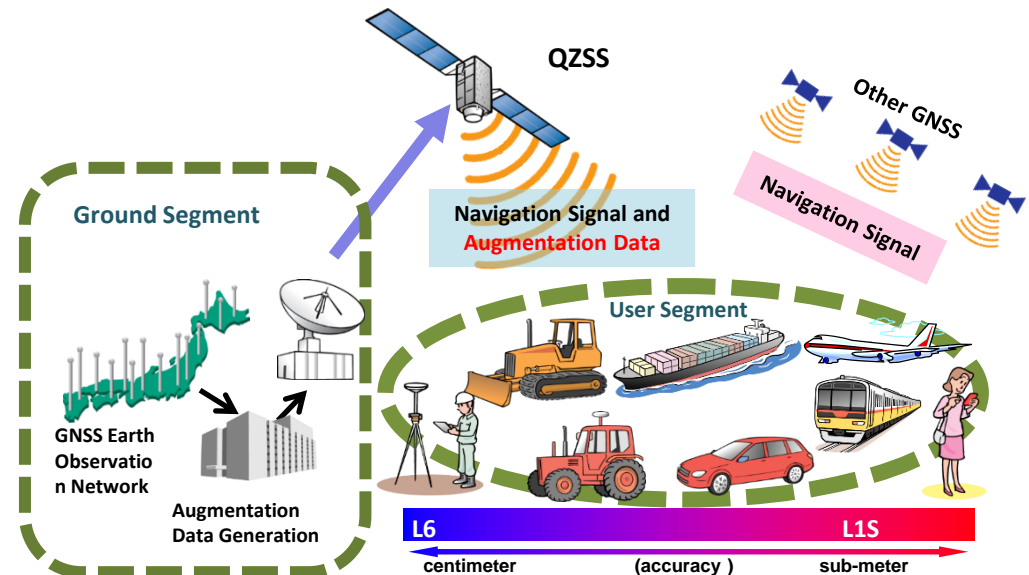
Improving PNT availability

- With highly interoperable signals with GPS.
- SIS-URE: 2.6m (95%)
- Available in East Asia and Oceania

GNSS Augmentation

Improving GNSS performance

- Positioning accuracy and reliability
- CLAS on L6 and SLAS on L1S
- Platform for MSAS from 2020
- Domestic services



QZSS Overview –Applications-



Automated Farming



**Natural Hazard
Mitigation**



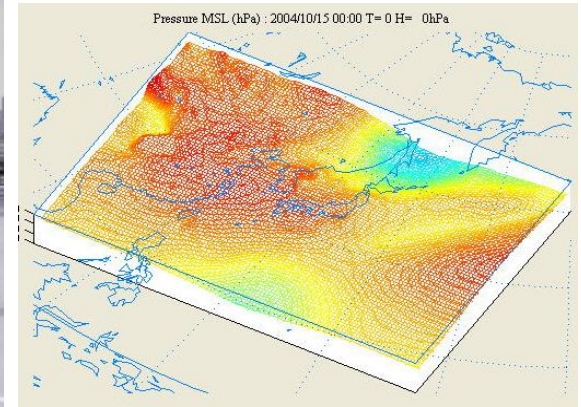
**Mining Machine
Control**



Offshore Construction



Autonomous Driving



Weather Forecast