

Quasi-Zenith Satellite System
Service Performance Report
MADOCA-PPP
(Before Service Launch, 2021)

(February 2022)
Cabinet Office

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1 Service Performance Evaluation Conditions

1.1 Evaluation Period

March 23rd, 2021, 00:00:00 – 23:59:59 (UTC)

1.2 Evaluation Points

IGS monitoring stations as shown in Table 1 and Figure 1

Table 1 Evaluation Point List

#	Station Name	Latitude [deg]	Longitude [deg]
1	AIRA00JPN	31.824	130.600
2	CCJ200JPN	27.068	142.195
3	ISHI00JPN	36.209	140.219
4	MIZU00JPN	39.135	141.133
5	STK200JPN	43.529	141.845
6	TSK200JPN	36.106	140.087

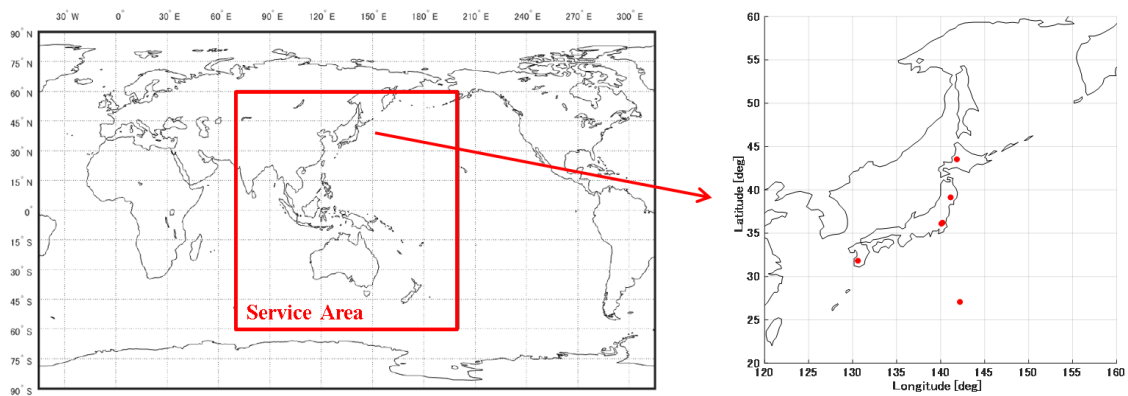


Figure 1 Evaluation Points

1.3 Augmented GNSS

- GPS + GLONASS (Visible satellite number ~ 13)
- GPS + GLONASS + Galileo (Visible satellite number ~ 20)

1.4 Calculation Conditions

1.4.1 PPP Conditions

- Observation Data Frequency
 - GPS: L1C/A + L2P
 - GLONASS: G1 +G2
 - Galileo: E1 + E5a

Detail Conditions: To be described

1.4.2 Convergence Time

- The PPP calculation was performed every 15 minutes during the evaluation period.
- By using each calculation result, the positioning accuracy (95%) was statistically calculated in every second.
- Convergence time was calculated by using the positioning accuracy (95%) of each second.

1.4.3 Positioning Accuracy

Positioning accuracy is the positioning accuracy (95%) in 1,800 seconds from the reception of the augmentation messages via L6 signals.

- The PPP calculation was performed every 15 minutes during the evaluation period.
- The horizontal and vertical positioning accuracy (95%) in 1,800 seconds was statistically calculated.

1.4.4 Availability

To be described

2 Evaluation Results

2.1 Convergence Time

See Figure 2.

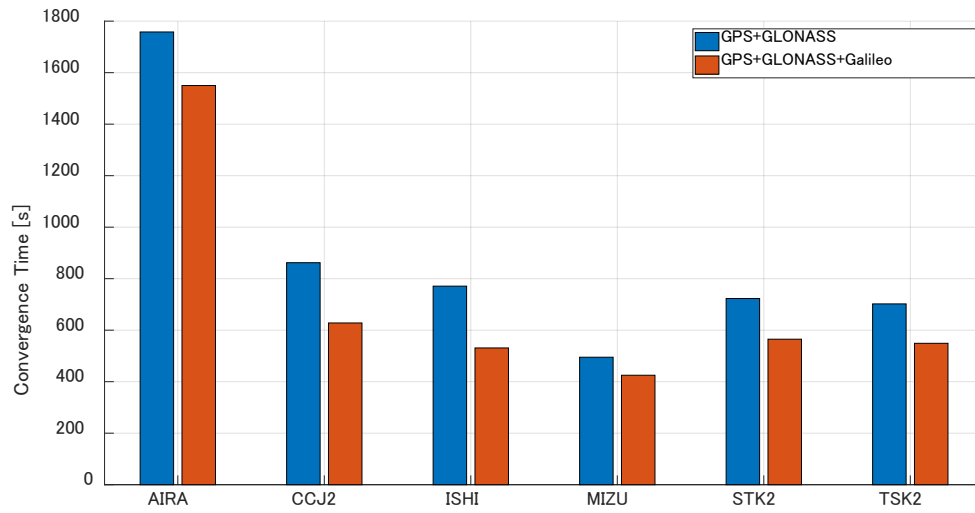


Figure 2 Convergence Time

2.2 Positioning Accuracy

See Figure 3 and Figure 4.

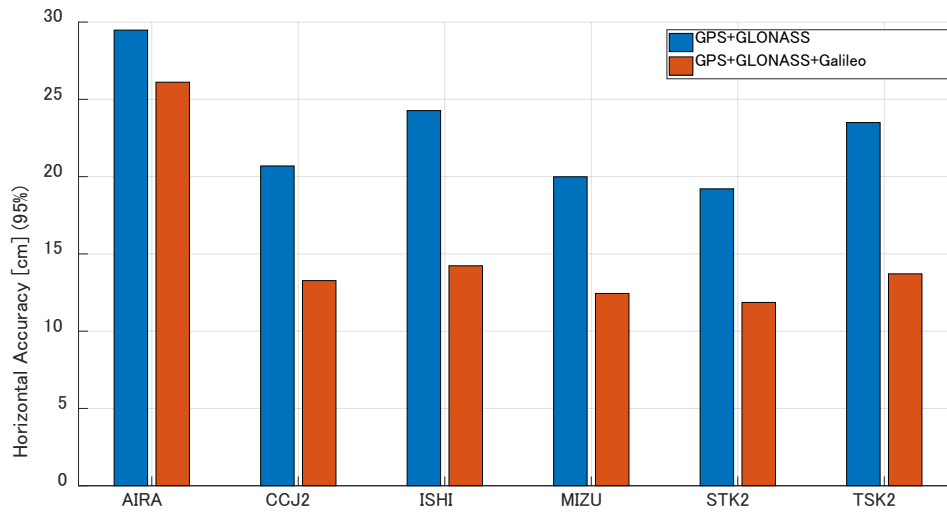


Figure 3 Horizontal Accuracy (95%)

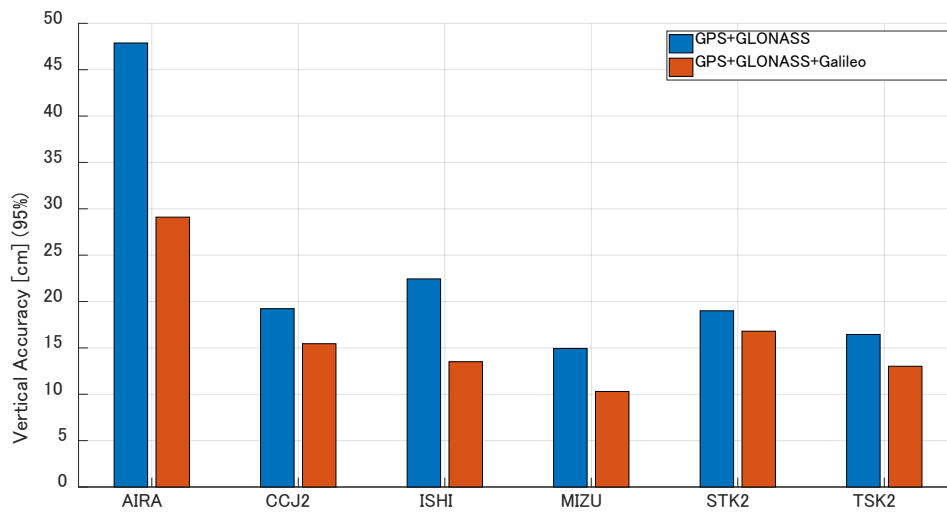


Figure 4 Vertical Accuracy (95%)

2.3 Availability

To be evaluated after the service launch