



Quasi-Zenith Satellite System

Service Performance Report for 1stH FY2021

Sub-meter Level Augmentation Service (SLAS)

February 28, 2022

Quasi-Zenith Satellite System Services Inc. (QSS)



1. Evaluation Period

From April 1, 2021 to September 30, 2021 (UTC)

2. Evaluation Item

The positioning accuracy (95%) in the service area.

3. Evaluation Method

The positioning accuracy in evaluation points*¹ are calculated based on IS-QZSS-L1S (5.UserAlgorithm). The evaluation points are selected near the edge of the SLAS service area circles where each monitoring station is located at the origin. The location of each monitoring station and the service area of SLAS are shown in Figure 1. The detail of evaluation points and the results of evaluation are described in section 4.

It is evaluated whether the positioning accuracy (95%) of each evaluation point meets PS-QZSS (5.3.1Positioning Accuracy).

As a reference position of each evaluation point, a precise current coordinate for each reference station provided by the Geospatial Information Authority of Japan (GSI), called an “F3 solution” are used.

- Augmentation Information : DGPS augmentation information on the L1S message broadcasted from QZS
- Augmented Satellite (signal): GPS (L1C/A), QZS (L1C/A)

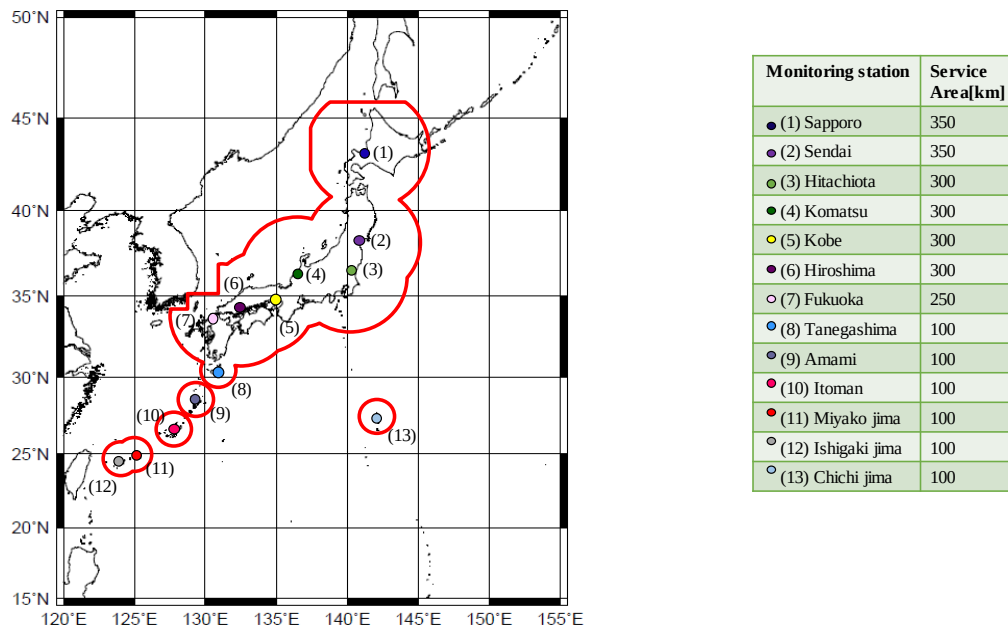


Figure 1 The location of Monitoring Station and the service area of SLAS

*¹ These evaluation points are assigned from GEONET (GNSS Earth Observation Network Systems).



4. Evaluation Result

The following table shows the result of positioning accuracy.

Monitoring station	Evaluation point (GEONET ID)	Base line length [km]	Positioning accuracy (95%) [m]											
			April		May		June		July		August		September	
			H	V	H	V	H	V	H	V	H	V	H	V
Sapporo	Ani 2 (020924)	363	0.81	1.11	0.83	1.10	0.89	1.13	0.92	1.11	0.88	1.12	0.91	1.15
Sendai	Imabetsu (960534)	324	0.75	0.69	0.84	0.70	0.83	0.73	0.80	0.76	0.88	0.72	0.85	0.68
Hitachiota	Ogasa (960622)	305	0.76	0.89	0.80	0.93	0.79	0.93	0.85	0.89	0.79	0.91	0.84	0.92
Komatsu	Nachikatsuura3 (071155)	307	0.78	1.03	0.73	1.03	0.79	1.04	0.81	1.02	0.77	1.06	0.75	1.13
Kobe	Takaoka (950248)	287	0.83	0.85	0.86	0.85	0.89	0.95	0.90	0.92	0.82	0.91	0.80	0.93
Hiroshima	Ebino (960714)	296	0.74	1.02	0.73	1.04	0.77	1.02	0.80	1.04	0.78	0.98	0.78	0.99
Fukuoka	Kushima 1 (950484)	254	0.55	0.87	0.57	0.79	0.57	0.91	0.56	0.91	0.55	0.93	0.56	0.92
Tanegashima	Kiire (021092)	100	0.73	1.15	0.74	1.02	0.76	0.99	0.71	1.01	0.72	1.05	0.76	1.24
Amami	Kagoshima amagi A (141208)	102	0.54	0.92	0.51	0.77	0.49	0.74	0.49	0.81	0.50	0.77	0.61	1.05
Itoman	Izena (960736)	91	0.70	1.30	0.67	1.05	0.69	0.94	0.65	0.95	0.65	1.00	0.74	1.36
Miyakojima	Iriomote jima (950500)	161	0.75	0.99	0.69	0.78	0.68	0.72	0.69	0.71	0.70	0.74	0.90	0.97
Ishigakijima	Hateruma jima (960751)	52	0.54	0.93	0.48	0.68	0.47	0.64	0.46	0.62	0.46	0.71	0.60	0.92
Chichijima	Hahajima (960603)	51	0.75	1.14	0.67	1.07	0.65	1.06	0.66	1.03	0.65	1.09	0.70	1.17

*H=Horizontal, V=Vertical