



REPORT	SP0S-DD-2026301
OBSERVATION	28 October 2026 · DOY 301/2026
GENERATED	2026-10-31 17:32 UTC
STATUS	R&D · provisional

Daily Datum Realisation — QA/QC Report

Anchored ITRF2020 double-difference network solution tied to the Sabah Geocentric Datum 2020 (SGD2020), observation epoch 2026.8214.

QC PASS

Solution accepted — all control stations mutually consistent and the tie RMS is within the few-millimetre intra-network target.

17

CORS control

4.0 mm

tie RMS

3.1 mm

median residual

8

IGS anchors fixed

—

external check

2026.821

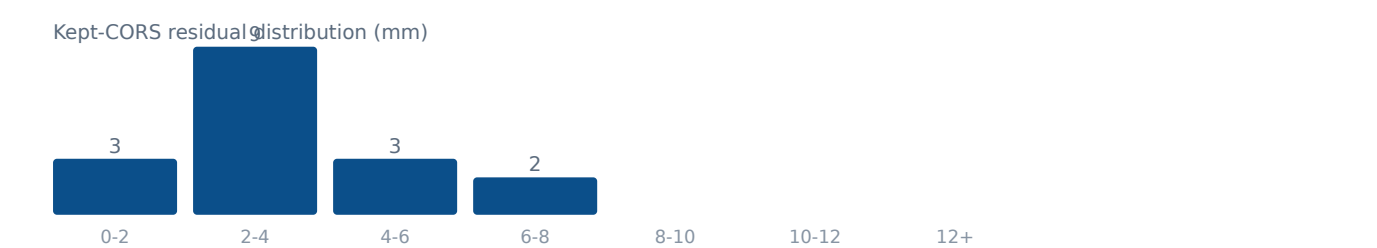
epoch (ITRF2020)

1 Reference frame & methodology

Engine	Bernese GNSS Software 5.4, RNX2SNX ambiguity-fixed double-difference network, 30 s sampling.
Fiducials	8 IGS Reference Network (IGS20/ITRF2020) stations held fixed. A-priori coordinates propagated from the IGS20 realisation (reference epoch 2015.0) with station velocities and the ITRF2020 post-seismic deformation (PSD) model to the observation epoch.
Antenna	Absolute IGS ANTEX phase-centre models; antenna reference-point (ARP) eccentricities applied for every station.
Loading	Ocean-tide loading from station-specific coefficients (SPOTL / TPX07.2).
Products	CODE multi-GNSS rapid orbits, clocks, Earth-rotation and code biases; CODE global ionosphere maps. Provisional — this day will be re-solved on the final products once CODE publishes them (typically 9–10 days after observation) and the coordinates below refreshed.
Datum tie	Robust 3-parameter (translation-only) transformation ITRF2020(t)→SGD2020 estimated against the published permanent-CORS control. Translation T = (+144.2, +16.4, +68.3) mm.

2 Quality & external accuracy

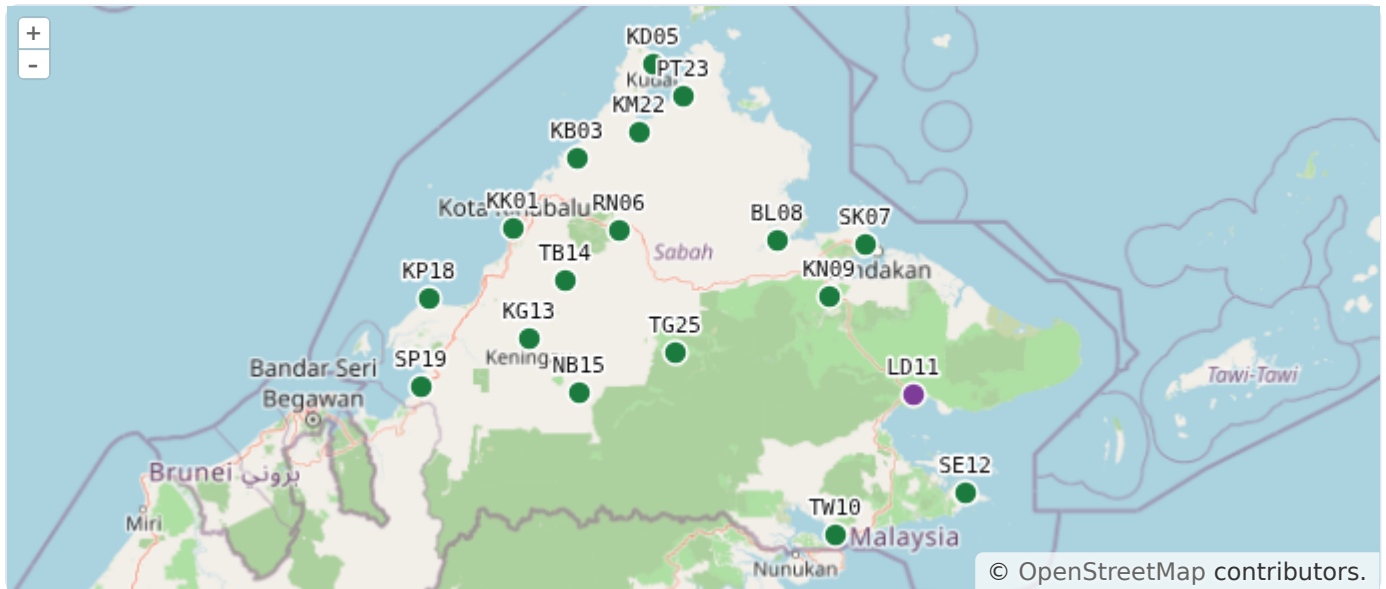
Tie RMS **4.0 mm** is the scatter of the 17 retained CORS about the fitted SGD2020 control (internal consistency). Kept-station residuals: median 3.1 mm, maximum 7.1 mm.



No check anchors were withheld this session, so no independent external-accuracy figure is reported. Run with check anchors to obtain one (diagnostic only — it never gates the solution).

3 Station map

kept (control) monitored (not control) no data anchor (fixed)



OpenStreetMap base · scroll to zoom, drag to pan, click a station for detail.
Circles = CORS, diamonds = IGS anchors.

4 Station disposition & QC

Automatic gates: cycle-slip (>1% loss-of-lock), thin data (<80% of the day), robust residual reject (>40 mm, MAD-based), anchor leave-one-out, and an a-priori gross-error gate.

SABAH CORS — ESTIMATED CONTROL

CORS	STATUS	LATITUDE	LONGITUDE	RESIDUAL / NOTE
BL08	kept (control)	5.89443	117.56020	2.8 mm
KB03	kept (control)	6.35118	116.43182	3.9 mm
KD05	kept (control)	6.88165	116.85333	4.6 mm
KG13	kept (control)	5.34215	116.15901	3.1 mm
KK01	kept (control)	5.95923	116.07029	2.1 mm
KM22	kept (control)	6.49988	116.77246	2.8 mm
KN09	kept (control)	5.58762	117.84713	5.3 mm
KP18	kept (control)	5.57213	115.59949	0.8 mm
NB15	kept (control)	5.04526	116.43643	3.2 mm
PT23	kept (control)	6.70681	117.02979	2.7 mm
RN06	kept (control)	5.95565	116.67012	1.4 mm
SE12	kept (control)	4.47876	118.61271	3.8 mm
SK07	kept (control)	5.87749	118.05401	6.8 mm
SP19	kept (control)	5.08000	115.55102	1.2 mm
TB14	kept (control)	5.66757	116.36249	7.1 mm
TG25	kept (control)	5.27162	116.97539	5.9 mm
TW10	kept (control)	4.24668	117.88027	2.9 mm
LD11	monitored (not control)	5.02904	118.31608	18.8 mm (not control)
TL27	no data	5.62983	117.12914	no usable data

IGS FIDUCIALS

ANCHOR	STATUS	LATITUDE	LONGITUDE	RESIDUAL / NOTE
CIBG	anchor (fixed)	-6.49037	106.84918	—
CMUM	anchor (fixed)	18.76088	98.93238	—
CUSV	anchor (fixed)	13.73591	100.53392	—
DARW	anchor (fixed)	-12.84369	131.13275	—
GUAM	anchor (fixed)	13.58933	144.86836	—
JOG2	anchor (fixed)	-7.76382	110.37247	—
PIM0	anchor (fixed)	14.63572	121.07773	—
XMIS	anchor (fixed)	-10.44996	105.68851	—

5 Published SGD2020 coordinates

ECEF CARTESIAN (M) — 17 RETAINED CORS

STATION	ITRF2020 (OBSERVATION EPOCH)			SGD2020		
	X	Y	Z	X	Y	Z
BL08	-2935567.8457	5624735.1129	650652.5201	-2935567.7015	5624735.1294	650652.5884
KB03	-2821849.1632	5676659.3610	700878.6593	-2821849.0190	5676659.3774	700878.7276
KD05	-2860468.7349	5649692.6686	759149.6810	-2860468.5907	5649692.6850	759149.7492
KG13	-2799918.9426	5700477.0821	589899.5461	-2799918.7984	5700477.0985	589899.6144
KK01	-2788004.7220	5698503.9312	657780.8201	-2788004.5778	5698503.9477	657780.8884
KM22	-2854706.9043	5658114.3005	717217.4633	-2854706.7601	5658114.3169	717217.5316
KN09	-2965300.9405	5612996.4726	616897.5897	-2965300.7962	5612996.4890	616897.6580
KP18	-2742938.8586	5725086.7509	615188.2906	-2742938.7144	5725086.7673	615188.3589
NB15	-2828878.6289	5689652.4835	557215.7341	-2828878.4847	5689652.5000	557215.8023
PT23	-2878899.0660	5642901.8691	739951.2948	-2878898.9218	5642901.8855	739951.3630
RN06	-2847754.2178	5669492.4841	657440.2730	-2847754.0736	5669492.5005	657440.3413
SE12	-3045175.1813	5582299.1063	494747.5423	-3045175.0371	5582299.1227	494747.6106
SK07	-2984042.3673	5599427.8919	648792.5694	-2984042.2231	5599427.9084	648792.6376
SP19	-2740277.7286	5731969.6395	561001.5569	-2740277.5844	5731969.6560	561001.6252
TB14	-2818727.7896	5687637.6286	625748.6242	-2818727.6454	5687637.6450	625748.6924
TG25	-2881081.4244	5660450.6780	582113.5640	-2881081.2802	5660450.6944	582113.6322
TW10	-2974477.0233	5622490.2272	469157.3401	-2974476.8791	5622490.2437	469157.4083

GEOGRAPHIC & PROJECTED — SGD2020

STATION	LATITUDE (°)	LONGITUDE (°)	ELLIP. H (M)	ORTHO H (M)	GEOC. RSO E (M)	GEOC. RSO N (M)
BL08	5.89443139	117.56020368	60.624	7.278	8873347.773	5653778.354
KB03	6.35117795	116.43182226	94.351	44.813	8748156.898	5703520.970
KD05	6.88164851	116.85332919	68.102	18.337	8794451.647	5762438.141
KG13	5.34214522	116.15901120	366.827	317.199	8718500.026	5591796.937
KK01	5.95922879	116.07028530	68.739	20.399	8708351.950	5659984.130
KM22	6.49988332	116.77246268	66.200	15.515	8785750.800	5720168.104
KN09	5.58762464	117.84713264	96.759	43.047	8905373.196	5620089.723
KP18	5.57213084	115.59948508	55.423	9.584	8656390.051	5616957.191
NB15	5.04526222	116.43642979	521.235	469.816	8749415.429	5559126.042
PT23	6.70681277	117.02979154	77.384	25.976	8814072.405	5743218.177
RN06	5.95565341	116.67012008	576.743	524.183	8774763.316	5659924.890
SE12	4.47876237	118.61271095	74.296	13.710	8991276.637	5498163.792
SK07	5.87748945	118.05400700	97.050	43.148	8928033.943	5652317.874
SP19	5.07999657	115.55102238	63.471	16.569	8651232.135	5562518.812
TB14	5.66757234	116.36248498	628.367	577.041	8740866.123	5627890.283
TG25	5.27162395	116.97538551	144.223	91.138	8809018.466	5584491.027
TW10	4.24668003	117.88026986	68.180	10.458	8910166.089	5471836.762

Geographic on the GRS80 ellipsoid; orthometric height via MyGeoid/GDM2000. **Geocentric RSO** = RSO Borneo (Hotine oblique Mercator) on GRS80 applied to the SGD2020 coordinates, false easting 8 000 000 m, false northing 5 000 000 m.

6 Caveats

- **Research & development output.** Coordinates are provisional and not sanctioned for cadastral or legal survey use.
- Tie RMS measures internal consistency of the CORS→SGD2020 fit, not absolute accuracy; the external check anchors (§2) provide an independent measure when run.
- This SGD2020 realisation is tied from the permanent CORS network and may differ from JUPEM primary control at the few-millimetre level.

Bernese GNSS Software 5.4 · RNX2SNX BPE · IGS20 (ITRF2020) + velocity + PSD · CODE multi-GNSS rapid products · provisional · SabahPOS / SLSD CORS Initiative · SPOS-DD-2026301 · generated 2026-10-31 17:32 UTC