Data Dictionary

for

Geodetic Survey Control Station Database

Version 1.2

Sep 2023

Version	Details of Change	Effective Date
1.0	Initial Release	1 Dec, 2017
1.1	Remarks of Fields Northing_m & Easting_m in Section 2 & 3 revised	10 Jul, 2020
1.2	Updating of document links and minor amendment on Remarks field in Section 1, 2 & 3	1 Oct, 2023

Content

1. Bench Mark (BM) Database

Field	Description	Allow Null	Remarks
STN_NO	Station number	NO	● 2013 Levelling Results* **2**00000 series (e.g. **200041**) ● Pre-2013 Levelling Results **1**0000 ~ **6**0000 series ● Re-valued BM Represented in decimal place Example 1: **20013.1** (1st re-valued of BM **20013**), Example 2: **20013.2** (2nd re-valued of BM **20013**) Example 3: **210136.1** (1st re-valued of BM **210136**) ** For more details, please refers to:* https://www.geodetic.gov.hk/common/data/pdf/Vertical_Control_Network_2013_FAQ_eng.pdf
LOCALITY	Location of Bench Mark	NO	
MONU_TYPE	Monument Type of Bench Mark	NO	**PICKET BOX**, **PICKET BOX-BR**, **STEEL ROD**, **STEEL BOLT**, **STEEL STAPLE**, **STAPLE**, **BRASS ROD**, **USM**, **SURVEY NAIL**, **IRON LADDER**
Northing_m	The Northing coordinates (HK1980 Grid) of Bench Mark in meter unit	NO	● Round to the nearest integer
Easting_m	The Easting coordinates (HK1980 Grid) of Bench Mark in meter unit	NO	● Round to the nearest integer

Field	Description	Allow Null	Remarks
HKPD_m	The height of Bench Mark above Hong Kong Principal Datum (HKPD) in meter unit	NO	• Round to the nearest 0.5 mm
CLA_ACURCY	Accuracy class of levelling survey	NO	For details, please refer to the document "Accuracy Standards of Control Survey (Version 2.0)" from below link: https://www.geodetic.gov.hk/common/data/Specifications/Accuracy%20Standards%20of%20Control%20Survey%20-%20Version%202.0.pdf
LEV_ACURCY	Accuracy class of levelling survey	NO	**1ST** – Bedrock Bench Mark **2ND** – 2013 Levelling Results **3RD** / **4TH** – At least one origin linked to Pre-2013 Levelling Results

2. Traverse Station Database

Field	Description	Allow Null	Remarks
STN_NO	Station number	NO	● Station's numbering system (current) ■ Main Traverse ➢ **1000** series, **4000** series, **7000** series ➢ 2 decimal place (e.g. **7044.02**) ■ Minor Traverse ➢ **2000** series, **3000** series, **5000** series, **8000** series ➢ 3 decimal place (e.g. **5061.005**) ● Station established before 1980's **TV** series: Main Traverse (e.g. **TV196.03**) **SV** series: Minor Traverse (e.g. **SV879.12**) ● Abnormal station numbers Other numbering systems used in the past (e.g. **1015.TS6**, **RRP19**, etc.)
LOCALITY	Location of station	NO	
MONU_TYPE	Type of mark	NO	**PICKET BOX**, **IRON TUBE**, **IRON SPIKE**, **CUT MARK**, **SURVEY NAIL**, **NAIL**, **BRASS PLATE**, **CROSS SCREW**, **PVC PIPE** **CONC. NAIL** : Concrete Nail **CART. CASE** : Cartridge Case **M.C.** : Mast Centre **S/S Rod** : Steel Rod **TYPE A BEACON** : Cylindrical pillar (~ 1.2m – 1.3m in height, ~ 0.3m – 0.4m diameter) **TYPE B BEACON** : Cylindrical pillar (~ 0.3m – 0.4m in height, ~ 0.3m – 0.4m

Field	Description	Allow Null	Remarks
			diameter) **TYPE C BEACON** : Conical high pillar (>-0.8m) **TYPE D BEACON** : Conical low pillar (<0.8m) **TYPE E BEACON** : Rectangular high pillar (>=0.8m) **TYPE F BEACON** : Rectangular low pillar (<0.8m) **TYPE G BEACON** : Trapezium high pillar (>=0.8m) **TYPE H BEACON** : Trapezium low pillar (<0.8m) **USM** : Urban Survey Mark **W.S.P.C.** : White Small Pole Centre
Northing_m	The Northing coordinates (HK1980 Grid) in meter unit	NO	● Round to the nearest 0.001m
Easting_m	The Easting coordinates (HK1980 Grid) in meter unit	NO	● Round to the nearest 0.001m
HKPD_m	Height above Hong Kong Principal Datum (HKPD) in meter unit	NO	● Value "**0**" was assigned for station without HKPD value ● The decimal place (at-most 0.001m) depended on the accuracy class of levelling survey
LAT_DEG	Degree of latitude (ITRF96 Epoch 1998:121)	NO	● Only available for stations were conducted by GNSS survey ● Value must be "**0**" or "**22**" ● Value "**0**" was assigned for station without using GNSS survey
LAT_MIN	Minute of latitude (ITRF96 Epoch 1998:121)	NO	● Only available for stations were conducted by GNSS survey ● Value must be integer and range between **0** and **59** ● Value "**0**" was assigned for station without using GNSS survey

Field	Description	Allow Null	Remarks
LAT_SEC	Second of latitude (ITRF96 Epoch 1998:121)	NO	• Only available for stations were conducted by GNSS survey • 5 decimal place in maximum and range between **0** and **59.99999** • Value "**0**" was assigned for station without using GNSS survey
LONG_DEG	Degree of longitude (ITRF96 Epoch 1998:121)	NO	• Only available for stations were conducted by GNSS survey • Value must be "**0**", "**113**" or "**114**" • Value "**0**" was assigned for station without using GNSS survey
LONG_MIN	Minute of longitude (ITRF96 Epoch 1998:121)	NO	• Only available for stations were conducted by GNSS survey • Value must be integer and range between **0** and **59** • Value "**0**" was assigned for station without using GNSS survey
LONG_SEC	Second of longitude (ITRF96 Epoch 1998:121)	NO	• Only available for stations were conducted by GNSS survey • 5 decimal place in maximum and range between **0** and **59.99999** Value "**0**" was assigned for station without using GNSS survey
WGS_LEVEL	Height above HKPD (ITRF96 Epoch 1998:121)	NO	• Only available for stations were conducted by GNSS survey • Round to the nearest 0.001m • Value "**0**" was assigned for station without using GNSS survey
WGS_SVY	Is the ITRF96 coordinates were measured by GNSS survey	NO	**Yes** : Station was measured by GNSS survey **No** : Station was surveyed by traditional traversing
FRAME	GNSS Reference Frame	YES	**ITRF96** : ITRF96 Epoch 1998:121 **STRE91** : Reference frame defined by the No.512 Specialist Team Royal Engineers (STRE)

Field	Description	Allow Null	Remarks
BY_TRANSFO	Is the HK1980 Grid coordinates transformed from GNSS surveyed geodetic coordinates?	NO	**Yes** : Station was measured by GNSS survey **No** : Station was surveyed by traditional traversing
ORI_TRANSF	Is the origin of traverse was measured by GNSS survey?	NO	**Yes** : The origin station of traverse was measured by GNSS survey **No** : The origin station of traverse was measured by traditional traversing
CLA_ACURCY	Accuracy class of terrestrial survey	NO	● "**N.A.**" value would be given if station was measured by GNSS survey. ● For details, please refer to the document "Accuracy Standards of Control Survey (Version 2.0)" from below link: https://www.geodetic.gov.hk/common/data/Specifications/Accuracy%20Standards%20of%20Control%20Survey%20-%20Version%202.0.pdf
GPS_ACURCY	Accuracy class of GNSS survey	YES	For details, please refer to the document "Accuracy Standards of Control Survey (Version 2.0)" from below link: https://www.geodetic.gov.hk/common/data/Specifications/Accuracy%20Standards%20of%20Control%20Survey%20-%20Version%202.0.pdf
LEV_ACURCY	Accuracy class of levelling survey	YES	For details, please refer to the document "Accuracy Standards of Control Survey (Version 2.0)" from below link: https://www.geodetic.gov.hk/common/data/Specifications/Accuracy%20Standards%20of%20Control%20Survey%20-%20Version%202.0.pdf

3. Trig. Station Database

Field	Description	Allow Null	Remarks
STN_NO	Station number	NO	● Main Trig. Station Number smaller than **100** (e.g. **76**) except **73.2**, **73.3**, and **77.1** ● Minor Trig. Station Number larger than **100** (e.g. **661**) except **73.2**, **73.3**, and **77.1**
STN_NAME	Trig. name	NO	
LOCALITY	Location of station	NO	
MONU_TYPE	Type of mark	NO	**ANGLE IRON, CUT MARK, NAIL** **CART. CASE** : Cartridge Case **TYPE A BEACON** : Cylindrical pillar (~ 1.2m – 1.3m in height, ~ 0.3m – 0.4m diameter) **TYPE B BEACON** : Cylindrical pillar (~ 0.3m – 0.4m in height, ~ 0.3m – 0.4m diameter) **TYPE C BEACON** : Conical high pillar (>-0.8m) **TYPE D BEACON** : Conical low pillar (<0.8m) **TYPE E BEACON** : Rectangular high pillar (>=0.8m) **TYPE F BEACON** : Rectangular low pillar (<0.8m) **TYPE G BEACON** : Trapezium high pillar (>=0.8m) **TYPE H BEACON** : Trapezium low pillar (<0.8m) **USM** : Urban Survey Mark
Northing_m	The Northing coordinates (HK1980 Grid) in meter unit	NO	● Round to the nearest 0.001m

Field	Description	Allow Null	Remarks
Easting_m	The Easting coordinates (HK1980 Grid) in meter unit	NO	● Round to the nearest 0.001m
HKPD_m	Height above Hong Kong Principal Datum (HKPD) in meter unit	NO	● The decimal place (at-most 0.001m) depended on the accuracy class of levelling survey
CLA_ACURCY	Accuracy class of terrestrial survey	NO	● "**N.A.**" value would be given if station was measured by GNSS survey. ● For details, please refer to the document "Accuracy Standards of Control Survey (Version 2.0)" from below link: https://www.geodetic.gov.hk/common/data/Specifications/Accuracy%20Standards%20of%20Control%20Survey%20-%20Version%202.0.pdf
LAT_DEG	Degree of latitude (ITRF96 Epoch 1998:121)	NO	● Only available for stations were conducted by GNSS survey ● Value must be "**0**" or "**22**" ● Value "**0**" was assigned for station without using GNSS survey
LAT_MIN	Minute of latitude (ITRF96 Epoch 1998:121)	NO	● Only available for stations were conducted by GNSS survey ● Value must be integer and range between **0** and **59** ● Value "**0**" was assigned for station without using GNSS survey
LAT_SEC	Second of latitude (ITRF96 Epoch 1998:121)	NO	● Only available for stations were conducted by GNSS survey ● 5 decimal place in maximum and range between **0** and **59.99999** ● Value "**0**" was assigned for station without using GNSS survey
LONG_DEG	Degree of longitude (ITRF96 Epoch 1998:121)	NO	● Only available for stations were conducted by GNSS survey ● Value must be "**0**", "**113**" or "**114**"

Field	Description	Allow Null	Remarks
			• Value "**0**" was assigned for station without using GNSS survey
LONG_MIN	Minute of longitude (ITRF96 Epoch 1998:121)	NO	• Only available for stations were conducted by GNSS survey • Value must be integer and range between **0** and **59** • Value "**0**" was assigned for station without using GNSS survey
LONG_SEC	Second of longitude (ITRF96 Epoch 1998:121)	NO	• Only available for stations were conducted by GNSS survey • 5 decimal place in maximum and range between **0** and **59.99999** • Value "**0**" was assigned for station without using GNSS survey
WGS_LEVEL	Height above HKPD (ITRF96 Epoch 1998:121)	NO	• Only available for stations were conducted by GNSS survey • Round to the nearest 0.001m • Value "**0**" was assigned for station without using GNSS survey
GPS_ACURCY	Accuracy class of GNSS survey	YES	For details, please refer to the document "Accuracy Standards of Control Survey (Version 2.0)" from below link: https://www.geodetic.gov.hk/common/data/Specifications/Accuracy%20Standards%20of%20Control%20Survey%20-%20Version%202.0.pdf
LEV_ACURCY	Accuracy class of levelling survey	YES	For details, please refer to the document "Accuracy Standards of Control Survey (Version 2.0)" from below link: https://www.geodetic.gov.hk/common/data/Specifications/Accuracy%20Standards%20of%20Control%20Survey%20-%20Version%202.0.pdf
FRAME	GNSS Reference Frame	YES	**ITRF96** : ITRF96 epoch 1998:121

Field	Description	Allow Null	Remarks
BY_TRANSFO	Is the HK1980 Grid coordinates transformed from GNSS surveyed geodetic coordinates?	NO	**Yes** : Station was measured by GNSS survey **No** : Station was measured by traditional traversing