Annex E
(normative)

ORM specifications

E.1 Introduction

This annex presents the specification of the standardized ORMs and associated RTs. If two or more object-fixed ORMs for the same object are specified, then one of the ORMs is designated as the reference ORM for that object. Table E.1 in E.2.1 lists the reference ORMs specified in this International Standard, ordered alphabetically by their label. ORM specifications are listed in tables in E.2.2 according to object categories (abstract, Earth, other planet, satellites, and Sun) and binding type (object-fixed or dynamic). Table E.2 provides a directory of these tables. Parameter values in the tables are specified by value or by reference. Parameters specified by reference use the terminology in the cited references. Those terms are enclosed in brackets ({ }). Referenced values in length units other than metres are converted to metres to specify the corresponding RT parameter. Angular values are generally expressed in the units of radian. However, to avoid a loss of precision, some angular values are expressed in the units of arc second (″) or arc degree (°), as indicated.

Abbreviations used in labels in this annex are defined in Annex F.

E.2 ORMs

E.2.1 Reference ORMs

Table E.1 — Reference ORM directory

Object name	Type	Reference ORM label
2D modelling space	Abstract	ABSTRACT_2D
3D modelling space	Abstract	ABSTRACT_3D
Adrastea	Satellite	ADRASTEA_2000
Aegaeon	Satellite	AEGAEON_2013
Amalthea	Satellite	AMALTHEA_2000
Anthe	Satellite	ANTHE_2013
Ariel	Satellite	ARIEL_1988
Atlas	Satellite	ATLAS_2013
Belinda	Satellite	BELINDA_1988
Bianca	Satellite	BIANCA_1988
Callisto	Satellite	CALLISTO_2001
Calypso	Satellite	CALYPSO_2013

Object name	Type	Reference ORM label
Charon	Satellite	CHARON_2017
Cordelia	Satellite	CORDELIA_1988
Cressida	Satellite	CRESSIDA_1988
Daphnis	Satellite	DAPHNIS_2013
Deimos	Satellite	DEIMOS_1993
Desdemona	Satellite	DESDEMONA_1988
Despina	Satellite	DESPINA_1991
Dione	Satellite	DIONE_2010
Earth	Earth	WGS_1984
Enceladus	Satellite	ENCELADUS_2016
Epimetheus	Satellite	EPIMETHEUS_2013
Eros (asteroid 433)	Planet	EROS_2002
Europa	Satellite	EUROPA_2007
Galatea	Satellite	GALATEA_1991
Ganymede	Satellite	GANYMEDE_2007
Gaspra (asteroid 951)	Planet	GASPRA_1991
Helene	Satellite	HELENE_2013
Hyperion	Satellite	HYPERION_2010
Iapetus	Satellite	IAPETUS_2010
Ida (asteroid 243)	Planet	IDA_1991
Io	Satellite	IO_1998
Janus	Satellite	JANUS_2013
Juliet	Satellite	JULIET_1988
Jupiter	Planet	JUPITER_2006
Larissa	Satellite	LARISSA_1991
Mars	Planet	MARS_2000
Mercury	Planet	MERCURY_2015
Methone	Satellite	METHONE_2013

Object name	Type	Reference ORM label
Metis	Satellite	METIS_2000
Mimas	Satellite	MIMAS_2010
Miranda	Satellite	MIRANDA_1988
Moon	Satellite	MOON_1991
Naiad	Satellite	NAIAD_1991
Neptune	Planet	NEPTUNE_1991
Oberon	Satellite	OBERON_1988
Ophelia	Satellite	OPHELIA_1988
Pallene	Satellite	PALLENE_2013
Pan	Satellite	PAN_2013
Pandora	Satellite	PANDORA_2013
Phobos	Satellite	PHOBOS_2010
Phoebe	Satellite	PHOEBE_2010
Pluto	Planet	PLUTO_2017
Polydeuces	Satellite	POLYDEUCES_2010
Portia	Satellite	PORTIA_1988
Prometheus	Satellite	PROMETHEUS_2013
Proteus	Satellite	PROTEUS_1991
Puck	Satellite	PUCK_1988
Rhea	Satellite	RHEA_2010
Rosalind	Satellite	ROSALIND_1988
Saturn	Planet	SATURN_1988
Sun	Sun	SUN_2008
Telesto	Satellite	TELESTO_2013
Tethys	Satellite	TETHYS_2010
Thalassa	Satellite	THALASSA_1991
Thebe	Satellite	THEBE_2000
Titan	Satellite	TITAN_2010

Object name	Type	Reference ORM label
Titania	Satellite	TITANIA_1988
Triton	Satellite	TRITON_1991
Umbriel	Satellite	UMBRIEL_1988
Uranus	Planet	URANUS_1988
Venus	Planet	VENUS_1991

E.2.2 Standardized ORMs

The elements of an ORM specification are defined in Table 7.10. Table E.2 is a directory of standardized ORMs organized by category of ORM and type of object. The ORM entries in each table are ordered alphabetically by their label. The deprecated ORMs are specified in Annex J. ORM specifications may include one or more RT specifications. The RT specifications associated with an ORM are specified in a corresponding table as shown in Table E.2.

Table E.2 — ORM specification directory

ORM and RT specification tables	ORM table	RT table
Abstract ORM specifications	Table E.3	Table E.4
Object-fixed ERM specifications	Table E.5	Table E.6
Dynamic ERM specifications	Table E.7	n/a
Time-fixed instances of dynamic ERM specifications	Table E.8	Table E.9
Object-fixed planet (non-Earth) ORM specifications	Table E.10	Table E.11
Dynamic planet (non-Earth) ORM specifications	Table E.12	n/a
Time-fixed instances of dynamic planet (non-Earth) ORM specifications	Table E.13	Table E.14
Object-fixed satellite ORM specifications	Table E.15	Table E.16
Time-fixed instances of dynamic satellite ORM specifications	Table E.17	Table E.18
Stellar ORM specifications	Table E.19	Table E.20
Dynamic stellar ORM specifications	Table E.21	n/a
Time-fixed instances of dynamic stellar ORM specifications	Table E.22	Table E.23

E.2.2.1 Abstract ORMs

Table E.3 — Abstract ORM specifications

ORM label	ORM code	Published name	Reference ORM	Binding information	Region	ORMT label	RD parameterization	References
ABSTRACT_2D	1	2D modelling space	This is the reference ORM for abstract 2D object-space.	none	Universal	BI_AXIS_ORIGIN_2D	n/a	none
ABSTRACT_3D	2	3D modelling space	This is the reference ORM for abstract 3D object-space.	none	Universal	TRI_PLANE	n/a	none

Table E.4 — Abstract ORM reference transformation specifications

ORM label	RT label	RT code	RT region	STT label and parameter values	Date published	References
ABSTRACT_2D	ABSTRACT_2D_IDENTITY	1	Universal	IDENTITY n/a (reference ORM)	n/a	none
ABSTRACT_3D	ABSTRACT_3D_IDENTITY	2	Universal	IDENTITY n/a (reference ORM)	n/a	none

E.2.2.2 Object-fixed ERMs

Table E.5 — Object-fixed ERM specifications

ORM label	ORM code	Published name	Reference ORM	Binding information	Region	ORMT label	RD parameterization	References
ACCRA	266	Accra	WGS_1984	1929	Ghana	OBLATE_ELLIPSOID	WAR_OFFICE-_1924	[NGA36, App. D.2, "ACC"]
ADEN_1925	300	Aden	WGS_1984	1925	Yemen	OBLATE_ELLIPSOID	CLARKE_1880	[NGA36, App. E.2, "ADN"], [EPSG, Code 1135]
ADINDAN_1991	3	Adindan	WGS_1984	1991	Burkina Faso, Cameroon, Ethiopia, Mali, Senegal, and Sudan	OBLATE_ELLIPSOID	CLARKE_1880	[NGA36, App. D.2, "ADI"]
AFGOOYE_1987	5	Afgooye	WGS_1984	1987	Somalia	OBLATE_ELLIPSOID	KRASSOVSKY-_1940	[NGA36, App. D.2, "AFG"]
AIN_EL_ABD_1970	6	Ain el Abd	WGS_1984	1970	Bahrain and Saudi Arabia	OBLATE_ELLIPSOID	INTERNATIONAL-_1924	[NGA36, App. D.3, "AIN"]
AMERICAN_SAMOA-_1962	8	American Samoa	WGS_1984	1962	American Samoa Islands	OBLATE_ELLIPSOID	CLARKE_1866	[NGA36, App. D.10, "AMA"]
AMERSFOORT	267	Amersfoort 1885/1903	WGS_1984	1903	Netherlands	OBLATE_ELLIPSOID	BESSEL_1841-_ETHIOPIA	[DIGEST, Table 6.2, "AME"]

ORM label	ORM code	Published name	Reference ORM	Binding information	Region	ORMT label	RD parameterization	References
ANNA_1_1965	9	Anna 1 (astronomic)	WGS_1984	1965	Cocos Islands	OBLATE_ELLIPSOID	AUSTRALIAN-_NATIONAL_1966	[NGA36, App. D.9, "ANO"]
ANTIGUA_1943	10	Antigua (astronomic)	WGS_1984	1943	Antigua and Leeward Islands	OBLATE_ELLIPSOID	CLARKE_1880	[NGA36, App. D.8, "AIA"]
ARC_1950	11	Arc	WGS_1984	1950	Botswana, Burundi, Democratic Republic of the Congo, Eswatini, Lesotho, Malawi, Zambia, and Zimbabwe	OBLATE_ELLIPSOID	CLARKE_1880	[NGA36, App. D.2, "ARF"]
ARC_1960	12	Arc	WGS_1984	1960	Kenya, Malawi, and Tanzania	OBLATE_ELLIPSOID	CLARKE_1880	[NGA36, App. D.2, "ARS"]
ASCENSION_1958	14	Ascension	WGS_1984	1958	Ascension Island	OBLATE_ELLIPSOID	INTERNATIONAL-_1924	[NGA36, App. D.8, "ASC"]
AUSTRALIAN_GEOD-_1966	16	Australian Geodetic	WGS_1984	1966	Australia and Tasmania	OBLATE_ELLIPSOID	AUSTRALIAN-_NATIONAL_1966	[NGA36, App. D.4, "AUA"]
AUSTRALIAN_GEOD-_1966_2012	346	Australian Geodetic	WGS_1984	2012	Australia and Tasmania	OBLATE_ELLIPSOID	AUSTRALIAN-_NATIONAL_1966	[NGA36, App. D.4, "AUA", Cycle number 1]
AUSTRALIAN_GEOD-_1984	17	Australian Geodetic	WGS_1984	1984	Australia and Tasmania	OBLATE_ELLIPSOID	AUSTRALIAN-_NATIONAL_1966	[NGA36, App. D.4, "AUG"]

ORM label	ORM code	Published name	Reference ORM	Binding information	Region	ORMT label	RD parameterization	References
AYABELLE-_LIGHTHOUSE_1991	18	Ayabelle Lighthouse	WGS_1984	1991	Djibouti	OBLATE_ELLIPSOID	CLARKE_1880	[NGA36, App. D.2, "PHA"]
AYABELLE-_LIGHTHOUSE_1991_2012	347	Ayabelle Lighthouse	WGS_1984	2012	Djibouti	OBLATE_ELLIPSOID	CLARKE_1880	[NGA36, App. D.2, "PHA", Cycle number 1]
BEACON_E_1945	19	Beacon E (Iwo Jima; astronomic)	WGS_1984	1945	Iwo Jima	OBLATE_ELLIPSOID	INTERNATIONAL-_1924	[NGA36, App. D.10, "ATF"]
BEIJING_1954	301	Beijing	WGS_1984	1954	China	OBLATE_ELLIPSOID	KRASSOVSKY-_1940	[NGA36, App. E.2, "PED"]
BEKAA_BASE-_SOUTH_END	268	Bekaa Base South End	WGS_1984	1920	Lebanon	OBLATE_ELLIPSOID	CLARKE_1880-_IGN	[DIGEST, Table 6.2, "BEK"]
BEKAA_VALLEY_1920	302	Bekaa Valley	WGS_1984	1920	Lebanon	OBLATE_ELLIPSOID	CLARKE_1880	[NGA36, App. E.2, "BVD"]
BELGIUM_1972	269	Belgium 1972 (Observatoire d'Uccle)	WGS_1984	1972	Belgium	OBLATE_ELLIPSOID	INTERNATIONAL-_1924	[DIGEST, Table 6.2, "ODU"]
BELLEVUE_IGN_1987	21	Bellevue (IGN)	WGS_1984	1987	Efate and Erromango Islands (Vanuatu)	OBLATE_ELLIPSOID	INTERNATIONAL-_1924	[NGA36, App. D.10, "IBE"]

ORM label	ORM code	Published name	Reference ORM	Binding information	Region	ORMT label	RD parameterization	References
BERMUDA_1957	22	Bermuda	WGS_1984	1957	Bermuda	OBLATE_ELLIPSOID	CLARKE_1866	[NGA36, App. D.8, "BER"]
BERNE_1898	270	Berne 1898 (Switzerland)	WGS_1984	1898	Switzerland	OBLATE_ELLIPSOID	BESSEL_1841-_ETHIOPIA	[DIGEST, Table 6.2, "BRE"]
BIOKO	303	Bioko	WGS_1984	2013	Bioko Island (Equatorial Guinea)	OBLATE_ELLIPSOID	INTERNATIONAL-_1924	[NGA36, App. D.2, "BIO"]
BISSAU_1991	24	Bissau	WGS_1984	1991	Guinea-Bissau	OBLATE_ELLIPSOID	INTERNATIONAL-_1924	[NGA36, App. D.2, "BID"]
BOGOTA_OBS_1987	25	Bogota Observatory	WGS_1984	1987	Colombia	OBLATE_ELLIPSOID	INTERNATIONAL-_1924	[NGA36, App. D.7, "BOO"]
BOGOTA_OBS_1987-_PM_BOGOTA	26	Bogota Observatory (with the Prime Meridian at Bogota)	WGS_1984	1987 The *x*-positive *xz*-half-plane contains Bogota, Colombia (Instituto Geografico Augustin Cadazzi (IGAC) determina-tion).	Colombia	OBLATE_ELLIPSOID	INTERNATIONAL-_1924	[NGA36, App. D.7, "BOO"]

ORM label	ORM code	Published name	Reference ORM	Binding information	Region	ORMT label	RD parameterization	References
BUKIT_RIMPAH_1987	27	Bukit Rimpah	WGS_1984	1987	Bangka and Belitung Islands (Indonesia)	OBLATE_ELLIPSOID	BESSEL_1841-_ETHIOPIA	[NGA36, App. E.2, "BUR"]
CAMP_AREA_1987	30	Camp Area (astronomic)	WGS_1984	1987	McMurdo Camp Area (Antarctica)	OBLATE_ELLIPSOID	INTERNATIONAL-_1924	[NGA36, App. E.2, "CAZ"]
CAMPO_INCHAUSPE-_1969	31	Campo Inchauspe	WGS_1984	1969	Argentina	OBLATE_ELLIPSOID	INTERNATIONAL-_1924	[NGA36, App. D.7, "CAI"]
CANTON_1966	32	Canton (astronomic)	WGS_1984	1966	Phoenix Islands (Kiribati)	OBLATE_ELLIPSOID	INTERNATIONAL-_1924	[NGA36, App. D.10, "CAO"]
CAPE_1987	33	Cape	WGS_1984	1987	South Africa	OBLATE_ELLIPSOID	CLARKE_1880	[NGA36, App. D.2, "CAP"]
CAPE_CANAVERAL-_1991	34	Cape Canaveral	WGS_1984	1991	Bahamas and Florida	OBLATE_ELLIPSOID	CLARKE_1866	[NGA36, App. D.6, "CAC"]
CARTHAGE_1987	35	Carthage	WGS_1984	1987	Tunisia	OBLATE_ELLIPSOID	CLARKE_1880	[NGA36, App. D.2, "CGE"]
CH1903_PLUS	271	CH1903+	WGS_1984	1903	Switzerland	OBLATE_ELLIPSOID	BESSEL_1841-_ETHIOPIA	[HELM, "CHW-7"]
CHATHAM_1971	37	Chatham (astronomic)	WGS_1984	1971	Chatham Islands (New Zealand)	OBLATE_ELLIPSOID	INTERNATIONAL-_1924	[NGA36, App. D.10, "CHI"]
CHUA_1987	38	Chua (astronomic)	WGS_1984	1987	Paraguay	OBLATE_ELLIPSOID	INTERNATIONAL-_1924	[NGA36, App. D.7, "CHU"]

ORM label	ORM code	Published name	Reference ORM	Binding information	Region	ORMT label	RD parameterization	References
CIRCUIT	304	Circuit	WGS_1984	2012	Zimbabwe	OBLATE_ELLIPSOID	CLARKE_1880	[NGA36, App. D.2, "CIR"]
COAMPS_1998	39	COAMPS™	WGS_1984	1998	Global (Earth)	SPHERE_ORIGIN	COAMPS_1998	[ERNWM, Table 1, "COAMPS"]
CONAKRY_1905	305	Conakry	WGS_1984	1905	Guinea	OBLATE_ELLIPSOID	CLARKE_1880-_IGN	[NGA36, App. E.2, "COU"]
CORREGO_ALEGRE-_1987	41	Corrego Alegre	WGS_1984	1987	Brazil	OBLATE_ELLIPSOID	INTERNATIONAL-_1924	[NGA36, App. D.7, "COA"]
CYPRUS_1935	272	Cyprus 1935	WGS_1984	1935	Cyprus	OBLATE_ELLIPSOID	CLARKE_1858	[HELM, "CYP-7"]
DABOLA_1991	43	Dabola	WGS_1984	1991	Guinea	OBLATE_ELLIPSOID	CLARKE_1880	[NGA36, App. D.2, "DAL"]
DECEPTION_1993	44	Deception	WGS_1984	1993	Deception Island (Antarctica)	OBLATE_ELLIPSOID	CLARKE_1880	[NGA36, App. D.8, "DID"]
DHDN_RAUENBERG	273	DHDN Rauenberg (Berlin, Germany)	WGS_1984	1832	Germany	OBLATE_ELLIPSOID	BESSEL_1841-_ETHIOPIA	[DIGEST, Table 6.2, "RAU"]
DJAKARTA_1987	49	Djakarta (also known as Batavia)	WGS_1984	1987	Sumatra (Indonesia)	OBLATE_ELLIPSOID	BESSEL_1841-_ETHIOPIA	[NGA36, App. D.3, "BAT"]

ORM label	ORM code	Published name	Reference ORM	Binding information	Region	ORMT label	RD parameterization	References
DJAKARTA_1987_PM-_DJAKARTA	50	Djakarta (also known as Batavia; with the Prime Meridian at Djakarta)	WGS_1984	1987 The *x*-positive *xz*-half-plane contains Djarkata, Indonesia.	Sumatra (Indonesia)	OBLATE_ELLIPSOID	BESSEL_1841-_ETHIOPIA	[NGA36, App. D.3, "BAT"]
DOS_1968	51	DOS (New Georgia Islands)	WGS_1984	1968	Gizo Island (Solomon Islands)	OBLATE_ELLIPSOID	INTERNATIONAL-_1924	[NGA36, App. D.10, "GIZ"]
DOS_71_4_1987	52	DOS 71/4 (St. Helena Island; astronomic)	WGS_1984	1987	St. Helena Island (UK)	OBLATE_ELLIPSOID	INTERNATIONAL-_1924	[NGA36, App. D.8, "SHB"]
EASTER_1967	60	Easter Island	WGS_1984	1967	Easter Island (Ecuador)	OBLATE_ELLIPSOID	INTERNATIONAL-_1924	[NGA36, App. D.10, "EAS"]
ESTONIA_1937	64	Estonia	WGS_1984	1937	Estonia	OBLATE_ELLIPSOID	BESSEL_1841-_ETHIOPIA	[NGA36, App. D.5, "EST"]
ETRF	65	ETRF	WGS_1984	1989	Europe	OBLATE_ELLIPSOID-_ORIGIN	GRS_1980	[HELM, "EUT"]
EUROPE_1950	67	European	WGS_1984	1950	Europe	OBLATE_ELLIPSOID	INTERNATIONAL-_1924	[NGA36, App. D.5, "EUR"]
EUROPE_1979	68	European	WGS_1984	1979	Europe	OBLATE_ELLIPSOID	INTERNATIONAL-_1924	[NGA36, App. D.5, "EUS"]

ORM label	ORM code	Published name	Reference ORM	Binding information	Region	ORMT label	RD parameterization	References
FAHUD_1987	69	Fahud	WGS_1984	1987	Oman	OBLATE_ELLIPSOID	CLARKE_1880	[NGA36, App. D.3, "FAH"]
FIJI_1956	306	Fiji	WGS_1984	1956	Fiji	OBLATE_ELLIPSOID	INTERNATIONAL-_1924	[NGA36, App. D.10, "FJI"]
FORT_THOMAS_1955	70	Fort Thomas	WGS_1984	1955	St. Kitts, Nevis and Leeward Islands	OBLATE_ELLIPSOID	CLARKE_1880	[NGA36, App. D.8, "FOT"]
GAN_1970	72	Gan	WGS_1984	1970	Republic of Maldives	OBLATE_ELLIPSOID	INTERNATIONAL-_1924	[NGA36, App. D.9, "GAA"]
GDA_1994	75	GDA	WGS_1984	1994	Australia	OBLATE_ELLIPSOID-_ORIGIN	GRS_1980	[HELM, "GDS"]
GEODETIC_DATUM-_1949	76	Geodetic Datum	WGS_1984	1949	New Zealand	OBLATE_ELLIPSOID	INTERNATIONAL-_1924	[NGA36, App. D.10, "GEO"]
GGRS87	274	GGRS 1987	WGS_1984	1987	Greece	OBLATE_ELLIPSOID	GRS_1980	[DIGEST, Table 6.2, "GRX"]
GRACIOSA_BASE-_SW_1948	89	Graciosa Base SW	WGS_1984	1948	Faial, Graciosa, Pico, Sao Jorge and Terceira Islands (Central Azores, Portugal))	OBLATE_ELLIPSOID	INTERNATIONAL-_1924	[NGA36, App. D.8, "GRA"]

ORM label	ORM code	Published name	Reference ORM	Binding information	Region	ORMT label	RD parameterization	References
GUAM_1963	90	Guam	WGS_1984	1963	Guam	OBLATE_ELLIPSOID	CLARKE_1866	[NGA36, App. D.10, "GUA"]
GUNONG_SEGARA-_1987	91	Gunung Segara	WGS_1984	1987	Kalimantan Island (Indonesia)	OBLATE_ELLIPSOID	BESSEL_1841-_ETHIOPIA	[NGA36, App. E.2, "GSE"]
GUX_1_1987	92	GUX1 (astronomic)	WGS_1984	1987	Guadalcanal Island (Solomon Islands)	OBLATE_ELLIPSOID	INTERNATIONAL-_1924	[NGA36, App. D.10, "DOB"]
HARTEBEESTHOEK-_1994	275	Hartebees-thoek 1994	WGS_1984	1994	South Africa	OBLATE_ELLIPSOID	GRS_1980	[EPSG, Code 6148]
HELSINKI_KALLIO-_CHURCH	276	Helsinki Kallio Church	WGS_1984	2001	Finland	OBLATE_ELLIPSOID	INTERNATIONAL-_1924	[HELM, "HEL-7"]
HERAT_NORTH_1987	98	Herat North	WGS_1984	1987	Afghanistan	OBLATE_ELLIPSOID	INTERNATIONAL-_1924	[NGA36, App. E.2, "HEN"]
HERMANNSKOGEL-_1871	99	Hermanns-kogel	WGS_1984	1871	Yugoslavia (prior to 1990), Bosnia and Herzegovina, Croatia, Serbia, and Slovenia	OBLATE_ELLIPSOID	BESSEL_1841-_ETHIOPIA	[NGA36, App. E.2, "HER"]
HJORSEY_1955	100	Hjorsey	WGS_1984	1955	Iceland	OBLATE_ELLIPSOID	INTERNATIONAL-_1924	[NGA36, App. D.5, "HJO"]

ORM label	ORM code	Published name	Reference ORM	Binding information	Region	ORMT label	RD parameterization	References
HONG_KONG_1963	101	Hong Kong	WGS_1984	1963	Hong Kong	OBLATE_ELLIPSOID	INTERNATIONAL-_1924	[NGA36, App. D.3, "HKD"]
HONG_KONG_1980	277	Hong Kong 1980	WGS_1984	1980	Hong Kong	OBLATE_ELLIPSOID	INTERNATIONAL-_1924	[EPSG, Code 6611]
HU_TZU_SHAN_1991	102	Hu-Tzu-Shan	WGS_1984	1991	Taiwan	OBLATE_ELLIPSOID	INTERNATIONAL-_1924	[NGA36, App. D.3, "HTN"]
HUNGARIAN_DATUM-_1972	278	Hungarian Datum 1972	WGS_1984	1972	Hungary	OBLATE_ELLIPSOID	GRS_1967	[DIGEST, Table 6.2, "HUY"]
INDIAN_1916	105	Indian	WGS_1984	1991	Bangladesh	OBLATE_ELLIPSOID	EVEREST_ADJ-_1937	[NGA36, App. D.3, "IND-B"]
INDIAN_1954	106	Indian	WGS_1984	1954	Thailand	OBLATE_ELLIPSOID	EVEREST_ADJ-_1937	[NGA36, App. D.3, "INF"]
INDIAN_1956	107	Indian	WGS_1984	1991	India and Nepal	OBLATE_ELLIPSOID	EVEREST_1956	[NGA36, App. D.3, "IND-I"]
INDIAN_1960	108	Indian	WGS_1984	1960	Vietnam	OBLATE_ELLIPSOID	EVEREST_ADJ-_1937	[NGA36, App. D.3, "ING"]
INDIAN_1962	109	Indian	WGS_1984	1962	Pakistan	OBLATE_ELLIPSOID	EVEREST-_REVISED_1962	[NGA36, App. E.2, "IND-P"]
INDIAN_1975	110	Indian	WGS_1984	1975	Thailand	OBLATE_ELLIPSOID	EVEREST_ADJ-_1937	[NGA36, App. D.3, "INH"]

ORM label	ORM code	Published name	Reference ORM	Binding information	Region	ORMT label	RD parameterization	References
INDONESIAN_1974	111	Indonesian	WGS_1984	1974	Indonesia	OBLATE_ELLIPSOID	INDONESIAN-_1974	[NGA36, App. D.3, "IDN"]
IRAQ_KUWAIT-_BOUNDARY_1992	279	Iraq-Kuwait Boundary Datum 1992	WGS_1984	1992	Iraq and Kuwait	OBLATE_ELLIPSOID	GRS_1980	[EPSG, Code 6667]
IRELAND_1965	113	Ireland 1965	WGS_1984	1965	Ireland	OBLATE_ELLIPSOID	MODIFIED_AIRY-_1849	[NGA36, App. D.5, "IRL"]
ISTS_061_1968	114	International Satellite Triangulation Station (ISTS) 061 (astronomic)	WGS_1984	1968	South Georgia Island (UK)	OBLATE_ELLIPSOID	INTERNATIONAL-_1924	[NGA36, App. D.8, "ISG"]
ISTS_073_1969	115	International Satellite Triangulation Station (ISTS) 073 (astronomic)	WGS_1984	1969	Diego Garcia (UK)	OBLATE_ELLIPSOID	INTERNATIONAL-_1924	[NGA36, App. D.9, "IST"]

ORM label	ORM code	Published name	Reference ORM	Binding information	Region	ORMT label	RD parameterization	References
ITRF	280	International Terrestrial Reference Frame	WGS_1984	2008 Representa-tive of realizations 1992, 1993, 1994, 1996, 1997, 2000, 2005, and 2008.	Global (Earth)	OBLATE_ELLIPSOID	GRS_1980	[ITRF], [IERS36]
JGD_2000	117	Japanese Geodetic Datum 2000 (JGD2000)	WGS_1984	2000	Japan	OBLATE_ELLIPSOID-_ORIGIN	GRS_1980	[ISOGR, Identifier 111]
JGD_2011	299	Japanese Geodetic Datum 2011 (JGD2011)	WGS_1984	2011	Japan	OBLATE_ELLIPSOID-_ORIGIN	GRS_1980	[ISOGR, Identifier 138
JOHNSTON_1961	118	Johnston	WGS_1984	1961	Johnston Island (US)	OBLATE_ELLIPSOID	INTERNATIONAL-_1924	[NGA36, App. D.10, "JOH"]
KANDAWALA_1987	127	Kandawala	WGS_1984	1987	Sri Lanka	OBLATE_ELLIPSOID	EVEREST_ADJ-_1937	[NGA36, App. D.3, "KAN"]
KERGUELEN_1949	128	Kerguelen	WGS_1984	1949	Kerguelen Island (France)	OBLATE_ELLIPSOID	INTERNATIONAL-_1924	[NGA36, App. D.9, "KEG"]
KERTAU_1948	129	Kertau	WGS_1984	1948	West Malaysia and Singapore	OBLATE_ELLIPSOID	EVEREST_1948	[NGA36, App. D.3, "KEA"]

ORM label	ORM code	Published name	Reference ORM	Binding information	Region	ORMT label	RD parameterization	References
KKJ	281	KKJ	WGS_1984	1966	Finland	OBLATE_ELLIPSOID	INTERNATIONAL-_1924	[DIGEST, Table 6.2, "KKX"]
KOREAN_GEODETIC-_1995	130	Korean Geodetic System	WGS_1984	1995	South Korea	OBLATE_ELLIPSOID	WGS_1984	[NGA36, App. D.3, "KGS"]
KUSAIE_1951	131	Kusaie 1951 (astronomic)	WGS_1984	1951	Caroline Islands (Federated States of Micronesia)	OBLATE_ELLIPSOID	INTERNATIONAL-_1924	[NGA36, App. D.10, "KUS"]
LC5_1961	133	LC5 (astronomic)	WGS_1984	1961	Cayman Brac Island (Cayman Islands)	OBLATE_ELLIPSOID	CLARKE_1866	[NGA36, App. D.8, "LCF"]
LEIGON_1991	134	Leigon	WGS_1984	1991	Ghana	OBLATE_ELLIPSOID	CLARKE_1880	[NGA36, App. D.2, "LEH"]
LIBERIA_1964	135	Liberia	WGS_1984	1964	Liberia	OBLATE_ELLIPSOID	CLARKE_1880	[NGA36, App. D.2, "LIB"]
LISBON_D73	282	Lisbon (Castelo di Sao Jorge) D73	WGS_1984	1937	Portugal	OBLATE_ELLIPSOID	INTERNATIONAL-_1924	[NGA36, App. D.5, "LIS"]
LKS94	283	Lithuania 1994 (ETRS89)	WGS_1984	1994	Lithuania	OBLATE_ELLIPSOID	GRS_1980	[EPSG, Code 6126]

ORM label	ORM code	Published name	Reference ORM	Binding information	Region	ORMT label	RD parameterization	References
LUXEMBOURG_NT	284	Luxembourg NT	WGS_1984	2006	Luxembourg	OBLATE_ELLIPSOID	INTERNATIONAL-_1924	[HELM, ""]
LUZON_1987	136	Luzon	WGS_1984	1987	Philippines	OBLATE_ELLIPSOID	CLARKE_1866	[NGA36, App. D.10, "LUZ"]
M_PORALOKO_1991	137	M'Poraloko	WGS_1984	1991	Gabon	OBLATE_ELLIPSOID	CLARKE_1880	[NGA36, App. D.2, "MPO"]
MAHE_1971	138	Mahe	WGS_1984	1971	Mahe Island (Seychelles)	OBLATE_ELLIPSOID	CLARKE_1880	[NGA36, App. D.9, "MIK"]
MARCUS_STATION-_1952	139	Marcus Station (astronomic)	WGS_1984	1952	Marcus Island (Japan)	OBLATE_ELLIPSOID	INTERNATIONAL-_1924	[NGA36, App. D.10, "ASQ"]
MASS_1999	143	Mesoscale Atmospheric Simulation System (MASS)	WGS_1984	1999	Global (Earth)	SPHERE_ORIGIN	MASS_1999	[ERNWM, Table 1, "MASS"]
MASSAWA_1987	144	Massawa	WGS_1984	1987	Eritrea and Ethiopia	OBLATE_ELLIPSOID	BESSEL_1841-_ETHIOPIA	[NGA36, App. D.2, "MAS"]
MAYOTTE_COMBANI-_1950	307	Mayotte Combani	WGS_1984	1950	Mayotte (France)	OBLATE_ELLIPSOID	INTERNATIONAL-_1924	[NGA36, App. E.2, "MCX"], [EPSG, Code 6632]

ORM label	ORM code	Published name	Reference ORM	Binding information	Region	ORMT label	RD parameterization	References
MERCHICH_1987	145	Merchich	WGS_1984	1987	Morocco	OBLATE_ELLIPSOID	CLARKE_1880	[NGA36, App. D.2, "MER"]
MGI_DATUM-_HERMANNSKOGEL	285	MGI Datum/Her-mannskogel	WGS_1984	1901	Austria	OBLATE_ELLIPSOID	BESSEL_1841-_ETHIOPIA	[DIGEST, Table 6.2, "HER"]
MIDWAY_1961	149	Midway 1961 (astronomic)	WGS_1984	1961	Midway Islands (US)	OBLATE_ELLIPSOID	INTERNATIONAL-_1924	[NGA36, App. D.10, "MID"]
MINNA_1991	151	Minna	WGS_1984	1991	Cameroon and Nigeria	OBLATE_ELLIPSOID	CLARKE_1880	[NGA36, App. D.2, "MIN"]
MM5_1997	153	MM5 (AFWA)	WGS_1984	1997	Global (Earth)	SPHERE_ORIGIN	MM5_1997	[ERNWM, Table 1, "MM5 (AFWA)"]
MODTRAN-_MIDLATITUDE_N-_1989	154	MODTRAN	WGS_1984	1989	Northern midlatitude regions (Earth)	SPHERE_ORIGIN	MODTRAN-_MIDLATITUDE-_1989	[ERNWM, Table 1, "MODTRAD, Midlatitude"]
MODTRAN-_MIDLATITUDE_S-_1989	155	MODTRAN	WGS_1984	1989	Southern midlatitude regions (Earth)	SPHERE_ORIGIN	MODTRAN-_MIDLATITUDE-_1989	[ERNWM, Table 1, "MODTRAD, Midlatitude"]
MODTRAN-_SUBARCTIC_N_1989	156	MODTRAN	WGS_1984	1989	Northern subarctic regions (Earth)	SPHERE_ORIGIN	MODTRAN-_SUBARCTIC-_1989	[ERNWM, Table 1, "MODTRAN, Subarctic"]

ORM label	ORM code	Published name	Reference ORM	Binding information	Region	ORMT label	RD parameterization	References
MODTRAN-_SUBARCTIC_S_1989	157	MODTRAN	WGS_1984	1989	Southern subarctic regions (Earth)	SPHERE_ORIGIN	MODTRAN-_SUBARCTIC-_1989	[ERNWM, Table 1, "MODTRAN, Subarctic"]
MODTRAN-_TROPICAL_1989	158	MODTRAN	WGS_1984	1989	Tropical regions (Earth)	SPHERE_ORIGIN	MODTRAN-_TROPICAL_1989	[ERNWM, Table 1, "MODTRAN, Tropical"]
MONTSERRAT_1958	159	Montserrat (astronomic)	WGS_1984	1958	Montserrat and Leeward Islands (UK)	OBLATE_ELLIPSOID	CLARKE_1880	[NGA36, App. D.8, "ASM"]
MULTIGEN_FLAT-_EARTH_1989	161	Multigen flat Earth	WGS_1984	1989	Global (Earth)	SPHERE_ORIGIN	MULTIGEN_FLAT-_EARTH_1989	[MFCG]
N_AM_1927	162	North American	WGS_1984	1927	North America	OBLATE_ELLIPSOID	CLARKE_1866	[NGA36, App. D.6, "NAS"]
N_AM_1983	163	North American	WGS_1984	1983	North America	OBLATE_ELLIPSOID	GRS_1980	[NGA36, App. D.6, "NAR"], [NAD83]
N_SAHARA_1959	164	North Sahara	WGS_1984	1959	Algeria	OBLATE_ELLIPSOID	CLARKE_1880	[NGA36, App. D.2, "NSD"]
NAHRWAN_1987	165	Nahrwan	WGS_1984	1987	Oman, Saudi Arabia, and the United Arab Emirates	OBLATE_ELLIPSOID	CLARKE_1880	[NGA36, App. D.3, "NAH"]

ORM label	ORM code	Published name	Reference ORM	Binding information	Region	ORMT label	RD parameterization	References
NAPARIMA_1991	167	Naparima, British West Indies (BWI)	WGS_1984	1991	Trinidad and Tobago	OBLATE_ELLIPSOID	INTERNATIONAL-_1924	[NGA36, App. D.8, "NAP"]
NGO_1948	286	NGO 1948	WGS_1984	1948	Norway	OBLATE_ELLIPSOID	BESSEL-_MODIFIED	[HELM, "NGO-7"]
NOGAPS_1988	171	NOGAPS	WGS_1984	1988	Global (Earth)	SPHERE_ORIGIN	NOGAPS_1988	[ERNWM, Table 1, "NOGAPS"]
NTF_1896	172	NTF	WGS_1984	1896	France	OBLATE_ELLIPSOID	CLARKE_1880-_IGN	[NGA36, App. E.2, "NFR"]
NTF_1896_PM_PARIS	173	NTF (with the Prime Meridian at Paris)	WGS_1984	1896 The *x*-positive *xz*-half-plane contains Paris, France (IGN 1936 determina-tion).	France	OBLATE_ELLIPSOID	CLARKE_1880-_IGN	[NGA36, App. E.2, "NFR"]
OBSERV_METEORO-_1939	175	Observatorio Meteorologico	WGS_1984	1939	Corvo and Flores Islands (Azores, Portugal)	OBLATE_ELLIPSOID	INTERNATIONAL-_1924	[NGA36, App. D.8, "FLO"]
OBSERV_CAMPOS-_RODRIGUES_1907	287	Observatório Campos Rodrigues	WGS_1984	1907	Mozambique South	OBLATE_ELLIPSOID	CLARKE_1866	[NGA36, App. D.2, "CPR"]

ORM label	ORM code	Published name	Reference ORM	Binding information	Region	ORMT label	RD parameterization	References
OCOTEPEQUE_1935	308	Ocotepeque	WGS_1984	1935	Costa Rica	OBLATE_ELLIPSOID	CLARKE_1866	[NGA36, App. E.2, "OCE"], [EPSG, Code 5461]
OLD_EGYPTIAN_1907	176	Old Egyptian	WGS_1984	1907	Egypt	OBLATE_ELLIPSOID	HELMERT_1906	[NGA36, App. D.2, "OEG"]
OLD_HAWAIIAN-_CLARKE_1987	177	Old Hawaiian (Clarke)	WGS_1984	1987	Hawaiian Islands	OBLATE_ELLIPSOID	CLARKE_1866	[NGA36, App. D.10, "OHA"]
OLD_HAWAIIAN-_INT_1987	178	Old Hawaiian (International)	WGS_1984	1987	Hawaiian Islands	OBLATE_ELLIPSOID	INTERNATIONAL-_1924	[NGA36, App. D.10, "OHI"]
OSGB_1936	180	Ordnance Survey of Great Britain	WGS_1984	1936	Great Britain	OBLATE_ELLIPSOID	AIRY_1830	[NGA36, App. D.5, "OGB"]
PALESTINE_1928	288	Palestine 1928	WGS_1984	1928	Israel	OBLATE_ELLIPSOID	CLARKE_1880-_PALESTINE	[DIGEST, Table 6.2, "PAL"]
PICO_DE_LAS-_NIEVES_1987	185	Pico de las Nieves	WGS_1984	1987	Canary Islands (Spain)	OBLATE_ELLIPSOID	INTERNATIONAL-_1924	[NGA36, App. D.8, "PLN"]
PITCAIRN_1967	186	Pitcairn (astronomic)	WGS_1984	1967	Pitcairn Island (UK)	OBLATE_ELLIPSOID	INTERNATIONAL-_1924	[NGA36, App. D.10, "PIT"]
POINT_58_1991	189	Point 58	WGS_1984	1991	Burkina Faso and Niger	OBLATE_ELLIPSOID	CLARKE_1880	[NGA36, App. D.2, "PTB"]

ORM label	ORM code	Published name	Reference ORM	Binding information	Region	ORMT label	RD parameterization	References
POINTE_NOIRE_1948	190	Pointe Noire	WGS_1984	1948	Congo	OBLATE_ELLIPSOID	CLARKE_1880	[NGA36, App. D.2, "PTN"]
PORTO_SANTO_1936	192	Porto Santo	WGS_1984	1936	Porto Santo and Madeira Islands (Portugal)	OBLATE_ELLIPSOID	INTERNATIONAL-_1924	[NGA36, App. D.8, "POS"]
PROV_S_AM_1956	195	Provisional South American	WGS_1984	1956	South America	OBLATE_ELLIPSOID	INTERNATIONAL-_1924	[NGA36, App. D.7, "PRP"]
PROV_S_CHILEAN-_1963	196	Provisional South Chilean (Hito XVIII)	WGS_1984	1963	South Chile	OBLATE_ELLIPSOID	INTERNATIONAL-_1924	[NGA36, App. D.7, "HIT"]
PUERTO_RICO_1987	198	Puerto Rico	WGS_1984	1987	Puerto Rico and Virgin Islands (US)	OBLATE_ELLIPSOID	CLARKE_1866	[NGA36, App. D.8, "PUR"]
PULKOVO_1942	199	Pulkovo	WGS_1984	1942	Russia	OBLATE_ELLIPSOID	KRASSOVSKY-_1940	[NGA36, App. E.2, "PUK"]
PZ90_GLONASS	289	Soviet Geodetic System 1990	WGS_1984	1990	Russia	OBLATE_ELLIPSOID	SOVIET-_GEODETIC_1990	[DIGEST, Table 6.2, "SGB"]
QATAR_NATIONAL-_1974	200	Qatar National	WGS_1984	1974	Qatar	OBLATE_ELLIPSOID	INTERNATIONAL-_1924	[NGA36, App. D.3, "QAT"]
QATAR_NATIONAL-_1995	290	Qatar National Datum 1995	WGS_1984	1995	Qatar	OBLATE_ELLIPSOID	INTERNATIONAL-_1924	[EPSG, Code 6614]

ORM label	ORM code	Published name	Reference ORM	Binding information	Region	ORMT label	RD parameterization	References
QORNOQ_1987	201	Qornoq	WGS_1984	1987	South Greenland	OBLATE_ELLIPSOID	INTERNATIONAL-_1924	[NGA36, App. D.8, "QUO"]
REUNION_1947	202	Reunion	WGS_1984	1947	Mascarene Islands (Republic of Mauritius and Reunion)	OBLATE_ELLIPSOID	INTERNATIONAL-_1924	[NGA36, App. D.9, "REU"]
RGF_1993	203	Reseau Geodesique Francais	WGS_1984	1993	France	OBLATE_ELLIPSOID	GRS_1980	[RGF]
ROME_1940	205	Rome (also known as Monte Mario)	WGS_1984	1940	Italy mainland, Sardinia, and Sicily	OBLATE_ELLIPSOID	INTERNATIONAL-_1924	[NGA36, App. D.5, "MOD"]
ROME_1940_PM-_ROME	206	Rome (also known as Monte Mario) (with the Prime Meridian at Rome)	WGS_1984	1940 The *x*-positive *xz*-half-plane contains Rome, Italy.	Italy mainland, Sardinia, and Sicily	OBLATE_ELLIPSOID	INTERNATIONAL-_1924	[NGA36, App. D.5, "MOD"]
RT90	291	RT90, Stockholm, Sweden	WGS_1984	1990	Sweden	OBLATE_ELLIPSOID	BESSEL_1841-_ETHIOPIA	[DIGEST, Table 6.2, "RTS"]
S_AM_1969	208	South American	WGS_1984	1969	South America	OBLATE_ELLIPSOID	SOUTH-_AMERICAN_1969	[NGA36, App. D.7, "SAN"]

ORM label	ORM code	Published name	Reference ORM	Binding information	Region	ORMT label	RD parameterization	References
S_ASIA_1987	209	South Asia	WGS_1984	1987	Singapore	OBLATE_ELLIPSOID	MODIFIED-_FISCHER_1960	[NGA36, App. D.3, "SOA"]
S_JTSK_1993	210	S-JTSK	WGS_1984	1993	Czechia and Slovakia	OBLATE_ELLIPSOID	BESSEL_1841-_ETHIOPIA	[NGA36, App. D.5, "CCD"]
S42_PULKOVO	211	S-42 (Pulkovo)	WGS_1984	1942	Eastern Europe	OBLATE_ELLIPSOID	KRASSOVSKY-_1940	[NGA36, App. D.5, "SPK"]
SANTO_DOS_1965	212	Santo (DOS)	WGS_1984	1965	Espirito Santo Island (Vanuatu)	OBLATE_ELLIPSOID	INTERNATIONAL-_1924	[NGA36, App. D.10, "SAE"]
SAO_BRAZ_1987	213	Sao Braz	WGS_1984	1987	Sao Miguel and Santa Maria Islands (Azores, Portugal)	OBLATE_ELLIPSOID	INTERNATIONAL-_1924	[NGA36, App. D.8, "SAO"]
SAPPER_HILL_1943	214	Sapper Hill	WGS_1984	1943	East Falkland Islands	OBLATE_ELLIPSOID	INTERNATIONAL-_1924	[NGA36, App. D.8, "SAP"]
SAPPER_HILL_1943-_ADJ_2000	292	Sapper Hill 1943 (adjusted 2000)	WGS_1984	2000	Falkland Islands	OBLATE_ELLIPSOID	INTERNATIONAL-_1924	[DIGEST, Table 6.2, "SAP"]
SCHWARZECK_1991	218	Schwarzeck	WGS_1984	1991	Namibia	OBLATE_ELLIPSOID	BESSEL_1841-_NAMIBIA	[NGA36, App. D.2, "SCK"]

ORM label	ORM code	Published name	Reference ORM	Binding information	Region	ORMT label	RD parameterization	References
SELVAGEM_GRANDE-_1938	219	Selvagem Grande	WGS_1984	1938	Salvage Islands, aka Selvagens or; Savage Islands (Portugal)	OBLATE_ELLIPSOID	INTERNATIONAL-_1924	[NGA36, App. D.8, "SGM"]
SIERRA_LEONE_1960	220	Sierra Leone	WGS_1984	1960	Sierra Leone	OBLATE_ELLIPSOID	CLARKE_1880	[NGA36, App. D.2, "SRL"]
SIRGAS_2000	221	SIRGAS	WGS_1984	2000	South America	OBLATE_ELLIPSOID-_ORIGIN	GRS_1980	[NGA36, App. D.7, "SIR"]
SOUTH_EAST-_ISLAND	293	South East Island	WGS_1984	1943	Seychelles	OBLATE_ELLIPSOID	CLARKE_1880	[NGA36, App. D.9, "SEI"]
SOVIET_GEODETIC-_SYSTEM_1985	294	Soviet Geodetic System 1985	WGS_1984	1985	Russia	OBLATE_ELLIPSOID	SOVIET-_GEODETIC_1985	[DIGEST, Table 6.2, "SGA"]
ST_PIERRE-_MIQUELON	309	St. Pierre et Miquelon	WGS_1984	1950	Saint Pierre and Miquelon (France)	OBLATE_ELLIPSOID	CLARKE_1866	[NGA36, App. E.2, "SPX"]
TANANARIVE_OBS-_1925	223	Tananarive Observatory	WGS_1984	1925	Madagascar	OBLATE_ELLIPSOID	INTERNATIONAL-_1924	[NGA36, App. D.2, "TAN"]

ORM label	ORM code	Published name	Reference ORM	Binding information	Region	ORMT label	RD parameterization	References
TANANARIVE_OBS-_1925_PM_PARIS	224	Tananarive Observatory (with the Prime Meridian at Paris)	WGS_1984	1925 The *x*-positive *xz*-half-plane contains Paris, France (IGN 1936 determina-tion).	Madagascar	OBLATE_ELLIPSOID	INTERNATIONAL-_1924	[NGA36, App. D.2, "TAN"]
TERN_1961	226	Tern (astronomic)	WGS_1984	1961	Tern Island (French Frigate Shoals, Hawaiian Islands)	OBLATE_ELLIPSOID	INTERNATIONAL-_1924	[NGA36, App. D.10, "TRN"]
TETE	295	Tete	WGS_1984	1960	Mozambique	OBLATE_ELLIPSOID	CLARKE_1866	[NGA36, App. D.2, "TEC"]
TIMBALAI_1948_ADJ-_1968_BESSEL	296	Timbalai 1968 adjustment of 1948 with Bessel ellipsoid	WGS_1984	1968	Brunei and East Malaysia	OBLATE_ELLIPSOID	BESSEL_1841-_ETHIOPIA	[HELM, "TIM-7"]
TIMBALAI_1948_ADJ-_1968_EVEREST	297	Timbalai 1968 adjustment of 1948 with Everest ellipsoid	WGS_1984	1968	Brunei and East Malaysia	OBLATE_ELLIPSOID	EVEREST-_BRUNEI_1967	[NGA36, App. D.3, "TIN"] "
TIMBALAI_BESSEL-_1948	298	Timbalai (Bessel)	WGS_1984	1948	Brunei and East Malaysia	OBLATE_ELLIPSOID	BESSEL_1841-_ETHIOPIA	[HELM, "TIV-7"]

ORM label	ORM code	Published name	Reference ORM	Binding information	Region	ORMT label	RD parameterization	References
TIMBALAI_EVEREST-_1948	230	Timbalai (Everest)	WGS_1984	1948	Brunei and East Malaysia (Sabah and Sarawak)	OBLATE_ELLIPSOID	EVEREST-_BRUNEI_1967	[NGA36, App. D.3, "TIL"]
TOKYO_1991	233	Tokyo	WGS_1984	1991	Japan, Korea, and Okinawa	OBLATE_ELLIPSOID	BESSEL_1841-_ETHIOPIA	[NGA36, App. D.3, "TOY"]
TRISTAN_1968	234	Tristan (astronomic)	WGS_1984	1968	Tristan da Cunha (UK)	OBLATE_ELLIPSOID	INTERNATIONAL-_1924	[NGA36, App. D.8, "TDC"]
VITI_LEVU_1916	242	Viti Levu	WGS_1984	1916	Viti Levu Island (Fiji Islands)	OBLATE_ELLIPSOID	CLARKE_1880	[NGA36, App. D.10, "MVS"]
VOIROL_1874	243	Voirol	WGS_1984	1874	Algeria and Tunisia	OBLATE_ELLIPSOID	CLARKE_1880	[NGA36, App. E.2, "VOI"]
VOIROL_1874_PM-_PARIS	244	Voirol (with the Prime Meridian at Paris)	WGS_1984	1874 The *x*-positive *xz*-half-plane contains Paris, France (IGN 1936 determina-tion).	Algeria and Tunisia	OBLATE_ELLIPSOID	CLARKE_1880	[NGA36, App. E.2, "VOI"]
VOIROL_1960	245	Voirol - Revised	WGS_1984	1960	Algeria	OBLATE_ELLIPSOID	CLARKE_1880	[NGA36, App. D.2, "VOR"]

ORM label	ORM code	Published name	Reference ORM	Binding information	Region	ORMT label	RD parameterization	References
VOIROL_1960_PM-_PARIS	246	Voirol - Revised (with the Prime Meridian at Paris)	WGS_1984	1960 The *x*-positive *xz*-half-plane contains Paris, France (IGN 1936 determina-tion).	Algeria	OBLATE_ELLIPSOID	CLARKE_1880	[NGA36, App. D.2, "VOR"]
WAKE_1952	247	Wake (astronomic)	WGS_1984	1952	Wake Atoll (US minor outlying islands)	OBLATE_ELLIPSOID	INTERNATIONAL-_1924	[NGA36, App. D.10, "WAK"]
WAKE_ENIWETOK-_1960	248	Wake-Eniwetok	WGS_1984	1960	Marshall Islands	OBLATE_ELLIPSOID	HOUGH_1960	[NGA36, App. D.10, "ENW"]
WGS_1972	249	World Geodetic System	WGS_1984	1972	Global (Earth)	OBLATE_ELLIPSOID-_ORIGIN	WGS_1972	[WGS72]

ORM label	ORM code	Published name	Reference ORM	Binding information	Region	ORMT label	RD parameterization	References
WGS_1984	250	World Geodetic System	This is the reference ORM for Earth.	1984 ellipsoid centred at the Earth centre of mass, *z*-axis points to the IERS reference pole, the *x*-axis points to the IERS reference meridian (Greenwich meridian).	Global (Earth)	OBLATE_ELLIPSOID-_ORIGIN	WGS_1984	[NGA36]
YACARE_1987	251	Yacare	WGS_1984	1987	Uruguay	OBLATE_ELLIPSOID	INTERNATIONAL-_1924	[NGA36, App. E.2, "YAC"]
ZANDERIJ_1987	252	Zanderij	WGS_1984	1987	Suriname	OBLATE_ELLIPSOID	INTERNATIONAL-_1924	[NGA36, App. D.7, "ZAN"]

NOTE 1: In Table E.6, when two references appear in the References element of an RT specification, the second reference, [GEOTRANS] or [EPSG], is the reference for the latitude and longitude values in the RT region element. The first reference listed is the reference for all other elements of such an RT specification, including the region name(s) in the RT region element. For non-Greenwich prime meridian RT specifications, the RT region longitude values are offset by ω_3, when applicable.

NOTE 2: For non-Greenwich prime meridian RT specifications in Table E.6, the RT parameters value, ω_3, is specified by this International Standard.

NOTE 3: In Table E.6, the phrase "Cycle number:" followed by an integer is appended to the References element of an RT specification to identify the non-zero cycle number in the reference from which the STT parameter values were obtained. When this phrase does not appear in the References element, cycle number zero is intended.

Table E.6 — Object-fixed ERM reference transformation specifications

ORM label	RT label	RT code	RT region	STT label and parameter values	Date published	References
ACCRA	ACCRA_GHANA_3	357	Ghana; +4° ≤ φ ≤ +13°; -4° ≤ λ ≤ +3°	TRANSLATE Δx = -170, Δy =-33, Δz = 326.	2012	[NGA36, App. D.2,, "ACC"], [GEOTRANS, "ACC"]
ADEN_1925	ADEN_1925_YEMEN	420	Yemen; +12° ≤ φ ≤ +19°; +42° ≤ λ ≤ +47°	TRANSLATE Δx = -24, Δy = -203, Δz = 268.	2012	[NGA36, App. E.2, "ADN"], [GEOTRANS, "ADN"]
ADINDAN_1991	ADINDAN_1991- _BURKINA_FASO	3	Burkina Faso; +4° ≤ φ ≤ +22°; -12° ≤ λ ≤ +8°	TRANSLATE Δx = -118 : σx = 25, Δy = -14 : σy = 25, Δz = 218 : σz = 25.	1991	[NGA36, App. D.2, "ADI-E"], [GEOTRANS, "ADI-E"]
	ADINDAN_1991_CAMEROON	4	Cameroon; -4° ≤ φ ≤ +19°; +3° ≤ λ ≤ +23°	TRANSLATE Δx = -134 : σx = 25, Δy = -2 : σy = 25, Δz = 210 : σz = 25.	1991	[NGA36, App. D.2, "ADI-F"], [GEOTRANS, "ADI-F"]

ORM label	RT label	RT code	RT region	STT label and parameter values	Date published	References
	ADINDAN_1991_ETHIOPIA	5	Ethiopia; -3° ≤ φ ≤ +25°; +26° ≤ λ ≤ +50°	TRANSLATE Δx = -165 : σx = 3, Δy = -11 : σy = 3, Δz = 206 : σz = 3.	1991	[NGA36, App. D.2, "ADI-A"], [GEOTRANS, "ADI-A"]
	ADINDAN_1991_MALI	6	Mali; +3° ≤ φ ≤ +31°; -20° ≤ λ ≤ +11°	TRANSLATE Δx = -123 : σx = 25, Δy = -20 : σy = 25, Δz = 220 : σz = 25.	1991	[NGA36, App. D.2, "ADI-C"], [GEOTRANS, "ADI-C"]
	ADINDAN_1991- _MEAN_SOLUTION	7	Mean Solution (Ethiopia and Sudan); -5° ≤ φ ≤ +31°; +15° ≤ λ ≤ +55°	TRANSLATE Δx = -166 : σx = 5, Δy = -15 : σy = 5, Δz = 204 : σz = 3.	1991	[NGA36, App. D.2, "ADI-M"], [GEOTRANS, "ADI-M"]
	ADINDAN_1991_SENEGAL	8	Senegal; +5° ≤ φ ≤ +23°; -24° ≤ λ ≤ -5°	TRANSLATE Δx = -128 : σx = 25, Δy = -18 : σy = 25, Δz = 224 : σz = 25.	1991	[NGA36, App. D.2, "ADI-D"], [GEOTRANS, "ADI-D"]
	ADINDAN_1991_SUDAN	9	Sudan; -3° ≤ φ ≤ +31°; +15° ≤ λ ≤ +45°	TRANSLATE Δx = -161 : σx = 3, Δy = -14 : σy = 5, Δz = 205 : σz = 3.	1991	[NGA36, App. D.2, "ADI-B"], [GEOTRANS, "ADI-B"]
AFGOOYE_1987	AFGOOYE_1987_SOMALIA	11	Somalia; -8° ≤ φ ≤ +19°; +35° ≤ λ ≤ +60°	TRANSLATE Δx = -43 : σx = 25, Δy = -163 : σy = 25, Δz = 45 : σz = 25.	1987	[NGA36, App. D.2," AFG"], [GEOTRANS, "AFG"]

ORM label	RT label	RT code	RT region	STT label and parameter values	Date published	References
AIN_EL_ABD_1970	AIN_EL_ABD_1970-_BAHRAIN_ISLAND	12	Bahrain Island; +24° ≤ φ ≤ +28°; +49° ≤ λ ≤ +53°	TRANSLATE Δx = -150 : σx = 25, Δy = -250 : σy = 25, Δz = -1 : σz = 25.	1991	[NGA36, App. D.3, "AIN-A"], [GEOTRANS, "AIN-A"]
	AIN_EL_ABD_1970-_SAUDI_ARABIA	13	Saudi Arabia; +8° ≤ φ ≤ +38°; +28° ≤ λ ≤ +62°	TRANSLATE Δx = -143 : σx = 10, Δy = -236 : σy = 10, Δz = 7 : σz = 10.	1991	[NGA36, App. D.3, "AIN-B"], [GEOTRANS, "AIN-B"]
AMERICAN_SAMOA-_1962	AMERICAN_SAMOA_1962-_AMERICAN_SAMOA-_ISLANDS	15	American Samoa Islands; -19° ≤ φ ≤ -9°; -174° ≤ λ ≤ -165°	TRANSLATE Δx = -115 : σx = 25, Δy = 118 : σy = 25, Δz = 426 : σz = 25.	1993	[NGA36, App. D.10, "AMA"], [GEOTRANS, "AMA"]
AMERSFOORT	AMERSFOORT-_NETHERLANDS_7	358	Netherlands; +50,75° ≤ φ ≤ +55,77°; +2,53° ≤ λ ≤ +7,22°	PV_7_PARAMETER Δx = 565 : σx = 1, Δy = 49,9 : σy = 1, Δz = 465,8 : σz = 1, ω_1 = -0,409″, ω_2 = 0,36″, ω_3 = -1,869″, Δs = 4,08 x 10^{-6}.	2001	[HELM, "AME-7"], [EPSG, Code 1172]
ANNA_1_1965	ANNA_1_1965_COCOS-_ISLANDS	16	Cocos Islands; -14° ≤ φ ≤ -10°; +94° ≤ λ ≤ +99°	TRANSLATE Δx = -491 : σx = 25, Δy = -22 : σy = 25, Δz = 435 : σz = 25.	1987	[NGA36, App. D.9, "ANO"], [GEOTRANS, "ANO"]

ORM label	RT label	RT code	RT region	STT label and parameter values	Date published	References
ANTIGUA_1943	ANTIGUA_1943_ANTIGUA-_LEEWARD_ISLANDS	17	Antigua and Leeward Islands; +16° ≤ φ ≤ +20°; -65° ≤ λ ≤ -61°	TRANSLATE Δx = -270 : σx = 25, Δy = 13 : σy = 25, Δz = 62 : σz = 25.	1991	[NGA36, App. D.8, "AIA"], [GEOTRANS, "AIA"]
ARC_1950	ARC_1950_BOTSWANA	19	Botswana; -33° ≤ φ ≤ -13°; +13° ≤ λ ≤ +36°	TRANSLATE Δx = -138 : σx = 3, Δy = -105 : σy = 5, Δz = -289 : σz = 3.	1991	[NGA36, App. D.2, "ARF-A"], [GEOTRANS, "ARF-A"]
	ARC_1950_BURUNDI	20	Burundi; -11° ≤ φ ≤ +4°; +21° ≤ λ ≤ +37°	TRANSLATE Δx = -153 : σx = 20, Δy = -5 : σy = 20, Δz = -292 : σz = 20.	1991	[NGA36, App. D.2, "ARF-H"], [GEOTRANS, "ARF-H"]
	ARC_1950_LESOTHO	21	Lesotho; -36° ≤ φ ≤ -23°; +21° ≤ λ ≤ +35°	TRANSLATE Δx = -125 : σx = 3, Δy = -108 : σy = 3, Δz = -295 : σz = 8.	1991	[NGA36, App. D.2, "ARF-B"], [GEOTRANS, "ARF-B"]
	ARC_1950_MALAWI	22	Malawi; -21° ≤ φ ≤ -3°; +26° ≤ λ ≤ +42°	TRANSLATE Δx = -161 : σx = 9, Δy = -73 : σy = 24, Δz = -317 : σz = 8.	1991	[NGA36, App. D.2, "ARF-C"], [GEOTRANS, "ARF-C"]
	ARC_1950_MEAN_SOLUTIO N	23	Mean Solution (Botswana, Democratic Republic of the Congo, Eswatini, Lesotho, Malawi, Zambia and Zimbabwe); -36° ≤ φ ≤ +10°; +4° ≤ λ ≤ +42°	TRANSLATE Δx = -143 : σx = 20, Δy = -90 : σy = 33, Δz = -294 : σz = 20.	1987	[NGA36, App. D.2, "ARF-M"], [GEOTRANS, "ARF-M"]

ORM label	RT label	RT code	RT region	STT label and parameter values	Date published	References
	ARC_1950_SWAZILAND	24	Eswatini (formerly Swaziland); -33° ≤ φ ≤ -20°; +25° ≤ λ ≤ +40°	TRANSLATE Δx = -134 : σx = 15, Δy = -105 : σy = 15, Δz = -295 : σz = 15.	1991	[NGA36, App. D.2, "ARF-D"], [GEOTRANS, "ARF-D"]
	ARC_1950_ZAIRE	25	Democratic Republic of the Congo (formerly Zaire); -21° ≤ φ ≤ +10°; +4° ≤ λ ≤ +38°	TRANSLATE Δx = -169 : σx = 25, Δy = -19 : σy = 25, Δz = -278 : σz = 25.	1991	[NGA36, App. D.2, "ARF-E"], [GEOTRANS, "ARF-E"]
	ARC_1950_ZAMBIA	26	Zambia; -24° ≤ φ ≤ -1°; +15° ≤ λ ≤ +40°	TRANSLATE Δx = -147 : σx = 21, Δy = -74 : σy = 21, Δz = -283 : σz = 27.	1991	[NGA36, App. D.2, "ARF-F"], [GEOTRANS, "ARF-F"]
	ARC_1950_ZIMBABWE_3	18	Zimbabwe; -29° ≤ φ ≤ -9°; +19° ≤ λ ≤ +39°	TRANSLATE Δx = -142 : σx = 5, Δy = -96 : σy = 8, Δz = -293 : σz = 11.	1991	[83502T, App. B.2, "ARF-G"], [GEOTRANS, "ARF-G"]
	ARC_1950_ZIMBABWE_7	360	Zimbabwe; -29° ≤ φ ≤ -9°; +19° ≤ λ ≤ +39°	PV_7_PARAMETER Δx = -111,16 : σx = 3, Δy = -186,64 : σy = 3, Δz = -301,34 : σz = 3, ω_1 = -4,023″, ω_2 = -2,838″, ω_3 = 4,899″, Δs = 1,776 x 10^{-6}.	2001	[HELM, "ARF-7"], [GEOTRANS, "ARF-G"]

ORM label	RT label	RT code	RT region	STT label and parameter values	Date published	References
ARC_1960	ARC_1960_KENYA_3	27	Kenya; -11° ≤ φ ≤ +8°; +28° ≤ λ ≤ +47°	TRANSLATE Δx = -157 : σx = 4, Δy = -2 : σy = 3, Δz = -299 : σz = 3.	1997	[NGA36, App. D.2, "ARS-A"], [GEOTRANS, "ARS-A"]
	ARC_1960_KENYA_7	359	Kenya; -11° ≤ φ ≤ +8°; +28° ≤ λ ≤ +47°	PV_7_PARAMETER Δx = -62,44 : σx = 2, Δy = -209,95 : σy = 2, Δz = 17,83 : σz = 2, ω_1 = -6,785 7″, ω_2 = 7,66″, ω_3 = 7,205 9″, Δs = 7,382 x 10^{-6}.	2001	[HELM, "ARS-7"], [GEOTRANS, "ARS-A"]
	ARC_1960_MALAWI	421	Malawi; -18° ≤ φ ≤ -9°; +32° ≤ λ ≤ +37°	TRANSLATE Δx = -179 : σx = 13, Δy = -81 : σy = 25, Δz = -314 : σz = 7.	2012	[NGA36, App. D.2, "ARS-C"], [GEOTRANS, "ARS-C"]
	ARC_1960_MEAN_SOLUTION	28	Mean Solution (Kenya and Tanzania); -18° ≤ φ ≤ +8°; +23° ≤ λ ≤ +47°	TRANSLATE Δx = -160 : σx = 20, Δy = -6 : σy = 20, Δz = -302 : σz = 20.	1991	[NGA36, App. D.2, "ARS-M"], [GEOTRANS, "ARS-M"]
	ARC_1960_TANZANIA	29	Tanzania; -18° ≤ φ ≤ +5°; +23° ≤ λ ≤ +47°	TRANSLATE Δx = -175 : σx = 6, Δy = -23 : σy = 9, Δz = -303 : σz = 10.	1997	[NGA36, App. D.2, "ARS-B"], [GEOTRANS, "ARS-B"]

ORM label	RT label	RT code	RT region	STT label and parameter values	Date published	References
ASCENSION_1958	ASCENSION_1958-_ASCENSION_ISLAND	31	Ascension Island; -9° ≤ φ ≤ -6°; -16° ≤ λ ≤ -13°	TRANSLATE Δx = -205 : σx = 25, Δy = 107 : σy = 25, Δz = 53 : σz = 25.	1991	[NGA36, App. D.8, "ASC"], [GEOTRANS, "ASC"]
AUSTRALIAN_GEOD-_1966	AUSTRALIAN_GEOD_1966-_AUSTRALIA_TASMANIA	33	Australia and Tasmania; -46° ≤ φ ≤ -4°; +109° ≤ λ ≤ +161°	TRANSLATE Δx = -133 : σx = 3, Δy = -48 : σy = 3, Δz = 148 : σz = 3.	1987	[83502T, App. B.4, "AUA"], [GEOTRANS, "AUA"]
AUSTRALIAN_GEOD-_1966_2012	AUSTRALIAN_GEOD_1966-_2012_AUSTRALIA_TASMANIA	483	Australia and Tasmania; -46° ≤ φ ≤ -4°; +109° ≤ λ ≤ +161°	TRANSLATE Δx = -128 : σx = 5, Δy = -52 : σy = 5, Δz = 153 : σz = 5.	2012	[NGA36, App. D.4, "AUA", Cycle number 1], [GEOTRANS, "AUA"]
AUSTRALIAN_GEOD-_1984	AUSTRALIAN_GEOD_1984-_AUSTRALIA_TASMANIA_3	34	Australia and Tasmania; -46° ≤ φ ≤ -4°; +109° ≤ λ ≤ +161°	TRANSLATE Δx = -134 : σx = 2, Δy = -48 : σy = 2, Δz = 149 : σz = 2.	1987	[NGA36, App. D.4, "AUG"], [GEOTRANS, "AUG"]
	AUSTRALIAN_GEOD_1984-_AUSTRALIA_TASMANIA_7	35	Australia and Tasmania; -46° ≤ φ ≤ -4°; +109° ≤ λ ≤ +161°	CF_7_PARAMETER Δx = -116, Δy = -50,47, Δz = 141,69, ω_1 = -0,23″, ω_2 = -0,39″, ω_3 = -0,344″, Δs = 0,098 3 x 10^{-6}.	1984	[CECT, Table 1], [GEOTRANS, "AUG"]

ORM label	RT label	RT code	RT region	STT label and parameter values	Date published	References
AYABELLE-_LIGHTHOUSE_1991	AYABELLE_LIGHTHOUSE-_1991_DJIBOUTI	36	Djibouti; +5° ≤ φ ≤ +20°; +36° ≤ λ ≤ +49°	TRANSLATE Δx = -79 : σx = 25, Δy = -129 : σy = 25, Δz = 145 : σz = 25.	1991	[83502T, App. B.2, "PHA"], [GEOTRANS, "PHA"]
AYABELLE-_LIGHTHOUSE_1991-_2012	AYABELLE_LIGHTHOUSE-_1991_2012_DJIBOUTI	484	Djibouti; +5° ≤ φ ≤ +20°; +36° ≤ λ ≤ +49°	TRANSLATE Δx = -77 : σx = 10, Δy = -128 : σy = 10, Δz = 142 : σz = 10.	2012	[NGA36, App. D.2, "PHA", Cycle number 1], [GEOTRANS, "PHA"]
BEACON_E_1945	BEACON_E_1945-_IWO_JIMA_ISLAND	37	Iwo Jima; +22° ≤ φ ≤ +26°; +140° ≤ λ ≤ +144°	TRANSLATE Δx = 145 : σx = 25, Δy = 75 : σy = 25, Δz = -272 : σz = 25.	1987	[NGA36, App. D.10, "ATF"], [GEOTRANS, "ATF"]
BEIJING_1954	BEIJING_1954_CHINA	422	China; +18° ≤ φ ≤ +55°; +72° ≤ λ ≤ +135°	TRANSLATE Δx = -11, Δy = -113, Δz = -41.	2012	[NGA36, App. E.2, "PED"], [GEOTRANS, "PED"]
BEKAA_BASE-_SOUTH_END	BEKAA_BASE_SOUTH-_END_LEBANON_7	361	Lebanon; +33,06° ≤ φ ≤ +34,84°; +33,75° ≤ λ ≤ +36,63°	PV_7_PARAMETER Δx = -465,05 : σx = 2, Δy = 440,83 : σy = 2, Δz = 41,4 : σz = 2, ω_1 = -3,887 71″, ω_2 = -11,348 2″, ω_3 = -27,413 9″, Δs = 15,289 x 10^{-6}.	2001	[HELM, "BEK-7 "], [EPSG, Code 1140]

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BEKAA_VALLEY_1920	BEKAA_VALLEY_1920- _LEBANON	423	Lebanon; +29° ≤ φ ≤ +38°; +33° ≤ λ ≤ +43	TRANSLATE Δx = -183, Δy = -15, Δz = 273.	2012	[NGA36, App. E.2, "BVD"], [GEOTRANS, "BVD"]
BELGIUM_1972	BELGIUM_1972_BELGIUM_7	362	Belgium; +49,5° ≤ φ ≤ +51,88°; +2,23° ≤ λ ≤ +6,4°	PV_7_PARAMETER Δx = -99,1 : σx = 1, Δy = 53,3 : σy = 1, Δz = -112,5 : σz = 1, ω_1 = 0,419″, ω_2 = -0,83″, ω_3 = 1,885″, Δs = -1 x 10^{-6}.	2001	[HELM, "ODU-7", "Belgium"], [EPSG, Code 1044]
BELLEVUE_IGN_1987	BELLEVUE_IGN_1987- _EFATE_ERROMANGO- _ISLANDS	39	Efate and Erromango Islands (Vanuatu); -20° ≤ φ ≤ -16°; +167° ≤ λ ≤ +171°	TRANSLATE Δx = -127 : σx = 20, Δy = -769 : σy = 20, Δz = 472 : σz = 20.	1987	[NGA36, App. D.10, "IBE"], [GEOTRANS, "IBE"]
BERMUDA_1957	BERMUDA_1957_BERMUDA	40	Bermuda; +31° ≤ φ ≤ +34°; -66° ≤ λ ≤ -63°	TRANSLATE Δx = -73 : σx = 20, Δy = 213 : σy = 20, Δz = 296 : σz = 20.	1987	[NGA36, App. D.8, "BER"], [GEOTRANS, "BER"]
BERNE_1898	BERNE_1898- _SWITZERLAND_7	363	Switzerland; +45,82° ≤ φ ≤ +47,81°; +5,96° ≤ λ ≤ +10,49°	PV_7_PARAMETER Δx = 660,077, Δy = 13,551, Δz = 369,344, ω_1 = -0,805″, ω_2 = -0,578″, ω_3 = -0,952″, Δs = 5,66 x 10^{-6}.	2001	[HELM, "BRE"], [EPSG, Code 1226]

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BIOKO	BIOKO_BIOKO_ISLAND	424	Bioko Island (Equatorial Guinea); +2° ≤ φ ≤ +5°; +8° ≤ λ ≤ +10°	TRANSLATE Δx = -235 : σx = 5, Δy = -110 : σy = 17, Δz = 393 : σz = 38.	2012	[NGA36, App. D.8, "BIO"], [GEOTRANS, "BIO"]
BISSAU_1991	BISSAU_1991-_GUINEA_BISSAU	42	Guinea-Bissau; +5° ≤ φ ≤ +19°; -23° ≤ λ ≤ -7°	TRANSLATE Δx = -173 : σx = 25, Δy = 253 : σy = 25, Δz = 27 : σz = 25.	1991	[NGA36, App. D.2, "BID"], [GEOTRANS, "BID"]
BOGOTA_OBS_1987	BOGOTA_OBS_1987-_COLOMBIA	43	Colombia; -10° ≤ φ ≤ +16°; -85° ≤ λ ≤ -61°	TRANSLATE Δx = 307 : σx = 6, Δy = 304 : σy = 5, Δz = -318 : σz = 6.	1987	[NGA36, App. D.7, "BOO"], [GEOTRANS, "BOO"]
BOGOTA_OBS_1987-_PM_BOGOTA	BOGOTA_OBS_1987_PM-_BOGOTA_COLOMBIA	44	Colombia; -10° ≤ φ ≤ +16°; -11° ≤ λ ≤ +13°	PV_Z_ROTATE_TRANSLATE Δx = 307 : σx = 6, Δy = 304 : σy = 5, Δz = -318 : σz = 6, ω = 285° 55′ 8,7″. Note: The referenced *z*-axis rotation has been offset so that Bogota is contained in the *x*-positive *xz*-plane.	1987	[NGA36, App. D.7, "BOO"], [GEOTRANS, "BOO"]
BUKIT_RIMPAH_1987	BUKIT_RIMPAH_1987-_BANGKA_BELITUNG-_ISLANDS	45	Bangka and Belitung Islands (Indonesia); -6° ≤ φ ≤ +0°; +103° ≤ λ ≤ +110°	TRANSLATE Δx = -384, Δy = 664, Δz = -48.	1987	[NGA36, App. E.2, "BUR"], [GEOTRANS, "BUR"]

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CAMP_AREA_1987	CAMP_AREA_1987-_MCMURDO_CAMP	48	McMurdo Camp Area (Antarctica); -85° ≤ φ ≤ -70°; +135° ≤ λ ≤ +180°	TRANSLATE Δx = -104, Δy = -129, Δz = 239.	1987	[NGA36, App. E.2, "CAZ"], [GEOTRANS, "CAZ"]
CAMPO-_INCHAUSPE_1969	CAMPO_INCHAUSPE-_1969_ARGENTINA	49	Argentina; -62° ≤ φ ≤ -20°; -76° ≤ λ ≤ -47°	TRANSLATE Δx = -148 : σx = 5, Δy = 136 : σy = 5, Δz = 90 : σz = 5.	1987	[NGA36, App. D.7, "CAI"], [GEOTRANS, "CAI"]
CANTON_1966	CANTON_1966_PHOENIX-_ISLANDS	50	Phoenix Islands (Kiribati); -13° ≤ φ ≤ +3°; -180° ≤ λ ≤ -165°	TRANSLATE Δx = 298 : σx = 15, Δy = -304 : σy = 15, Δz = -375 : σz = 15.	1987	[NGA36, App. D.10, "CAO"], [GEOTRANS, "CAO"]
CAPE_1987	CAPE_1987_SOUTH_AFRICA	51	South Africa; -43° ≤ φ ≤ -15°; +10° ≤ λ ≤ +40°	TRANSLATE Δx = -136 : σx = 3, Δy = -108 : σy = 6, Δz = -292 : σz = 6.	1987	[NGA36, App. D.2, "CAP"], [GEOTRANS, "CAP"]
CAPE_CANAVERAL-_1991	CAPE_CANAVERAL_1991-_MEAN_SOLUTION	52	Mean Solution (Bahamas and Florida); +15° ≤ φ ≤ +38°; -94° ≤ λ ≤ -58°	TRANSLATE Δx = -2 : σx = 3, Δy = 151 : σy = 3, Δz = 181 : σz = 3.	1991	[NGA36, App. D.6, "CAC"], [GEOTRANS, "CAC"]
CARTHAGE_1987	CARTHAGE_1987_TUNISIA	53	Tunisia; +24° ≤ φ ≤ +43°; +2° ≤ λ ≤ +18°	TRANSLATE Δx = -263 : σx = 6, Δy = 6 : σy = 9, Δz = 431 : σz = 8.	1987	[NGA36, App. D.2, "CGE"], [GEOTRANS, "CGE"]

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CH1903_PLUS	CH1903_PLUS- _SWITZERLAND_3	364	Switzerland; +45,82° ≤ φ ≤ +47,81°; +5,96° ≤ λ ≤ +10,49°	TRANSLATE Δx = 674,4 : σx = 2, Δy = 15,1 : σy = 2, Δz = 405,3 : σz = 2.	2001	[HELM, "CHW-7"], [EPSG, Code 1226]
CHATHAM_1971	CHATHAM_1971- _CHATHAM_ISLANDS	55	Chatham Islands (New Zealand); -46° ≤ φ ≤ -42°; -180° ≤ λ ≤ -174°	TRANSLATE Δx = 175 : σx = 15, Δy = -38 : σy = 15, Δz = 113 : σz = 15.	1987	[NGA36, App. D.10, "CHI"], [GEOTRANS, "CHI"]
CHUA_1987	CHUA_1987_PARAGUAY	56	Paraguay; -33° ≤ φ ≤ -14°; -69° ≤ λ ≤ -49°	TRANSLATE Δx = -134 : σx = 6, Δy = 229 : σy = 9, Δz = -29 : σz = 5.	1987	[NGA36, App. D.7, "CHU"], [GEOTRANS, "CHU"]
CIRCUIT	CIRCUIT_ZIMBABWE	425	Zimbabwe; -23° ≤ φ ≤ -15°; +25° ≤ λ ≤ +34°	TRANSLATE Δx = -144 : σx = 10, Δy = -97 : σy = 10, Δz = -291 : σz = 10.	2012	[NGA36, App. D.2, "CIR"], [GEOTRANS, "CIR"]
COAMPS_1998	COAMPS_1998_IDENTITY- _BY_DEFAULT	57	Global (Earth)	IDENTITY	1998	[ERNWM, Table 1, "COAMPS"]
CONAKRY_1905	CONAKRY_1905_GUINEA	426	Guinea; +7° ≤ φ ≤ +13°; -16° ≤ λ ≤ -7°	TRANSLATE Δx = -23, Δy = 259, Δz = -9.	2012	[NGA36, App. E.2, "COU"], [GEOTRANS, "COU"]
CORREGO_ALEGRE- _1987	CORREGO_ALEGRE_1987- _BRAZIL	59	Brazil; -39° ≤ φ ≤ +9°; -80° ≤ λ ≤ -29°	TRANSLATE Δx = -206 : σx = 5, Δy = 172 : σy = 3, Δz = -6 : σz = 5.	1987	[NGA36, App. D.7, "COA"], [GEOTRANS, "COA"]

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CYPRUS_1935	CYPRUS_1935_CYPRUS_7	365	Cyprus; +33° ≤ φ ≤ +37°; +31° ≤ λ ≤ +36°	PV_7_PARAMETER Δx = -104,24, Δy = -16,713, Δz = 843,593, ω_1 = 0,904 97″, ω_2 = 0,641 31″, ω_3 = 3,011 74″, Δs = -60,095 x 10^{-6}.	2001	[HELM, "CYP-7"], [GEOTRANS, "EUR-E"]
DABOLA_1991	DABOLA_1991_GUINEA	61	Guinea; +1° ≤ φ ≤ +19°; -18° ≤ λ ≤ -4°	TRANSLATE Δx = -83 : σx = 15, Δy = 37 : σy = 15, Δz = 124 : σz = 15.	1991	[NGA36, App. D.2, "DAL"], [GEOTRANS, "DAL"]
DECEPTION_1993	DECEPTION_1993- _DECEPTION_ISLAND	62	Deception Island (Antarctica); -65° ≤ φ ≤ -62°; -62° ≤ λ ≤ -58°	TRANSLATE Δx = 260 : σx = 20, Δy = 12 : σy = 20, Δz = -147 : σz = 20.	1993	[NGA36, App. D.8, "DID"], [GEOTRANS, "DID"]
DHDN_RAUENBERG	DHDN_RAUENBERG- _GERMANY_7	366	Germany; +47,27° ≤ φ ≤ +55,92°; +3,34° ≤ λ ≤ +15,04°	PV_7_PARAMETER Δx = 582 : σx = 4, Δy = 105 : σy = 4, Δz = 414 : σz = 4, ω_1 = 1,04″, ω_2 = 0,35″, ω_3 = -3,08″, Δs = 8,3 x 10^{-6}.	2001	[HELM, "RAU-7"], [EPSG, Code 1103]
DJAKARTA_1987	DJAKARTA_1987_SUMATRA	68	Sumatra (Indonesia); -16° ≤ φ ≤ +11°; +89° ≤ λ ≤ +146°	TRANSLATE Δx = -377 : σx = 3, Δy = 681 : σy = 3, Δz = -50 : σz = 3.	1987	[NGA36, App. D.3, "BAT"], [GEOTRANS, "BAT"]

ORM label	RT label	RT code	RT region	STT label and parameter values	Date published	References
DJAKARTA_1987-_PM_DJAKARTA	DJAKARTA_1987_PM-_DJAKARTA_SUMATRA	67	Sumatra (Indonesia); -16° ≤ φ ≤ +11°; -18° ≤ λ ≤ +39°	PV_Z_ROTATE_TRANSLATE Δx = -377 : σx = 3, Δy = 681 : σy = 3, Δz = -50 : σz = 3, ω = 106° 48′ 27,79″. Note: The referenced *z*-axis rotation has been offset so that Djakarta is contained in the *x*-positive *xz*-plane.	1987	[NGA36, App. D.3, "BAT"], [GEOTRANS, "BAT"]
DOS_1968	DOS_1968_GIZO_ISLAND	69	Gizo Island (Solomon Islands); -10° ≤ φ ≤ -7°; +155° ≤ λ ≤ +158°	TRANSLATE Δx = 230 : σx = 25, Δy = -199 : σy = 25, Δz = -752 : σz = 25.	1987	[NGA36, App. D.10, "GIZ"], [GEOTRANS, "GIZ"]
DOS_71_4_1987	DOS_71_4_1987-_ST_HELENA_ISLAND	70	St. Helena Island (UK); -18° ≤ φ ≤ -14°; -7° ≤ λ ≤ -4°	TRANSLATE Δx = -320 : σx = 25, Δy = 550 : σy = 25, Δz = -494 : σz = 25.	1987	[NGA36, App. D.8, "SHB"], [GEOTRANS, "SHB"]
EASTER_1967	EASTER_1967_EASTER-_ISLAND	71	Easter Island (Ecuador); -29° ≤ φ ≤ -26°; -111° ≤ λ ≤ -108°	TRANSLATE Δx = 211 : σx = 25, Δy = 147 : σy = 25, Δz = 111 : σz = 25.	1987	[NGA36, App. D.10, "EAS"], [GEOTRANS, "EAS"]
ESTONIA_1937	ESTONIA_1937_ESTONIA	75	Estonia; +52° ≤ φ ≤ +65°; +16° ≤ λ ≤ +34°	TRANSLATE Δx = 374 : σx = 2, Δy = 150 : σy = 3, Δz = 588 : σz = 3.	1997	[NGA36, App. D.5, "EST"], [GEOTRANS, "EST"]

ORM label	RT label	RT code	RT region	STT label and parameter values	Date published	References
ETRF	ETRF_IDENTITY_BY-_MEASUREMENT	76	Europe; +32,88° ≤ φ ≤ +84,73°; -16,1° ≤ λ ≤ +40,18°	TRANSLATE Δx = 0 : σx = 0, Δy = 0 : σy = 0, Δz = 0 : σz = 0.	2001	[HELM, "EUT"], [EPSG, Code 1298]
EUROPE_1950	EUROPE_1950_ALGERIA_7	367	Algeria; +13° ≤ φ ≤ +43°; -15° ≤ λ ≤ +11°	PV_7_PARAMETER Δx = -130,95 : σx = 2, Δy = -94,49 : σy = 2, Δz = -139,08 : σz = 2, ω_1 = 0,440 5″, ω_2 = 0,456 5″, ω_3 = -0,224 4″, Δs = 6,957 x 10^{-6}.	2001	[HELM, "EUR-7", "Algeria"], [GEOTRANS, "NSD"]
	EUROPE_1950-_BALEARIC_ISLANDS_7	368	Balearic Islands; +38,59° ≤ φ ≤ +40,15°; +1,12° ≤ λ ≤ +4,39°	PV_7_PARAMETER Δx = -181,5 : σx = 2, Δy = -90,3 : σy = 2, Δz = -187,2 : σz = 2, ω_1 = 0,144″, ω_2 = 0,492″, ω_3 = -0,394″, Δs = 17,57 x 10^{-6}.	2001	[HELM, "EUR-7", "Balearic Islands"], [EPSG, Code 2335]
	EUROPE_1950-_CHANNEL_ISLANDS	79	Channel Islands; +48,77° ≤ φ ≤ +50,16°; -3,73° ≤ λ ≤ -1,81°	TRANSLATE Δx = -83,901 : σx = 2, Δy = -98,127 : σy = 2, Δz = -118,635 : σz = 2.	2001	[HELM, "EUR", "Channel Islands"], [EPSG, Code 2988 & 2989]

ORM label	RT label	RT code	RT region	STT label and parameter values	Date published	References
	EUROPE_1950_CYPRUS_3	78	Cyprus; +33° ≤ φ ≤ +37°; +31° ≤ λ ≤ +36°	TRANSLATE Δx = -104 : σx = 15, Δy = -101 : σy = 15, Δz = -140 : σz = 15.	1991	[NGA36, App. D.5, "EUR-E"], [GEOTRANS, "EUR-E"]
	EUROPE_1950_CYPRUS_7	369	Cyprus; +33° ≤ φ ≤ +37°; +31° ≤ λ ≤ +36°	PV_7_PARAMETER Δx = -431,005 : σx = 2, Δy = -227,335 : σy = 2, Δz = 331,466 : σz = 2, ω_1 = -8,884 03″, ω_2 = 16,700 3″, ω_3 = -1,684 26″, Δs = 2,091 x 10^{-6}.	2001	[HELM, "EUR-7", "Cyprus"], [GEOTRANS, "EUR-E"]
	EUROPE_1950_DENMARK_7	370	Denmark; +54,36° ≤ φ ≤ +58,27°; +3,24° ≤ λ ≤ +16,51°	PV_7_PARAMETER Δx = -81,1 : σx = 1, Δy = -89,4 : σy = 1, Δz = -115,8 : σz = 1, ω_1 = 0,485″, ω_2 = 0,024″, ω_3 = 0,413″, Δs = -0,54 x 10^{-6}.	2001	[HELM, "EUR-7", "Denmark"], [EPSG, Code 1080]
	EUROPE_1950_EGYPT	80	Egypt; +16° ≤ φ ≤ +38°; +19° ≤ λ ≤ +42°	TRANSLATE Δx = -130 : σx = 6, Δy = -117 : σy = 8, Δz = -151 : σz = 8.	1991	[NGA36, App. D.5, "EUR-F"], [GEOTRANS, "EUR-F"]

ORM label	RT label	RT code	RT region	STT label and parameter values	Date published	References
	EUROPE_1950_ENGLAND-_SCOTLAND	81	England, Channel Islands, Scotland and Shetland Islands; +48° ≤ φ ≤ +62°; -10° ≤ λ ≤ +3°	TRANSLATE Δx = -86 : σx = 3, Δy = -96 : σy = 3, Δz = -120 : σz = 3.	1991	[NGA36, App. D.5, "EUR-G"], [GEOTRANS, "EUR-G"]
	EUROPE_1950_FORMER-_YUGOSLAVIA_N	371	Former Yugoslavia N; +35° ≤ φ ≤ +52°; +7° ≤ λ ≤ +29°	TRANSLATE Δx = -83, Δy = -96, Δz = -117.	2001	[HELM, "EUR", "Former Yugoslavia N"], [GEOTRANS, "HER"]
	EUROPE_1950-_GIBRALTAR_3	372	Gibraltar; +36° ≤ φ ≤ +36,16°; -5,42° ≤ λ ≤ -4,89°	TRANSLATE Δx = -116,8 : σx = 1, Δy = -106,4 : σy = 1, Δz = -154,4 : σz = 1.	2001	[HELM, "EUR", "Gibraltar"], [EPSG, Code 1105]
	EUROPE_1950_GREECE	82	Greece; +30° ≤ φ ≤ +48°; +14° ≤ λ ≤ +34°	TRANSLATE Δx = -84 : σx = 25, Δy = -95 : σy = 25, Δz = -130 : σz = 25.	1991	[NGA36, App. D.5, "EUR-B"], [GEOTRANS, "EUR-B"]
	EUROPE_1950_IRAN	83	Iran; +19° ≤ φ ≤ +47°; +37° ≤ λ ≤ +69°	TRANSLATE Δx = -117 : σx = 9, Δy = -132 : σy = 12, Δz = -164 : σz = 11.	1991	[NGA36, App. D.5, "EUR-H"], [GEOTRANS, "EUR-H"]
	EUROPE_1950_IRAQ	84	Iraq, Israel, Jordan, Kuwait, Lebanon, Saudi Arabia and Syria; +20° ≤ φ ≤ +48°; +24° ≤ λ ≤ +60°	TRANSLATE Δx = -103, Δy = -106, Δz = -141.	1991	[NGA36, App. E.2, "EUR-S"], [GEOTRANS, "EUR-S"]

ORM label	RT label	RT code	RT region	STT label and parameter values	Date published	References
	EUROPE_1950_IRELAND	85	England, Ireland, Scotland and Shetland Islands; +48° ≤ φ ≤ +62°; -12° ≤ λ ≤ +3°	TRANSLATE Δx = -86 : σx = 3, Δy = -96 : σy = 3, Δz = -120 : σz = 3.	1991	[NGA36, App. D.5, "EUR-K"], [GEOTRANS, "EUR-K"]
	EUROPE_1950_LEBANON_7	373	Lebanon; +33,06° ≤ φ ≤ +34,84°; +33,75° ≤ λ ≤ +36,63°	PV_7_PARAMETER Δx = -417,78, Δy = 472,76, Δz = -208,24, ω_1 = 9,831″, ω_2 = 2,9″, ω_3 = -18,947″, Δs = -4,592 x 10^{-6}.	2001	[HELM, "EUR-7", "Lebanon"], [EPSG, Code 1140]
	EUROPE_1950_MALTA	86	Malta; +34° ≤ φ ≤ +38°; +12° ≤ λ ≤ +16°	TRANSLATE Δx = -107 : σx = 25, Δy = -88 : σy = 25, Δz = -149 : σz = 25.	1991	[NGA36, App. D.5, "EUR-L"], [GEOTRANS, "EUR-L"]
	EUROPE_1950_MEAN-_SOLUTION	87	Mean Solution (Austria, Belgium, Denmark, Finland, France, FRG, Gibraltar, Greece, Italy, Luxembourg, Netherlands, Norway, Portugal, Spain, Sweden and Switzerland); +30° ≤ φ ≤ +80°; +5° ≤ λ ≤ +33°	TRANSLATE Δx = -87 : σx = 3, Δy = -98 : σy = 8, Δz = -121 : σz = 5.	1987	[NGA36, App. D.5, "EUR-M"], [GEOTRANS, "EUR-M"]

ORM label	RT label	RT code	RT region	STT label and parameter values	Date published	References
	EUROPE_1950_NORWAY	88	Finland and Norway; +52° ≤ φ ≤ +80°; -2° ≤ λ ≤ +38°	TRANSLATE Δx = -87 : σx = 3, Δy = -95 : σy = 5, Δz = -120 : σz = 3.	1950	[NGA36, App. D.5, "EUR-C"], [GEOTRANS, "EUR-C"]
	EUROPE_1950_OMAN_7	374	Oman; +10° ≤ φ ≤ +32°; +46° ≤ λ ≤ +65°	PV_7_PARAMETER Δx = -137,34 : σx = 2, Δy = -189,51 : σy = 2, Δz = -2,6 : σz = 2, ω_1 = -4,573 5″, ω_2 = 2,625 7″, ω_3 = 0,684 9″, Δs = -8,017 x 10^{-6}.	2001	[HELM, "EUR-7", "Oman"], [GEOTRANS, "FAH"]
	EUROPE_1950_PORTUGAL_3	375	Portugal; +29,24° ≤ φ ≤ +43,07°; -35,58° ≤ λ ≤ -6,19°	TRANSLATE Δx = -84,248 : σx = 1, Δy = -108,628 : σy = 1, Δz = -118,027 : σz = 1.	2001	[HELM, "EUR", "Portugal"], [EPSG, Code 1193]
	EUROPE_1950-_PORTUGAL_SPAIN	89	Portugal and Spain; +30° ≤ φ ≤ +49°; -15° ≤ λ ≤ +10°	TRANSLATE Δx = -84 : σx = 5, Δy = -107 : σy = 6, Δz = -120 : σz = 3.	1950	[NGA36, App. D.5, "EUR-D"], [GEOTRANS, "EUR-D"]
	EUROPE_1950_SARDINIA	90	Sardinia (Italy); +37° ≤ φ ≤ +43°; +6° ≤ λ ≤ +12°	TRANSLATE Δx = -97 : σx = 25, Δy = -103 : σy = 25, Δz = -120 : σz = 25.	1991	[NGA36, App. D.5, "EUR-I"], [GEOTRANS, "EUR-I"]

ORM label	RT label	RT code	RT region	STT label and parameter values	Date published	References
	EUROPE_1950_SICILY	91	Sicily (Italy); +35° ≤ φ ≤ +40°; +10° ≤ λ ≤ +17°	TRANSLATE Δx = -97 : σx = 20, Δy = -88 : σy = 20, Δz = -135 : σz = 20.	1991	[NGA36, App. D.5, "EUR-J"], [GEOTRANS, "EUR-J"]
	EUROPE_1950_SPAIN-_EXCEPT_NW_7	376	Spain (except NW); +35,26° ≤ φ ≤ +43,56°; -7,54° ≤ λ ≤ +3,39°	PV_7_PARAMETER Δx = -131 : σx = 2, Δy = -100,3 : σy = 2, Δz = -163,4 : σz = 2, ω_1 = -1,244″, ω_2 = -0,02″, ω_3 = -1,144″, Δs = 9,39 x 10^{-6}.	2001	[HELM, "EUR-7", "Spain (except NW)"], [EPSG, Code 2336]
	EUROPE_1950_SPAIN_NW_7	377	Spain NW; +41,5° ≤ φ ≤ +43,82°; -9,37° ≤ λ ≤ -4,5°	PV_7_PARAMETER Δx = -178,4 : σx = 2, Δy = -83,2 : σy = 2, Δz = -221,3 : σz = 2, ω_1 = 0,54″, ω_2 = -0,532″, ω_3 = -0,126″, Δs = 21,2 x 10^{-6}.	2001	[HELM, "EUR-7", "Spain NW"], [EPSG, Code 2337]
	EUROPE_1950_TUNISIA	92	Tunisia; +24° ≤ φ ≤ +43°; +2° ≤ λ ≤ +18°	TRANSLATE Δx = -112 : σx = 25, Δy = -77 : σy = 25, Δz = -145 : σz = 25.	1993	[NGA36, App. D.5, "EUR-T"], [GEOTRANS, "EUR-T"]

ORM label	RT label	RT code	RT region	STT label and parameter values	Date published	References
	EUROPE_1950_TURKEY_7	378	Turkey; +34,42° ≤ φ ≤ +43,45°; +25,62° ≤ λ ≤ +44,83°	PV_7_PARAMETER Δx = -84,1 : σx = 2, Δy = -101,8 : σy = 2, Δz = -129,7 : σz = 2, ω_1 = 0″, ω_2 = 0″, ω_3 = 0,468″, Δs = 1,05 x 10^{-6}.	2001	[HELM, "EUR-7", "Turkey"], [EPSG, Code 1237]
	EUROPE_1950- _W_EUROPE_MEAN- _SOLUTION	93	Western Europe Mean Solution (Austria, Denmark, France, FRG, Netherlands and Switzerland); +30° ≤ φ ≤ +78°; -15° ≤ λ ≤ +25°	TRANSLATE Δx = -87 : σx = 3, Δy = -96 : σy = 3, Δz = -120 : σz = 3.	1991	[NGA36, App. D.5, "EUR-A"], [GEOTRANS, "EUR-A"]
EUROPE_1979	EUROPE_1979- _MEAN_SOLUTION	94	Mean Solution (Austria, Finland, Netherlands, Norway, Spain, Sweden and Switzerland); +30° ≤ φ ≤ +80°; -15° ≤ λ ≤ +24°	TRANSLATE Δx = -86 : σx = 3, Δy = -98 : σy = 3, Δz = -119 : σz = 3.	1987	[NGA36, App. D.5, "EUS"], [GEOTRANS, "EUS"]
	EUROPE_1979- _PORTUGAL_3	379	Portugal; +29,24° ≤ φ ≤ +43,07°; -35,58° ≤ λ ≤ -6,19°	TRANSLATE Δx = -81,548 : σx = 0,5, Δy = -94,168 : σy = 0,5, Δz = -118,729 : σz = 0,5.	2001	[HELM, "EUS", "Portugal"], [EPSG, Code 1193]

ORM label	RT label	RT code	RT region	STT label and parameter values	Date published	References
FAHUD_1987	FAHUD_1987_OMAN_3	95	Oman; +10° ≤ φ ≤ +32°; +46° ≤ λ ≤ +65°	TRANSLATE Δx = -346 : σx = 3, Δy = -1 : σy = 3, Δz = 224 : σz = 9.	1987	[83502T, App. B.3, "FAH"], [GEOTRANS, "FAH"]
	FAHUD_1987_OMAN_3_2012	427	Oman; +10° ≤ φ ≤ +32°; +46° ≤ λ ≤ +65°	TRANSLATE Δx = -345 : σx = 3, Δy = 3 : σy = 3, Δz = 223 : σz = 6.	2012	[NGA36, App. D.3, "FAH", Cycle number 1], [GEOTRANS, "FAH"]
	FAHUD_1987_OMAN_7	96	Oman; +10° ≤ φ ≤ +32°; +46° ≤ λ ≤ +65°	PV_7_PARAMETER Δx = -173,69 : σx = 2, Δy = -247,71 : σy = 2, Δz = 162,08 : σz = 2, ω_1 = -1,141″, ω_2 = -2,730 8″, ω_3 = 8,634 3″, Δs = 19,727 x 10^{-6}.	2001	[HELM, "FAH-7"], [GEOTRANS, "FAH"]
FIJI_1956	FIJI_1956_FIJI	428	Fiji; -20° ≤ φ ≤ -15°; +175° ≤ λ ≤ +180° or -180° ≤ λ ≤ -177°	TRANSLATE Δx = 265 : σx = 5, Δy = 385 : σy = 3, Δz = -194 : σz = 2.	2012	[NGA36, App. D.10, "FJI"], [GEOTRANS, "FJI"]
FORT_THOMAS_1955	FORT_THOMAS_1955- _ST_KITTS_NEVIS- _LEEWARD_ISLANDS	97	St. Kitts, Nevis and Leeward Islands; +16° ≤ φ ≤ +19°; -64° ≤ λ ≤ -61°	TRANSLATE Δx = -7 : σx = 25, Δy = 215 : σy = 25, Δz = 225 : σz = 25.	1991	[NGA36, App. D.8, "FOT"], [GEOTRANS, "FOT"]

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GAN_1970	GAN_1970_MALDIVES	99	Republic of Maldives; -2° ≤ φ ≤ +9°; +71° ≤ λ ≤ +75°	TRANSLATE Δx = -133 : σx = 25, Δy = -321 : σy = 25, Δz = 50 : σz = 25.	1987	[NGA36, App. D.9, "GAA"], [GEOTRANS, "GAA"]
GDA_1994	GDA_1994_IDENTITY_BY-_MEASUREMENT	102	Australia; -47,2° ≤ φ ≤ -8,88°; +109,23° ≤ λ ≤ +163,2°	TRANSLATE Δx = 0 : σx = 0, Δy = 0 : σy = 0, Δz = 0 : σz = 0.	2001	[HELM, "GDS"], [EPSG, Code 1036]
GEODETIC_DATUM-_1949	GEODETIC_DATUM_1949-_NEW_ZEALAND_3	103	New Zealand; -48° ≤ φ ≤ -33°; +165° ≤ λ ≤ +180°	TRANSLATE Δx = 84 : σx = 5, Δy = -22 : σy = 3, Δz = 209 : σz = 5.	1987	[NGA36, App. D.10, "GEO"], [GEOTRANS, "GEO"]
	GEODETIC_DATUM_1949-_NEW_ZEALAND_7	104	New Zealand; -48° ≤ φ ≤ -33°; +165° ≤ λ ≤ +180°	PV_7_PARAMETER Δx = 59,47, Δy = -5,04, Δz = 187,44, ω_1 = 0,47″, ω_2 = -0,1″, ω_3 = 1,024″, Δs = -4,599 3 x 10^{-6}.	2001	[HELM, "GEO-7"], [GEOTRANS, "GEO"]
GGRS87	GGRS87_GREECE_3	380	Greece; +30° ≤ φ ≤ +48°; +14° ≤ λ ≤ +34°	TRANSLATE Δx = -199,87, Δy = 74,79, Δz = 246,62.	2001	[HELM, "GRX"], [GEOTRANS, "EUR-B"]

ORM label	RT label	RT code	RT region	STT label and parameter values	Date published	References
GRACIOSA_BASE-_SW_1948	GRACIOSA_BASE_SW-_1948_CENTRAL_AZORES	117	Faial, Graciosa, Pico, Sao Jorge and Terceira Islands (Central Azores, Portugal); +37° ≤ φ ≤ +41°; -30° ≤ λ ≤ -26°	TRANSLATE Δx = -104 : σx = 3, Δy = 167 : σy = 3, Δz = -38 : σz = 3.	1991	[NGA36, App. D.8, "GRA"], [GEOTRANS, "GRA"]
GUAM_1963	GUAM_1963_GUAM	118	Guam; +12° ≤ φ ≤ +15°; +143° ≤ λ ≤ +146°	TRANSLATE Δx = -100 : σx = 3, Δy = -248 : σy = 3, Δz = 259 : σz = 3.	1987	[NGA36, App. D.10, "GUA"], [GEOTRANS, "GUA"]
GUNONG_SEGARA-_1987	GUNONG_SEGARA_1987-_KALIMANTAN_ISLAND	119	Kalimantan Island (Indonesia); -6° ≤ φ ≤ +9°; +106° ≤ λ ≤ +121°	TRANSLATE Δx = -403, Δy = 684, Δz = 41.	1987	[NGA36, App. E.2, "GSE"], [GEOTRANS, "GSE"]
GUX_1_1987	GUX_1_1987-_GUADALCANAL_ISLAND	120	Guadalcanal Island (Solomon Islands); -12° ≤ φ ≤ -8°; +158° ≤ λ ≤ +163°	TRANSLATE Δx = 252 : σx = 25, Δy = -209 : σy = 25, Δz = -751 : σz = 25.	1987	[NGA36, App. D.10, "DOB"], [GEOTRANS, "DOB"]
HARTEBEESTHOEK-_1994	HARTEBEESTHOEK_1994-_IDENTITY	381	South Africa; -50,32° ≤ φ ≤ -22,13°; +13,33° ≤ λ ≤ +42,85°	IDENTITY	2001	[HELM, ""], [EPSG, Code 1215]

ORM label	RT label	RT code	RT region	STT label and parameter values	Date published	References
HELSINKI_KALLIO-_CHURCH	HELSINKI_KALLIO-_CHURCH_FINLAND_7	382	Finland; +58,84° ≤ φ ≤ +70,09°; +19,08° ≤ λ ≤ +31,59°	PV_7_PARAMETER Δx = -84,8 : σx = 2, Δy = -208 : σy = 2, Δz = -96,3 : σz = 2, ω_1 = 2,36″, ω_2 = 1″, ω_3 = 3,09″, Δs = -0,023 x 10^{-6}.	2001	[HELM, "HEL-7"], [EPSG, Code 1095]
HERAT_NORTH_1987	HERAT_NORTH_1987-_AFGHANISTAN	122	Afghanistan; +23° ≤ φ ≤ +44°; +55° ≤ λ ≤ +81°	TRANSLATE Δx = -333, Δy = -222, Δz = 114.	1987	[NGA36, App. E.2, "HEN"], [GEOTRANS, "HEN"]
HERMANNSKOGEL-_1871	HERMANNSKOGEL_1871-_YUGOSLAVIA_3	123	Yugoslavia (prior to 1990), Bosnia and Herzegovina, Croatia, Serbia, and Slovenia; +35° ≤ φ ≤ +52°; +7° ≤ λ ≤ +29°	TRANSLATE Δx = 682, Δy = -203, Δz = 480.	1997	[NGA36, App. E.2, "HER"], [GEOTRANS, "HER"]
	HERMANNSKOGEL_1871-_YUGOSLAVIA_7	383	Former Yugoslavia; +35° ≤ φ ≤ +52°; +7° ≤ λ ≤ +29°	PV_7_PARAMETER Δx = 515,149 : σx = 3, Δy = 186,233 : σy = 3, Δz = 511,959 : σz = 3, ω_1 = 5,497 21″, ω_2 = 3,517 42″, ω_3 = -12,948″, Δs = 0,782 x 10^{-6}.	2001	[HELM, "HER-7", "Former Yugoslavia"], [GEOTRANS, "HER"]

ORM label	RT label	RT code	RT region	STT label and parameter values	Date published	References
HJORSEY_1955	HJORSEY_1955_ICELAND	124	Iceland; +61° ≤ φ ≤ +69°; -24° ≤ λ ≤ -11°	TRANSLATE Δx = -73 : σx = 3, Δy = 46 : σy = 3, Δz = -86 : σz = 6.	1987	[83502T, App. B.5, "HJO"], [GEOTRANS, "HJO"]
	HJORSEY_1955_ICELAND-_2012	485	Iceland; +61° ≤ φ ≤ +69°; -24° ≤ λ ≤ -11°	TRANSLATE Δx = -73 : σx = 3, Δy = 47 : σy = 3, Δz = -83 : σz = 6.	2012	[NGA36, App. D.5, "HJO", Cycle number 1], [GEOTRANS, "HJO"]
HONG_KONG_1963	HONG_KONG_1963-_HONG_KONG	125	Hong Kong; +21° ≤ φ ≤ +24°; +112° ≤ λ ≤ +116°	TRANSLATE Δx = -156 : σx = 25, Δy = -271 : σy = 25, Δz = -189 : σz = 25.	1987	[NGA36, App. D.3, "HKD"], [GEOTRANS, "HKD"]
HONG_KONG_1980	HONG_KONG_1980-_HONG_KONG_3	384	Hong Kong; +21° ≤ φ ≤ +24°; +112° ≤ λ ≤ +116°	TRANSLATE Δx = -156,8, Δy = -269, Δz = -188,2.	2001	[HELM, "HKE"], [GEOTRANS, "HKD"]
HU_TZU_SHAN_1991	HU_TZU_SHAN_1991-_TAIWAN	126	Taiwan; +20° ≤ φ ≤ +28°; +117° ≤ λ ≤ +124°	TRANSLATE Δx = -637 : σx = 15, Δy = -549 : σy = 15, Δz = -203 : σz = 15.	1991	[NGA36, App. D.3, "HTN"], [GEOTRANS, "HTN"]

ORM label	RT label	RT code	RT region	STT label and parameter values	Date published	References
HUNGARIAN-_DATUM_1972	HUNGARIAN_DATUM-_1972_HUNGARY_3	385	Hungary; +40° ≤ φ ≤ +54°; +11° ≤ λ ≤ +29°	PV_7_PARAMETER Δx = -56,94 : σx = 2, Δy = 67,91 : σy = 2, Δz = 19,32 : σz = 2, ω_1 = 0,2″, ω_2 = 0,32″, ω_3 = 0,42″, Δs = -1,09 x 10^{-6}.	2001	[HELM, "HUY-7"], [GEOTRANS, "SPK-A"]
INDIAN_1916	INDIAN_1916-_BANGLADESH_3	129	Bangladesh; +15° ≤ φ ≤ +33°; +80° ≤ λ ≤ +100°	TRANSLATE Δx = 282 : σx = 10, Δy = 726 : σy = 8, Δz = 254 : σz = 12.	1991	[NGA36, App. D.3, "IND-B"], [GEOTRANS, "IND-B"]
	INDIAN_1916-_BANGLADESH_7	130	Bangladesh; +15° ≤ φ ≤ +33°; +80° ≤ λ ≤ +100°	PV_7_PARAMETER Δx = 79,2, Δy = 670,3, Δz = 230, ω_1 = 0″, ω_2 = 0″, ω_3 = -7,274″, Δs = 11,034 x 10^{-6}.	2001	[HELM, "IND-7"], [GEOTRANS, "IND-B"]
INDIAN_1954	INDIAN_1954_THAILAND	131	Thailand; +0° ≤ φ ≤ +27°; +91° ≤ λ ≤ +111°	TRANSLATE Δx = 217 : σx = 15, Δy = 823 : σy = 6, Δz = 299 : σz = 12.	1993	[NGA36, App. D.3, "INF-A"], [GEOTRANS, "INF-A"]
INDIAN_1956	INDIAN_1956_INDIA_NEPAL	132	India and Nepal; +2° ≤ φ ≤ +44°; +62° ≤ λ ≤ +105°	TRANSLATE Δx = 295 : σx = 12, Δy = 736 : σy = 10, Δz = 257 : σz = 15.	1991	[NGA36, App. D.3, "IND-I"], [GEOTRANS, "IND-I"]

ORM label	RT label	RT code	RT region	STT label and parameter values	Date published	References
INDIAN_1960	INDIAN_1960_CON_SON-_ISLAND	133	Con Son Island (Vietnam); +6° ≤ φ ≤ +11°; +104° ≤ λ ≤ +109°	TRANSLATE Δx = 182 : σx = 25, Δy = 915 : σy = 25, Δz = 344 : σz = 25.	1993	[NGA36, App. D.3, "ING-B"], [GEOTRANS, "ING-B"]
	INDIAN_1960_VIETNAM_16_N	134	Vietnam (near 16°N); +2° ≤ φ ≤ +30°; +101° ≤ λ ≤ +115°	TRANSLATE Δx = 198 : σx = 25, Δy = 881 : σy = 25, Δz = 317 : σz = 25.	1993	[NGA36, App. D.3, "ING-A"], [GEOTRANS, "ING-A"]
INDIAN_1962	INDIAN_1962_PAKISTAN	135	Pakistan; +17° ≤ φ ≤ +44°; +55° ≤ λ ≤ +81°	TRANSLATE Δx = 283, Δy = 682, Δz = 231.	1993	[NGA36, App. E.2, "IND-P"], [GEOTRANS, "IND-P"]
INDIAN_1975	INDIAN_1975_THAILAND-_1991	136	Thailand; +0° ≤ φ ≤ +27°; +91° ≤ λ ≤ +111°	TRANSLATE Δx = 209 : σx = 12, Δy = 818 : σy = 10, Δz = 290 : σz = 12.	1991	[NGA36, App. D.3, "INH-A"], [GEOTRANS, "INH-A"]
	INDIAN_1975_THAILAND-_1997	137	Thailand; +0° ≤ φ ≤ +27°; +91° ≤ λ ≤ +111°	TRANSLATE Δx = 210 : σx = 3, Δy = 814 : σy = 2, Δz = 289 : σz = 3.	1997	[NGA36, App. D.3, "INH-A1", Cycle number 1], [GEOTRANS, "INH-A1"]
INDONESIAN_1974	INDONESIAN_1974-_INDONESIA	138	Indonesia; -16° ≤ φ ≤ +11°; +89° ≤ λ ≤ +146°	TRANSLATE Δx = -24 : σx = 25, Δy = -15 : σy = 25, Δz = 5 : σz = 25.	1993	[NGA36, App. D.3, "IDN"], [GEOTRANS, "IDN"]

ORM label	RT label	RT code	RT region	STT label and parameter values	Date published	References
IRAQ_KUWAIT-_BOUNDARY_1992	IRAQ_KUWAIT_BOUNDARY-_1992_IRAQ_KUWAIT-_BOUNDARY_3	386	Iraq and Kuwait; +28,53° ≤ φ ≤ +37,39°; +38,79° ≤ λ ≤ +49,53°	TRANSLATE Δx = 0 : σx = 2, Δy = 0 : σy = 2, Δz = 0 : σz = 2.	2001	[HELM, "IKB"], [EPSG, Code 1124 & 1136]
IRELAND_1965	IRELAND_1965_IRELAND_3	140	Ireland; +50° ≤ φ ≤ +57°; -12° ≤ λ ≤ -4°	TRANSLATE Δx = 506 : σx = 3, Δy = -122 : σy = 3, Δz = 611 : σz = 3.	1987	[NGA36, App. D.5, "IRL"], [GEOTRANS, "IRL"]
	IRELAND_1965_IRELAND_7	141	Ireland; +50° ≤ φ ≤ +57°; -12° ≤ λ ≤ -4°	PV_7_PARAMETER Δx = 482,53 : σx = 1, Δy = -130,596 : σy = 1, Δz = 564,557 : σz = 1, ω_1 = -1,042″, ω_2 = -0,214″, ω_3 = -0,631″, Δs = 8,15 x 10^{-6}.	2001	[HELM, "IRL-7"], [GEOTRANS, "IRL"]
ISTS_061_1968	ISTS_061_1968_SOUTH-_GEORGIA_ISLAND	142	South Georgia Island (UK); -56° ≤ φ ≤ -52°; -38° ≤ λ ≤ -34°	TRANSLATE Δx = -794 : σx = 25, Δy = 119 : σy = 25, Δz = -298 : σz = 25.	1991	[NGA36, App. D.8, "ISG"], [GEOTRANS, "ISG"]
ISTS_073_1969	ISTS_073_1969_DIEGO-_GARCIA	143	Diego Garcia (UK); -10° ≤ φ ≤ -4°; +69° ≤ λ ≤ +75°	TRANSLATE Δx = 208 : σx = 25, Δy = -435 : σy = 25, Δz = -229 : σz = 25.	1987	[NGA36, App. D.9, "IST"], [GEOTRANS, "IST"]

ORM label	RT label	RT code	RT region	STT label and parameter values	Date published	References
ITRF	ITRF_IDENTITY_BY-_MEASUREMENT	387	Global (Earth); -90° ≤ φ ≤ +90°; -180° ≤ λ ≤ +180°	TRANSLATE Δx = 0 : σx = 0,02, Δy = 0 : σy = 0,02, Δz = 0 : σz = 0,02.	2008	[ITRF], [NGA36, Section 2.2], [IERS36]
JGD_2000	JGD_2000_IDENTITY_BY-_MEASUREMENT	145	Japan; +20,4° ≤ φ ≤ +45,6°; +122,9° ≤ λ ≤ +154,0°	TRANSLATE Δx = 0, Δy = 0, Δz = 0.	2000	[ISOGR, Identifier 111]
JGD_2011	JGD_2011_IDENTITY_BY-_MEASUREMENT	419	Japan; +20,4° ≤ φ ≤ +45,6°; +122,9° ≤ λ ≤ +154,0°	TRANSLATE Δx = 0, Δy = 0, Δz = 0.	2011	[ISOGR, Identifier 138]
JOHNSTON_1961	JOHNSTON_1961-_JOHNSTON_ISLAND	146	Johnston Island (US); +15° ≤ φ ≤ +19°; -171° ≤ λ ≤ -168°	TRANSLATE Δx = 189 : σx = 25, Δy = -79 : σy = 25, Δz = -202 : σz = 25.	1991	[NGA36, App. D.10, "JOH"], [GEOTRANS, "JOH"]
KANDAWALA_1987	KANDAWALA_1987-_SRI_LANKA_3	150	Sri Lanka; +4° ≤ φ ≤ +12°; +77° ≤ λ ≤ +85°	TRANSLATE Δx = -97 : σx = 20, Δy = 787 : σy = 20, Δz = 86 : σz = 20.	1987	[NGA36, App. D.3, "KAN"], [GEOTRANS, "KAN"]

ORM label	RT label	RT code	RT region	STT label and parameter values	Date published	References
	KANDAWALA_1987_SRI-_LANKA_7	388	Sri Lanka; +4° ≤ φ ≤ +12°; +77° ≤ λ ≤ +85°	PV_7_PARAMETER Δx = 33,7, Δy = 886,1, Δz = 105,3, ω_1 = -0,11″, ω_2 = 0,369″, ω_3 = 3,701″, Δs = -20,187 x 10^{-6}.	2001	[HELM, "KAN-7", "Sri Lanka"], [GEOTRANS, "KAN"]
KERGUELEN_1949	KERGUELEN_1949-_KERGUELEN_ISLAND	151	Kerguelen Island (France); -52° ≤ φ ≤ -47°; +65° ≤ λ ≤ +74°	TRANSLATE Δx = 145 : σx = 25, Δy = -187 : σy = 25, Δz = 103 : σz = 25.	1987	[NGA36, App. D.9, "KEG"], [GEOTRANS, "KEG"]
KERTAU_1948	KERTAU_1948-_W_MALAYSIA-_SINGAPORE_3	152	West Malaysia and Singapore; -5° ≤ φ ≤ +12°; +94° ≤ λ ≤ +112°	TRANSLATE Δx = -11 : σx = 10, Δy = 851 : σy = 8, Δz = 5 : σz = 6.	1987	[NGA36, App. D.3, "KEA"], [GEOTRANS, "KEA"]
	KERTAU_1948-_W_MALAYSIA-_SINGAPORE_7	389	West Malaysia and Singapore; -5° ≤ φ ≤ +12°; +94° ≤ λ ≤ +112°	PV_7_PARAMETER Δx = -366,94, Δy = 719,29, Δz = -88,93, ω_1 = 2,498″, ω_2 = 2,142″, ω_3 = -12,057″, Δs = 9,093 x 10^{-6}.	2001	[HELM, "KEA-7", "Malaysia W & Sing."], [GEOTRANS, "KEA"]

ORM label	RT label	RT code	RT region	STT label and parameter values	Date published	References
KKJ	KKJ_FINLAND_7	390	Finland; +58,84° ≤ φ ≤ +70,09°; +19,08° ≤ λ ≤ +31,59°	PV_7_PARAMETER Δx = -90,7 : σx = 2, Δy = -106,1 : σy = 2, Δz = -119,2 : σz = 2, ω_1 = 4,09″, ω_2 = 0,218″, ω_3 = -1,05″, Δs = 1,37 x 10^{-6}.	2001	[HELM, "KKX-7"], [EPSG, Code 1095]
KOREAN-_GEODETIC_1995	KOREAN_GEODETIC_1995-_SOUTH_KOREA	153	South Korea; +27° ≤ φ ≤ +45°; +120° ≤ λ ≤ +139°	TRANSLATE Δx = 0 : σx = 1, Δy = 0 : σy = 1, Δz = 0 : σz = 1.	2000	[NGA36, App. D.3, "KGS"], [GEOTRANS, "KGS"]
KUSAIE_1951	KUSAIE_1951_CAROLINE-_ISLANDS	154	Caroline Islands (Federated States of Micronesia); -1° ≤ φ ≤ +12°; +134° ≤ λ ≤ +167°	TRANSLATE Δx = 647 : σx = 25, Δy = 1 777 : σy = 25, Δz = -1 124 : σz = 25.	1991	[NGA36, App. D.10, "KUS"], [GEOTRANS, "KUS"]
LC5_1961	LC5_1961_CAYMAN_BRAC-_ISLAND	156	Cayman Brac Island (Cayman Islands); +18° ≤ φ ≤ +21°; -83° ≤ λ ≤ -78°	TRANSLATE Δx = 42 : σx = 25, Δy = 124 : σy = 25, Δz = 147 : σz = 25.	1987	[NGA36, App. D.8, "LCF"], [GEOTRANS, "LCF"]
LEIGON_1991	LEIGON_1991_GHANA_3	157	Ghana; -1° ≤ φ ≤ +17°; -9° ≤ λ ≤ +7°	TRANSLATE Δx = -130 : σx = 2, Δy = 29 : σy = 3, Δz = 364 : σz = 2.	1991	[NGA36, App. D.2, "LEH"], [GEOTRANS, "LEH"]

ORM label	RT label	RT code	RT region	STT label and parameter values	Date published	References
	LEIGON_1991_GHANA_7	158	Ghana; -1° ≤ φ ≤ +17°; -9° ≤ λ ≤ +7°	PV_7_PARAMETER Δx = -135,58, Δy = 13,23, Δz = 364,13, ω_1 = 2,016 8″, ω_2 = -0,025 6″, ω_3 = 0,809 1″, Δs = 0,719 x 10^{-6}.	2001	[HELM, "LEH-7"], [GEOTRANS, "LEH"]
LIBERIA_1964	LIBERIA_1964_LIBERIA	159	Liberia; -1° ≤ φ ≤ +14°; -17° ≤ λ ≤ -1°	TRANSLATE Δx = -90 : σx = 15, Δy = 40 : σy = 15, Δz = 88 : σz = 15.	1987	[NGA36, App. D.2, "LIB"], [GEOTRANS, "LIB"]
LISBON_D73	LISBON_D73_PORTUGAL_3	429	Portugal; +29,24° ≤ φ ≤ +43,07°; -35,58° ≤ λ ≤ -6,19°	TRANSLATE Δx = -306 : σx = 25, Δy = -62 : σy = 25, Δz = 105 : σz = 25.	2012	[NGA36, App. D.5, "LIS"], [EPSG, Code 1193]
	LISBON_D73_PORTUGAL_7	391	Portugal; +29,24° ≤ φ ≤ +43,07°; -35,58° ≤ λ ≤ -6,19°	PV_7_PARAMETER Δx = -238,2 : σx = 1, Δy = 85,2 : σy = 1, Δz = 29,9 : σz = 1, ω_1 = 0,166″, ω_2 = 0,046″, ω_3 = 1,248″, Δs = 2,03 x 10^{-6}.	2001	[HELM, "LIS-7"], [EPSG, Code 1193]
LKS94	LKS94_IDENTITY	392	Lithuania; +53,89° ≤ φ ≤ +56,45°; +19,02° ≤ λ ≤ +26,82°	IDENTITY	2001	[HELM, "LTH"], [EPSG, Code 1145]

ORM label	RT label	RT code	RT region	STT label and parameter values	Date published	References
LUXEMBOURG_NT	LUXEMBOURG_NT-_LUXEMBOURG_7	393	Luxembourg; +49,44° ≤ φ ≤ +50,19°; +5,73° ≤ λ ≤ +6,53°	PV_7_PARAMETER Δx = -193 : σx = 1, Δy = 13,7 : σy = 1, Δz = -39,3 : σz = 1, ω_1 = -0,41″, ω_2 = -2,933″, ω_3 = 2,688″, Δs = 0,43 x 10^{-6}.	2001	[HELM], [EPSG, Code 1146]
LUZON_1987	LUZON_1987_MINDANAO-_ISLAND	160	Mindanao Island (Philippines); +4° ≤ φ ≤ +12°; +120° ≤ λ ≤ +128°	TRANSLATE Δx = -133 : σx = 25, Δy = -79 : σy = 25, Δz = -72 : σz = 25.	1987	[NGA36, App. D.10, "LUZ-B"], [GEOTRANS, "LUZ-B"]
	LUZON_1987_PHILIPPINES-_EXCLUDING_MINDANAO-_ISLAND	161	Philippines (excluding Mindanao Island); +3° ≤ φ ≤ +23°; +115° ≤ λ ≤ +128°	TRANSLATE Δx = -133 : σx = 8, Δy = -77 : σy = 11, Δz = -51 : σz = 9.	1987	[NGA36, App. D.10, "LUZ-A"], [GEOTRANS, "LUZ-A"]
M_PORALOKO_1991	M_PORALOKO_1991_GABON	162	Gabon; -10° ≤ φ ≤ +8°; +3° ≤ λ ≤ +20°	TRANSLATE Δx = -74 : σx = 25, Δy = -130 : σy = 25, Δz = 42 : σz = 25.	1991	[NGA36, App. D.2, "MPO"], [GEOTRANS, "MPO"]
MAHE_1971	MAHE_1971_MAHE_ISLAND	163	Mahe Island (Seychelles); -6° ≤ φ ≤ -3°; +54° ≤ λ ≤ +57°	TRANSLATE Δx = 41 : σx = 25, Δy = -220 : σy = 25, Δz = -134 : σz = 25.	1987	[NGA36, App. D.9, "MIK"], [GEOTRANS, "MIK"]

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MARCUS_STATION-_1952	MARCUS_STATION_1952-_MARCUS_ISLANDS	164	Marcus Island (Japan); +22° ≤ φ ≤ +26°; +152° ≤ λ ≤ +156°	TRANSLATE Δx = 124 : σx = 25, Δy = -234 : σy = 25, Δz = -25 : σz = 25.	1987	[NGA36, App. D.10, "ASQ"], [GEOTRANS, "ASQ"]
MASS_1999	MASS_1999_IDENTITY_BY-_DEFAULT	167	Global (Earth)	IDENTITY	1999	[ERNWM, Table 1, "MASS"]
MASSAWA_1987	MASSAWA_1987_ERITREA-_ETHIOPIA	168	Eritrea and Ethiopia; +7° ≤ φ ≤ +25°; +37° ≤ λ ≤ +53°	TRANSLATE Δx = 639 : σx = 25, Δy = 405 : σy = 25, Δz = 60 : σz = 25.	1987	[NGA36, App. D.2, "MAS"], [GEOTRANS, "MAS"]
MAYOTTE_COMBANI-_1950	MAYOTTE_COMBANI_1950_MAYOTTE	430	Mayotte (France); -14° ≤ φ ≤ -12°; +44° ≤ λ ≤ +46°	TRANSLATE Δx = -382, Δy = -59, Δz = -262.	2012	[NGA36, App. E.2, "MCX"], [GEOTRANS, "MCX"]
MERCHICH_1987	MERCHICH_1987_MOROCCO	169	Morocco; +22° ≤ φ ≤ +42°; -19° ≤ λ ≤ +5°	TRANSLATE Δx = 31 : σx = 5, Δy = 146 : σy = 3, Δz = 47 : σz = 3.	1987	[NGA36, App. D.2, "MER"], [GEOTRANS, "MER"]
MGI_DATUM-_HERMANNSKOGEL	MGI_DATUM-_HERMANNSKOGEL-_AUSTRIA_7	394	Austria; +46,4° ≤ φ ≤ +49,02°; +9,53° ≤ λ ≤ +17,17°	PV_7_PARAMETER Δx = 577,3 : σx = 2, Δy = 90,1 : σy = 2, Δz = 463,9 : σz = 2, ω_1 = 5,137″, ω_2 = 1,474″, ω_3 = 5,297″, Δs = 2,42 x 10^{-6}.	2001	[HELM, "HER-7", "Austria"], [EPSG, Code 1037]

ORM label	RT label	RT code	RT region	STT label and parameter values	Date published	References
MIDWAY_1961	MIDWAY_1961_MIDWAY-_ISLANDS	172	Midway Islands (US); +25° ≤ φ ≤ +30°; -180° ≤ λ ≤ -169°	TRANSLATE Δx = 403 : σx = 25, Δy = -81 : σy = 25, Δz = 277 : σz = 25.	2003	[NGA36, App. D.10, "MID", Cycle number 1], [GEOTRANS, "MID"]
MINNA_1991	MINNA_1991_CAMEROON	174	Cameroon; -4° ≤ φ ≤ +19°; +3° ≤ λ ≤ +23°	TRANSLATE Δx = -81 : σx = 25, Δy = -84 : σy = 25, Δz = 115 : σz = 25.	1991	[NGA36, App. D.2, "MIN-A"], [GEOTRANS, "MIN-A"]
	MINNA_1991_NIGERIA	175	Nigeria; -1° ≤ φ ≤ +21°; -4° ≤ λ ≤ +20°	TRANSLATE Δx = -92 : σx = 3, Δy = -93 : σy = 6, Δz = 122 : σz = 5.	1987	[NGA36, App. D.2, "MIN-B"], [GEOTRANS, "MIN-B"]
MM5_1997	MM5_1997_IDENTITY_BY-_DEFAULT	177	Global (Earth)	IDENTITY	1997	[ERNWM, Table 1, "MM5 (AFWA)"]
MODTRAN-_MIDLATITUDE_N-_1989	MODTRAN_MIDLATITUDE_N-_1989_IDENTITY_BY-_DEFAULT	178	Northern midlatitude regions (Earth); +30° ≤ φ ≤ +60°; -180° ≤ λ ≤ +180°	IDENTITY	1989	[ERNWM, Table 1, "MODTRAN, Midlatitude"]
MODTRAN-_MIDLATITUDE_S-_1989	MODTRAN_MIDLATITUDE_S-_1989_IDENTITY_BY-_DEFAULT	179	Southern midlatitude regions (Earth); -60° ≤ φ ≤ -30°; -180° ≤ λ ≤ +180°	IDENTITY	1989	[ERNWM, Table 1, "MODTRAN, Midlatitude"]

ORM label	RT label	RT code	RT region	STT label and parameter values	Date published	References
MODTRAN-_SUBARCTIC_N-_1989	MODTRAN_SUBARCTIC_N-_1989_IDENTITY_BY-_DEFAULT	180	Northern subarctic regions (Earth); +60° ≤ φ ≤ +75°; -180° ≤ λ ≤ +180°	IDENTITY	1989	[ERNWM, Table 1, "MODTRAN, Subarctic"]
MODTRAN-_SUBARCTIC_S-_1989	MODTRAN_SUBARCTIC_S-_1989_IDENTITY_BY-_DEFAULT	181	Southern subarctic regions (Earth); -75° ≤ φ ≤ -60°; -180° ≤ λ ≤ +180°	IDENTITY	1989	[ERNWM, Table 1, "MODTRAN, Subarctic"]
MODTRAN-_TROPICAL_1989	MODTRAN_TROPICAL_1989-_IDENTITY_BY_DEFAULT	182	Tropical regions (Earth); -30° ≤ φ ≤ +30°; -180° ≤ λ ≤ +180°	IDENTITY	1989	[ERNWM, Table 1, "MODTRAN, Tropical"]
MONTSERRAT_1958	MONTSERRAT_1958-_MONTSERRAT_LEEWARD-_ISLANDS	183	Montserrat and Leeward Islands (UK); +15° ≤ φ ≤ +18°; -64° ≤ λ ≤ -61°	TRANSLATE Δx = 174 : σx = 25, Δy = 359 : σy = 25, Δz = 365 : σz = 25.	1991	[NGA36, App. D.8, "ASM"], [GEOTRANS, "ASM"]
MULTIGEN_FLAT-_EARTH_1989	MULTIGEN_FLAT_EARTH-_1989_IDENTITY_BY-_DEFAULT	185	Global (Earth)	IDENTITY	1989	[MFCG]
N_AM_1927	N_AM_1927_ALASKA-_EXCLUDING_ALEUTIAN-_ISLANDS	186	Alaska (excluding Aleutian Islands); +47° ≤ φ ≤ +78°; -175° ≤ λ ≤ -130°	TRANSLATE Δx = -5 : σx = 5, Δy = 135 : σy = 9, Δz = 172 : σz = 5.	1987	[NGA36, App. D.6, "NAS-D"], [GEOTRANS, "NAS-D"]
	N_AM_1927_ALBERTA-_BRITISH_COLUMBIA	187	Canada (Alberta and British Columbia); +43° ≤ φ ≤ +65°; -145° ≤ λ ≤ -105°	TRANSLATE Δx = -7 : σx = 8, Δy = 162 : σy = 8, Δz = 188 : σz = 6.	1991	[NGA36, App. D.6, "NAS-F"], [GEOTRANS, "NAS-F"]

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	N_AM_1927_BAHAMAS-_EXCLUDING_SAN-_SALVADOR_ISLAND	188	Bahamas (excluding San Salvador Island); +19° ≤ φ ≤ +29°; -83° ≤ λ ≤ -71°	TRANSLATE Δx = -4 : σx = 5, Δy = 154 : σy = 3, Δz = 178 : σz = 5.	1987	[NGA36, App. D.6, "NAS-Q"], [GEOTRANS, "NAS-Q"]
	N_AM_1927_CANADA	189	Canada; +36° ≤ φ ≤ +90°; -150° ≤ λ ≤ -50°	TRANSLATE Δx = -10 : σx = 15, Δy = 158 : σy = 11, Δz = 187 : σz = 6.	1987	[NGA36, App. D.6, "NAS-E"], [GEOTRANS, "NAS-E"]
	N_AM_1927_CANAL_ZONE	190	Canal Zone; +3° ≤ φ ≤ +15°; -86° ≤ λ ≤ -74°	TRANSLATE Δx = 0 : σx = 20, Δy = 125 : σy = 20, Δz = 201 : σz = 20.	1987	[NGA36, App. D.6, "NAS-O"], [GEOTRANS, "NAS-O"]
	N_AM_1927_CARIBBEAN	191	Caribbean (Antigua Island, Barbados, Barbuda, Caicos Islands, Cuba, Dominican Republic, Grand Cayman, Jamaica and Turks Islands); +8° ≤ φ ≤ +29°; -87° ≤ λ ≤ -58°	TRANSLATE Δx = -3 : σx = 3, Δy = 142 : σy = 9, Δz = 183 : σz = 12.	1991	[NGA36, App. D.6, "NAS-P"], [GEOTRANS, "NAS-P"]
	N_AM_1927_CENTRAL-_AMERICA	192	Central America (Belize, Costa Rica, El Salvador, Guatemala, Honduras and Nicaragua); +3° ≤ φ ≤ +25°; -98° ≤ λ ≤ -77°	TRANSLATE Δx = 0 : σx = 8, Δy = 125 : σy = 3, Δz = 194 : σz = 5.	1987	[NGA36, App. D.6, "NAS-N"], [GEOTRANS, "NAS-N"]

ORM label	RT label	RT code	RT region	STT label and parameter values	Date published	References
	N_AM_1927_CONTINENTAL-_US	193	Continental United States Mean Solution; +15° ≤ φ ≤ +60°; -135° ≤ λ ≤ -60°	TRANSLATE Δx = -8 : σx = 5, Δy = 160 : σy = 5, Δz = 176 : σz = 6.	1987	[NGA36, App. D.6, "NAS-C"], [GEOTRANS, "NAS-C"]
	N_AM_1927_CUBA	194	Cuba; +18° ≤ φ ≤ +25°; -87° ≤ λ ≤ -72°	TRANSLATE Δx = -9 : σx = 25, Δy = 152 : σy = 25, Δz = 178 : σz = 25.	1987	[NGA36, App. D.6, "NAS-T"], [GEOTRANS, "NAS-T"]
	N_AM_1927_EAST-_ALEUTIAN_ISLANDS	195	Aleutian Islands (east of 180°W); +50° ≤ φ ≤ +58°; -180° ≤ λ ≤ -161°	TRANSLATE Δx = -2 : σx = 6, Δy = 152 : σy = 8, Δz = 149 : σz = 10.	1993	[NGA36, App. D.6, "NAS-V"], [GEOTRANS, "NAS-V"]
	N_AM_1927_EASTERN-_CANADA	196	Eastern Canada (New Brunswick, Newfoundland and Labrador, Nova Scotia and Quebec); +38° ≤ φ ≤ +68°; -85° ≤ λ ≤ -45°	TRANSLATE Δx = -22 : σx = 6, Δy = 160 : σy = 6, Δz = 190 : σz = 3.	1991	[NGA36, App. D.6, "NAS-G"], [GEOTRANS, "NAS-G"]

ORM label	RT label	RT code	RT region	STT label and parameter values	Date published	References
	N_AM_1927_EASTERN_US	197	Eastern United States (Alabama, Connecticut, Delaware, District of Columbia, Florida, Georgia, Illinois, Indiana, Kentucky, Louisiana, Maine, Maryland, Massachusetts, Michigan, Minnesota, Mississippi, Missouri, New Hampshire, New Jersey, New York, North Carolina, Ohio, Pennsylvania, Rhode Island, South Carolina, Tennessee, Vermont, Virginia, West Virginia and Wisconsin); +18° ≤ φ ≤ +55°; -102° ≤ λ ≤ -60°	TRANSLATE Δx = -9 : σx = 5, Δy = 161 : σy = 5, Δz = 179 : σz = 8.	1991	[NGA36, App. D.6, "NAS-A"], [GEOTRANS, "NAS-A"]
	N_AM_1927_HAYES-_PENINSULA	198	Hayes Peninsula (Greenland); +74° ≤ φ ≤ +81°; -74° ≤ λ ≤ -56°	TRANSLATE Δx = 11 : σx = 25, Δy = 114 : σy = 25, Δz = 195 : σz = 25.	1987	[NGA36, App. D.6, "NAS-U"], [GEOTRANS, "NAS-U"]
	N_AM_1927_MANITOBA-_ONTARIO	199	Canada (Manitoba and Ontario); +36° ≤ φ ≤ +63°; -108° ≤ λ ≤ -69°	TRANSLATE Δx = -9 : σx = 9, Δy = 157 : σy = 5, Δz = 184 : σz = 5.	1991	[NGA36, App. D.6, "NAS-H"], [GEOTRANS, "NAS-H"]

ORM label	RT label	RT code	RT region	STT label and parameter values	Date published	References
	N_AM_1927_MEXICO	200	Mexico; +10° ≤ φ ≤ +38°; -122° ≤ λ ≤ -80°	TRANSLATE Δx = -12 : σx = 8, Δy = 130 : σy = 6, Δz = 190 : σz = 6.	1987	[NGA36, App. D.6, "NAS-L"], [GEOTRANS, "NAS-L"]
	N_AM_1927_NORTHWEST-_TERRITORIES-_SASKATCHEWAN	201	Canada (Northwest Territories, Nunavut, and Saskatchewan); +43° ≤ φ ≤ +90°; -144° ≤ λ ≤ -55°	TRANSLATE Δx = 4 : σx = 5, Δy = 159 : σy = 5, Δz = 188 : σz = 3.	1991	[NGA36, App. D.6, "NAS-I"], [GEOTRANS, "NAS-I"]
	N_AM_1927_SAN-_SALVADOR_ISLAND	202	San Salvador Island (The Bahamas); +23° ≤ φ ≤ +26°; -75° ≤ λ ≤ -74°	TRANSLATE Δx = 1 : σx = 25, Δy = 140 : σy = 25, Δz = 165 : σz = 25.	1987	[NGA36, App. D.6, "NAS-R"], [GEOTRANS, "NAS-R"]
	N_AM_1927_WEST-_ALEUTIAN_ISLANDS	203	Aleutian Islands (west of 180°W); +50° ≤ φ ≤ +58°; +169° ≤ λ ≤ +180°	TRANSLATE Δx = 2 : σx = 10, Δy = 204 : σy = 10, Δz = 105 : σz = 10.	1993	[NGA36, App. D.6, "NAS-W"], [GEOTRANS, "NAS-W"]

ORM label	RT label	RT code	RT region	STT label and parameter values	Date published	References
	N_AM_1927_WESTERN_US	204	Western United States (Arizona, Arkansas, California, Colorado, Idaho, Iowa, Kansas, Montana, Nebraska, Nevada, New Mexico, North Dakota, Oklahoma, Oregon, South Dakota, Texas, Utah, Washington and Wyoming); +19° ≤ φ ≤ +55°; -132° ≤ λ ≤ -87°	TRANSLATE Δx = -8 : σx = 5, Δy = 159 : σy = 3, Δz = 175 : σz = 3.	1991	[NGA36, App. D.6, "NAS-B"], [GEOTRANS, "NAS-B"]
	N_AM_1927_YUKON	205	Canada (Yukon); +53° ≤ φ ≤ +75°; -147° ≤ λ ≤ -117°	TRANSLATE Δx = -7 : σx = 5, Δy = 139 : σy = 8, Δz = 181 : σz = 3.	1991	[NGA36, App. D.6, "NAS-J"], [GEOTRANS, "NAS-J"]
N_AM_1983	N_AM_1983_ALASKA-_EXCLUDING_ALEUTIAN-_ISLANDS	206	Alaska (excluding Aleutian Islands); +48° ≤ φ ≤ +78°; -175° ≤ λ ≤ -135°	TRANSLATE Δx = 0 : σx = 2, Δy = 0 : σy = 2, Δz = 0 : σz = 2.	1987	[NGA36, App. D.6, "NAR-A"], [GEOTRANS, "NAR-A"]
	N_AM_1983_ALEUTIAN-_ISLANDS	207	Aleutian Islands; +51° ≤ φ ≤ +74°; +169° ≤ λ ≤ +180° or -180° ≤ λ ≤ -161°	TRANSLATE Δx = -2 : σx = 5, Δy = 0 : σy = 2, Δz = 4 : σz = 5.	1993	[NGA36, App. D.6, "NAR-E"], [GEOTRANS, "NAR-E"]
	N_AM_1983_CANADA	208	Canada; +36° ≤ φ ≤ +90°; -150° ≤ λ ≤ -50°	TRANSLATE Δx = 0 : σx = 2, Δy = 0 : σy = 2, Δz = 0 : σz = 2.	1987	[NGA36, App. D.6, "NAR-B"], [GEOTRANS, "NAR-B"]

ORM label	RT label	RT code	RT region	STT label and parameter values	Date published	References
	N_AM_1983_CONTINENTAL-_US	209	Continental United States; +15° ≤ φ ≤ +60°; -135° ≤ λ ≤ -60°	TRANSLATE Δx = 0 : σx = 2, Δy = 0 : σy = 2, Δz = 0 : σz = 2.	1987	[NGA36, App. D.6, "NAR-C"], [GEOTRANS, "NAR-C"]
	N_AM_1983_HAWAII	210	Hawaii (US); +17° ≤ φ ≤ +24°; -164° ≤ λ ≤ -153°	TRANSLATE Δx = 1 : σx = 2, Δy = 1 : σy = 2, Δz = -1 : σz = 2.	1993	[NGA36, App. D.6, "NAR-H"], [GEOTRANS, "NAR-H"]
	N_AM_1983_MEXICO-_CENTRAL_AMERICA	211	Mexico and Central America; +11° ≤ φ ≤ +35°; -122° ≤ λ ≤ -72°	TRANSLATE Δx = 0 : σx = 2, Δy = 0 : σy = 2, Δz = 0 : σz = 2.	1987	[NGA36, App. D.6, "NAR-D"], [GEOTRANS, "NAR-D"]
N_SAHARA_1959	N_SAHARA_1959_ALGERIA	212	Algeria; +13° ≤ φ ≤ +43°; -15° ≤ λ ≤ +18°	TRANSLATE Δx = -186 : σx = 25, Δy = -93 : σy = 25, Δz = 310 : σz = 25.	1993	[NGA36, App. D.2, "NSD"], [GEOTRANS, "NSD"]
NAHRWAN_1987	NAHRWAN_1987-_MASIRAH_ISLAND	213	Masirah Island (Oman); +19° ≤ φ ≤ +22°; +57° ≤ λ ≤ +60°	TRANSLATE Δx = -247 : σx = 25, Δy = -148 : σy = 25, Δz = 369 : σz = 25.	1987	[NGA36, App. D.3, "NAH-A"], [GEOTRANS, "NAH-A"]
	NAHRWAN_1987-_SAUDI_ARABIA	214	Saudi Arabia; +8° ≤ φ ≤ +38°; +28° ≤ λ ≤ +62°	TRANSLATE Δx = -243 : σx = 20, Δy = -192 : σy = 20, Δz = 477 : σz = 20.	1991	[NGA36, App. D.3, "NAH-C"], [GEOTRANS, "NAH-C"]

ORM label	RT label	RT code	RT region	STT label and parameter values	Date published	References
	NAHRWAN_1987_UNITED-_ARAB_EMIRATES	215	United Arab Emirates; +17° ≤ φ ≤ +32°; +45° ≤ λ ≤ +62°	TRANSLATE Δx = -249 : σx = 25, Δy = -156 : σy = 25, Δz = 381 : σz = 25.	1987	[NGA36, App. D.3, "NAH-B"], [GEOTRANS, "NAH-B"]
NAPARIMA_1991	NAPARIMA_1991-_TRINIDAD_TOBAGO	217	Trinidad and Tobago; +8° ≤ φ ≤ +13°; -64° ≤ λ ≤ -59°	TRANSLATE Δx = -10 : σx = 15, Δy = 375 : σy = 15, Δz = 165 : σz = 15.	1991	[NGA36, App. D.8, "NAP"], [GEOTRANS, "NAP"]
NGO_1948	NGO_1948_NORWAY_7	395	Norway; +56,08° ≤ φ ≤ +84,72°; -3,34° ≤ λ ≤ +38°	PV_7_PARAMETER Δx = 278,3 : σx = 3, Δy = 93 : σy = 3, Δz = 474,5 : σz = 3, ω_1 = 7,889″, ω_2 = 0,05″, ω_3 = -6,61″, Δs = 6,21 x 10^{-6}.	2001	[HELM, "NGO-7"], [EPSG, Code 1182]
NOGAPS_1988	NOGAPS_1988_IDENTITY-_BY_DEFAULT	220	Global (Earth)	IDENTITY	1988	[ERNWM, Table 1, "NOGAPS"]
NTF_1896	NTF_1896_FRANCE	221	France; +41,15° ≤ φ ≤ +51,56°; -9,86° ≤ λ ≤ +10,38°	TRANSLATE Δx = -168, Δy = -60, Δz = 320.	2012	[NGA36, App. E.2, "NTF"], [EPSG, Code 1096]

ORM label	RT label	RT code	RT region	STT label and parameter values	Date published	References
NTF_1896_PM-_PARIS	NTF_1896_PM_PARIS-_FRANCE	222	France; +41,15° ≤ φ ≤ +51,56°; -11,86° ≤ λ ≤ +8,38°	PV_Z_ROTATE_TRANSLATE Δx = -168, Δy = -60, Δz = 320, ω = 2° 20′ 14,025″. Note: The referenced *z*-axis rotation has been offset so that Paris is contained in the *x*-positive *xz*-plane.	2012	[NGA36, App. E.2, "NTF"], [EPSG, Code 1096]
OBSERV_METEORO-_1939	OBSERV_METEORO_1939-_CORVO_FLORES_ISLANDS	224	Corvo and Flores Islands (Azores, Portugal); +38° ≤ φ ≤ +41°; -33° ≤ λ ≤ -30°	TRANSLATE Δx = -425 : σx = 20, Δy = -169 : σy = 20, Δz = 81 : σz = 20.	1991	[NGA36, App. D.8, "FLO"], [GEOTRANS, "FLO"]
OBSERV_CAMPOS-_RODRIGUES_1907	OBSERV-_CAMPOS_RODRIGUES-_1907-MOZAMBIQUE_SOUTH_3	431	Mozambique South; -26,87° ≤ φ ≤ -19,84°; +31,29° ≤ λ ≤ +35,65°	TRANSLATE Δx = -132 : σx = 10, Δy = -110 : σy = 10, Δz = -355 : σz = 10.	2012	[NGA36, App. D.2, "CPR"], [EPSG, Code 1329]
	OBSERV-_CAMPOS_RODRIGUES-_1907_-_MOZAMBIQUE_SOUTH_7	396	Mozambique South; -26,87° ≤ φ ≤ -19,84°; +31,29° ≤ λ ≤ +35,65°	PV_7_PARAMETER Δx = -153 : σx = 8, Δy = -227 : σy = 8, Δz = -255 : σz = 8, ω_1 = -1,986″, ω_2 = -0,033″, ω_3 = 3,866″, Δs = 16,99 x 10^{-6}.	2001	[HELM, "CPR-7"], [EPSG, Code 1329]

ORM label	RT label	RT code	RT region	STT label and parameter values	Date published	References
OCOTEPEQUE_1935	OCOTEPEQUE_1935-_COSTA_RICA	432	Costa Rica; +7° ≤ φ ≤ +12°; -87° ≤ λ ≤ -82°	TRANSLATE Δx = 205, Δy = 96, Δz = -98.	2012	[NGA36, App. E.2, "OCE"], [GEOTRANS, "OCE"]
OLD_EGYPTIAN_1907	OLD_EGYPTIAN_1907_EGYPT	225	Egypt; +16° ≤ φ ≤ +38°; +19° ≤ λ ≤ +42°	TRANSLATE Δx = -130 : σx = 3, Δy = 110 : σy = 6, Δz = -13 : σz = 8.	1987	[NGA36, App. D.2, "OEG"], [GEOTRANS, "OEG"]
OLD_HAWAIIAN-_CLARKE_1987	OLD_HAWAIIAN_CLARKE-_1987_HAWAII	226	Hawaii (US); +17° ≤ φ ≤ +22°; -158° ≤ λ ≤ -153°	TRANSLATE Δx = 89 : σx = 25, Δy = -279 : σy = 25, Δz = -183 : σz = 25.	1991	[NGA36, App. D.10, "OHA-A"], [GEOTRANS, "OHA-A"]
	OLD_HAWAIIAN_CLARKE-_1987_KAUAI	227	Kauai (US); +20° ≤ φ ≤ +24°; -161° ≤ λ ≤ -158°	TRANSLATE Δx = 45 : σx = 20, Δy = -290 : σy = 20, Δz = -172 : σz = 20.	1991	[NGA36, App. D.10, "OHA-B"], [GEOTRANS, "OHA-B"]
	OLD_HAWAIIAN_CLARKE-_1987_MAUI	228	Maui (US); +19° ≤ φ ≤ +23°; -158° ≤ λ ≤ -154°	TRANSLATE Δx = 65 : σx = 25, Δy = -290 : σy = 25, Δz = -190 : σz = 25.	1991	[NGA36, App. D.10, "OHA-C"], [GEOTRANS, "OHA-C"]
	OLD_HAWAIIAN_CLARKE-_1987_MEAN_SOLUTION	229	Mean Solution (Hawaii (US)); +17° ≤ φ ≤ +24°; -164° ≤ λ ≤ -153°	TRANSLATE Δx = 61 : σx = 25, Δy = -285 : σy = 20, Δz = -181 : σz = 20.	1987	[NGA36, App. D.10, "OHA-M"], [GEOTRANS, "OHA-M"]

ORM label	RT label	RT code	RT region	STT label and parameter values	Date published	References
	OLD_HAWAIIAN_CLARKE-_1987_OAHU	230	Oahu (US); +20° ≤ φ ≤ +23°; -160° ≤ λ ≤ -156°	TRANSLATE Δx = 58 : σx = 10, Δy = -283 : σy = 6, Δz = -182 : σz = 6.	1991	[NGA36, App. D.10, "OHA-D"], [GEOTRANS, "OHA-D"]
OLD_HAWAIIAN_INT-_1987	OLD_HAWAIIAN_INT_1987-_HAWAII	231	Hawaii (US); +17° ≤ φ ≤ +22°; -158° ≤ λ ≤ -153°	TRANSLATE Δx = 229 : σx = 25, Δy = -222 : σy = 25, Δz = -348 : σz = 25.	2000	[NGA36, App. D.10, "OHI-A"], [GEOTRANS, "OHI-A"]
	OLD_HAWAIIAN_INT_1987-_KAUAI	232	Kauai (US); +20° ≤ φ ≤ +24°; -161° ≤ λ ≤ -158°	TRANSLATE Δx = 185 : σx = 20, Δy = -233 : σy = 20, Δz = -337 : σz = 20.	2000	[NGA36, App. D.10, "OHI-B"], [GEOTRANS, "OHI-B"]
	OLD_HAWAIIAN_INT_1987-_MAUI	233	Maui (US); +19° ≤ φ ≤ +23°; -158° ≤ λ ≤ -154°	TRANSLATE Δx = 205 : σx = 25, Δy = -233 : σy = 25, Δz = -355 : σz = 25.	2000	[NGA36, App. D.10, "OHI-C"], [GEOTRANS, "OHI-C"]
	OLD_HAWAIIAN_INT_1987-_MEAN_SOLUTION	234	Mean Solution (Hawaii (US)); +17° ≤ φ ≤ +24°; -164° ≤ λ ≤ -153°	TRANSLATE Δx = 201 : σx = 25, Δy = -228 : σy = 20, Δz = -346 : σz = 20.	2000	[NGA36, App. D.10, "OHI-M"], [GEOTRANS, "OHI-M"]
	OLD_HAWAIIAN_INT_1987-_OAHU	235	Oahu (US); +20° ≤ φ ≤ +23°; -160° ≤ λ ≤ -156°	TRANSLATE Δx = 198 : σx = 10, Δy = -226 : σy = 6, Δz = -347 : σz = 6.	2000	[NGA36, App. D.10, "OHI-D"], [GEOTRANS, "OHI-D"]

ORM label	RT label	RT code	RT region	STT label and parameter values	Date published	References
OSGB_1936	OSGB_1936_ENGLAND	239	England; +44° ≤ φ ≤ +61°; -12° ≤ λ ≤ +7°	TRANSLATE Δx = 371 : σx = 5, Δy = -112 : σy = 5, Δz = 434 : σz = 6.	1991	[NGA36, App. D.5, "OGB-A"], [GEOTRANS, "OGB-A"]
	OSGB_1936_ENGLAND-_ISLE_OF_MAN_WALES	240	England, Isle of Man, and Wales; +44° ≤ φ ≤ +61°; -12° ≤ λ ≤ +7°	TRANSLATE Δx = 371 : σx = 10, Δy = -111 : σy = 10, Δz = 434 : σz = 15.	1991	[NGA36, App. D.5, "OGB-B"], [GEOTRANS, "OGB-B"]
	OSGB_1936_GREAT-_BRITAIN_7	238	Great Britain; +49,797° ≤ φ ≤ +60,935°; -8,818° ≤ λ ≤ +1,92°	PV_7_PARAMETER Δx = 446,448 : σx = 4, Δy = -125,157 : σy = 4, Δz = 542,06 : σz = 4, ω_1 = 0,15″, ω_2 = 0,247″, ω_3 = 0,842 1″, Δs = -20,49 x 10^{-6}.	2001	[HELM, "OGB-7"], [EPSG, Code 1264]
	OSGB_1936_MEAN-_SOLUTION_3	237	Mean Solution (England, Isle of Man, Scotland, Shetland Islands, and Wales); +44° ≤ φ ≤ +66°; -14° ≤ λ ≤ +7°	TRANSLATE Δx = 375 : σx = 10, Δy = -111 : σy = 10, Δz = 431 : σz = 15.	1936	[NGA36, App. D.5, "OGB-M"], [GEOTRANS, "OGB-M"]
	OSGB_1936_SCOTLAND-_SHETLAND_ISLANDS	241	Scotland and Shetland Islands; +49° ≤ φ ≤ +66°; -14° ≤ λ ≤ +4°	TRANSLATE Δx = 384 : σx = 10, Δy = -111 : σy = 10, Δz = 425 : σz = 10.	1991	[NGA36, App. D.5, "OGB-C"], [GEOTRANS, "OGB-C"]

ORM label	RT label	RT code	RT region	STT label and parameter values	Date published	References
	OSGB_1936_WALES	242	Wales; +46° ≤ φ ≤ +59°; -11° ≤ λ ≤ +3°	TRANSLATE Δx = 370 : σx = 20, Δy = -108 : σy = 20, Δz = 434 : σz = 20.	1991	[NGA36, App. D.5, "OGB-D"], [GEOTRANS, "OGB-D"]
PALESTINE_1928	PALESTINE_1928-_PALESTINE_3	397	Israel; +29,45° ≤ φ ≤ +33,53°; +32,99° ≤ λ ≤ +35,69°	TRANSLATE Δx = -223, Δy = -70, Δz = 271.	2001	[HELM, "PAL"], [EPSG, Code 1126]
PICO_DE_LAS-_NIEVES_1987	PICO_DE_LAS_NIEVES_1987-_CANARY_ISLANDS	247	Canary Islands (Spain); +26° ≤ φ ≤ +31°; -20° ≤ λ ≤ -12°	TRANSLATE Δx = -307 : σx = 25, Δy = -92 : σy = 25, Δz = 127 : σz = 25.	1987	[NGA36, App. D.8, "PLN"], [GEOTRANS, "PLN"]
PITCAIRN_1967	PITCAIRN_1967-_PITCAIRN_ISLAND	248	Pitcairn Island (UK); -27° ≤ φ ≤ -21°; -134° ≤ λ ≤ -119°	TRANSLATE Δx = 185 : σx = 25, Δy = 165 : σy = 25, Δz = 42 : σz = 25.	1987	[NGA36, App. D.10, "PIT"], [GEOTRANS, "PIT"]
POINT_58_1991	POINT_58_1991_MEAN-_SOLUTION	250	Mean Solution (Burkina Faso and Niger); +0° ≤ φ ≤ +10°; -15° ≤ λ ≤ +25°	TRANSLATE Δx = -106 : σx = 25, Δy = -129 : σy = 25, Δz = 165 : σz = 25.	1991	[NGA36, App. D.2, "PTB"], [GEOTRANS, "PTB"]
POINTE_NOIRE_1948	POINTE_NOIRE_1948-_CONGO	251	Congo; -11° ≤ φ ≤ +10°; +5° ≤ λ ≤ +25°	TRANSLATE Δx = -148 : σx = 25, Δy = 51 : σy = 25, Δz = -291 : σz = 25.	1991	[NGA36, App. D.2, "PTN"], [GEOTRANS, "PTN"]

ORM label	RT label	RT code	RT region	STT label and parameter values	Date published	References
PORTO_SANTO_1936	PORTO_SANTO_1936-_PORTO_SANTO-_MADEIRA_ISLANDS	253	Porto Santo and Madeira Islands (Portugal); +31° ≤ φ ≤ +35°; -18° ≤ λ ≤ -15°	TRANSLATE Δx = -499 : σx = 25, Δy = -249 : σy = 25, Δz = 314 : σz = 25.	1991	[NGA36, App. D.8, "POS"], [GEOTRANS, "POS"]
PROV_S_AM_1956	PROV_S_AM_1956_BOLIVIA	258	Bolivia; -28° ≤ φ ≤ -4°; -75° ≤ λ ≤ -51°	TRANSLATE Δx = -270 : σx = 5, Δy = 188 : σy = 11, Δz = -388 : σz = 14.	1991	[NGA36, App. D.7, "PRP-A"], [GEOTRANS, "PRP-A"]
	PROV_S_AM_1956-_COLOMBIA	259	Colombia; -10° ≤ φ ≤ +16°; -85° ≤ λ ≤ -61°	TRANSLATE Δx = -282 : σx = 15, Δy = 169 : σy = 15, Δz = -371 : σz = 15.	1991	[NGA36, App. D.7, "PRP-D"], [GEOTRANS, "PRP-D"]
	PROV_S_AM_1956-_ECUADOR	260	Ecuador; -11° ≤ φ ≤ +7°; -85° ≤ λ ≤ -70°	TRANSLATE Δx = -278 : σx = 3, Δy = 171 : σy = 5, Δz = -367 : σz = 3.	1991	[NGA36, App. D.7, "PRP-E"], [GEOTRANS, "PRP-E"]
	PROV_S_AM_1956-_C_CHILE_2014	433	Central Chile; -36° ≤ φ ≤ -26°; -83° ≤ λ ≤ -60°	TRANSLATE Δx = -328 : σx = 10, Δy = 340 : σy = 10, Δz = -329 : σz = 10.	2014	[NGA36, App. D.7, "PRP-B2"], [GEOTRANS, "PRP-B"]
	PROV_S_AM_1956_GUYANA	261	Guyana; -4° ≤ φ ≤ +14°; -67° ≤ λ ≤ -51°	TRANSLATE Δx = -298 : σx = 6, Δy = 159 : σy = 14, Δz = -369 : σz = 5.	1991	[NGA36, App. D.7, "PRP-F"], [GEOTRANS, "PRP-F"]

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	PROV_S_AM_1956-_MEAN_SOLUTION	262	Mean Solution (Bolivia, Chile, Colombia, Ecuador, Guyana, Peru and Venezuela); -64° ≤ φ ≤ +18°; -87° ≤ λ ≤ -51°	TRANSLATE Δx = -288 : σx = 17, Δy = 175 : σy = 27, Δz = -376 : σz = 27.	1987	[NGA36, App. D.7, "PRP-M"], [GEOTRANS, "PRP-M"]
	PROV_S_AM_1956-_N_CHILE_19_S	263	Northern Chile (near 19°S); -45° ≤ φ ≤ -12°; -83° ≤ λ ≤ -60°	TRANSLATE Δx = -270 : σx = 25, Δy = 183 : σy = 25, Δz = -390 : σz = 25.	1991	[83502T, App. B.7, "PRP-B"], [GEOTRANS, "PRP-B"]
	PROV_S_AM_1956-_N_CHILE_2014	434	Northern Chile; -26° ≤ φ ≤ -17,5°; -83° ≤ λ ≤ -60°	TRANSLATE Δx = -302 : σx = 10, Δy = 272 : σy = 10, Δz = -360 : σz = 10.	2014	[NGA36, App. D.7, "PRP-B1"], [GEOTRANS, "PRP-B"]
	PROV_S_AM_1956_PERU	264	Peru; -24° ≤ φ ≤ +5°; -87° ≤ λ ≤ -63°	TRANSLATE Δx = -279 : σx = 6, Δy = 175 : σy = 8, Δz = -379 : σz = 12.	1991	[NGA36, App. D.7, "PRP-G"], [GEOTRANS, "PRP-G"]
	PROV_S_AM_1956-_S_CHILE_2014	435	Southern Chile; -44° ≤ φ ≤ -36°; -83° ≤ λ ≤ -60°	TRANSLATE Δx = -352 : σx = 10, Δy = 403 : σy = 10, Δz = -287 : σz = 10.	2014	[NGA36, App. D.7, "PRP-C1"], [GEOTRANS, "PRP-C"]
	PROV_S_AM_1956-_S_CHILE_43_S	265	Southern Chile (near 43°S); -64° ≤ φ ≤ -20°; -83° ≤ λ ≤ -60°	TRANSLATE Δx = -305 : σx = 20, Δy = 243 : σy = 20, Δz = -442 : σz = 20.	1991	[83502T, App. B.7, "PRP-C"], [GEOTRANS, "PRP-C"]

ORM label	RT label	RT code	RT region	STT label and parameter values	Date published	References
	PROV_S_AM_1956- _VENEZUELA_3	256	Venezuela; -5° ≤ φ ≤ +18°; -79° ≤ λ ≤ -54°	TRANSLATE Δx = -295 : σx = 9, Δy = 173 : σy = 14, Δz = -371 : σz = 15.	1991	[NGA36, App. D.7, "PRP-H"], [GEOTRANS, "PRP-H"]
	PROV_S_AM_1956- _VENEZUELA_7	257	Venezuela; -5° ≤ φ ≤ +18°; -79° ≤ λ ≤ -54°	PV_7_PARAMETER Δx = -197,43, Δy = 139,39, Δz = -192,8, ω_1 = 5,266″, ω_2 = 1,238″, ω_3 = -2,381″, Δs = -5,109 x 10^{-6}.	2001	[HELM, "PRP-7"], [GEOTRANS, "PRP-H"]
PROV_S_CHILEAN- _1963	PROV_S_CHILEAN_1963- _SOUTH_CHILE	266	South Chile (near 53°S); -64° ≤ φ ≤ -25°; -83° ≤ λ ≤ -60°	TRANSLATE Δx = 16 : σx = 25, Δy = 196 : σy = 25, Δz = 93 : σz = 25.	1987	[NGA36, App. D.7, "HIT"], [GEOTRANS, "HIT"]
PUERTO_RICO_1987	PUERTO_RICO_1987- _PUERTO_RICO_VIRGIN- _ISLANDS	268	Puerto Rico and Virgin Islands (US); +16° ≤ φ ≤ +20°; -69° ≤ λ ≤ -63°	TRANSLATE Δx = 11 : σx = 3, Δy = 72 : σy = 3, Δz = -101 : σz = 3.	1987	[NGA36, App. D.8, "PUR"], [GEOTRANS, "PUR"]
PULKOVO_1942	PULKOVO_1942_RUSSIA	269	Russia; +36° ≤ φ ≤ +89°; +15° ≤ λ ≤ +180° or -180° ≤ λ ≤ -165°	TRANSLATE Δx = 28, Δy = -130, Δz = -95.	1993	[NGA36, App. E.2, "PUK"], [GEOTRANS, "PUK"]

ORM label	RT label	RT code	RT region	STT label and parameter values	Date published	References
PZ90_GLONASS	PZ90_GLONASS_RUSSIA_7	398	Russia; +36° ≤ φ ≤ +89°; +15° ≤ λ ≤ +180° or -180° ≤ λ ≤ -165°	PV_Z_ROTATE_TRANSLATE Δx = -1,1, Δy = -0,3, Δz = -0,9, ω = 0,169″.	2001	[HELM, "SGB-7"], [GEOTRANS, "PUK"]
QATAR_NATIONAL-_1974	QATAR_NATIONAL_1974-_QATAR_3	270	Qatar; +19° ≤ φ ≤ +32°; +45° ≤ λ ≤ +57°	TRANSLATE Δx = -128 : σx = 20, Δy = -283 : σy = 20, Δz = 22 : σz = 20.	1987	[NGA36, App. D.3, "QAT"], [GEOTRANS, "QAT"]
	QATAR_NATIONAL_1974-_QATAR_7	399	Qatar; +19° ≤ φ ≤ +32°; +45° ≤ λ ≤ +57°	PV_7_PARAMETER Δx = -126,44, Δy = -298,86, Δz = -10,92, ω_1 = 1,23″, ω_2 = 0,27″, ω_3 = 0,85″, Δs = 3,73 x 10^{-6}.	2001	[HELM, "QAT-7", "Qatar"], [GEOTRANS, "QAT"]
QATAR_NATIONAL-_1995	QATAR_NATIONAL_1995-_QATAR_7	400	Qatar; +19° ≤ φ ≤ +32°; +45° ≤ λ ≤ +57°	PV_7_PARAMETER Δx = -119,425, Δy = -303,6587, Δz = -11,00061, ω_1 = 1,164 3″, ω_2 = 0,174 46″, ω_3 = 1,096 259″, Δs = 3,657 07 x 10^{-6}.	2001	[HELM, "QAR-7", "Qatar"], [GEOTRANS, "QAT"]

ORM label	RT label	RT code	RT region	STT label and parameter values	Date published	References
QORNOQ_1987	QORNOQ_1987_SOUTH-_GREENLAND	271	South Greenland; +57° ≤ φ ≤ +85°; -77° ≤ λ ≤ -7°	TRANSLATE Δx = 164 : σx = 25, Δy = 138 : σy = 25, Δz = -189 : σz = 32.	1987	[NGA36, App. D.8, "QUO"], [GEOTRANS, "QUO"]
REUNION_1947	REUNION_1947-_MASCARENE_ISLANDS	272	Mascarene Islands (Republic of Mauritius and Reunion); -27° ≤ φ ≤ -12°; +47° ≤ λ ≤ +65°	TRANSLATE Δx = 94 : σx = 25, Δy = -948 : σy = 25, Δz = -1 262 : σz = 25.	1987	[NGA36, App. D.9, "REU"], [GEOTRANS, "REU"]
RGF_1993	RGF_1993_IDENTITY_BY-_MEASUREMENT	273	France; +42° ≤ φ ≤ +52°; -6° ≤ λ ≤ +10°	TRANSLATE Δx = 0 : σx = 0, Δy = 0 : σy = 0, Δz = 0 : σz = 0.	1993	[RGF]
ROME_1940	ROME_1940_ITALY_7	401	Italy mainland; +37,86° ≤ φ ≤ +47,1°; +6,62° ≤ λ ≤ +18,58°	PV_7_PARAMETER Δx = -104,1 : σx = 4, Δy = -49,1 : σy = 4, Δz = -9,9 : σz = 4, ω_1 = 0,971″, ω_2 = -2,917″, ω_3 = 0,714″, Δs = -11,68 x 10^{-6}.	2001	[HELM, "MOD-7", "Italy"], [EPSG, Code 2372]
	ROME_1940_SARDINIA	276	Sardinia (Italy); +37° ≤ φ ≤ +43°; +6° ≤ λ ≤ +12°	TRANSLATE Δx = -225 : σx = 25, Δy = -65 : σy = 25, Δz = 9 : σz = 25.	1987	[NGA36, App. D.5, "MOD"], [GEOTRANS, "MOD"]

ORM label	RT label	RT code	RT region	STT label and parameter values	Date published	References
	ROME_1940_SARDINIA_7	402	Sardinia (Italy); +37° ≤ φ ≤ +43°; +6° ≤ λ ≤ +12°	PV_7_PARAMETER Δx = -168,6 : σx = 4, Δy = -34 : σy = 4, Δz = 38,6 : σz = 4, ω_1 = -0,374″, ω_2 = -0,679″, ω_3 = -1,379″, Δs = -9,48 x 10^{-6}.	2001	[HELM, "MOD-7", "Sardinia"], [GEOTRANS, "MOD"]
	ROME_1940_SICILY_7	403	Sicily (Italy); +35° ≤ φ ≤ +40°; +10° ≤ λ ≤ +17°	PV_7_PARAMETER Δx = -50,2 : σx = 4, Δy = -50,4 : σy = 4, Δz = 84,8 : σz = 4, ω_1 = -0,69″, ω_2 = -2,012″, ω_3 = 0,459″, Δs = -28,08 x 10^{-6}.	2001	[HELM, "MOD-7", "Sicily"], [GEOTRANS, "EUR-J"]
ROME_1940_PM-_ROME	ROME_1940_PM_ROME-_SARDINIA	275	Sardinia (Italy); +37° ≤ φ ≤ +43°; -6,5° ≤ λ ≤ -0,5°	PV_Z_ROTATE_TRANSLATE Δx = -225 : σx = 25, Δy = -65 : σy = 25, Δz = 9 : σz = 25, ω = 12° 27′ 8,4″. Note: The referenced *z*-axis rotation has been offset so that Rome is contained in the *x*-positive *xz*-plane.	1987	[NGA36, App. D.5, "MOD"], [GEOTRANS, "MOD"]

ORM label	RT label	RT code	RT region	STT label and parameter values	Date published	References
RT90	RT90_SWEDEN_7	404	Sweden; +54,96° ≤ φ ≤ +69,07°; +10,03° ≤ λ ≤ +24,17°	PV_7_PARAMETER Δx = 414,1 : σx = 0, Δy = 41,3 : σy = 0, Δz = 603,1 : σz = 0, ω_1 = -0,855″, ω_2 = 2,141″, ω_3 = -7,023″, Δs = 0 x 10^{-6}.	2001	[HELM, "RTS-7"], [EPSG, Code 1225]
S_AM_1969	S_AM_1969_ARGENTINA	278	Argentina; -62° ≤ φ ≤ -20°; -76° ≤ λ ≤ -47°	TRANSLATE Δx = -62 : σx = 5, Δy = -1 : σy = 5, Δz = -37 : σz = 5.	1991	[NGA36, App. D.7, "SAN-A"], [GEOTRANS, "SAN-A"]
	S_AM_1969_BALTRA-_GALAPAGOS_ISLANDS	279	Baltra and Galapagos Islands (Ecuador); -2° ≤ φ ≤ +1°; -92° ≤ λ ≤ -89°	TRANSLATE Δx = -47 : σx = 25, Δy = 26 : σy = 25, Δz = -42 : σz = 25.	1991	[NGA36, App. D.7, "SAN-J"], [GEOTRANS, "SAN-J"]
	S_AM_1969_BOLIVIA	280	Bolivia; -28° ≤ φ ≤ -4°; -75° ≤ λ ≤ -51°	TRANSLATE Δx = -61 : σx = 15, Δy = 2 : σy = 15, Δz = -48 : σz = 15.	1991	[NGA36, App. D.7, "SAN-B"], [GEOTRANS, "SAN-B"]
	S_AM_1969_BRAZIL	281	Brazil; -39° ≤ φ ≤ +9°; -80° ≤ λ ≤ -29°	TRANSLATE Δx = -60 : σx = 3, Δy = -2 : σy = 5, Δz = -41 : σz = 5.	1991	[NGA36, App. D.7, "SAN-C"], [GEOTRANS, "SAN-C"]

ORM label	RT label	RT code	RT region	STT label and parameter values	Date published	References
	S_AM_1969_CHILE	282	Chile; -64° ≤ φ ≤ -12°; -83° ≤ λ ≤ -60°	TRANSLATE Δx = -75 : σx = 15, Δy = -1 : σy = 8, Δz = -44 : σz = 11.	1991	[NGA36, App. D.7, "SAN-D"], [GEOTRANS, "SAN-D"]
	S_AM_1969_CHILE_2014_1	436	Northern Chile; -32° ≤ φ ≤ -17,5°; -83° ≤ λ ≤ -60°	TRANSLATE Δx = -59 : σx = 2, Δy = -11 : σy = 2, Δz = -52 : σz = 2.	2014	[NGA36, App. D.7, "SAN-D1"], [GEOTRANS, "SAN-D"]
	S_AM_1969_CHILE_2014_2	437	North Central Chile; -36° ≤ φ ≤ -32°; -83° ≤ λ ≤ -60°	TRANSLATE Δx = -64 : σx = 2, Δy = 0 : σy = 2, Δz = -32 : σz = 2.	2014	[NGA36, App. D.7, "SAN-D2"], [GEOTRANS, "SAN-D"]
	S_AM_1969_CHILE_2014_3	438	South Central Chile; -44° ≤ φ ≤ -36°; -83° ≤ λ ≤ -60°	TRANSLATE Δx = -72 : σx = 4, Δy = 10 : σy = 4, Δz = -32 : σz = 4.	2014	[NGA36, App. D.7, "SAN-D3"], [GEOTRANS, "SAN-D"]
	S_AM_1969_CHILE_2014_4	439	Southern Chile; -56° ≤ φ ≤ -44°; -83° ≤ λ ≤ -60°	TRANSLATE Δx = -79 : σx = 3, Δy = 13 : σy = 3, Δz = -14 : σz = 4.	2014	[NGA36, App. D.7, "SAN-D4"], [GEOTRANS, "SAN-D"]
	S_AM_1969_COLOMBIA	283	Colombia; -10° ≤ φ ≤ +16°; -85° ≤ λ ≤ -61°	TRANSLATE Δx = -44 : σx = 6, Δy = 6 : σy = 6, Δz = -36 : σz = 5.	1991	[NGA36, App. D.7, "SAN-E"], [GEOTRANS, "SAN-E"]

ORM label	RT label	RT code	RT region	STT label and parameter values	Date published	References
	S_AM_1969_ECUADOR-_EXCLUDING-_GALAPAGOS_ISLANDS	284	Ecuador (excluding Galapagos Islands); -11° ≤ φ ≤ +7°; -85° ≤ λ ≤ -70°	TRANSLATE Δx = -48 : σx = 3, Δy = 3 : σy = 3, Δz = -44 : σz = 3.	1991	[NGA36, App. D.7, "SAN-F"], [GEOTRANS, "SAN-F"]
	S_AM_1969_GUYANA	285	Guyana; -4° ≤ φ ≤ +14°; -67° ≤ λ ≤ -51°	TRANSLATE Δx = -53 : σx = 9, Δy = 3 : σy = 5, Δz = -47 : σz = 5.	1991	[NGA36, App. D.7, "SAN-G"], [GEOTRANS, "SAN-G"]
	S_AM_1969_MEAN-_SOLUTION	286	Mean Solution (Argentina, Bolivia, Brazil, Chile, Colombia, Ecuador, Guyana, Paraguay, Peru, Trinidad and Tobago, and Venezuela); -65° ≤ φ ≤ +20°; -90° ≤ λ ≤ -25°	TRANSLATE Δx = -57 : σx = 15, Δy = 1 : σy = 6, Δz = -41 : σz = 9.	1987	[NGA36, App. D.7, "SAN-M"], [GEOTRANS, "SAN-M"]
	S_AM_1969_PARAGUAY	287	Paraguay; -33° ≤ φ ≤ -14°; -69° ≤ λ ≤ -49°	TRANSLATE Δx = -61 : σx = 15, Δy = 2 : σy = 15, Δz = -33 : σz = 15.	1991	[NGA36, App. D.7, "SAN-H"], [GEOTRANS, "SAN-H"]
	S_AM_1969_PERU	288	Peru; -24° ≤ φ ≤ +5°; -87° ≤ λ ≤ -63°	TRANSLATE Δx = -58 : σx = 5, Δy = 0 : σy = 5, Δz = -44 : σz = 5.	1991	[NGA36, App. D.7, "SAN-I"], [GEOTRANS, "SAN-I"]

ORM label	RT label	RT code	RT region	STT label and parameter values	Date published	References
	S_AM_1969_TRINIDAD-_TOBAGO	289	Trinidad and Tobago; +4° ≤ φ ≤ +17°; -68° ≤ λ ≤ -55°	TRANSLATE Δx = -45 : σx = 25, Δy = 12 : σy = 25, Δz = -33 : σz = 25.	1991	[NGA36, App. D.7, "SAN-K"], [GEOTRANS, "SAN-K"]
	S_AM_1969_VENEZUELA	290	Venezuela; -5° ≤ φ ≤ +18°; -79° ≤ λ ≤ -54°	TRANSLATE Δx = -45 : σx = 3, Δy = 8 : σy = 6, Δz = -33 : σz = 3.	1991	[NGA36, App. D.7, "SAN-L"], [GEOTRANS, "SAN-L"]
S_ASIA_1987	S_ASIA_1987_SINGAPORE	291	Singapore; +0° ≤ φ ≤ +3°; +102° ≤ λ ≤ +106°	TRANSLATE Δx = 7 : σx = 25, Δy = -10 : σy = 25, Δz = -26 : σz = 25.	1987	[NGA36, App. D.3, "SOA"], [GEOTRANS, "SOA"]
S_JTSK_1993	S_JTSK_1993_CZECH-_REPUBLIC	292	Czechia (formerly Czech Republic); +48,58° ≤ φ ≤ +51,06°; +12,09° ≤ λ ≤ +18,86°	PV_7_PARAMETER Δx = 570,8 : σx = 2, Δy = 85,7 : σy = 2, Δz = 462,8 : σz = 2, ω_1 = 4,998″, ω_2 = 1,587″, ω_3 = 5,261″, Δs = 3,56 x 10^{-6}.	2001	[HELM, "CCD-7", "Czech Republic"], [EPSG, Code 1079]
	S_JTSK_1993_CZECH-_REPUBLIC_SLOVAKIA	293	Czechia (formerly Czech Republic) and Slovakia; +43° ≤ φ ≤ +56°; +6° ≤ λ ≤ +28°	TRANSLATE Δx = 589 : σx = 4, Δy = 76 : σy = 2, Δz = 480 : σz = 3.	1993	[NGA36, App. D.5, "CCD"], [GEOTRANS, "CCD"]

ORM label	RT label	RT code	RT region	STT label and parameter values	Date published	References
	S_JTSK_1993_SLOVAKIA	405	Slovakia; +47,73° ≤ φ ≤ +49,61°; +16,84° ≤ λ ≤ +22,56°	PV_7_PARAMETER Δx = 559 : σx = 2, Δy = 68,7 : σy = 2, Δz = 451,5 : σz = 2, ω_1 = 7,92″, ω_2 = 4,073″, ω_3 = 4,251″, Δs = 5,71 x 10^{-6}.	2001	[HELM, "CCD-7", "Slovakia"], [EPSG, Code 1211]
S42_PULKOVO	S42_PULKOVO-_AFGHANISTAN_3	406	Afghanistan; +23° ≤ φ ≤ +44°; +55° ≤ λ ≤ +81°	TRANSLATE Δx = 15 : σx = 25, Δy = -130 : σy = 25, Δz = -84 : σz = 25.	2001	[HELM, "SPK", "Afghanistan"], [GEOTRANS, "HEN"]
	S42_PULKOVO_ALBANIA	295	Albania; +34° ≤ φ ≤ +48°; +14° ≤ λ ≤ +26°	TRANSLATE Δx = 24 : σx = 3, Δy = -130 : σy = 3, Δz = -92 : σz = 3.	1997	[NGA36, App. D.5, "SPK-F"], [GEOTRANS, "SPK-F"]
	S42_PULKOVO_CZECH-_REPUBLIC_SLOVAKIA	296	Czechia (formerly Czech Republic) and Slovakia; +42° ≤ φ ≤ +57°; +6° ≤ λ ≤ +28°	TRANSLATE Δx = 26 : σx = 3, Δy = -121 : σy = 3, Δz = -78 : σz = 2.	1997	[NGA36, App. D.5, "SPK-C"], [GEOTRANS, "SPK-C"]
	S42_PULKOVO-_ESTONIA_3	440	Estonia; +57° ≤ φ ≤ +60°; +21° ≤ λ ≤ +29°	TRANSLATE Δx = 22 : σx = 2, Δy = -126 : σy = 3, Δz = -85 : σz = 3.	2012	[NGA36, App. D.5, "SPK-H"], [GEOTRANS, "SPK-H"]

ORM label	RT label	RT code	RT region	STT label and parameter values	Date published	References
	S42_PULKOVO-_ESTONIA_7	407	Estonia; +57° ≤ φ ≤ +60°; +21° ≤ λ ≤ +29°	PV_7_PARAMETER Δx = 21,58719, Δy = -97,541, Δz = -60,925, ω_1 = 1,013 78″, ω_2 = 0,581 17″, ω_3 = 0,234 8″, Δs = -4,612 1 x 10^{-6}.	2001	[HELM, "PUK-7", "Estonia"], [GEOTRANS, "SPK-H"]
	S42_PULKOVO-_GERMANY_7	408	Germany; +47,27° ≤ φ ≤ +55,92°; +3,34° ≤ λ ≤ +15,04°	PV_7_PARAMETER Δx = 24, Δy = -123, Δz = -94, ω_1 = -0,02″, ω_2 = 0,25″, ω_3 = 0,13″, Δs = 1,1 x 10^{-6}.	2001	[HELM, "PUK-7", "Germany"], [EPSG, Code 1103]
	S42_PULKOVO_HUNGARY	298	Hungary; +40° ≤ φ ≤ +54°; +11° ≤ λ ≤ +29°	TRANSLATE Δx = 28 : σx = 2, Δy = -121 : σy = 2, Δz = -77 : σz = 2.	1993	[NGA36, App. D.5, "SPK-A"], [GEOTRANS, "SPK-A"]
	S42_PULKOVO-_KAZAKHSTAN	299	Kazakhstan; +35° ≤ φ ≤ +62°; +41° ≤ λ ≤ +93°	TRANSLATE Δx = 15 : σx = 25, Δy = -130 : σy = 25, Δz = -84 : σz = 25.	1997	[NGA36, App. D.5, "SPK-E"], [GEOTRANS, "SPK-E"]
	S42_PULKOVO_LATVIA	300	Latvia; +50° ≤ φ ≤ +64°; +15° ≤ λ ≤ +34°	TRANSLATE Δx = 24 : σx = 2, Δy = -124 : σy = 2, Δz = -82 : σz = 2.	1997	[NGA36, App. D.5, "SPK-D"], [GEOTRANS, "SPK-D"]

ORM label	RT label	RT code	RT region	STT label and parameter values	Date published	References
	S42_PULKOVO_POLAND_3	294	Poland; +43° ≤ φ ≤ +60°; +8° ≤ λ ≤ +30°	TRANSLATE Δx = 23 : σx = 4, Δy = -124 : σy = 2, Δz = -82 : σz = 4.	1997	[NGA36, App. D.5, "SPK-B"], [GEOTRANS, "SPK-B"]
	S42_PULKOVO_POLAND_7	409	Poland; +43° ≤ φ ≤ +60°; +8° ≤ λ ≤ +30°	PV_7_PARAMETER Δx = 33,4 : σx = 1, Δy = -146,6 : σy = 1, Δz = -76,3 : σz = 1, ω_1 = -0,359″, ω_2 = -0,053″, ω_3 = 0,844″, Δs = -0,84 x 10^{-6}.	2001	[HELM, "SPK-7", "Poland"], [GEOTRANS, "SPK-B"]
	S42_PULKOVO_ROMANIA_3	410	Romania; +38° ≤ φ ≤ +54°; +15° ≤ λ ≤ +35°	TRANSLATE Δx = 27,8 : σx = 1, Δy = -125,9 : σy = 3, Δz = -77,5 : σz = 2.	2001	[HELM, "SPK", "Romania"], [GEOTRANS, "SPK-G"]
	S42_PULKOVO_ROMANIA_G	297	Romania; +38° ≤ φ ≤ +54°; +15° ≤ λ ≤ +35°	TRANSLATE Δx = 28 : σx = 3, Δy = -121 : σy = 5, Δz = -77 : σz = 3.	1997	[NGA36, App. D.5, "SPK-G"], [GEOTRANS, "SPK-G"]
SANTO_DOS_1965	SANTO_DOS_1965- _ESPIRITO_SANTO_ISLAND	301	Espirito Santo Island (Vanuatu); -20° ≤ φ ≤ -11°; +163° ≤ λ ≤ +172°	TRANSLATE Δx = 170 : σx = 25, Δy = 42 : σy = 25, Δz = 84 : σz = 25.	1987	[NGA36, App. D.10, "SAE"], [GEOTRANS, "SAE"]

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SAO_BRAZ_1987	SAO_BRAZ_1987- _SAO_MIGUEL- _SANTA_MARIA_ISLANDS	302	Sao Miguel and Santa Maria Islands (Azores, Portugal); +35° ≤ φ ≤ +39°; -27° ≤ λ ≤ -23°	TRANSLATE Δx = -203 : σx = 25, Δy = 141 : σy = 25, Δz = 53 : σz = 25.	1987	[NGA36, App. D.8, "SAO"], [GEOTRANS, "SAO"]
SAPPER_HILL_1943	SAPPER_HILL_1943_E- _FALKLAND_ISLANDS_3	303	East Falkland Islands; -54° ≤ φ ≤ -50°; -61° ≤ λ ≤ -56°	TRANSLATE Δx = -355 : σx = 1, Δy = 21 : σy = 1, Δz = 72 : σz = 1.	1991	[NGA36, App. D.8, "SAP"], [GEOTRANS, "SAP"]
SAPPER_HILL_1943- _ADJ_2000	SAPPER_HILL_1943_ADJ- _2000_FALKLAND- _ISLANDS_7	411	Falkland Islands; -56,25° ≤ φ ≤ -47,68°; -65,01° ≤ λ ≤ -52,31°	PV_7_PARAMETER Δx = -120,379, Δy = 126,358, Δz = 95,91, ω_1 = -0,092 47″, ω_2 = 2,499 33″, ω_3 = -10,542 06″, Δs = -0,349 x 10^{-6}.	2001	[HELM, "SAP-7"], [EPSG, Code 1092]
SCHWARZECK_1991	SCHWARZECK_1991- _NAMIBIA	306	Namibia; -35° ≤ φ ≤ -11°; +5° ≤ λ ≤ +31°	TRANSLATE Δx = 616 : σx = 20, Δy = 97 : σy = 20, Δz = -251 : σz = 20.	1991	[NGA36, App. D.2, "SCK"], [GEOTRANS, "SCK"]
SELVAGEM- _GRANDE_1938	SELVAGEM_GRANDE_1938- _SALVAGE_ISLANDS	307	Salvage Islands, aka Selvagens or Savage Islands (Portugal); +28° ≤ φ ≤ +32°; -18° ≤ λ ≤ -14°	TRANSLATE Δx = -289 : σx = 25, Δy = -124 : σy = 25, Δz = 60 : σz = 25.	1991	[NGA36, App. D.8, "SGM"], [GEOTRANS, "SGM"]

ORM label	RT label	RT code	RT region	STT label and parameter values	Date published	References
SIERRA_LEONE_1960	SIERRA_LEONE_1960-_SIERRA_LEONE	308	Sierra Leone; +1° ≤ φ ≤ +16°; -19° ≤ λ ≤ -4°	TRANSLATE Δx = -88 : σx = 15, Δy = 4 : σy = 15, Δz = 101 : σz = 15.	1997	[NGA36, App. D.2, "SRL"], [GEOTRANS, "SRL"]
SIRGAS_2000	SIRGAS_2000_IDENTITY_BY-_MEASUREMENT	309	South America; -65° ≤ φ ≤ -50°; -90° ≤ λ ≤ -25°	TRANSLATE Δx = 0 : σx = 1, Δy = 0 : σy = 1, Δz = 0 : σz = 1.	2000	[NGA36, App. D.7, "SIR"], [GEOTRANS, "SIR"]
SOUTH_EAST-_ISLAND	SOUTH_EAST_ISLAND-_SEYCHELLES_3	441	Seychelles; -5° ≤ φ ≤ -4°; +55° ≤ λ ≤ +56°	TRANSLATE Δx = -44 : σx = 1, Δy = -180 : σy = 1, Δz = -268 : σz = 1.	2012	[NGA36, App. D.9, "SEI"], [GEOTRANS, "SEI"]
	SOUTH_EAST_ISLAND-_SEYCHELLES_7	412	Seychelles; -5° ≤ φ ≤ -4°; +55° ≤ λ ≤ +56°	PV_7_PARAMETER Δx = 30,768, Δy = -129,01, Δz = -91,673, ω_1 = -1,984 7″, ω_2 = 7,513 28″, ω_3 = 0,645 32″, Δs = -10,901 x 10^{-6}.	2001	[HELM, "SEI-7", "Seychelles"], [GEOTRANS, "SEI"]
SOVIET_GEODETIC-_SYSTEM_1985	SOVIET_GEODETIC-_SYSTEM_1985_RUSSIA_7	413	Russia; +36° ≤ φ ≤ +89°; +15° ≤ λ ≤ +180° or -180° ≤ λ ≤ -165°	PV_Z_ROTATE_TRANSLATE Δx = 0, Δy = 0, Δz = 4, ω = 0,6″.	2001	[HELM, "SGA-7"], [GEOTRANS, "PUK"]

ORM label	RT label	RT code	RT region	STT label and parameter values	Date published	References
ST_PIERRE-_MIQUELON	ST_PIERRE_MIQUELON-_ST_PIERRE_MIQUELON_3	442	Saint Pierre and Miquelon (France); +46° ≤ φ ≤ +48°; -57° ≤ λ ≤ -56°	TRANSLATE Δx = 30, Δy = 430, Δz = 368.	2012	[NGA36, App. E.2, "SPX"], [GEOTRANS, "SPX"]
TANANARIVE_OBS-_1925	TANANARIVE_OBS_1925-_MADAGASCAR_3	311	Madagascar; -34° ≤ φ ≤ -8°; +40° ≤ λ ≤ +53°	TRANSLATE Δx = -189, Δy = -242, Δz = -91.	1987	[83502T, App. C.2, "TAN"], [GEOTRANS, "TAN"]
	TANANARIVE_OBS_1925-_MADAGASCAR_3_2012	443	Madagascar; -34° ≤ φ ≤ -8°; +40° ≤ λ ≤ +53°	TRANSLATE Δx = -191 : σx = 6, Δy = -232 : σy = 5, Δz = -111 : σz = 2.	2012	[NGA36, App. D.9, "TAN"], [GEOTRANS, "TAN"]
	TANANARIVE_OBS_1925-_MADAGASCAR_7	414	Madagascar; -34° ≤ φ ≤ -8°; +40° ≤ λ ≤ +53°	PV_7_PARAMETER Δx = -242,75 : σx = 5, Δy = -191,8 : σy = 3, Δz = -105,56 : σz = 2, ω_1 = 0,913″, ω_2 = 1,137″, ω_3 = -2,698″, Δs = 1,149 x 10^{-6}.	2001	[HELM, "TAN-7", "Madagascar"], [GEOTRANS, "TAN"]

ORM label	RT label	RT code	RT region	STT label and parameter values	Date published	References
TANANARIVE_OBS-_1925_PM_PARIS	TANANARIVE_OBS_1925-_PM_PARIS-_MADAGASCAR_3	312	Madagascar; -34° ≤ φ ≤ -8°; +38° ≤ λ ≤ +51°	PV_Z_ROTATE_TRANSLATE Δx = -189, Δy = -242, Δz = -91, ω = 2° 20′ 14,025″. Note: The referenced *z*-axis rotation has been offset so that Paris is contained in the *x*-positive *xz*-plane.	1987	[83502T, App. C.2, "TAN"], [GEOTRANS, "TAN"]
TERN_1961	TERN_1961_TERN_ISLAND	314	Tern Island (French Frigate Shoals, Hawaiian Islands); +22° ≤ φ ≤ +26°; -168° ≤ λ ≤ -164°	TRANSLATE Δx = 114 : σx = 25, Δy = -116 : σy = 25, Δz = -333 : σz = 25.	1991	[NGA36, App. D.10, "TRN"], [GEOTRANS, "TRN"]
TETE	TETE_MOZAMBIQUE_3	444	Mozambique; -27,71° ≤ φ ≤ -10,09°; +30,21° ≤ λ ≤ +43,03°	TRANSLATE Δx = -80 : σx = 10, Δy = -100 : σy = 10, Δz = -228 : σz = 10.	2012	[NGA36, App. D.2, "TEC"], [EPSG, Code 1167]
	TETE_MOZAMBIQUE_7	415	Mozambique; -27,71° ≤ φ ≤ -10,09°; +30,21° ≤ λ ≤ +43,03°	PV_7_PARAMETER Δx = -107 : σx = 9, Δy = -167 : σy = 9, Δz = -211 : σz = 9, ω_1 = 0,871″, ω_2 = 0,207″, ω_3 = 0,992″, Δs = 9,28 x 10^{-6}.	2001	[HELM, "TEC-7"], [EPSG, Code 1167]

ORM label	RT label	RT code	RT region	STT label and parameter values	Date published	References
TIMBALAI_1948_ADJ-_1968_BESSEL	TIMBALAI_1948_ADJ_1968-_BESSEL_MALAYSIA_E-_BRUNEI_7	416	Brunei and East Malaysia; -5° ≤ φ ≤ +15°; +101° ≤ λ ≤ +125°	PV_7_PARAMETER Δx = -528 : σx = 1, Δy = 566,18 : σy = 2, Δz = -75,24 : σz = 1, ω_1 = 1,137″, ω_2 = 0,194″, ω_3 = 3,034″, Δs = 9,216 x 10^{-6}.	2001	[HELM, "TIM-7", "Malaysia E & Brunei"], [GEOTRANS, "TIL"]
TIMBALAI_1948_ADJ-_1968_EVEREST	TIMBALAI_1948_ADJ_1968-_EVEREST_MALAYSIA_E-_BRUNEI_3	445	Brunei and East Malaysia; -5° ≤ φ ≤ +15°; +101° ≤ λ ≤ +125°	TRANSLATE Δx = -679 : σx = 1, Δy = 667 : σy = 6, Δz = -49 : σz = 2.	2012	[NGA36, App. D.3, "TIN"], [GEOTRANS, "TIN"]
	TIMBALAI_1948_ADJ_1968-_EVEREST_MALAYSIA_E-_BRUNEI_7	417	Brunei and East Malaysia; -5° ≤ φ ≤ +15°; +101° ≤ λ ≤ +125°	PV_7_PARAMETER Δx = -541,8 : σx = 1, Δy = 667,65 : σy = 2, Δz = -63,42 : σz = 1, ω_1 = 0,478″, ω_2 = -0,24″, ω_3 = 4,019″, Δs = 9,139 x 10^{-6}.	2001	[HELM, "TIN-7", "Malaysia E & Brunei"], [GEOTRANS, "TIL"]
TIMBALAI_BESSEL-_1948	TIMBALAI_BESSEL_1948-_BRUNEI_E_MALAYSIA_7	418	Brunei and East Malaysia; -5° ≤ φ ≤ +15°; +101° ≤ λ ≤ +125°	PV_7_PARAMETER Δx = -496,34 : σx = 1, Δy = 580,76 : σy = 2, Δz = -44,31 : σz = 2, ω_1 = 0,098″, ω_2 = 0,018″, ω_3 = 4,146″, Δs = 8,82 x 10^{-6}.	2001	[HELM, "TIV-7", "Malaysia E & Brunei"], [GEOTRANS, "TIL"]

ORM label	RT label	RT code	RT region	STT label and parameter values	Date published	References
TIMBALAI_EVEREST-_1948	TIMBALAI_EVEREST_1948-_BRUNEI_E_MALAYSIA_3	318	Brunei and East Malaysia (Sabah and Sarawak); -5° ≤ φ ≤ +15°; +101° ≤ λ ≤ +125°	TRANSLATE Δx = -679 : σx = 10, Δy = 669 : σy = 10, Δz = -48 : σz = 12.	1987	[NGA36, App. D.3, "TIL"], [GEOTRANS, "TIL"]
	TIMBALAI_EVEREST_1948-_BRUNEI_E_MALAYSIA_7	319	Brunei and East Malaysia (Sabah and Sarawak); -5° ≤ φ ≤ +15°; +101° ≤ λ ≤ +125°	PV_7_PARAMETER Δx = -582,33 : σx = 1, Δy = 671,57 : σy = 2, Δz = -108,15 : σz = 2, ω_1 = 1,744″, ω_2 = 0,56″, ω_3 = 2,876″, Δs = 6,495 x 10^{-6}.	2001	[HELM, "TIL-7"], [GEOTRANS, "TIL"]
TOKYO_1991	TOKYO_1991_JAPAN	322	Japan; +19° ≤ φ ≤ +51°; +119° ≤ λ ≤ +156°	TRANSLATE Δx = -148 : σx = 8, Δy = 507 : σy = 5, Δz = 685 : σz = 8.	1991	[NGA36, App. D.3, "TOY-A"], [GEOTRANS, "TOY-A"]
	TOKYO_1991_MEAN-_SOLUTION	323	Mean Solution (Japan, Okinawa and South Korea); +23° ≤ φ ≤ +53°; +120° ≤ λ ≤ +155°	TRANSLATE Δx = -148 : σx = 20, Δy = 507 : σy = 5, Δz = 685 : σz = 20.	1991	[NGA36, App. D.3, "TOY-M"], [GEOTRANS, "TOY-M"]
	TOKYO_1991_OKINAWA	324	Okinawa (Japan); +19° ≤ φ ≤ +31°; +119° ≤ λ ≤ +134°	TRANSLATE Δx = -158 : σx = 20, Δy = 507 : σy = 5, Δz = 676 : σz = 20.	1991	[NGA36, App. D.3, "TOY-C"], [GEOTRANS, "TOY-C"]

ORM label	RT label	RT code	RT region	STT label and parameter values	Date published	References
	TOKYO_1991_SOUTH- _KOREA_1991	325	South Korea; +27° ≤ φ ≤ +45°; +120° ≤ λ ≤ +139°	TRANSLATE Δx = -146 : σx = 8, Δy = 507 : σy = 5, Δz = 687 : σz = 8.	1991	[NGA36, App. D.3, "TOY-B"], [GEOTRANS, "TOY-B"]
	TOKYO_1991_SOUTH- _KOREA_1997	326	South Korea; +27° ≤ φ ≤ +45°; +120° ≤ λ ≤ +139°	TRANSLATE Δx = -147 : σx = 2, Δy = 506 : σy = 2, Δz = 687 : σz = 2.	1997	[83502T, App. B.3, "TOY-B1", Cycle number 1], [GEOTRANS, "TOY-B1"]
TRISTAN_1968	TRISTAN_1968- _TRISTAN_DA_CUNHA	327	Tristan da Cunha (UK); -39° ≤ φ ≤ -36°; -14° ≤ λ ≤ -11°	TRANSLATE Δx = -632 : σx = 25, Δy = 438 : σy = 25, Δz = -609 : σz = 25.	1987	[NGA36, App. D.8, "TDC"], [GEOTRANS, "TDC"]
VITI_LEVU_1916	VITI_LEVU_1916- _VITI_LEVU_ISLANDS	333	Viti Levu Island (Fiji Islands); -20° ≤ φ ≤ -16°; +176° ≤ λ ≤ +180°	TRANSLATE Δx = 51 : σx = 25, Δy = 391 : σy = 25, Δz = -36 : σz = 25.	1987	[83502T, App. B.10, "MVS"], [GEOTRANS, "MVS"]
	VITI_LEVU_1916- _VITI_LEVU_ISLANDS_2012	446	Viti Levu Island (Fiji Islands); -20° ≤ φ ≤ -16°; +176° ≤ λ ≤ +180°	TRANSLATE Δx = 98 : σx = 3, Δy = 390 : σy = 3, Δz = -22 : σz = 3.	2012	[NGA36, App. D.10, "MVS", Cycle number 1], [GEOTRANS, "MVS"]
VOIROL_1874	VOIROL_1874_ALGERIA	334	Algeria and Tunisia; +13° ≤ φ ≤ +43°; -15° ≤ λ ≤ +18°	TRANSLATE Δx = -73, Δy = -247, Δz = 227.	1997	[NGA36, App. E.2, "VOI"], [GEOTRANS, "VOI"]

ORM label	RT label	RT code	RT region	STT label and parameter values	Date published	References
VOIROL_1874_PM-_PARIS	VOIROL_1874_PM_PARIS-_ALGERIA	335	Algeria and Tunisia; +13° ≤ φ ≤ +43°; -17° ≤ λ ≤ +16°	PV_Z_ROTATE_TRANSLATE Δx = -73, Δy = -247, Δz = 227, ω = 2° 20′ 14,025″. Note: The referenced *z*-axis rotation has been offset so that Paris is contained in the *x*-positive *xz*-plane.	1997	[NGA36, App. E.2, "VOI"], [GEOTRANS, "VOI"]
VOIROL_1960	VOIROL_1960_ALGERIA	336	Algeria; +13° ≤ φ ≤ +43°; -15° ≤ λ ≤ +18°	TRANSLATE Δx = -123 : σx = 25, Δy = -206 : σy = 25, Δz = 219 : σz = 25.	1993	[NGA36, App. D.2, "VOR"], [GEOTRANS, "VOR"]
VOIROL_1960_PM-_PARIS	VOIROL_1960_PM_PARIS-_ALGERIA	337	Algeria; +13° ≤ φ ≤ +43°; -17° ≤ λ ≤ +16°	PV_Z_ROTATE_TRANSLATE Δx = -123 : σx = 25, Δy = -206 : σy = 25, Δz = 219 : σz = 25, ω = 2° 20′ 14,025″. Note: The referenced *z*-axis rotation has been offset so that Paris is contained in the *x*-positive *xz*-plane.	1993	[NGA36, App. D.2, "VOR"], [GEOTRANS, "VOR"]
WAKE_1952	WAKE_1952_WAKE_ATOLL	338	Wake Atoll (US minor outlying islands); +17° ≤ φ ≤ +21°; +164° ≤ λ ≤ +168°	TRANSLATE Δx = 276 : σx = 25, Δy = -57 : σy = 25, Δz = 149 : σz = 25.	1991	[NGA36, App. D.10, "WAK"], [GEOTRANS, "WAK"]

ORM label	RT label	RT code	RT region	STT label and parameter values	Date published	References
WAKE_ENIWETOK-_1960	WAKE_ENIWETOK_1960-_MARSHALL_ISLANDS	339	Marshall Islands; +1° ≤ φ ≤ +16°; +159° ≤ λ ≤ +175°	TRANSLATE Δx = 102 : σx = 3, Δy = 52 : σy = 3, Δz = -38 : σz = 3.	1991	[NGA36, App. D.10, "ENW"], [GEOTRANS, "ENW"]
WGS_1972	WGS_1972_GLOBAL	340	Global (Earth)	PV_7_PARAMETER Δx = 0 : σx = 0, Δy = 0 : σy = 0, Δz = 4,5 : σz = 0, ω_1 = 0″, ω_2 = 0″, ω_3 = 0,554″, Δs = 0,219 x 10^{-6}.	2001	[HELM, "WGC-7"], [NGA36, Table G.1]
WGS_1984	WGS_1984_IDENTITY	341	Global (Earth)	IDENTITY The reference ORM for object Earth.	1984	[NGA36, Section 3]
YACARE_1987	YACARE_1987_URUGUAY	342	Uruguay; -40° ≤ φ ≤ -25°; -65° ≤ λ ≤ -47°	TRANSLATE Δx = -155, Δy = 171, Δz = 37.	1987	[NGA36, App. E.2, "YAC"], [GEOTRANS, "YAC"]
ZANDERIJ_1987	ZANDERIJ_1987_SURINAME	343	Suriname; -10° ≤ φ ≤ +20°; -76° ≤ λ ≤ -47°	TRANSLATE Δx = -265 : σx = 5, Δy = 120 : σy = 5, Δz = -358 : σz = 8.	1987	[NGA36, App. D.7, "ZAN"], [GEOTRANS, "ZAN"]

E.2.2.3 Dynamic ERMs

Table E.7 — Dynamic ERM specifications

ORM label	ORM code	Published name	Reference ORM	Binding information	Region	ORMT label	RD parameterization	References
EARTH_INERTIAL-_ARIES_1950	53	Earth equatorial inertial, Aries mean of 1950	WGS_1984	OBRS EQUATORIAL_INERTIAL Note: First point of Aries, mean of 1950.	Vicinity of Earth	BI_AXIS-_ORIGIN_3D	n/a	Clause 7.5.2
EARTH_INERTIAL-_ARIES_TRUE_OF-_DATE	54	Earth equatorial inertial, Aries true of date	WGS_1984	OBRS EQUATORIAL_INERTIAL Note: First point of Aries, true of date.	Vicinity of Earth	BI_AXIS-_ORIGIN_3D	n/a	Clause 7.5.2
EARTH_INERTIAL-_J2000r0	55	Earth equatorial inertial, J2000.0	WGS_1984	OBRS EQUATORIAL_INERTIAL Note: First point of Aries as of 2000 Jan 1 11:58:55.816 UTC.	Vicinity of Earth	BI_AXIS-_ORIGIN_3D	n/a	Clause 7.5.2
EARTH_SOLAR-_ECLIPTIC	56	Solar ecliptic	WGS_1984	OBRS SOLAR_ECLIPTIC	Vicinity of Earth	BI_AXIS-_ORIGIN_3D	n/a	[HAPG]
EARTH_SOLAR-_EQUATORIAL	57	Solar equatorial	WGS_1984	OBRS SOLAR_EQUATORIAL	Vicinity of Earth	BI_AXIS-_ORIGIN_3D	n/a	[CRUS]
EARTH_SOLAR-_MAG_DIPOLE	58	Solar magnetic dipole	WGS_1984	OBRS SOLAR_MAGNETIC_DIPOLE	Vicinity of Earth	BI_AXIS-_ORIGIN_3D	n/a	[CRUS], [BHAV]
EARTH_SOLAR-_MAGNETO-SPHERIC	59	Solar magnetospheric	WGS_1984	OBRS SOLAR_MAGNETIC_ECLIPTIC	Vicinity of Earth	BI_AXIS-_ORIGIN_3D	n/a	[CRUS]

Table E.8 — Time-fixed instances of dynamic ERM specifications

ORM label	ORM code	Published name	Reference ORM	Binding information	Region	ORMT label	RD parameterization	References
GEOMAGNETIC_1945-_IGRF13	253	IGRF-13 1945	WGS_1984	1945 OBRS CELESTIOMAGNETIC Note: Object-fixed base epoch for the 5 year period 1945 to 1950.	Vicinity of Earth	BI_AXIS-_ORIGIN_3D	n/a	[IAGA, Table 4, "1945"]
GEOMAGNETIC_1950-_IGRF13	254	IGRF-13 1950	WGS_1984	1950 OBRS CELESTIOMAGNETIC Note: Object-fixed base epoch for the 5 year period 1950 to 1955.	Vicinity of Earth	BI_AXIS-_ORIGIN_3D	n/a	[IAGA, Table 4, "1950"]
GEOMAGNETIC_1955-_IGRF13	255	IGRF-13 1955	WGS_1984	1955 OBRS CELESTIOMAGNETIC Note: Object-fixed base epoch for the 5 year period 1955 to 1960.	Vicinity of Earth	BI_AXIS-_ORIGIN_3D	n/a	[IAGA, Table 4, "1955"]
GEOMAGNETIC_1960-_IGRF13	256	IGRF-13 1960	WGS_1984	1960 OBRS CELESTIOMAGNETIC Note: Object-fixed base epoch for the 5 year period 1960 to 1965.	Vicinity of Earth	BI_AXIS-_ORIGIN_3D	n/a	[IAGA, Table 4, "1960"]
GEOMAGNETIC_1965-_IGRF13	257	IGRF-13 1965	WGS_1984	1965 OBRS CELESTIOMAGNETIC Note: Object-fixed base epoch for the 5 year period 1965 to 1970.	Vicinity of Earth	BI_AXIS-_ORIGIN_3D	n/a	[IAGA, Table 4, "1965"]

ORM label	ORM code	Published name	Reference ORM	Binding information	Region	ORMT label	RD parameterization	References
GEOMAGNETIC_1970-_IGRF13	258	IGRF-13 1970	WGS_1984	1970 OBRS CELESTIOMAGNETIC Note: Object-fixed base epoch for the 5 year period 1970 to 1975.	Vicinity of Earth	BI_AXIS-_ORIGIN_3D	n/a	[IAGA, Table 4, "1970"]
GEOMAGNETIC_1975-_IGRF13	259	IGRF-13 1975	WGS_1984	1975 OBRS CELESTIOMAGNETIC Note: Object-fixed base epoch for the 5 year period 1975 to 1980.	Vicinity of Earth	BI_AXIS-_ORIGIN_3D	n/a	[IAGA, Table 4, "1975"]
GEOMAGNETIC_1980-_IGRF13	260	IGRF-13 1980	WGS_1984	1980 OBRS CELESTIOMAGNETIC Note: Object-fixed base epoch for the 5 year period 1980 to 1985.	Vicinity of Earth	BI_AXIS-_ORIGIN_3D	n/a	[IAGA, Table 4, "1980"]
GEOMAGNETIC_1985-_IGRF13	261	IGRF-13 1985	WGS_1984	1985 OBRS CELESTIOMAGNETIC Note: Object-fixed base epoch for the 5 year period 1985 to 1990.	Vicinity of Earth	BI_AXIS-_ORIGIN_3D	n/a	[IAGA, Table 4, "1985"]
GEOMAGNETIC_1990-_IGRF13	262	IGRF-13 1990	WGS_1984	1990 OBRS CELESTIOMAGNETIC Note: Object-fixed base epoch for the 5 year period 1990 to 1995.	Vicinity of Earth	BI_AXIS-_ORIGIN_3D	n/a	[IAGA, Table 4, "1990"]

ORM label	ORM code	Published name	Reference ORM	Binding information	Region	ORMT label	RD parameterization	References
GEOMAGNETIC_1995-_IGRF13	263	IGRF-13 1995	WGS_1984	1995 OBRS CELESTIOMAGNETIC Note: Object-fixed base epoch for the 5 year period 1995 to 2000.	Vicinity of Earth	BI_AXIS-_ORIGIN_3D	n/a	[IAGA, Table 4, "1995"]
GEOMAGNETIC_2000-_IGRF13	264	IGRF-13 2000	WGS_1984	2000 OBRS CELESTIOMAGNETIC Note: Object-fixed base epoch for the 5 year period 2000 to 2005.	Vicinity of Earth	BI_AXIS-_ORIGIN_3D	n/a	[IAGA, Table 4, "2000"]
GEOMAGNETIC_2005-_IGRF13	265	IGRF-13 2005	WGS_1984	2005 OBRS CELESTIOMAGNETIC Note: Object-fixed base epoch for the 5 year period 2005 to 2010.	Vicinity of Earth	BI_AXIS-_ORIGIN_3D	n/a	[IAGA, Table 4, "2005"]
GEOMAGNETIC_2010-_IGRF13	348	IGRF-13 2010	WGS_1984	2010 OBRS CELESTIOMAGNETIC Note: Object-fixed base epoch for the 5 year period 2010 to 2015.	Vicinity of Earth	BI_AXIS-_ORIGIN_3D	n/a	[IAGA, Table 4, "2010"]
GEOMAGNETIC_2015-_IGRF13	349	IGRF-13 2015	WGS_1984	2015 OBRS CELESTIOMAGNETIC Note: Object-fixed base epoch for the 5 year period 2015 to 2020.	Vicinity of Earth	BI_AXIS-_ORIGIN_3D	n/a	[IAGA, Table 4, "2015"]

ORM label	ORM code	Published name	Reference ORM	Binding information	Region	ORMT label	RD parameterization	References
GEOMAGNETIC_2020-_IGRF13	350	IGRF-13 2020	WGS_1984	2020 OBRS CELESTIOMAGNETIC Note: Object-fixed base epoch for the 5 year period 2020 to 2025.	Vicinity of Earth	BI_AXIS-_ORIGIN_3D	n/a	[IAGA, Table 4, "2020"]
GEOMAGNETIC_2025-_IGRF13	351	IGRF-13 2025	WGS_1984	2025 OBRS CELESTIOMAGNETIC Note: Object-fixed base epoch for the 5 year period 2025 to 2030.	Vicinity of Earth	BI_AXIS-_ORIGIN_3D	n/a	[IAGA, Table 4, "2025"]
WORLD_MAGNETIC-_MODEL_2010	352	WMM2010	WGS_1984	2010 OBRS CELESTIOMAGNETIC Note: Object-fixed base epoch for the 5 year period 2010 to 2015.	Vicinity of Earth	BI_AXIS-_ORIGIN_3D	n/a	[WMM2010, Table 4]
WORLD_MAGNETIC-_MODEL_2015	353	WMM2015	WGS_1984	2015 OBRS CELESTIOMAGNETIC Note: Object-fixed base epoch for the 5 year period 2015 to 2020.	Vicinity of Earth	BI_AXIS-_ORIGIN_3D	n/a	[WMM2015, Table 4]
WORLD_MAGNETIC-_MODEL_2020	354	WMM2020	WGS_1984	2020 OBRS CELESTIOMAGNETIC Note: Object-fixed base epoch for the 5 year period 2020 to 2025.	Vicinity of Earth	BI_AXIS-_ORIGIN_3D	n/a	[WMM2020, Table 4]

Table E.9 — Time-fixed instances of dynamic ERM reference transformation specifications

ORM label	RT label	RT code	RT region	STT label and parameter values	Date published	References
GEOMAGNETIC_1945-_IGRF13	GEOMAGNETIC_1945-_IGRF13	344	Global (Earth)	PV_ZY_ROTATE ω_1 = 11,45°, ω_2 = -68,53°. Note: Centred dipole model northern pole.	2019	[IAGA, Table 4, "1945"]
GEOMAGNETIC_1950-_IGRF13	GEOMAGNETIC_1950-_IGRF13	345	Global (Earth)	PV_ZY_ROTATE ω_1 = 11,45°, ω_2 = -68,85°. Note: Centred dipole model northern pole.	2019	[IAGA, Table 4, "1950"]
GEOMAGNETIC_1955-_IGRF13	GEOMAGNETIC_1955-_IGRF13	346	Global (Earth)	PV_ZY_ROTATE ω_1 = 11,46°, ω_2 = -69,16°. Note: Centred dipole model northern pole.	2019	[IAGA, Table 4, "1955"]
GEOMAGNETIC_1960-_IGRF13	GEOMAGNETIC_1960-_IGRF13	347	Global (Earth)	PV_ZY_ROTATE ω_1 = 11,42°, ω_2 = -69,47°. Note: Centred dipole model northern pole.	2019	[IAGA, Table 4, "1960"]
GEOMAGNETIC_1965-_IGRF13	GEOMAGNETIC_1965-_IGRF13	348	Global (Earth)	PV_ZY_ROTATE ω_1 = 11,40°, ω_2 = -69,85°. Note: Centred dipole model northern pole.	2019	[IAGA, Table 4, "1965"]
GEOMAGNETIC_1970-_IGRF13	GEOMAGNETIC_1970-_IGRF13	349	Global (Earth)	PV_ZY_ROTATE ω_1 = 11,34°, ω_2 = -70,18°. Note: Centred dipole model northern pole.	2019	[IAGA, Table 4, "1970"]

ORM label	RT label	RT code	RT region	STT label and parameter values	Date published	References
GEOMAGNETIC_1975-_IGRF13	GEOMAGNETIC_1975-_IGRF13	350	Global (Earth)	PV_ZY_ROTATE ω_1 = 11,24°, ω_2 = -70,47°. Note: Centred dipole model northern pole.	2019	[IAGA, Table 4, "1975"]
GEOMAGNETIC_1980-_IGRF13	GEOMAGNETIC_1980-_IGRF13	351	Global (Earth)	PV_ZY_ROTATE ω_1 = 11,12°, ω_2 = -70,76°. Note: Centred dipole model northern pole.	2019	[IAGA, Table 4, "1980"]
GEOMAGNETIC_1985-_IGRF13	GEOMAGNETIC_1985-_IGRF13	352	Global (Earth)	PV_ZY_ROTATE ω_1 = 10,96°, ω_2 = -70,90°. Note: Centred dipole model northern pole.	2019	[IAGA, Table 4, "1985"]
GEOMAGNETIC_1990-_IGRF13	GEOMAGNETIC_1990-_IGRF13	353	Global (Earth)	PV_ZY_ROTATE ω_1 = 10,79°, ω_2 = -71,13°. Note: Centred dipole model northern pole.	2019	[IAGA, Table 4, "1990"]
GEOMAGNETIC_1995-_IGRF13	GEOMAGNETIC_1995-_IGRF13	354	Global (Earth)	PV_ZY_ROTATE ω_1 = 10,61°, ω_2 = -71,42°. Note: Centred dipole model northern pole.	2019	[IAGA, Table 4, "1995"]
GEOMAGNETIC_2000-_IGRF13	GEOMAGNETIC_2000-_IGRF13	355	Global (Earth)	PV_ZY_ROTATE ω_1 = 10,39°, ω_2 = -71,57°. Note: Centred dipole model northern pole.	2019	[IAGA, Table 4, "2000"]

ORM label	RT label	RT code	RT region	STT label and parameter values	Date published	References
GEOMAGNETIC_2005-_IGRF13	GEOMAGNETIC_2005-_IGRF13	356	Global (Earth)	PV_ZY_ROTATE ω_1 = 10,18°, ω_2 = -71,81°. Note: Centred dipole model northern pole.	2019	[IAGA, Table 4, "2005"]
GEOMAGNETIC_2010-_IGRF13	GEOMAGNETIC_2010-_IGRF13	486	Global (Earth)	PV_ZY_ROTATE ω_1 = 9,91°, ω_2 = -72,21°. Note: Centred dipole model northern pole.	2019	[IAGA, Table 4, "2010"]
GEOMAGNETIC_2015-_IGRF13	GEOMAGNETIC_2015-_IGRF13	487	Global (Earth)	PV_ZY_ROTATE ω_1 = 9,62°, ω_2 = -72,61°. Note: Centred dipole model northern pole.	2019	[IAGA, Table 4, "2015"]
GEOMAGNETIC_2020-_IGRF13	GEOMAGNETIC_2020-_IGRF13	488	Global (Earth)	PV_ZY_ROTATE ω_1 = 9,35°, ω_2 = -72,68°. Note: Centred dipole model northern pole.	2019	[IAGA, Table 4, "2020"]
GEOMAGNETIC_2025-_IGRF13	GEOMAGNETIC_2025-_IGRF13	489	Global (Earth)	PV_ZY_ROTATE ω_1 = 9,10°, ω_2 = -72,64°. Note: Centred dipole model northern pole.	2019	[IAGA, Table 4, "2025"]
WORLD_MAGNETIC-_MODEL_2010	WORLD_MAGNETIC-_MODEL_2010	490	Global (Earth)	PV_ZY_ROTATE ω_1 = 9,98°, ω_2 = -72,21°. Note: Centred dipole model northern pole.	2010	[WMM2010, Table 4]

ORM label	RT label	RT code	RT region	STT label and parameter values	Date published	References
WORLD_MAGNETIC-_MODEL_2015	WORLD_MAGNETIC-_MODEL_2015	491	Global (Earth)	PV_ZY_ROTATE ω_1 = 9,69°, ω_2 = -72,62°. Note: Centred dipole model northern pole.	2015	[WMM2015, Table 4]
WORLD_MAGNETIC-_MODEL_2020	WORLD_MAGNETIC-_MODEL_2020	492	Global (Earth)	PV_ZY_ROTATE ω_1 = 9,41°, ω_2 = -72,68°. Note: Centred dipole model northern pole.	2020	[WMM2020, Table 4]

E.2.2.4 Object-fixed planet (non-Earth) ORMs

Table E.10 — Object-fixed planet (non-Earth) ORM specifications

ORM label	ORM code	Published name	Reference ORM	Binding information	Region	ORMT label	RD parameterization	References
CHARON_2017	315	Charon	This is the reference ORM for Charon (a satellite of Pluto).	2017 The *x*-positive *xz*-half-plane as determined by an ephemeris as specified in {Table 2, "Charon"}, with its associated accuracy as specified in {Section 2, paragraph 7}.	Charon, Global	SPHERE	CHARON_2017	[RIIC15, Table 3, "(134340) Pluto: I Charon"]

ORM label	ORM code	Published name	Reference ORM	Binding information	Region	ORMT label	RD parameterization	References
EROS_2002	321	Eros (asteroid 433)	This is the reference ORM for Eros (asteroid 433, a minor planet).	2002 The *x*-positive *xz*-half-plane as determined by an ephemeris as specified in {Table 3, "(433) Eros"}, with its associated accuracy as specified in {Section 2, paragraph 7}.	Eros, Global	TRI_AXIAL-_ELLIPSOID	EROS_2002	[RIIC15, Table 3, "(433) Eros"]
GASPRA_1991	74	Gaspra (asteroid 951)	This is the reference ORM for Gaspra (asteroid 951, a minor planet).	1991 The *x*-positive *xz*-half-plane as determined by an observable fixed surface feature and approximated by an ephemeris as specified in {Table 3, "Gaspra"}, with its associated accuracy as specified in {Section 2, paragraph 5}.	Gaspra, Global	TRI_AXIAL-_ELLIPSOID	GASPRA_1991	[RIIC15, Table 3, "(951) Gaspra"]
IDA_1991	104	Ida (asteroid 243)	This is the reference ORM for Ida (asteroid 243, a minor planet).	1991 The *x*-positive *xz*-half-plane as determined by an observable fixed surface feature and approximated by an ephemeris as specified in {Table 3, "Ida"}, with its associated accuracy as specified in {Section 2, paragraph 5}.	Ida, Global	TRI_AXIAL-_ELLIPSOID	IDA_1991	[RIIC15, Table 3, "(243) Ida"]
JUPITER_2006	120	Jupiter	This is the reference ORM for Jupiter (a planet).	2006 The *x*-positive *xz*-half-plane as determined by an ephemeris as specified in {Table 1, "Jupiter"}, with its associated accuracy as specified in {Section 2, paragraph 5}. Bound to the magnetic field (System III).	Jupiter, Global	OBLATE-_ELLIPSOID	JUPITER_2006	[RIIC15, Table 1, "Jupiter"]

ORM label	ORM code	Published name	Reference ORM	Binding information	Region	ORMT label	RD parameterization	References
MARS_2000	140	Mars	This is the reference ORM for Mars (a planet).	2000 The *x*-positive *xz*-half-plane as determined by an observable fixed surface feature and approximated by an ephemeris as specified in {Table 1, "Mars"}, with its associated accuracy as specified in {Section 2, paragraph 5}.	Mars, Global	OBLATE-_ELLIPSOID	MARS_2000	[RIIC15, Table 1, "Mars"]
MARS_SPHERE-_2000	142	Mars (spherical)	MARS_2000	2000 The *x*-positive *xz*-half-plane as determined by an observable fixed surface feature and approximated by an ephemeris as specified in {Table 1, "Mars"}, with its associated accuracy as specified in {Section 2, paragraph 5}.	Mars, Global	SPHERE	MARS_SPHERE-_2000	[RIIC15, Table 1, "Mars"]
MERCURY_2015	329	Mercury	This is the reference ORM for Mercury (a planet).	2015 The *x*-positive *xz*-half-plane as determined by an ephemeris as specified in {Table 1, "Mercury"}, with its associated accuracy as specified in {Section 2, paragraph 7}.	Mercury, Global	OBLATE-_ELLIPSOID	MERCURY_2015	[RIIC15, Table 1, "Mercury"]
MERCURY_SPHERE_2015	330	Mercury (spherical)	MERCURY_2015	2015 The *x*-positive *xz*-half-plane as determined by an ephemeris as specified in {Table 1, "Mercury"}, with its associated accuracy as specified in {Section 2, paragraph 7}.	Mercury, Global	SPHERE	MERCURY-_SPHERE_2015	[RIIC15, Table 1, "Mercury"]

ORM label	ORM code	Published name	Reference ORM	Binding information	Region	ORMT label	RD parameterization	References
NEPTUNE_1991	168	Neptune	This is the reference ORM for Neptune (a planet).	1991 The *x*-positive *xz*-half-plane as determined by an ephemeris as specified in {Table 1, "Neptune"}, with its associated accuracy as specified in {Section 2, paragraph 5}. Bound to the magnetic field (System III).	Neptune, Global	OBLATE-_ELLIPSOID	NEPTUNE_1991	[RIIC15, Table 1, "Neptune"]
PLUTO_2017	338	Pluto	This is the reference ORM for Pluto (a dwarf planet).	2017 The *x*-positive *xz*-half-plane as determined by an ephemeris as specified in {Table 3, "(134340) Pluto"}, with its associated accuracy as specified in {Section 2, paragraph 7}.	Pluto, Global	SPHERE	PLUTO_2017	[RIIC15, Table 3, "(134340) Pluto"]
SATURN_1988	215	Saturn	This is the reference ORM for Saturn (a planet).	1991 The *x*-positive *xz*-half-plane as determined by an ephemeris as specified in {Table 1, "Saturn"}, with its associated accuracy as specified in {Section 2, paragraph 5}. Bound to the magnetic field (System III)	Saturn, Global	OBLATE-_ELLIPSOID	SATURN_1988	[RIIC15, Table 1, "Saturn"]
URANUS_1988	237	Uranus	This is the reference ORM for Uranus (a planet).	1988 The *x*-positive *xz*-half-plane as determined by an ephemeris as specified in {Table 1, "Uranus"}, with its associated accuracy as specified in {Section 2, paragraph 5}. Bound to the magnetic field (System III).	Uranus, Global	OBLATE-_ELLIPSOID	URANUS_1988	[RIIC15, Table 1, "Uranus"]

ORM label	ORM code	Published name	Reference ORM	Binding information	Region	ORMT label	RD parameterization	References
VENUS_1991	240	Venus	This is the reference ORM for Venus (a planet).	1991 The *x*-positive *xz*-half-plane as determined by an observable fixed surface feature and approximated by an ephemeris as specified in {Table 1, "Venus"}, with its associated accuracy as specified in {Section 2, paragraph 5}.	Venus, Global	SPHERE	VENUS_1991	[RIIC15, Table 1, "Venus"]

Table E.11 — Object-fixed planet (non-Earth) ORM reference transformation specifications

ORM label	RT label	RT code	RT region	STT label and parameter values	Date published	References
CHARON_2017	CHARON_2017_IDENTITY	452	Global (Charon)	IDENTITY The reference ORM for object Charon	2017	[RIIC15, Table 3, "(134340) Pluto: I Charon"]
EROS_2002	EROS_2002_IDENTITY	458	Global (Eros)	IDENTITY The reference ORM for object Eros.	2002	[RIIC15, Table 3, "(433) Eros"]
GASPRA_1991	GASPRA_1991_IDENTITY	101	Global (Gaspra)	IDENTITY The reference ORM for object Gaspra.	1991	[RIIC15, Table 3, "(951) Gaspra"]
IDA_1991	IDA_1991_IDENTITY	128	Global (Ida)	IDENTITY The reference ORM for object Ida.	1991	[RIIC15, Table 3, "(243) Ida"]

ORM label	RT label	RT code	RT region	STT label and parameter values	Date published	References
JUPITER_2006	JUPITER_1988_IDENTITY	148	Global (Jupiter)	IDENTITY The reference ORM for object Jupiter.	2006	[RIIC15, Table 1, "Jupiter"]
MARS_2000	MARS_2000_IDENTITY	165	Global (Mars)	IDENTITY The reference ORM for object Mars.	2000	[RIIC15, Table 1, "Mars"]
MARS_SPHERE-_2000	MARS_SPHERE_2000-_IDENTITY	166	Global (Mars)	IDENTITY	2000	[RIIC15, Table 1, "Mars"]
MERCURY_2015	MERCURY_2015_IDENTITY	466	Global (Mercury)	IDENTITY The reference ORM for object Mercury.	2015	[RIIC15, Table 1, "Mercury"]
MERCURY_-SPHERE_2015	MERCURY_SPHERE_2015_IDENTITY	467	Global (Mercury)	IDENTITY	2015	[RIIC15, Table 1, "Mercury"]
NEPTUNE_1991	NEPTUNE_1991_IDENTITY	218	Global (Neptune)	IDENTITY The reference ORM for object Neptune.	1991	[RIIC15, Table 1, "Neptune"]
PLUTO_2017	PLUTO_2017_IDENTITY	475	Global (Pluto)	IDENTITY The reference ORM for object Pluto	2017	[RIIC15, Table 3, "(134340) Pluto"]
SATURN_1988	SATURN_1988_IDENTITY	304	Global (Saturn)	IDENTITY The reference ORM for object Saturn.	1991	[RIIC15, Table 1, "Saturn"]
URANUS_1988	URANUS_1988_IDENTITY	330	Global (Uranus)	IDENTITY The reference ORM for object Uranus.	1988	[RIIC15, Table 1, "Uranus"]
VENUS_1991	VENUS_1991_IDENTITY	332	Global (Venus)	IDENTITY The reference ORM for object Venus.	1991	[RIIC15, Table 1, "Venus"]

E.2.2.5 Dynamic planet (non-Earth) ORMs

Table E.12 — Dynamic planet (non-Earth) ORM specifications

ORM label	ORM code	Published name	Reference ORM	Binding information	Region	ORMT label	RD parameterization	References
JUPITER_INERTIAL	121	Jupiter equatorial inertial	JUPITER-_2006	OBRS EQUATORIAL_INERTIAL Note: Vernal equinox, true of date.	Vicinity of Jupiter	BI_AXIS-_ORIGIN_3D	n/a	Clause 7.5.2
JUPITER_SOLAR-_ECLIPTIC	123	Jupiter solar ecliptic	JUPITER-_2006	OBRS SOLAR_ECLIPTIC	Vicinity of Jupiter	BI_AXIS-_ORIGIN_3D	n/a	[HAPG]
JUPITER_SOLAR-_EQUATORIAL	124	Jupiter solar equatorial	JUPITER-_2006	OBRS SOLAR_EQUATORIAL	Vicinity of Jupiter	BI_AXIS-_ORIGIN_3D	n/a	[CRUS]
JUPITER_SOLAR-_MAG_DIPOLE	125	Jupiter solar magnetic dipole	JUPITER-_2006	OBRS SOLAR_MAGNETIC-_DIPOLE	Vicinity of Jupiter	BI_AXIS-_ORIGIN_3D	n/a	[CRUS], [BHAV]
JUPITER_SOLAR-_MAG_ECLIPTIC	126	Jupiter solar magnetic ecliptic	JUPITER-_2006	OBRS SOLAR_MAGNETIC-_ECLIPTIC	Vicinity of Jupiter	BI_AXIS-_ORIGIN_3D	n/a	[CRUS]
MARS_INERTIAL	141	Mars equatorial inertial	MARS_2000	OBRS EQUATORIAL_INERTIAL Note: Vernal equinox, true of date.	Vicinity of Mars	BI_AXIS-_ORIGIN_3D	n/a	Clause 7.5.2

ORM label	ORM code	Published name	Reference ORM	Binding information	Region	ORMT label	RD parameterization	References
MERCURY_INERTIAL	147	Mercury equatorial inertial	MERCURY-_2015	OBRS EQUATORIAL_INERTIAL Note: Vernal equinox, true of date.	Vicinity of Mercury	BI_AXIS-_ORIGIN_3D	n/a	Clause 7.5.2
NEPTUNE_INERTIAL	169	Neptune equatorial inertial	NEPTUNE-_1991	OBRS EQUATORIAL_INERTIAL Note: Vernal equinox, true of date.	Vicinity of Neptune	BI_AXIS-_ORIGIN_3D	n/a	Clause 7.5.2
PLUTO_INERTIAL	188	Pluto equatorial inertial	PLUTO_2017	OBRS EQUATORIAL_INERTIAL Note: Vernal equinox, true of date.	Vicinity of Pluto	BI_AXIS-_ORIGIN_3D	n/a	Clause 7.5.2
SATURN_INERTIAL	216	Saturn equatorial inertial	SATURN-_1988	OBRS EQUATORIAL_INERTIAL Note: Vernal equinox, true of date.	Vicinity of Saturn	BI_AXIS-_ORIGIN_3D	n/a	Clause 7.5.2
URANUS_INERTIAL	238	Uranus equatorial inertial	URANUS-_1988	OBRS EQUATORIAL_INERTIAL Note: Vernal equinox, true of date.	Vicinity of Uranus	BI_AXIS-_ORIGIN_3D	n/a	Clause 7.5.2
VENUS_INERTIAL	241	Venus equatorial inertial	VENUS_1991	OBRS EQUATORIAL_INERTIAL Note: Vernal equinox, true of date.	Vicinity of Venus	BI_AXIS-_ORIGIN_3D	n/a	Clause 7.5.2

Table E.13 — Time-fixed instances of dynamic planet (non-Earth) ORM specifications

ORM label	ORM code	Published name	Reference ORM	Binding information	Region	ORMT label	RD parameterization	References
JUPITER-_MAGNETIC_1993	122	Jupiter magnetic	JUPITER-_2006	1992 OBRS CELESTIOMAGNETIC Note: Object-fixed based on the "eccentric dipoles" of an octopole representation of a sixth degree and order field (O_6) model that was derived from empirical measurements made by the Pioneer 10/11 and Voyager 1/2 spacecraft.	Vicinity of Jupiter	BI_AXIS-_ORIGIN_3D	n/a	[MFOP, Table 5, "Jupiter"]
NEPTUNE-_MAGNETIC_1993	170	Neptune magnetic	NEPTUNE-_1991	1993 OBRS CELESTIOMAGNETIC Note: Object-fixed based on the "eccentric dipoles" of an octopole representation of an eighth degree field (O_8) model that was derived from empirical measurements made by the Voyager 2 spacecraft.	Vicinity of Neptune	BI_AXIS-_ORIGIN_3D	n/a	[MFOP, Table 5, "Neptune"]
SATURN-_MAGNETIC_1993	217	Saturn magnetic	SATURN-_1988	1993 OBRS CELESTIOMAGNETIC Note: Object-fixed based on the "eccentric dipoles" of a Z_3 zonal harmonic model that was derived from empirical measurements made by the Pioneer 11 and Voyager 1/2 spacecraft.	Vicinity of Saturn	BI_AXIS-_ORIGIN_3D	n/a	[MFOP, Table 5, "Saturn"]

ORM label	ORM code	Published name	Reference ORM	Binding information	Region	ORMT label	RD parameterization	References
URANUS-_MAGNETIC_1993	239	Uranus magnetic	URANUS-_1988	1993 OBRS CELESTIOMAGNETIC Note: Object-fixed based on the "eccentric dipoles" of an Q_3 model that was derived from empirical measurements made by the Voyager 2 spacecraft.	Vicinity of Uranus	BI_AXIS-_ORIGIN_3D	n/a	[MFOP, Table 5, "Uranus"]

Table E.14 — Time-fixed instances of dynamic planet (non-Earth) ORM reference transformation specifications

ORM label	RT label	RT code	RT region	STT label and parameter values	Date published	References
JUPITER-_MAGNETIC_1993	JUPITER_MAGNETIC_1993-_VOYAGER	149	Global (Jupiter)	PV_ZY_ROTATE ω_1 = 9,4°, ω_2 = -200,1°.	1993	[MFOP, Table 5, "Jupiter"]
NEPTUNE-_MAGNETIC_1993	NEPTUNE_MAGNETIC_1993-_VOYAGER	219	Global (Neptune)	PV_ZY_ROTATE ω_1 = 46,9°, ω_2 = -72°.	1993	[MFOP, Table 5, "Neptune"]
SATURN-_MAGNETIC_1993	SATURN_MAGNETIC_1993-_VOYAGER_IDENTITY_BY-_MEASUREMENT	305	Global (Saturn)	PV_ZY_ROTATE ω_1 = 0°, ω_2 = 0°.	1993	[MFOP, Table 5, "Saturn"]
URANUS-_MAGNETIC_1993	URANUS_MAGNETIC_1993-_VOYAGER	331	Global (Uranus)	PV_ZY_ROTATE ω_1 = 58,6°, ω_2 = -53,6°.	1993	[MFOP, Table 5, "Uranus"]

E.2.2.6 Object-fixed satellite ORMs

Table E.15 — Object-fixed satellite ORM specifications

ORM label	ORM code	Published name	Reference ORM	Binding information	Region	ORMT label	RD parameterization	References
ADRASTEA-_2000	4	Adrastea	This is the reference ORM for Adrastea (a satellite of Jupiter).	2000 The *x*-positive *xz*-half-plane as determined by an ephemeris as specified in {Table 2, "Adrastea"}, with its associated accuracy as specified in {Section 2, paragraph 5}.	Adrastea, Global	TRI_AXIAL-_ELLIPSOID	ADRASTEA-_2000	[RIIC15, Table 2, "Adrastea"]
AEGAEON_2013	310	Aegaeon	This is the reference ORM for Aegaeon (a satellite of Saturn).	No ephemeris information for Aegaeon is included in RIIC15.	Aegaeon, Global	TRI_AXIAL-_ELLIPSOID	AEGAEON_2013	[RIIC15]
AMALTHEA-_2000	7	Amalthea	This is the reference ORM for Amalthea (a satellite of Jupiter).	2000 The *x*-positive *xz*-half-plane as determined by an ephemeris as specified in {Table 2, "Amalthea"}, with its associated accuracy as specified in {Section 2, paragraph 5}.	Amalthea, Global	TRI_AXIAL-_ELLIPSOID	AMALTHEA-_2000	[RIIC15, Table 2, "Amalthea"]
ANTHE_2013	311	Anthe	This is the reference ORM for Anthe (a satellite of Saturn).	No ephemeris information for Anthe is included in RIIC15.	Anthe, Global	SPHERE	ANTHE_2013	[RIIC15]

ORM label	ORM code	Published name	Reference ORM	Binding information	Region	ORMT label	RD parameterization	References
ARIEL_1988	13	Ariel	This is the reference ORM for Ariel (a satellite of Uranus).	1988 The *x*-positive *xz*-half-plane as determined by an ephemeris as specified in {Table 2, "Ariel"}, with its associated accuracy as specified in {Section 2, paragraph 5}.	Ariel, Global	SPHERE	ARIEL_1988	[RIIC15, Table 2, "Ariel"]
ATLAS_2013	312	Atlas	This is the reference ORM for Atlas (a satellite of Saturn).	2013 The *x*-positive *xz*-half-plane as determined by an ephemeris as specified in {Table 2, "Atlas"}, with its associated accuracy as specified in {Section 2, paragraph 7}.	Atlas, Global	TRI_AXIAL-_ELLIPSOID	ATLAS_2013	[RIIC15, Table 2, "Atlas"]
BELINDA_1988	20	Belinda	This is the reference ORM for Belinda (a satellite of Uranus).	1988 The *x*-positive *xz*-half-plane as determined by an ephemeris as specified in {Table 2, "Belinda"}, with its associated accuracy as specified in {Section 2, paragraph 5}.	Belinda, Global	SPHERE	BELINDA_1988	[RIIC15, Table 2, "Belinda"]
BIANCA_1988	23	Bianca	This is the reference ORM for Bianca (a satellite of Uranus).	1988 The *x*-positive *xz*-half-plane as determined by an ephemeris as specified in {Table 2, "Bianca"}, with its associated accuracy as specified in {Section 2, paragraph 5}.	Bianca, Global	SPHERE	BIANCA_1988	[RIIC15, Table 2, "Bianca"]

ORM label	ORM code	Published name	Reference ORM	Binding information	Region	ORMT label	RD parameterization	References
CALLISTO_2001	313	Callisto	This is the reference ORM for Callisto (a satellite of Jupiter).	2001 The *x*-positive *xz*-half-plane as determined by an ephemeris as specified in {Table 2, "Callisto"}, with its associated accuracy as specified in {Section 2, paragraph 7}.	Callisto, Global	TRI_AXIAL-_ELLIPSOID	CALLISTO_2001	[RIIC15, Table 2, "Callisto"]
CALYPSO_2013	314	Calypso	This is the reference ORM for Calypso (a satellite of Saturn).	2013 The *x*-positive *xz*-half-plane as determined by an ephemeris as specified in {Table 2, "Calypso"}, with its associated accuracy as specified in {Section 2, paragraph 7}.	Calypso, Global	TRI_AXIAL-_ELLIPSOID	CALYPSO_2013	[RIIC15, Table 2, "Calypso"]
CORDELIA_1988	40	Cordelia	This is the reference ORM for Cordelia (a satellite of Uranus).	1988 The *x*-positive *xz*-half-plane as determined by an ephemeris as specified in {Table 2, "Cordelia"}, with its associated accuracy as specified in {Section 2, paragraph 5}.	Cordelia, Global	SPHERE	CORDELIA_1988	[RIIC15, Table 2, "Cordelia"]
CRESSIDA_1988	42	Cressida	This is the reference ORM for Cressida (a satellite of Uranus).	1988 The *x*-positive *xz*-half-plane as determined by an ephemeris as specified in {Table 2, "Cressida"}, with its associated accuracy as specified in {Section 2, paragraph 5}.	Cressida, Global	SPHERE	CRESSIDA_1988	[RIIC15, Table 2, "Cressida"]

ORM label	ORM code	Published name	Reference ORM	Binding information	Region	ORMT label	RD parameterization	References
DAPHNIS_2013	316	Daphnis	This is the reference ORM for Daphnis (a satellite of Saturn).	No ephemeris information for Daphnis is included in RIIC15.	Daphnis, Global	TRI_AXIAL-_ELLIPSOID	DAPHNIS_2013	[RIIC15]
DEIMOS_1993	317	Deimos	This is the reference ORM for Deimos (a satellite of Mars).	1993 The *x*-positive *xz*-half-plane as determined by an ephemeris as specified in {Table 2, "Deimos"}, with its associated accuracy as specified in {Section 2, paragraph 7}.	Deimos, Global	TRI_AXIAL-_ELLIPSOID	DEIMOS_1993	[RIIC15, Table 2, "Deimos"]
DESDEMONA-_1988	46	Desdemona	This is the reference ORM for Desdemona (a satellite of Uranus).	1988 The *x*-positive *xz*-half-plane as determined by an ephemeris as specified in {Table 2, "Desdemona"}, with its associated accuracy as specified in {Section 2, paragraph 5}.	Desde-mona, Global	SPHERE	DESDEMONA-_1988	[RIIC15, Table 2, "Desde-mona"]
DESPINA_1991	47	Despina	This is the reference ORM for Despina (a satellite of Neptune).	1991 The *x*-positive *xz*-half-plane as determined by an ephemeris as specified in {Table 2, "Despina"}, with its associated accuracy as specified in {Section 2, paragraph 5}.	Despina, Global	SPHERE	DESPINA_1991	[RIIC15, Table 2, "Despina"]

ORM label	ORM code	Published name	Reference ORM	Binding information	Region	ORMT label	RD parameterization	References
DIONE_2010	318	Dione	This is the reference ORM for Dione (a satellite of Saturn).	2010 The *x*-positive *xz*-half-plane as determined by an ephemeris as specified in {Table 2, "Dione"}, with its associated accuracy as specified in {Section 2, paragraph 7}.	Dione, Global	TRI_AXIAL-_ELLIPSOID	DIONE_2010	[RIIC15, Table 2, "Dione"]
ENCELADUS-_2016	319	Enceladus	This is the reference ORM for Enceladus (a satellite of Saturn).	2016 The *x*-positive *xz*-half-plane as determined by an observable fixed surface feature and approximated by an ephemeris as specified in {Table 2, "Enceladus"}, with its associated accuracy as specified in {Section 2, paragraph 7}.	Encela-dus, Global	TRI_AXIAL-_ELLIPSOID	ENCELADUS-_2016	[RIIC15, Table 2, "Enceladus"]
EPIMETHEUS-_2013	320	Epimetheus	This is the reference ORM for Epimetheus (a satellite of Saturn).	1988 The *x*-positive *xz*-half-plane as determined by an ephemeris as specified in {Table 2, "Epimetheus"}, with its associated accuracy as specified in {Section 2, paragraph 5}.	Epime-theus, Global	TRI_AXIAL-_ELLIPSOID	EPIMETHEUS-_2013	[RIIC15, Table 2, "Epime-theus"]
EUROPA_2007	322	Europa	This is the reference ORM for Europa (a satellite of Jupiter).	2007 The *x*-positive *xz*-half-plane as determined by an observable fixed surface feature and approximated by an ephemeris as specified in {Table 2, "Europa"}, with its associated accuracy as specified in {Section 2, paragraph 7}.	Europa, Global	TRI_AXIAL-_ELLIPSOID	EUROPA_2007	[RIIC15, Table 2, "Europa"]

ORM label	ORM code	Published name	Reference ORM	Binding information	Region	ORMT label	RD parameterization	References
GALATEA_1991	71	Galatea	This is the reference ORM for Galatea (a satellite of Neptune).	1991 The *x*-positive *xz*-half-plane as determined by an ephemeris as specified in {Table 2, "Galatea"}, with its associated accuracy as specified in {Section 2, paragraph 5}.	Galatea, Global	SPHERE	GALATEA_1991	[RIIC15, Table 2, "Galatea"]
GANYMEDE-_2007	323	Ganymede	This is the reference ORM for Ganymede (a satellite of Jupiter).	2007 The *x*-positive *xz*-half-plane as determined by an observable fixed surface feature and approximated by an ephemeris as specified in {Table 2, "Ganymede"}, with its associated accuracy as specified in {Section 2, paragraph 7}.	Gany-mede, Global	TRI_AXIAL-_ELLIPSOID	GANYMEDE-_2007	[RIIC15, Table 2, "Ganymede"]
HELENE_2013	324	Helene	This is the reference ORM for Helene (a satellite of Saturn).	2013 The *x*-positive *xz*-half-plane as determined by an ephemeris as specified in {Table 2, "Helene"}, with its associated accuracy as specified in {Section 2, paragraph 7}.	Helene, Global	TRI_AXIAL-_ELLIPSOID	HELENE_2013	[RIIC15 Table 2, "Helene"]
HYPERION-_2010	325	Hyperion	This is the reference ORM for Hyperion (a satellite of Saturn).	No ephemeris information for Hyperion is included in RIIC15.	Hyperion, Global	TRI_AXIAL-_ELLIPSOID	HYPERION-_2010	[RIIC15]

ORM label	ORM code	Published name	Reference ORM	Binding information	Region	ORMT label	RD parameterization	References
IAPETUS_2010	326	Iapetus	This is the reference ORM for Iapetus (a satellite of Saturn).	2010 The *x*-positive *xz*-half-plane as determined by an ephemeris as specified in {Table 2, "Iapetus"}, with its associated accuracy as specified in {Section 2, paragraph 7}.	Iapetus, Global	TRI_AXIAL-_ELLIPSOID	IAPETUS_2010	[RIIC15, Table 2, "Iapetus"]
IO_1998	327	Io	This is the reference ORM for Io (a satellite of Jupiter).	1998 The *x*-positive *xz*-half-plane as determined by an ephemeris as specified in {Table 2, "Io"}, with its associated accuracy as specified in {Section 2, paragraph 7}.	Io, Global	TRI_AXIAL-_ELLIPSOID	IO_1998	[RIIC15, Table 2, "Io"]
JANUS_2013	328	Janus	This is the reference ORM for Janus (a satellite of Saturn).	2013 The *x*-positive *xz*-half-plane as determined by an ephemeris as specified in {Table 2, "Janus"}, with its associated accuracy as specified in {Section 2, paragraph 7}.	Janus, Global	TRI_AXIAL-_ELLIPSOID	JANUS_2013	[RIIC15, Table 2, "Janus"]
JULIET_1988	119	Juliet	This is the reference ORM for Juliet (a satellite of Uranus).	1988 The *x*-positive *xz*-half-plane as determined by an ephemeris as specified in {Table 2, "Juliet"}, with its associated accuracy as specified in {Section 2, paragraph 5}.	Juliet, Global	SPHERE	JULIET_1988	[RIIC15, Table 2, "Juliet"]

ORM label	ORM code	Published name	Reference ORM	Binding information	Region	ORMT label	RD parameterization	References
LARISSA_1991	132	Larissa	This is the reference ORM for Larissa (a satellite of Neptune).	1991 The *x*-positive *xz*-half-plane as determined by an ephemeris as specified in {Table 2, "Larissa"}, with its associated accuracy as specified in {Section 2, paragraph 5}.	Larissa, Global	OBLATE-_ELLIPSOID	LARISSA_1991	[RIIC15, Table 2, "Larissa"]
METHONE_2013	331	Methone	This is the reference ORM for Methone (a satellite of Saturn).	No ephemeris information for Methone is included in RIIC15.	Methone, Global	TRI_AXIAL-_ELLIPSOID	METHONE_2013	[RIIC15]
METIS_2000	148	Metis	This is the reference ORM for Metis (a satellite of Jupiter).	2000 The *x*-positive *xz*-half-plane as determined by an ephemeris as specified in {Table 2, "Metis"}, with its associated accuracy as specified in {Section 2, paragraph 5}.	Metis, Global	TRI_AXIAL-_ELLIPSOID	METIS_2000	[RIIC15, Table 2, "Metis"]
MIMAS_2010	332	Mimas	This is the reference ORM for Mimas (a satellite of Saturn).	2010 The *x*-positive *xz*-half-plane as determined by an ephemeris as specified in {Table 2, "Mimas"}, with its associated accuracy as specified in {Section 2, paragraph 7}.	Mimas, Global	TRI_AXIAL-_ELLIPSOID	MIMAS_2010	[RIIC15, Table 2, "Mimas"]

ORM label	ORM code	Published name	Reference ORM	Binding information	Region	ORMT label	RD parameterization	References
MIRANDA_1988	152	Miranda	This is the reference ORM for Miranda (a satellite of Uranus).	1988 The *x*-positive *xz*-half-plane as determined by an ephemeris as specified in {Table 2, "Miranda"}, with its associated accuracy as specified in {Section 2, paragraph 5}.	Miranda, Global	SPHERE	MIRANDA_1988	[RIIC15, Table 2, "Miranda"]
MOON_1991	160	Moon	This is the reference ORM for Moon (a satellite of Earth).	1991 The *x*-positive *xz*-half-plane as determined by an ephemeris as specified in {Table 2, "Moon"}, with its associated accuracy as specified in {Section 2, paragraph 5}.	Moon, Global	SPHERE	MOON_1991	[RIIC15, Table 2, "Moon"]
NAIAD_1991	166	Naiad	This is the reference ORM for Naiad (a satellite of Neptune).	1991 The *x*-positive *xz*-half-plane as determined by an ephemeris as specified in {Table 2, "Naiad"}, with its associated accuracy as specified in {Section 2, paragraph 5}.	Naiad, Global	SPHERE	NAIAD_1991	[RIIC15, Table 2, "Naiad"]
OBERON_1988	174	Oberon	This is the reference ORM for Oberon (a satellite of Uranus).	1988 The *x*-positive *xz*-half-plane as determined by an ephemeris as specified in {Table 2, "Oberon"}, with its associated accuracy as specified in {Section 2, paragraph 5}.	Oberon, Global	SPHERE	OBERON_1988	[RIIC15, Table 2, "Oberon"]

ORM label	ORM code	Published name	Reference ORM	Binding information	Region	ORMT label	RD parameterization	References
OPHELIA_1988	179	Ophelia	This is the reference ORM for Ophelia (a satellite of Uranus).	1988 The *x*-positive *xz*-half-plane as determined by an ephemeris as specified in {Table 2, "Ophelia"}, with its associated accuracy as specified in {Section 2, paragraph 5}.	Ophelia, Global	SPHERE	OPHELIA_1988	[RIIC15, Table 2, "Ophelia"]
PALLENE_2013	333	Pallene	This is the reference ORM for Pallene (a satellite of Saturn).	No ephemeris information for Pallene is included in RIIC15.	Pallene, GlobaL	TRI_AXIAL-_ELLIPSOID	PALLENE_2013	[RIIC15]
PAN_2013	334	Pan	This is the reference ORM for Pan (a satellite of Saturn).	2013 The *x*-positive *xz*-half-plane as determined by an ephemeris as specified in {Table 2, "Pan"}, with its associated accuracy as specified in {Section 2, paragraph 7}.	Pan, Global	TRI_AXIAL-_ELLIPSOID	PAN_2013	[RIIC15, Table 2, "Pan"]
PANDORA_2013	335	Pandora	This is the reference ORM for Pandora (a satellite of Saturn).	2013 The *x*-positive *xz*-half-plane as determined by an ephemeris as specified in {Table 2, "Pandora"}, with its associated accuracy as specified in {Section 2, paragraph 7}.	Pandora, Global	TRI_AXIAL-_ELLIPSOID	PANDORA_2013	[RIIC15, Table 2, "Pandora"]

ORM label	ORM code	Published name	Reference ORM	Binding information	Region	ORMT label	RD parameterization	References
PHOBOS_2010	336	Phobos	This is the reference ORM for Phobos (a satellite of Mars).	2010 The *x*-positive *xz*-half-plane as determined by an ephemeris as specified in {Table 2, "Phobos"}, with its associated accuracy as specified in {Section 2, paragraph 7}.	Phobos, Global	TRI_AXIAL-_ELLIPSOID	PHOBOS_2010	[RIIC15, Table 2, "Phobos"]
PHOEBE_2010	337	Phoebe	This is the reference ORM for Phoebe (a satellite of Saturn).	2010 The *x*-positive *xz*-half-plane as determined by an ephemeris as specified in {Table 2, "Phoebe"}, with its associated accuracy as specified in {Section 2, paragraph 7}.	Phoebe, Global	TRI_AXIAL-_ELLIPSOID	PHOEBE_2010	[RIIC15, Table 2, "Phoebe"]
POLYDEUCES-_2010	339	Polydeuces	This is the reference ORM for Polyde (a satellite of Saturn).	No ephemeris information for Polydeuces is included in RIIC15.	Polydeuces, Global	TRI_AXIAL-_ELLIPSOID	POLYDEUCES-_2010	[RIIC15]
PORTIA_1988	191	Portia	This is the reference ORM for Portia (a satellite of Uranus).	1988 The *x*-positive *xz*-half-plane as determined by an ephemeris as specified in {Table 2, "Portia"}, with its associated accuracy as specified in {Section 2, paragraph 5}.	Portia, Global	SPHERE	PORTIA_1988	[RIIC15, Table 2, "Portia"]

ORM label	ORM code	Published name	Reference ORM	Binding information	Region	ORMT label	RD parameterization	References
PROMETHEUS-_2013	340	Prometheus	This is the reference ORM for Prometheus (a satellite of Saturn).	2013 The *x*-positive *xz*-half-plane as determined by an ephemeris as specified in {Table 2, "Prometheus"}, with its associated accuracy as specified in {Section 2, paragraph 7}.	Prome-theus, Global	TRI_AXIAL-_ELLIPSOID	PROMETHEUS-_2013	[RIIC15, Table 2, "Prome-theus"]
PROTEUS_1991	194	Proteus	This is the reference ORM for Proteus (a satellite of Neptune).	1991 The *x*-positive *xz*-half-plane as determined by an ephemeris as specified in {Table 2, "Proteus"}, with its associated accuracy as specified in {Section 2, paragraph 5}.	Proteus, Global	TRI_AXIAL-_ELLIPSOID	PROTEUS_1991	[RIIC15, Table 2, "Proteus"]
PUCK_1988	197	Puck	This is the reference ORM for Puck (a satellite of Uranus).	1988 The *x*-positive *xz*-half-plane as determined by an ephemeris as specified in {Table 2, "Puck"}, with its associated accuracy as specified in {Section 2, paragraph 5}.	Puck, Global	SPHERE	PUCK_1988	[RIIC15, Table 2, "Puck"]
RHEA_2010	341	Rhea	This is the reference ORM for Rhea (a satellite of Saturn).	2010 The *x*-positive *xz*-half-plane as determined by an ephemeris as specified in {Table 2, "Rhea"}, with its associated accuracy as specified in {Section 2, paragraph 7}.	Rhea, Global	TRI_AXIAL-_ELLIPSOID	RHEA_2010	[RIIC15, Table 2, "Rhea"]

ORM label	ORM code	Published name	Reference ORM	Binding information	Region	ORMT label	RD parameterization	References
ROSALIND_1988	207	Rosalind	This is the reference ORM for Rosalind (a satellite of Uranus).	1988 The *x*-positive *xz*-half-plane as determined by an ephemeris as specified in {Table 2, "Rosalind"}, with its associated accuracy as specified in {Section 2, paragraph 5}.	Rosalind, Global	SPHERE	ROSALIND_1988	[RIIC15, Table 2, "Rosalind"]
TELESTO_2013	343	Telesto	This is the reference ORM for Telesto (a satellite of Saturn).	2013 The *x*-positive *xz*-half-plane as determined by an ephemeris as specified in {Table 2, "Telesto"}, with its associated accuracy as specified in {Section 2, paragraph 7}.	Telesto, Global	TRI_AXIAL-_ELLIPSOID	TELESTO_2013	[RIIC15, Table 2, "Telesto"]
TETHYS_2010	344	Tethys	This is the reference ORM for Tethys (a satellite of Saturn).	2010 The *x*-positive *xz*-half-plane as determined by an ephemeris as specified in {Table 2, "Tethys"}, with its associated accuracy as specified in {Section 2, paragraph 7}.	Tethys, Global	TRI_AXIAL-_ELLIPSOID	TETHYS_2010	[RIIC15, Table 2, "Tethys"]
THALASSA-_1991	228	Thalassa	This is the reference ORM for Thalassa (a satellite of Neptune).	1991 The *x*-positive *xz*-half-plane as determined by an ephemeris as specified in {Table 2, "Thalassa"}, with its associated accuracy as specified in {Section 2, paragraph 5}.	Thalassa, Global	SPHERE	THALASSA_1991	[RIIC15, Table 2, "Thalassa"]

ORM label	ORM code	Published name	Reference ORM	Binding information	Region	ORMT label	RD parameterization	References
THEBE_2000	229	Thebe	This is the reference ORM for Thebe (a satellite of Jupiter).	2000 The *x*-positive *xz*-half-plane as determined by an ephemeris as specified in {Table 2, "Thebe"}, with its associated accuracy as specified in {Section 2, paragraph 5}.	Thebe, Global	OBLATE-_ELLIPSOID	THEBE_2000	[RIIC15, Table 2, "Thebe"]
TITAN_2010	345	Titan	This is the reference ORM for Titan (a satellite of Saturn).	2010 The *x*-positive *xz*-half-plane as determined by an ephemeris as specified in {Table 2, "Titan"}, with its associated accuracy as specified in {Section 2, paragraph 7}.	Titan, Global	TRI_AXIAL-_ELLIPSOID	TITAN_2010	[RIIC15, Table 2, "Titan"]
TITANIA_1988	232	Titania	This is the reference ORM for Titania (a satellite of Uranus).	1988 The *x*-positive *xz*-half-plane as determined by an ephemeris as specified in {Table 2, "Titania"}, with its associated accuracy as specified in {Section 2, paragraph 5}.	Titania, Global	SPHERE	TITANIA_1988	[RIIC15, Table 2, "Titania"]
TRITON_1991	235	Triton	This is the reference ORM for Triton (a satellite of Neptune).	1991 The *x*-positive *xz*-half-plane as determined by an ephemeris as specified in {Table 2, "Triton"}, with its associated accuracy as specified in {Section 2, paragraph 5}.	Triton, Global	SPHERE	TRITON_1991	[RIIC15, Table 2, "Triton"]

ORM label	ORM code	Published name	Reference ORM	Binding information	Region	ORMT label	RD parameterization	References
UMBRIEL_1988	236	Umbriel	This is the reference ORM for Umbriel (a satellite of Uranus).	1988 The *x*-positive *xz*-half-plane as determined by an ephemeris as specified in {Table 2, "Umbriel"}, with its associated accuracy as specified in {Section 2, paragraph 5}.	Umbriel, Global	SPHERE	UMBRIEL_1988	[RIIC15, Table 2, "Umbriel"]

Table E.16 — Object-fixed satellite ORM reference transformation specifications

ORM label	RT label	RT code	RT region	STT label and parameter values	Date published	References
ADRASTEA-_2000	ADRASTEA_2000_IDENTITY	10	Global (Adrastea)	IDENTITY The reference ORM for object Adrastea.	2000	[RIIC15, Table 2, "Adrastea"]
AEGAEON_2013	AEGAEON_2013_IDENTITY	447	Global (Aegaeon)	IDENTITY The reference ORM for object Aegaeon.	2013	[RIIC15]
AMALTHEA-_2000	AMALTHEA_2000_IDENTITY	14	Global (Amalthea)	IDENTITY The reference ORM for object Amalthea.	2000	[RIIC15, Table 2, "Amalthea"]
ANTHE_2013	ANTHE_2013_IDENTITY	448	Global (Anthe)	IDENTITY The reference ORM for object Anthe	2013	[RIIC15]
ARIEL_1988	ARIEL_1988_IDENTITY	30	Global (Ariel)	IDENTITY The reference ORM for object Ariel.	1988	[RIIC15, Table 2, "Ariel"]

ORM label	RT label	RT code	RT region	STT label and parameter values	Date published	References
ATLAS_2013	ATLAS_2013_IDENTITY	449	Global (Atlas)	IDENTITY The reference ORM for object Atlas.	2013	[RIIC15, Table 2, "Atlas"]
BELINDA_1988	BELINDA_1988_IDENTITY	38	Global (Belinda)	IDENTITY The reference ORM for object Belinda.	1988	[RIIC15, Table 2, "Belinda"]
BIANCA_1988	BIANCA_1988_IDENTITY	41	Global (Bianca)	IDENTITY The reference ORM for object Bianca.	1988	[RIIC15, Table 2, "Bianca"]
CALLISTO_2001	CALLISTO_2001_IDENTITY	450	Global (Callisto)	IDENTITY The reference ORM for object Callisto.	2001	[RIIC15, Table 2, "Callisto"]
CALYPSO_2013	CALYPSO_2013_IDENTITY	451	Global (Calypso)	IDENTITY The reference ORM for the object Calypso	2013	[RIIC15, Table 2, "Calypso"]
CORDELIA_1988	CORDELIA_1988_IDENTITY	58	Global (Cordelia)	IDENTITY The reference ORM for object Cordelia.	1988	[RIIC15, Table 2, "Cordelia"]
CRESSIDA_1988	CRESSIDA_1988_IDENTITY	60	Global (Cressida)	IDENTITY The reference ORM for object Cressida.	1988	[RIIC15, Table 2, "Cressida"]
DAPHNIS_2013	DAPHNIS_2013_IDENTITY	453	Global (Daphnis)	IDENTITY The reference ORM for object Daphnis.	2013	[RIIC15]

ORM label	RT label	RT code	RT region	STT label and parameter values	Date published	References
DEIMOS_1993	DEIMOS_1993_IDENTITY	454	Global (Deimos)	IDENTITY The reference ORM for object Deimos.	1993	[RIIC15, Table 2, "Deimos"]
DESDEMONA-_1988	DESDEMONA_1988-_IDENTITY	64	Global (Desdemona)	IDENTITY The reference ORM for object Desdemona.	2000	[RIIC15, Table 2, "Desdemona"]
DESPINA_1991	DESPINA_1991_IDENTITY	65	Global (Despina)	IDENTITY The reference ORM for object Despina.	1991	[RIIC15, Table 2, "Despina"]
DIONE_2010	DIONE_2010_IDENTITY	455	Global (Dione)	IDENTITY The reference ORM for object Dione.	2010	[RIIC15, Table 2, "Dione"]
ENCELADUS-_2016	ENCELADUS_2016-_IDENTITY	456	Global (Enceladus)	IDENTITY The reference ORM for object Enceladus.	2016	[RIIC15, Table 2, "Enceladus"]
EPIMETHEUS-_2013	EPIMETHEUS_2013-_IDENTITY	457	Global (Epimetheus)	IDENTITY The reference ORM for object Epimetheus.	2013	[RIIC15, Table 2, "Epimetheus"]
EUROPA_2007	EUROPA_2007_IDENTITY	459	Global (Europa)	IDENTITY The reference ORM for object Europa.	2007	[RIIC15, Table 2, "Europa"]
GALATEA_1991	GALATEA_1991_IDENTITY	98	Global (Galatea)	IDENTITY The reference ORM for object Galatea.	1991	[RIIC15, Table 2, "Galatea"]

ORM label	RT label	RT code	RT region	STT label and parameter values	Date published	References
GANYMEDE-_2007	GANYMEDE_2007_IDENTITY	460	Global (Ganymede)	IDENTITY The reference ORM for object Ganymede.	2007	[RIIC15, Table 2, "Ganymede"]
HELENE_2013	HELENE_2013_IDENTITY	461	Global (Helene)	IDENTITY The reference ORM for object Helene.	2013	[RIIC15, Table 2, "Helene"]
HYPERION-_2010	HYPERION_2013_IDENTITY	462	Global (Hyperion)	IDENTITY The reference ORM for object Hyperion.	2010	[RIIC15]
IAPETUS_2010	IAPETUS_2010_IDENTITY	463	Global (Iapetus)	IDENTITY The reference ORM for object Iapetus.	2010	[RIIC15, Table 2, "Iapetus"]
IO_1998	IO_1998_IDENTITY	464	Global (Io)	IDENTITY The reference ORM for object Io.	1998	[RIIC15, Table 2, "Io"]
JANUS_2013	JANUS_2013_IDENTITY	465	Global (Janus)	IDENTITY The reference ORM for object Janus.	2013	[RIIC15, Table 2, "Janus"]
JULIET_1988	JULIET_1988_IDENTITY	147	Global (Juliet)	IDENTITY The reference ORM for object Juliet.	2000	[RIIC15, Table 2, "Juliet"]
LARISSA_1991	LARISSA_1991_IDENTITY	155	Global (Larissa)	IDENTITY The reference ORM for object Larissa.	1991	[RIIC15, Table 2, "Larissa"]
METHONE_2013	METHONE_2013_IDENTITY	468	Global (Methone)	IDENTITY The reference ORM for object Methone.	2013	[RIIC15]

ORM label	RT label	RT code	RT region	STT label and parameter values	Date published	References
METIS_2000	METIS_2000_IDENTITY	171	Global (Metis)	IDENTITY The reference ORM for object Metis.	2000	[RIIC15, Table 2, "Metis"]
MIMAS_2010	MIMAS_2010_IDENTITY	469	Global (Mimas)	IDENTITY The reference ORM for object Mimas.	2010	[RIIC15, Table 2, "Mimas"]
MIRANDA_1988	MIRANDA_1988_IDENTITY	176	Global (Miranda)	IDENTITY The reference ORM for object Miranda.	1988	[RIIC15, Table 2, "Miranda"]
MOON_1991	MOON_1991_IDENTITY	184	Global (Moon)	IDENTITY The reference ORM for object Moon.	1991	[RIIC15, Table 2, "Moon"]
NAIAD_1991	NAIAD_1991_IDENTITY	216	Global (Naiad)	IDENTITY The reference ORM for object Naiad.	1991	[RIIC15, Table 2, "Naiad"]
OBERON_1988	OBERON_1988_IDENTITY	223	Global (Oberon)	IDENTITY The reference ORM for object Oberon.	1988	[RIIC15, Table 2, "Oberon"]
OPHELIA_1988	OPHELIA_1988_IDENTITY	236	Global (Ophelia)	IDENTITY The reference ORM for object Ophelia.	1988	[RIIC15, Table 2, "Ophelia"]
PALLENE_2013	PALLENE_2013_IDENTITY	470	Global (Pallene)	IDENTITY The reference ORM for object Pallene.	2013	[RIIC15]

ORM label	RT label	RT code	RT region	STT label and parameter values	Date published	References
PAN_2013	PAN_2013_IDENTITY	471	Global (Pan)	IDENTITY The reference ORM for object Pan.	2013	[RIIC15, Table 2, "Pan"]
PANDORA_2013	PANDORA_2013_IDENTITY	472	Global (Pandora)	IDENTITY The reference ORM for object Pandora.	2013	[RIIC15, Table 2, "Pandora"]
PHOBOS_2010	PHOBOS_2010_IDENTITY	473	Global (Phobos)	IDENTITY The reference ORM for object Phobos.	2010	[RIIC15, Table 2, "Phobos"]
PHOEBE_2010	PHOEBE_2010_IDENTITY	474	Global (Phoebe)	IDENTITY The reference ORM for object Phoebe.	2010	[RIIC15, Table 2, "Phoebe"]
POLYDEUCES-_2010	POLYDEUCES_2010_IDENTITY	476	Global (Polydeuces)	IDENTITY The reference ORM for object Polydeuces.	2010	[RIIC15]
PORTIA_1988	PORTIA_1988_IDENTITY	252	Global (Portia)	IDENTITY The reference ORM for object Portia.	1988	[RIIC15, Table 2, "Portia"]
PROMETHEUS-_2013	PROMETHEUS_2013-_IDENTITY	477	Global (Prometheus)	IDENTITY The reference ORM for object Prometheus.	2013	[RIIC15, Table 2, "Prometheus"]
PROTEUS_1991	PROTEUS_1991_IDENTITY	255	Global (Proteus)	IDENTITY The reference ORM for object Proteus.	1991	[RIIC15, Table 2, "Proteus"]

ORM label	RT label	RT code	RT region	STT label and parameter values	Date published	References
PUCK_1988	PUCK_1988_IDENTITY	267	Global (Puck)	IDENTITY The reference ORM for object Puck.	1988	[RIIC15, Table 2, "Puck"]
RHEA_2010	RHEA_2010_IDENTITY	478	Global (Rhea)	IDENTITY The reference ORM for object Rhea.	2010	[RIIC15, Table 2, "Rhea"]
ROSALIND_1988	ROSALIND_1988_IDENTITY	277	Global (Rosalind)	IDENTITY The reference ORM for object Rosalind.	1988	[RIIC15, Table 2, "Rosalind"]
TELESTO_2013	TELESTO_2013_IDENTITY	480	Global (Telesto)	IDENTITY The reference ORM for object Telesto.	2013	[RIIC15, Table 2, "Telesto"]
TETHYS_2010	TETHYS_2010_IDENTITY	481	Global (Tethys)	IDENTITY The reference ORM for object Tethys.	2010	[RIIC15, Table 2, "Tethys"]
THALASSA-_1991	THALASSA_1991_IDENTITY	316	Global (Thalassa)	IDENTITY The reference ORM for object Thalassa.	1991	[RIIC15, Table 2, "Thalassa"]
THEBE_2000	THEBE_2000_IDENTITY	317	Global (Thebe)	IDENTITY The reference ORM for object Thebe.	2000	[RIIC15, Table 2, "Thebe"]
TITAN_2010	TITAN_2010_IDENTITY	482	Global (Titan)	IDENTITY The reference ORM for object Titan.	2010	[RIIC15, Table 2, "Titan"]

ORM label	RT label	RT code	RT region	STT label and parameter values	Date published	References
TITANIA_1988	TITANIA_1988_IDENTITY	321	Global (Titania)	IDENTITY The reference ORM for object Titania.	1988	[RIIC15, Table 2, "Titania"]
TRITON_1991	TRITON_1991_IDENTITY	328	Global (Triton)	IDENTITY The reference ORM for object Triton.	1991	[RIIC15, Table 2, "Triton"]
UMBRIEL_1988	UMBRIEL_1988_IDENTITY	329	Global (Umbriel)	IDENTITY The reference ORM for object Umbriel.	1988	[RIIC15, Table 2, "Umbriel"]

E.2.2.7 Dynamic satellite ORMs

Table E.17 — Time-fixed instances of dynamic satellite ORM specifications

In this International Standard there are no time-fixed instances of dynamic satellite ORM specifications, therefore this table is empty.

Table E.18 — Time-fixed instances of dynamic satellite ORM reference transformation specifications

In this International Standard there are no time-fixed instances of dynamic satellite ORM reference transformation specifications, therefore this table is empty.

E.2.2.8 Object-fixed stellar ORMs

Table E.19 — Stellar ORM specifications

ORM label	ORM code	Published name	Reference ORM	Binding information	Region	ORMT label	RD parameterization	References
SUN_2008	342	Sun	This is the reference ORM for the Sun (a star).	2008 The *x*-positive *xz*-half-plane as determined by an ephemeris as specified in {Table 1, "Sun"}, with its associated accuracy as specified in {Section 2, paragraph 7}.	Sun, Global	SPHERE	SUN_2008	[RIIC15, Table 1, "Sun"]

Table E.20 — Stellar ORM reference transformation specifications

ORM label	RT label	RT code	RT region	STT label and parameter values	Date published	References
SUN_2008	SUN_2008_IDENTITY	479	Global (Sun)	IDENTITY The reference ORM for object Sun.	2008	[RIIC15, Table 1, "Sun"]

E.2.2.9 Dynamic stellar ORMs

Table E.21 — Dynamic stellar ORM specifications

ORM label	ORM code	Published name	Reference ORM	Binding information	Region	ORMT label	RD parameterization	References
HELIO_ARIES-_ECLIPTIC_J2000r0	94	Heliocentric Aries ecliptic, J2000.0	SUN_2008	OBRS HELIOCENTRIC_ARIES_ECLIPTIC Note: First point of Aries as of 2000 Jan 1 11:58:55.816 UTC.	Solar system	BI_AXIS-_ORIGIN_3D	n/a	[HAPG]
HELIO_ARIES-_ECLIPTIC_TRUE-_OF_DATE	95	Heliocentric Aries ecliptic, true of date	SUN_2008	OBRS HELIOCENTRIC_ARIES_ECLIPTIC Note: First point of Aries, true of date.	Solar system	BI_AXIS-_ORIGIN_3D	n/a	[HAPG]
HELIO_EARTH-_ECLIPTIC	96	Heliocentric Earth ecliptic	SUN_2008	OBRS HELIOCENTRIC_PLANET-_ECLIPTIC	Solar system	BI_AXIS-_ORIGIN_3D	n/a	[HAPG]
HELIO_EARTH-_EQUATORIAL	97	Heliocentric Earth equatorial	SUN_2008	OBRS HELIOCENTRIC_PLANET-_EQUATORIAL	Solar system	BI_AXIS-_ORIGIN_3D	n/a	[HAPG]

Table E.22 — Time-fixed instances of dynamic stellar ORM specifications

In this International Standard there are no time-fixed instances of dynamic stellar ORM specifications, therefore this table is empty.

Table E.23 — Time-fixed instances of dynamic stellar ORM reference transformation specifications

In this International Standard there are no time-fixed instances of dynamic stellar ORM reference transformation specifications, therefore this table is empty.

https://standards.iso.org/ittf/PubliclyAvailableStandards/