

## Appendix 5: Acronyms

The following acronyms and other abbreviations are used in this report. For more acronyms related to IERS see <<http://www.iers.org/Acronyms>>.

|        |                                                                              |          |                                                                          |
|--------|------------------------------------------------------------------------------|----------|--------------------------------------------------------------------------|
| A&A    | Astronomy & Astrophysics                                                     | CCD      | Charge-Coupled Device                                                    |
| AAM    | Atmospheric Angular Momentum                                                 | CDDIS    | NASA Crustal Dynamics Data Information System                            |
| AAS    | American Astronautical Society                                               | CDS      | Centre de Données astronomiques de Strasbourg                            |
| AC     | Analysis Centre                                                              | CEOS     | Committee on Earth Observation Satellites                                |
| AC     | Analysis Coordinator                                                         | CERGA    | Centre d'Etudes et de Recherches Géodynamiques et Astronomiques          |
| AGN    | Active Galactic Nucleus [or Nuclei]                                          | CfA      | Harvard-Smithsonian Center for Astrophysics                              |
| AGU    | American Geophysical Union                                                   | CFHT     | Canada-France-Hawaii Telescope                                           |
| AICAS  | Astronomical Institute, Academy of Sciences of the Czech Republic            | CLS      | Collecte Localisation Satellites                                         |
| ALMA   | Atacama Large Millimeter/submillimeter Array                                 | CNES     | Centre National d'Etude Spatiale                                         |
| AOD    | atmospheric and oceanic dealiasing                                           | CODE     | Centre for Orbit Determination in Europe                                 |
| AOV    | Asia-Oceania VLBI Group for Geodesy and Astrometry                           | COL      | combination at/on the observation level                                  |
| APSG   | Asia-Pacific Space Geodynamics                                               | CONT     | continuous VLBI session/campaign                                         |
| AR     | [IERS] Annual Report                                                         | CPC      | Climate Prediction Center                                                |
| AR     | autoregressive                                                               | CRF      | Celestial Reference Frame                                                |
| ASCII  | American Standard Code for Information Interchange                           | CSR      | Center for Space Research, University of Texas                           |
| ASI    | Agenzia Spaziale Italiana                                                    | CTIO     | Cerro Tololo Inter-American Observatory                                  |
| ASV    | Astronomical Station Vidojevica                                              | DB       | Directing Board                                                          |
| ATML   | atmospheric loading                                                          | DC       | District of Columbia, USA                                                |
| AUS    | = AUSLIG                                                                     | Dec, DEC | declination                                                              |
| AUSLIG | Australian Surveying and Land Information Group (now: Geoscience Australia ) | deg      | degree                                                                   |
| AWG    | Analysis Working Group                                                       | DGFI     | Deutsches Geodätisches Forschungsinstitut                                |
| BIH    | Bureau International de l'Heure                                              | DiFX     | Distributed FX                                                           |
| BIPM   | Bureau International des Poids et Mesures                                    | DIS      | IERS Data and Information System                                         |
| BKG    | Bundesamt für Kartographie und Geodäsie                                      | DOI      | Digital Object Identifier                                                |
| BVID   | Bordeaux VLBI Image Database                                                 | DOMES    | Directory Of MERIT Sites (originally; now of more general use)           |
| CA     | California, USA                                                              | DORIS    | Doppler Orbit determination and Radiopositioning Integrated on Satellite |
| CASLEO | Complejo Astronómico El Leoncito                                             | DSS      | Digitized Sky Survey                                                     |
| CATREF | Combination and Analysis of Terrestrial Reference Frames                     | DSS45    | Deep Space Station 45                                                    |
| CB     | Central Bureau                                                               | DTRF     | ITRS realization by DGFI                                                 |
| CB     | Coordinating Board                                                           | DUT1     | = UT1–UTC                                                                |
| CC     | Combination Centre                                                           | EC       | Executive Committee                                                      |
|        |                                                                              | ECCO     | Estimating the Circulation and Climate of the Ocean                      |

## Appendices

|          |                                                                         |         |                                                                                                       |
|----------|-------------------------------------------------------------------------|---------|-------------------------------------------------------------------------------------------------------|
| ECMWF    | European Center for Medium Range Weather Forecasting                    | GGRF    | Global Geodetic Reference Frame                                                                       |
| EGSG     | Extra-Galactic Science with Gaia                                        | GHz     | gigahertz                                                                                             |
| EGU      | European Geosciences Union                                              | GIAC    | GGOS Inter-Agency Committee                                                                           |
| EMR      | Energy, Mines and Resources Canada (replaced by NRCan)                  | GINs    | Geodesy by Simultaneous Digital Integration [software]                                                |
| EMRP     | European Metrology Research Programme                                   | GIOVE   | Galileo In-Orbit Validation Element                                                                   |
| ENVISAT  | Environmental Satellite                                                 | GIQC    | Gaia Initial Quasar Catalogue                                                                         |
| EO       | Earth orientation                                                       | GLDAS   | NASA's Global Land Data Assimilation System                                                           |
| EOC      | Earth Orientation Centre                                                | GLONASS | GLObal'naya NAVigatsionnay Sputnikovaya Sistema [Global Orbiting Navigation Satellite System, Russia] |
| EOP      | Earth Orientation Parameters                                            | GLOUP   | GLObal Undersea Pressure                                                                              |
| ERA      | ECMWF Reanalysis Data                                                   | GNSS    | Global Navigation Satellite System                                                                    |
| ERP      | Earth Rotation Parameters                                               | GOP     | Geodetic Observatory Pecny                                                                            |
| ESA      | European Space Agency                                                   | GPS     | Global Positioning System                                                                             |
| ESO      | European Southern Observatory                                           | GPT     | Global Pressure and Temperature                                                                       |
| ESOC     | European Space Operations Center, ESA                                   | GRACE   | Gravity Recovery and Climate Experiment                                                               |
| Eumetsat | European Organisation for the Exploitation of Meteorological Satellites | GRAIL   | Gravity Recovery and Interior Laboratory                                                              |
| EVGA     | European VLBI [Group] for Geodesy and Astrometry                        | GRGS    | Groupe de Recherches de Géodésie Spatiale                                                             |
| e-VLBI   | Electronic transfer VLBI                                                | GSC     | GSFC Analysis Center                                                                                  |
| FAQ      | Frequently Asked Question(s)                                            | GSFC    | Goddard Space Flight Center                                                                           |
| FedEx    | Federal Express Corporation Inc.                                        | GSI     | Geospatial Information Authority of Japan                                                             |
| FL       | Floria, USA                                                             | HAM     | Hydrological Angular Momentum                                                                         |
| FNMOc    | [US Navy] Fleet Numerical Meteorology and Oceanography Center           | HartRAO | Hartebeesthoek Radio Astronomy Observatory                                                            |
| FRA-UAS  | Frankfurt University of Applied Sciences                                | HEO     | High Earth Orbiter                                                                                    |
| FTP, ftp | File Transfer Protocol                                                  | hr      | hour, hours                                                                                           |
| GA       | General Assembly                                                        | HY      | HaiYan / Haiyang [satellite]                                                                          |
| GA       | Geoscience Australia                                                    | IAA     | Institute of Applied Astronomy, St. Petersburg                                                        |
| GAOUA    | Main Astronomical Observatory of the Ukrainian Academy of Sciences      | IAG     | International Association of Geodesy                                                                  |
| GB       | Governing Board                                                         | IAU     | International Astronomical Union                                                                      |
| GCRF     | Gaia Celestial Reference Frame                                          | IB      | Inverted Barometer                                                                                    |
| GCRS     | Gaia Celestial Reference System                                         | ICRF    | International Celestial Reference Frame                                                               |
| GEO      | Group on Earth Observations                                             | ICRS    | International Celestial Reference System                                                              |
| GEST     | Goddard Earth Science and Technology Center                             | ICSU    | International Council for Science                                                                     |
| GFZ      | GeoForschungsZentrum Potsdam                                            | IDS     | International DORIS Service                                                                           |
| GGAO     | Goddard's Geophysical and Astronomical Observatory                      | IERS    | International Earth Rotation and Reference Systems Service                                            |
| GGFC     | Global Geophysical Fluids Centre                                        |         |                                                                                                       |
| GGOS     | Global Geodetic Observing System                                        |         |                                                                                                       |

## 5 Acronyms

|           |                                                                                                          |        |                                                                                    |
|-----------|----------------------------------------------------------------------------------------------------------|--------|------------------------------------------------------------------------------------|
| IfE       | Institut für Erdmessung [Institute of Geodesy], University of Hannover                                   | JMA    | Japan Meteorological Agency                                                        |
| IGG, IGGB | Institute of Geodesy and Geoinformation of the University of Bonn                                        | JP     | Japan                                                                              |
| IGN       | Institut National de l'Information Géographique et Forestière (formerly: Institut Géographique National) | JPL    | Jet Propulsion Laboratory                                                          |
| IGR       | IGS rapid [products / satellite orbits]                                                                  | KALREF | Kalman filter for Reference frames                                                 |
| IGS       | International GNSS Service                                                                               | KASI   | Korea Astronomy and Space Science Institute                                        |
| ILRS      | International Laser Ranging Service                                                                      | LAB    | Laboratoire d'Astrophysique de Bordeaux                                            |
| ILW       | international laser workshop / International Workshop on Laser Ranging                                   | LAREG  | Laboratoire de Recherche en Geodesie                                               |
| IMCCE     | Institut de Mécanique Céleste et de Calcul des Éphémérides                                               | LARGE  | Laser Ranging to GNSS s/c Experiment                                               |
| INA       | = INASAN                                                                                                 | LCA    | LEGOS in cooperation with CLS                                                      |
| INASAN    | INstitut ASTRonomii Rossijskoj Akademii Nauk (Institute of Astronomy of the Russian Academy of Sciences) | LDAS   | Land Data Assimilation System                                                      |
| INFN      | Istituto Nazionale di Fisica Nucleare [National Institute for Nuclear Physics]                           | LEGOS  | Laboratoire d'Etudes en Géophysique et Océanographie Spatiales                     |
| InSAR     | Interferometric Synthetic Aperture Radar                                                                 | LEO    | Low Earth Orbit(er)                                                                |
| INT       | Intensive [VLBI session]                                                                                 | LFOA   | Leopold-Figl-Observatorium für Astrophysik                                         |
| IPGP      | Institut de Physique du Globe de Paris                                                                   | LLR    | Lunar Laser Ranging                                                                |
| IRAF      | Image Reduction and Analysis Facility                                                                    | LNA    | Laboratório Nacional de Astrofísica                                                |
| IRIS      | International Radio Interferometric Surveying                                                            | LOD    | Length of Day                                                                      |
| IRNSS     | Indian Regional Navigation Satellite System                                                              | LQAC   | Large Quasar Astrometric Catalogue                                                 |
| ISO       | International Organization for Standardization                                                           | LRO    | Lunar Reconnaissance Orbiter                                                       |
| ITRF      | International Terrestrial Reference Frame                                                                | LS     | least-squares                                                                      |
| ITRS      | International Terrestrial Reference System                                                               | LSDM   | Land Surface Discharge Model                                                       |
| IUGG      | International Union of Geodesy and Geophysics                                                            | MA     | Massachusetts, USA                                                                 |
| IVOA      | International Virtual Observatory Alliance                                                               | MAO    | = GAOUA                                                                            |
| IVS       | International VLBI Service for Geodesy and Astrometry                                                    | mas    | milliarcsecond(s)                                                                  |
| JADE      | JAPANESE Dynamic Earth observation by VLBI                                                               | μas    | microarcsecond(s)                                                                  |
| Jason-CS  | Jason Continuity of Service [mission]                                                                    | MATLAB | matrix laboratory [programming language and environment]                           |
| JCET      | Joint Center for Earth Systems Technology, GSFC                                                          | MCC    | Russian Mission Control Centre                                                     |
|           |                                                                                                          | MD     | Maryland, USA                                                                      |
|           |                                                                                                          | MeO    | Métrologie Optique [Grasse SLR /LLR system]                                        |
|           |                                                                                                          | MERIT  | Monitoring Earth Rotation and Inter-comparison of Techniques                       |
|           |                                                                                                          | MIT    | Massachusetts Institute of Technology                                              |
|           |                                                                                                          | MJD    | Modified Julian Day                                                                |
|           |                                                                                                          | MOG2D  | two-dimensional barotropic gravity wave ocean model                                |
|           |                                                                                                          | MPG    | Max-Planck-Gesellschaft / Max Planck Society                                       |
|           |                                                                                                          | MPIfR  | Max-Planck-Institut für Radioastronomie / Max Planck Institute for Radio Astronomy |

## Appendices

|         |                                                      |          |                                                                 |
|---------|------------------------------------------------------|----------|-----------------------------------------------------------------|
| ms      | millisecond(s)                                       | PC       | Product Centre                                                  |
| μs      | microsecond(s)                                       | PCV      | Phase-Center Variations                                         |
| MX      | Mexico                                               | PG       | Papua New Guinea                                                |
| N       | number                                               | PI       | Principal Investigator                                          |
| NASA    | U.S. National Aeronautics and Space Administration   | PM       | Polar Motion                                                    |
| Nat.    | National, Nacional                                   | POC      | point of contact                                                |
| NAVGEN  | [U.S.] Navy Global Environmental Model               | POD      | Precise [or Precision] Orbit Determination                      |
| NCEP    | U.S. National Centers for Environmental Prediction   | POE      | Precise Orbit Comparison                                        |
| NEQ     | normal equation                                      | POLAC    | Paris Observatory Lunar Analyses Center                         |
| NLS     | National Land Survey [of Finland; Maanmittauslaitos] | PP       | Pilot Project                                                   |
| NMA     | Norwegian Mapping Authority                          | ppb      | parts per billion (10 <sup>-9</sup> )                           |
| NMC     | National Meteorological Center (replaced by NCEP)    | PSF      | point spread function                                           |
| NNR     | No-net-rotation                                      | PUL      | Pulkovo Observatory                                             |
| NO      | Norway                                               | PZT      | Photographic Zenith Tube [or Telescope]                         |
| No.     | Number                                               | QSO      | Quasi-Stellar Object [or quasar]                                |
| NOAA    | U.S. National Oceanic and Atmospheric Administration | RA       | right ascension                                                 |
| NOFS    | [U.S.] Naval Observatory Flagstaff Station           | RAEGE    | Red Atlantica de Estaciones Geodinamicas y Espaciales           |
| NOT     | Nordic Optical Telescope                             | RAS      | Russian Academy of Sciences                                     |
| NP      | SLR normal point(s)                                  | R&D      | Research and Development                                        |
| NRAO    | [U.S.] National Radio Astronomy Observatory          | REFAG    | [Symposium on] Reference Frames for Applications in Geosciences |
| NRCan   | Natural Resources, Canada (formerly: EMR)            | RFI      | radio frequency interference                                    |
| NSGF    | NERC Space Geodesy Facility                          | RINEX    | Receiver INdependent EXchange format                            |
| NT-ATML | non-tidal atmospheric loading                        | rms, RMS | Root Mean Square                                                |
| NTP     | Network Time Protocol                                | RRFID    | USNO Radio Reference Frame Image Database                       |
| NTT     | New Technology Telescope                             | RS/PC    | IERS Rapid Service/Prediction Center                            |
| NZ      | New Zealand                                          | RT       | radio telescope                                                 |
| OAM     | Oceanic Angular Momentum                             | RU       | Russian Federation                                              |
| OB      | Observatoire de Bordeaux                             | SAA      | South Atlantic Anomaly                                          |
| OBP     | Ocean Bottom Pressure                                | SARAL    | Satellite with ARGOS and ALTIKA                                 |
| Obs.    | Observatory, Observatoire                            | SB       | Special Bureau                                                  |
| OCARS   | Optical Characteristics of Astrometric Radio Sources | SBA      | GGFC Special Bureau for the Atmosphere                          |
| OHIG    | O'Higgins [station]                                  | SBCP     | GGFC Special Bureau for the Combination Products                |
| OHP     | Observatoire de Haute Provence                       | SBH      | GGFC Special Bureau for Hydrology                               |
| OP, OPA | Observatoire de Paris                                | SBO      | GGFC Special Bureau for the Oceans                              |
| ORB     | Observatoire Royal de Belgique                       | s/c      | spacecraft                                                      |
| OSO     | Onsala Space Observatory                             | SDSS     | Sloan Digital Sky Survey                                        |
|         |                                                      | sec      | second(s) [of time]                                             |

## 5 Acronyms

|          |                                                                                                                        |               |                                                               |
|----------|------------------------------------------------------------------------------------------------------------------------|---------------|---------------------------------------------------------------|
| SG       | Study Group                                                                                                            | TUM           | Technical University of Munich                                |
| SGP      | Space Geodesy Project                                                                                                  | TUW           | Technische Universität Wien (Vienna University of Technology) |
| SGSLR    | Space Geodesy SLR system                                                                                               | TWS           | terrestrial water storage                                     |
| SHAO     | Shanghai Observatory                                                                                                   | U.            | University                                                    |
| SINEX    | Solution (Software/technique)<br>INdependent EXchange Format                                                           | UAW           | Unified Analysis Workshop                                     |
| SIO      | Scripps Institution of Oceanography                                                                                    | UCAC          | USNO CCD Astrograph Catalog                                   |
| SLR      | Satellite Laser Ranging                                                                                                | UCL           | University College London                                     |
| SNR      | signal-to-noise ratio                                                                                                  | UK, U.K.      | United Kingdom                                                |
| SOD      | CNES Service d'Orbitographie DORIS                                                                                     | UKMO          | U.K. Meteorological Office                                    |
| SOKENDAI | Graduate University for Advanced Studies                                                                               | UMBC          | University of Maryland, Baltimore County                      |
| SP       | SP Technical Research Institute of Sweden [SP Sveriges Tekniska Forskningsinstitut; formerly Statens Provningsanstalt] | UN            | United Nations                                                |
| SpinSat  | Special Purpose Inexpensive Satellite                                                                                  | UNB           | University of New Brunswick                                   |
| SPOT     | Satellite Pour l'Observation de la Terre                                                                               | UNAVCO        | University Navstar Consortium                                 |
| sq.deg   | square degree                                                                                                          | UN-GGIM       | Global Geospatial Information Management Initiative of the UN |
| SSALTO   | Segment Sol multi-mission<br>d'ALTimétrie, d'Orbitographie et de localisation précise                                  | Uni, Univ.    | University                                                    |
| STD      | standard deviation                                                                                                     | URAT          | USNO Robotic Astrometric Telescope                            |
| SWOT     | Surface Water Ocean Topography [mission]                                                                               | URL           | Uniform Resource Locator                                      |
| SYRTE    | (Laboratoire) Systèmes de Référence Temps-Espace                                                                       | US, U.S.      | United States                                                 |
| TAI      | Temps Atomique International (International Atomic Time)                                                               | USGS          | U.S. Geological Survey                                        |
| TAROT    | Télescopes à Action Rapide pour les Objets Transitoires                                                                | USNO          | United States Naval Observatory                               |
| TC       | Technique Centre                                                                                                       | USO           | Ultra-Stable Oscillator                                       |
| TCH      | Three Corner Hat [technique]                                                                                           | UT, UT0, UT1, |                                                               |
| TE       | Temps des éphémérides / Ephemeris time                                                                                 | UT2R          | Universal Time                                                |
| TN       | [IERS] Technical Note                                                                                                  | UTAAM         | NOAA AAM analysis and forecast data                           |
| ToR      | Terms of Reference                                                                                                     | UTC           | Coordinated Universal Time                                    |
| TPS      | Tachymeter Positioning System / Total station Positioning System                                                       | UZ            | Uzbekistan                                                    |
| TRF      | Terrestrial Reference Frame                                                                                            | VCS           | VLBA Calibrator Survey                                        |
| TT       | Terrestrial Time                                                                                                       | VEX           | VLBI Experiment Documentation                                 |
| TU       | Technical University                                                                                                   | VGOS          | VLBI Global Observing System                                  |
|          |                                                                                                                        | VLBA          | Very Long Baseline Array, NRAO                                |
|          |                                                                                                                        | VLBI          | Very Long Baseline Interferometry                             |
|          |                                                                                                                        | VO            | Virtual Observatory                                           |
|          |                                                                                                                        | VTRF          | VLBI terrestrial reference frame                              |
|          |                                                                                                                        | WDS           | ICSU World Data System                                        |
|          |                                                                                                                        | WG            | working group                                                 |
|          |                                                                                                                        | WP            | Work Package                                                  |
|          |                                                                                                                        | WRMS          | Weighted Root Mean Square                                     |
|          |                                                                                                                        | XML           | eXtensible Markup Language                                    |
|          |                                                                                                                        | yr            | year                                                          |