GUIDELINES FOR LONG PRODUCT FILENAMES IN THE IGS

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International GNSS Service (IGS)

IGS Infrastructure Committee (IC)

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Document History

Date	Version	Amendments	Author(s)
2019-07-01	1.0	• Document available	I. Romero P. Steigenberger O. Montenbruck
2022-12-06	2.0	• Updated links in "References" • Added (optional) station dependent part to filename (section 2) • Added campaign identifiers "DEM" and "TST" (section 2.1) • Added solution type identifier "PRD" (section 2.2) • Updated list of content types (section 2.4) • Changed IONEX file format identifier from "IOX" to "INX" (section 2.5) • Added "JSON" as new format identifier (section 2.5) • Added "YAML" as new format identifier (section 2.5) • Added short version description (section 2.6) • Added examples (section 3) • Removed section "Adoption Timeline"	IGS-IC

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References

Hilla S. (2016) The Extended Standard Product 3 Orbit Format (SP3-d). URL:

https://files.igs.org/pub/data/format/sp3d.pdf

Pacione R., Dousa J. (2019) SINEX_TRO - Solution (Software/technique) INdependent EXchange Format for combination of TROpospheric estimates, Version 2.0. URL: https://files.igs.org/pub/data/format/sinex_tro_v2.00.pdf

Kouba J. and Mireault Y. (1998) [IGSMAIL-1943] New IGS ERP Format (version 2). URL:

https://lists.igs.org/pipermail/igsmail/1998/003315.html

Ray J., Gurtner W., Coleman M. (2017) RINEX Extensions to Handle Clock Information, Version 3.04. URL: https://files.igs.org/pub/data/format/rinex_clock304.txt

Rothacher M., Thaller D. (2006) SINEX − Solution (Software/technique) INdependent EXchange Format Version 2.02 (December 01, 2006). URL: https://www.iers.org/SharedDocs/Publikationen/EN/IERS/Documents/ac/sinex/sinex_v202_pdf

Schaer S., Gurtner W. and Feltens J. (1998) IONEX: The IONosphere Map EXchange Format Version 1. URL: https://files.igs.org/pub/data/format/ionex1.pdf

Schaer (2018) SINEX BIAS—Solution (Software/technique) Independent EXchange Format for GNSS Biases Version 1.00. URL: https://files.igs.org/pub/data/format/sinex_bias_100.pdf

Loyer S., Montenbruck O., Hilla S., (2019) The Orbit Exchange Format ORBEX, v0.09, 6 May 2019. URL: https://geodesy.noaa.gov/pub/ORBEX/ORBEX009.pdf

1 Introduction

As part of the evolution of the IGS it is deemed necessary to adapt the product names to using longer designations rather than the 8.3 names inherited from initial OS naming limitations.

To this effect it was unanimously agreed at the IGS Governing Board Meeting 48 after the 2017 IGS Workshop in Paris, France that the following naming scheme be adopted by all Analysis Centers, starting with the Multi-GNSS Pilot Project (MGEX) product files.

Additionally, at the IGS Analysis Center Workshop in Potsdam in April 2019 the attendees agreed without objection the long names defined below for start of use with the reprocessing 3 campaign (repro3) products, including the test solutions.

The long product filenames are applicable to all IGS products with the switch to repro3 standards in the operational processing.

2 Product Filenames

This new file naming allows for a proper distinction of legacy and MGEX products for the different product lines (ultra-rapid, rapid, and final products). The file name is all in upper case and composed of different fields providing information about Analysis Center, product version, campaign/project, product type, start epoch, sampling, content type, and format. For station-dependent solutions an additional but optional station identifier (9-character station name) has been specified (adopted from Pacione and Dousa (2019)). All logical fields are separated by an underscore ("_").

```
AAAVPPPTTT_YYYYDDDHHMM_LEN_SMP_[SSSSMRCCC_]CNT.FMT[.gz]
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Field	Length	Content
AAA	3 characters	Analysis Center/Combination abbreviation; e.g., COD, EMR, ESA, GFZ, GRG, IGS, JAX, JPL, MIT, NGS, SIO, SHA, WUH, etc.
V	1 character	Version/Solution identifier (0-9)
PPP	3 characters	Campaign/Project specification
TTT	3 characters	Solution type identifier
YYYYDDDHHMM	11 digits	Product intended nominal start epoch*
LEN	3 characters	Intended (nominal) product period. The longest time unit to be used (e.g., '01D' instead of '24H')*
SMP	3 characters	Temporal product sampling resolution. The longest time unit to be used (e.g., '01H' instead of '60M'). Use '00U' if not applicable/unspecified
CNT	3 characters	Content type
[SSSSMRCCC]	9 characters	Station identifier, optional

FMT	3-4 characters	File format
[.gz]		Compression method extension; gzip

* Long-term products exclusively can have start/end epochs as defined in section 2.3.

2.1 Campaign/Project Specifications

The following campaign or project specific values (**PPP**) are currently supported:

DEM Demonstration campaign

MGX Multi-GNSS Project product

OPS Operational IGS product

R01 Reprocessing Campaign 1

Rnn Reprocessing Campaign *nn* (where *nn* is a zero-padded integer)

TGA Tide Gauge Benchmark Monitoring (TIGA)

TST Test campaign

2.2 Solution Type Identifiers

The following solution type identifiers (**TTT**) are currently supported:

FIN Final products*

NRT Near-Real Time products (products between **ULT** and **RTS**)

PRD Predicted products

RAP Rapid products*

RTS Real-Time streamed products

SNX SINEX Combination product

ULT Ultra-rapid products (every 6 hours)

* Definitions as agreed by the relevant IGS Working Group

2.3 Product Period and Sampling Interval

The following abbreviations for specifying the product period (**LEN**) and the sampling interval (**SMP**) are supported:

S	Second
M	Minute
H	Hour
D	Day
W	Week
L	Month
Y	Year

The longest time unit always has to be used (e.g., '01D' instead of '24H'). Only long-term product files without specific lengths can use start/end epochs as; **YYYYDDD_YYYYDDD**, instead of start/length as all others (e.g., multi-year SINEX solution, accumulated time series of ERPs or biases, etc).

NOTE: For accumulated products (e.g., ERP solutions), the product period can be specified as "00U" (unspecified).

2.4 Content Types

The following content types (**CNT**) are currently agreed within the IGS Analysis Centers:

ATT	Attitude information
CLK	Receiver and/or satellite clock parameters
CLS	Summary of clock combination
CMP	Comparison summary files
CRD	Station Coordinates/velocities in SINEX
ERP	Earth rotation parameters
ORB	Satellite orbits
RES	Residuals from daily SINEX combination
SOL	Variance/covariance information or normal equations in SINEX
SUM	Summary of orbit or SINEX combination

TRO   Troposphere ZPD product

The following content types are distinguished for bias products:

DCB   Differential code biases

DPB   Differential phase biases

DSB   Differential signal biases (code and phase)

OCB   Observable-specific code biases

OPB   Observable-specific phase biases

OSB   Observable-specific signal biases (code and phase)

The following content types are distinguished for ionosphere products:

GIM   Global Ionosphere (TEC) Maps (GIMs)
ROT   Rate of TEC Index Maps (ROTI Maps)

2.5 File Formats

Currently, the following file formats (**FMT**) are defined:

BIA   bias SINEX, Schaer (2018)

CLK   clock RINEX, Ray and Gurtner (2012)

ERP   IGS ERP format, Kouba and Mirault (1998)

INX   IONEX ionospheric TEC grid product format, Schaer et al. (1998)

JSON JavaScript Object Notation, lightweight data-interchange format (https://www.json.org)

OBX   ORBEX satellite orbit/attitude format, Loyer (2019)

SNX   Solution INdependent EXchange (SINEX) format, Rothacher and Thaller (2006)

SP3   Standard Product 3 (SP3) orbit format, Hilla (2016)

SUM   Summary of the indicated product, combination summary, etc

TRO   SINEX_TRO product format, Pacione and Dousa (2019)

YAML YAML Ain't Markup Language, human-friendly data serialization language (https://yaml.org). Alternatively, **YML** can be used as identifier.

2.6 Short Version

To make latest product releases easily accessible for the community, a short time-invariant version of the long product filename standard has been introduced. It provides information about Analysis Center, product version, campaign/project, product type, and format: **AAAVPPPTTT.FMT[.gz]**

3 Examples

COD0OPSFIN_20173360000_01D_05M_ORB.SP3 denotes a Final Operational orbit file in SP3 format of the CODE analysis center covering one day (day of year 336/2017) with 5 min sampling and uncompressed.

SHA0MGXRAP_20182700000_01D_05M_CLK.CLK.gz denotes a Rapid MGEX clock file in clock RINEX format from the Shanghai Observatory analysis center covering one day (270/2018) with 5 min sampling and gzip compressed.

EUR0OPSFIN_20190480000_07D_01H_TRO.SUM denotes a Final EUREF TZD summary file from a weekly combination process. The corresponding TZD values would be in the file; **EUR0OPSFIN_20190480000_07D_01H_TRO.TRO**

IGS0OPSSNX_1994002_2019159_00U_SOL.SNX denotes the GPS week 2056 release of the operational IGS cumulative SINEX solution (old filename: IGS19P23.snx). The same cumulative SINEX solution, but without covariance matrix (old filename: IGS19P23.ssc), would be called **IGS0OPSSNX_1994002_2019159_00U_CRD.SNX**.

GFZ1OPSRAP_20220300900_05M_05M_POTS00DEU_TRO.TRO denotes a Rapid Operational TZD file processed by the GFZ analysis center and for the IGS station POTS00DEU (Potsdam, Germany). The solution identifier is set to "1", meaning that one resubmission occurred.

IGS0OPSULT.SP3 denotes the latest release of an IGS operational Ultra-Rapid file (old filename: igu.sp3). It is a shortened version of the long product filename standard for user convenience.