Guideline for the transition of the IGS products to the long filenames

Version 2.0 – February 2023

International GNSS Service (IGS)

IGS Analysis Centre Coordinator / IGS Reference Frame Coordinator / IGS Infrastructure Committee Chair

Contact: acc@igs.org

1 Background

Starting from **27 November 2022**, the IGS adopted a new reference frame, called IGS20, along with the corresponding igs20.atx antenna file. At the same time as this switch, the IGS also adopted for its operational products the same conventions and models as in its third reprocessing campaign (repro3), including in particular the adoption of **new long filenames for the IGS products** (see https://files.igs.org/pub/resource/guidelines/Guidelines_For_Long_Product_Filenames_in_the_IGS_v2.0.pdf).

Detailed description of the changes are described in [IGSMAIL-8238] and [IGSMAIL-8256].

This document is intended to be used as a practical guide for the users about the changes related to the filenames that impact the access of the users to the IGS products. A first version of this document was published in November 2022 highlighting the changes in the filenames as a result of transition to the long filenames. Since then, a new version of the Guidelines for long product filenames in the IGS was approved and published. The current version of the transition guideline contains the latest changes according to the updated long filename guideline, as well as additional description of the transition plans.

2 Major changes since the previous version 1.0 of this document

2.1 Version number

The version number is now limited to 0 for the IGS operational products. Further details are given in Section 4 of this document.

2.2 Accumulated ERP files

Accumulated ERP files are now provided in long filenames. The corresponding changes in the filenames are highlighted in Tables 2 to 5.

2.3 Latest ultra-rapid products

A short time-invariant version of the long filename standard is now introduced to allow users to easily access the latest product releases. The corresponding change is highlighted in Table 5.

2.4 Comparison summary of the ultra-rapid and rapid products

A new content type CMP is now introduced for the long product filenames, which allows the transition of the comparison summaries of the ultra-rapid orbit compared to rapid orbits to the long filenames. The corresponding change is highlighted in Table 5.

2.5 Summary file name changes

The SINEX combination residual summary files previously used “RES.RES” as content and format identifiers. This has now changed to “RES.SUM” to be consistent with the IGS guidelines for long product filenames. Similarly, the clock combination summary files previously used “CLS.CLS” as content and format identifiers, which has now been changed to “CLS.SUM”.

3 Guidelines and examples for transition to long filenames

Starting from **GPS week 2238, 27 November 2022**, all the IGS final, rapid and ultra-rapid products are only available in long filenames. There will be no short filenames available except for some of the experimental products that will be described in the document. Users need to adapt their software to be able to access the long filename products. Table 1 below lists the variables and their descriptions as used in this document. Tables 2 to 5 list the changes in the filenames for specific products, along with examples for each change.

Table 1. Variables used in the document and their descriptions

Variable	Description	Range	Example
${wwww}	4-character GPS week	2222-	2231
${d}	1-character day of week	0-6	3
${yyyy}	4-character year	2022-	2022
${yy}	2-character year	22-	22
${ww}	2-character week of year	01-53	41
${ddd}	3-character day of year	001-366	285
${hh]	2-character hour of the day	00-23	06

Table 2. IGS terrestrial frame solutions

Product	Old short filename format	New long filename format	Old short filename example	New long filename example
Daily combined SINEX solution	igs${yy}P${wwww}${d}.snx.Z	IGS0OPSSNX_${yyyy}${ddd}0000_01D_01D_SOL.SNX.gz	igs22P22313.snx.Z	IGS0OPSSNX_20222850000_01D_01D_SOL.SNX.gz
Daily combined SINEX solution w/o covariance matrices	igs${yy}P${wwww}${d}.ssc.Z	IGS0OPSSNX_${yyyy}${ddd}0000_01D_01D_CRD.SNX.gz	igs22P22313.ssc.Z	IGS0OPSSNX_20222850000_01D_01D_CRD.SNX.gz
Daily SINEX combination residuals	igs${yy}P${wwww}${d}.res.Z	IGS0OPSSNX_${yyyy}${ddd}0000_01D_01D_RES.SUM.gz	igs22P22313.res.Z	IGS0OPSSNX_20222850000_01D_01D_RES.SUM.gz
Daily SINEX combination residuals in YAML format	****New file****	IGS0OPSSNX_${yyyy}${ddd}0000_01D_01D_RES.YML.gz	-	IGS0OPSSNX_20222850000_01D_01D_RES.YML.gz
Weekly combined SINEX solution	igs${yy}P${wwww}.snx.Z	IGS0OPSSNX_${yyyy}${ddd}0000_07D_07D_SOL.SNX.gz	igs22P2231.snx.Z	IGS0OPSSNX_20222820000_07D_07D_SOL.SNX.gz
Weekly combined SINEX solution w/o covariance matrices	igs${yy}P${wwww}.ssc.Z	IGS0OPSSNX_${yyyy}${ddd}0000_07D_07D_CRD.SNX.gz	igs22P2231.ssc.Z	IGS0OPSSNX_20222820000_07D_07D_CRD.SNX.gz
Weekly ERP files	igs${yy}P${wwww}.erp.Z	IGS0OPSSNX_${yyyy}${ddd}0000_07D_01D_ERP.ERP.gz	igs22P2231.erp.Z	IGS0OPSSNX_20222820000_07D_01D_ERP.ERP.gz
Weekly combination summary	igs${yy}P${wwww}.sum.Z	IGS0OPSSNX_${yyyy}${ddd}0000_07D_07D_SUM.SUM.gz	igs22P2231.sum.Z	IGS0OPSSNX_20222820000_07D_07D_SUM.SUM.gz
Weekly combination summary in YAML format	****New file****	IGS0OPSSNX_${yyyy}${ddd}0000_07D_07D_SUM.YML.gz	-	IGS0OPSSNX_20222820000_07D_07D_SUM.YML.gz
Cumulative SINEX solution	IGS${yy}P${ww}.snx.Z	IGS0OPSSNX_1994002_${yyyy}${ddd}_00U_SOL.SNX.gz *Note: ${ddd} stands here for the **last** day of the GPS week.*	IGS22P41.snx.Z	IGS0OPSSNX_1994002_2022288_00U_SOL.SNX.gz
Cumulative SINEX solution w/o covariance matrix	IGS${yy}P${ww}.ssc.Z	IGS0OPSSNX_1994002_${yyyy}${ddd}_00U_CRD.SNX.gz *Note: ${ddd} stands here for the **last** day of the GPS week.*	IGS22P41.ssc.Z	IGS0OPSSNX_1994002_2022288_00U_CRD.SNX.gz
Accumulated final ERP	igs00p03.erp.Z	IGS0OPSSNX_19961821200_00U_01D_ERP.ERP.gz	-	-

Table 3. IGS final products

Product	Old short filename format	New long filename format	Old short filename example	New long filename example
Final orbits	igs${wwww}${d}.sp3.Z	IGS0OPSFIN_${yyyy}${ddd}0000_01D_15M_ORB.SP3.gz	igs22313.sp3.Z	IGS0OPSFIN_20222850000_01D_15M_ORB.SP3.gz
Final clocks (5-min sampling)	igs${wwww}${d}.clk.Z	IGS0OPSFIN_${yyyy}${ddd}0000_01D_05M_CLK.CLK.gz	igs22313.clk.Z	IGS0OPSFIN_20222850000_01D_05M_CLK.CLK.gz
Final clocks (30-sec sampling for satellite clocks)	igs${wwww}${d}.clk_30s.Z	IGS0OPSFIN_${yyyy}${ddd}0000_01D_30S_CLK.CLK.gz	igs22313.clk_30s.Z	IGS0OPSFIN_20222850000_01D_30S_CLK.CLK.gz
Final clock combination summary	igs${wwww}${d}.cls.Z	IGS0OPSFIN_${yyyy}${ddd}0000_01D_01D_CLS.SUM.gz	igs22313.cls.Z	IGS0OPSFIN_20222850000_01D_01D_CLS.SUM.gz
Final ERP	igs${wwww}7.erp.Z	IGS0OPSFIN_${yyyy}${ddd}0000_07D_01D_ERP.ERP.gz	igs22317.erp.Z	IGS0OPSFIN_20222820000_07D_01D_ERP.ERP.gz
Final combination summary	igs${wwww}7.sum.Z	IGS0OPSFIN_${yyyy}${ddd}0000_07D_01D_SUM.SUM.gz	igs22317.sum.Z	IGS0OPSFIN_20222820000_07D_01D_SUM.SUM
Accumulated ERP file based on combination of Analysis Centre final ERP solutions	igs95p02.erp.Z	IGS0OPSFIN_19961821200_00U_01D_ERP.ERP.gz	-	-

Table 4. IGS rapid products

Product	Old short filename format	New long filename format	Old short filename example	New long filename example
Rapid orbits	igr${wwww}${d}.sp3.Z	IGS0OPSRAP_${yyyy}${ddd}0000_01D_15M_ORB.SP3.gz	igr22313.sp3.Z	IGS0OPSRAP_20222850000_01D_15M_ORB.SP3.gz
Rapid clocks	igr${wwww}${d}.clk.Z	IGS0OPSRAP_${yyyy}${ddd}0000_01D_05M_CLK.CLK.gz	igr22313.clk.Z	IGS0OPSRAP_20222850000_01D_05M_CLK.CLK.gz
Rapid clock combination summary	igr${wwww}${d}.cls.Z	IGS0OPSRAP_${yyyy}${ddd}0000_01D_01D_CLS.SUM.gz	igr22313.cls.Z	IGS0OPSRAP_20222850000_01D_01D_CLS.SUM.gz
Rapid ERP	igr${wwww}${d}.erp.Z	IGS0OPSRAP_${yyyy}${ddd}0000_01D_01D_ERP.ERP.gz	igr22313.erp.Z	IGS0OPSRAP_20222850000_01D_01D_ERP.ERP.gz
Rapid combination summary	igr${wwww}${d}.sum.Z	IGS0OPSRAP_${yyyy}${ddd}0000_01D_01D_SUM.SUM.gz	igr22313.sum.Z	IGS0OPSRAP_20222850000_01D_01D_SUM.SUM
Accumulated rapid ERP	igs96p02.erp.Z	IGS0OPSRAP_19961821200_00U_01D_ERP.ERP.gz	-	-

Table 5. IGS ultra-rapid products

Product	Old short filename format	New long filename format	Old short filename example	New long filename example
Ultra-Rapid orbits	igu${wwww}${d}_${hh}.sp3.Z	IGS0OPSULT_${yyyy}${ddd}${hh}00_02D_15M_ORB.SP3.gz	igu22313_06.sp3.Z	IGS0OPSULT_20222840600_02D_15M_ORB.SP3.gz
Ultra-Rapid ERP	igu${wwww}${d}_${hh}.erp.Z	IGS0OPSULT_${yyyy}${ddd}${hh}00_02D_01D_ERP.ERP.gz	igu22313_06.erp.Z	IGS0OPSULT_20222840600_02D_01D_ERP.ERP.gz
Ultra-Rapid combination summary	igu${wwww}${d}_${hh}.sum.Z	IGS0OPSULT_${yyyy}${ddd}${hh}00_02D_02D_SUM.SUM.gz	igu22313_06.sum.Z	IGS0OPSULT_20222840600_02D_02D_SUM.SUM
Accumulated ultra-rapid ERP	igu00p01.erp.Z	IGS0OPSULT_20000851200_00U_06H_ERP.ERP.gz	-	-
Latest ultra-rapid orbit	igu.sp3.Z	IGS0OPSULT.SP3.gz	-	-
Latest ultra-rapid ERP	igu.erp.Z	IGS0OPSULT.ERP.gz	-	-
Latest ultra-rapid combination summary	igu.sum.Z	IGS0OPSULT.SUM.gz	-	-
Summary file containing comparisons of ultra-rapid with rapid orbits	igu${wwww}${d}_${hh}_cmp.sum.Z	IGS0OPSULT_${yyyy}${ddd}${hh}00_02D_02M_CMP.SUM.gz	igu22313_06_cmp.sum.Z	IGS0OPSULT_20222840600_02D_02D_CMP.SUM.gz

4 Additional Notes

4.1 Version identifier

Following a review by the IGS Infrastructure Committee about the use of Version/Solution Identifier as specified by V in the Guidelines for long product filenames in the IGS, it was decided that only version identifier 0 is used for all the IGS operational products. Therefore, in case of resubmission of the products, the resubmitted products replace the previously submitted products keeping the same file name (with version number as 0). This decision was made following the feedback received by some of the users of the IGS products to make it easier for the users to access the resubmitted products.

4.2 Ultra-rapid long filenames and weekly directories

For the ultra-rapid products, the old short filenames referred to the start of the ultra-rapid prediction, i.e. mid-point of the file contents. With the change to the long filename convention, however, the filename refers to the start point of the file content, i.e. the start of observed data. This should be taken care of when retrieving the files. It should also be noted that this has an impact on where the products are stored. As an example, the short filename ultra-rapid products containing the predictions for day of week 0 (e.g. igu22310_06.sp3.Z) used to be stored in the week directory 2231 in the data centres. However, since the new long filename refers to the start of the observed data, the same file is now stored as IGS0OPSULT_20222810000_02D_15M_ORB.SP3.gz in the week directory 2230 as the last day of this directory. The same applies to erp and sum files, as well as to other hours of the day (00,06,12,18).

4.3 Multi-GNSS orbit/clock/bias combinations

The repro3 campaign involved combination of the GPS/GAL/GLO orbit, clock and bias products, for which the results are available (see [IGSMAIL-8248]). IGS ACC is now working on operationalizing the repro3-like multi-GNSS combinations and will soon release them as experimental products on a regular basis. These products will initially replace the current experimental GLONASS combinations. The current experimental GLONASS products will keep using the short filenames until the time they are replaced by the experimental multi-GNSS combinations (which will be provided in long filenames). Further announcements will be distributed through IGSMail about the transitions from GLONASS to multi-GNSS products. There is also a multi-GNSS task force group currently being run as a joint effort between IGS ACC and IGS Multi-GNSS working group to consolidate the efforts on multi-GNSS combination. The multi-GNSS combinations will eventually replace the GPS-only combinations as operational IGS products.

4.4 Future versions of this document

This document will be updated to include the most recent information as the transition of the IGS products to the long filenames occurs, and more products are available in long filename formats.