Enabling global identity
Protecting digital trust

GLEIF Golden Copy and Delta Files Specification User Manual

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About this Document

This document:

- Describes the GLEIF Golden Copy and Delta Files.
- Explains how to download and use the Files.

Change History

This section records the history of all changes to this document.

Date	Version	Description of change	Author
2026-11-03	2.3	Added a note clarifying the publish and download timings of Golden Copy files.	GLEIF
2022-02-24	2.2	Updated the File retrieval URL's section	GLEIF
2020-08-11	2.1	Enhanced URLs amended (Aliases)	GLEIF
2020-07-10	2.0	Second published version	GLEIF
2018-02-08	1.0	First published version	GLEIF

1 About the GLEIF Golden Copy Files

The Golden Copy LEI record file (Level 1 data) contains each LEI code exactly once. The Golden Copy relationships and relationship reporting exceptions (Level 2) files contain only allowed combinations of reporting items, and only current Level 2 reporting information, i.e., relationship records with RegistrationStatus = PUBLISHED, or LAPSED.

GLEIF offers Golden Copy Files free of charge to any interested user, but please take note of the **LEI Data Terms of Use** at www.gleif.org.

1.1 What is the responsibility of LEI Issuers and GLEIF in publishing Golden Copy Files?

LEI Issuers – also referred to as Local Operating Units (LOUs):

- supply registration, renewal, and other services, and
- act as the primary interface for Legal Entities wishing to obtain an LEI.

They assign LEIs to, and collect information on, Legal Entities, and publish this information daily in original source files, both at their public websites and via direct upload to GLEIF's systems, for production of the centralized Global LEI Index.

GLEIF

- maintains an archive of all uploaded LEI Issuer files (GLEIF Concatenated Files) for audit purposes.
- checks these files for basic standards compliance (Common Data File formats);
- produces data quality feedback that is passed on to the LEI Issuers, and
- compiles **Golden Copy Files** containing the latest version of each LEI record (Level 1 data) received from any LEI Issuer, and their associated relationship records and reporting exceptions (Level 2 data).

1.2 What is included in the Golden Copy Files?

- GLEIF Golden Copy Files' content includes:
- All Legal Entity Identifiers (LEIs) globally;
- All related LEI Reference Data (LE-RD), including:
    - Level 1:
        - Identification data for each Legal Entity itself;

- Level 2:
    - Relationships to other Legal Entities (where applicable);
    - Reasons for lack of relationship reporting (“reporting exceptions”; where applicable)

Please note: Only technically valid (XML schema valid) LEI issuer source files are used in the Golden Copy Files.

Delta Files, based on the Golden Copy Files, contain a sub-set of the most recent Golden Copy defined as *only the new or changed records since a previous Golden Copy specified by the user.*

1.3 What if one or more LEI Issuers upload the same LEI more than once, or a disallowed combination of relationship reporting?

Attempts to upload duplicate LEIs are rejected by GLEIF’s database (although they are kept on record for audit). Duplication is prevented according to the following business rules:

- For LEI (legal entity data) records:
    - A new LEI record is created in the Golden Copy when GLEIF receives an LEI record containing a new unique LEI code (i.e. one not previously uploaded to GLEIF).
    - *Existing records* are updated only if:
        - *a changed version* of the LEI data record is uploaded with the same LEI code (in the <lei:LEI> data field) as in the database, and
        - *the current LEI Issuer of the LEI*, according to the database, is the LEI Issuer whose LEI is found in the <lei:ManagingLOU> field of the uploaded record, and
        - *the uploader of the file (*whose LEI code is found in the <lei:Originator> field, is the same as the current LEI Issuer of the LEI, and
        - there is no other, contradictory (i.e., different) record in the same LEI Issuer file with the same LEI code.
        - **Exception**: the current LEI Issuer explicitly marks the LEI record as ready for transfer (lei:RegistrationStatus = “PENDING_ARCHIVAL”) so that the new LEI Issuer may update the record with a different, appropriate post-transfer status, and become the record’s new “owner”.

Please note: In the case of an LEI **transfer**, no additional LEI record is created. The same single record is simply updated and assigned to a new “owner” who is allowed to update it.

- For **relationship records**:
    - *A new relationship record* is created in the Golden Copy only when
        - GLEIF receives a new, unique relationship record (“unique” as below),
        - <rr:RegistrationStatus> = “PUBLISHED”, or “LAPSED” and
        - the LEI of the “child” entity already exists in the database.

Please note: The RegistrationStatus of the relationship record is “LAPSED”, when the Child LEI is not renewed within the date specified in the **NextRenewalDate** field in the Registration details section of the relationship record.

- Relationship Records are *updated* by new versions only when
    - they are considered unique and matched against uploaded records based on the combination of their:
        - <rr:StartNodeID> (the LEI of the “child” entity),
        - <rr:RelationshipType>
        - the LEI of the “child” entity already exists in the database.

For **reporting exceptions**:

- A new Reporting Exception is created in the Golden Copy when GLEIF receives a new, unique Reporting Exception (“unique” as below).
- A current relationship record of a given relationship type always replaces an existing Reporting Exception of the same type for a given “child” LEI.
- Reporting Exceptions are considered unique based on the combination of their:
    - <repex:LEI> (i.e. LEI code of the “child” entity),
    - <repex:ExceptionCategory> (type of relationship).

Please note:

The rules for creating, updating and removing Level 2 information from the Golden Copy Files (**not** from the Concatenated Files) mean that non-current (historical, and also erroneous) relationships and / or reporting exceptions may not be found in a given Golden Copy File, even though they are in the Concatenated Files (i.e. audit trail) of the same day.

LEI records, however, are *never* deleted from the Golden Copy.

1.4 How up-to-date are the GLEIF Golden Copy Files?

GLEIF makes all of the latest Golden Copy Files available three times daily at 8-hour intervals by:

a) 02:00 UTC+0

b) 10:00 UTC+0

c) 18:00 UTC+0

This publication schedule is intended to provide a realistic level of timeliness for all major global business time zones, given the likely time needed for updates to LEI data and changes to legal entities themselves and the relationships between them.

LEI Issuers can upload their files at any time of day and are required to upload at least one full file of each type (i.e., **all** LEI Records, relationship record, and reporting exceptions they manage) per day.

Depending on specific LEI Issuers' upload schedules, there may therefore be a delay of up to 24 hours before a change made, or a new LEI issued is reflected in the latest Golden Copy File.

All GLEIF Golden Copy Files are provided with ZIP compression for reduced disk space and download bandwidth consumption.

1.5 How can I download updates to GLEIF Golden Copy Files (Delta Files)?

In addition to Golden Copy Files, which always contain the most recent version of **all** LEI records, GLEIF makes Delta Files available.

Delta Files contain only the most recent version of those LEI records which have been changed or newly uploaded to GLEIF (for the first time ever) since the delta start time and date.

Technical details of how to obtain Delta Files can be found below. As noted below, Delta Files are created as the difference between full Golden Copy Files. They are made available in three pre-defined time increments per day as above.

The delta start can be specified as:

- one Golden Copy publication (intra-day),
- one day (three publications),
- one week (7 days) or
- one month (31 days) before the present Golden Copy File.

Delta Files are typically used to update a local copy of the Global LEI Index, after first creating the local copy from a complete Golden Copy File.

Please note:

The timestamp displayed on the GLEIF Golden Copy and Delta Files website (00:00, 08:00, and 16:00 UTC) represents the cut-off times by which LEI Issuing Organizations (LEI Issuers/LOUs) are expected to upload their LEI data records. These timestamps do not indicate when the corresponding files become available for download.

The Golden Copy and Delta files are typically available for download approximately two hours after the respective LOU's cut-off times, at 02:00, 10:00, and 18:00 UTC. These publication times indicate when the files are expected to be fully available, enabling users to download the complete set of LEI data records.

Relationship records with any status other than "PUBLISHED" or "LAPSED" are removed from the Golden Copy.

Delta Files that reflect this change contain the record to be deleted with an **added deletion flag in the Extension field.**

1.6 What is the format of the GLEIF Golden Copy Files?

Golden Copy Files are provided in a range of technical formats to meet various user requirements.

1.6.1 File compression

All GLEIF Golden Copy Files are provided with ZIP compression for reduced disk space and download bandwidth consumption.

Please note: When working with such very large files, downloading, opening and manipulating the file may be interrupted sometimes due to e.g. lack of sufficient memory. For large numbers of records this could be impractical and a specialized tool e.g., a dedicated XML, JSON or CSV editor or parser, is needed**.**

1.6.2 Data content standards

Each type of information is provided by the LEI Issuer according to its own Common Data File (CDF) format, an XML Schema and content specification:

CDF format	Content
LEI-CDF	Legal Entity identification (LEI code, Legal Entity information)

RR-CDF	Relationships between Legal Entities (LEI to LEI relationships)
RepEx	Reporting Exceptions (reasons for relationship non-reporting)

Please see the GLEIF **Common Data File Formats** page for general and technical details of each CDF format.

1.6.3 File formats

Files complying to each of the above data content standards can be offered in the following common file formats:

File format	Description
XML	XML files in UTF-8 (Unicode) encoding, valid against the corresponding Common Data File format XML schema.
JSON	JSON files in a format corresponding to the nested XML tag structure of the corresponding Common Data File format XML schema.
CSV	CSV files in a tabular format that limits some repeatable fields found in the XML and JSON data formats to a useful number of instances.

Please note:

XML, **JSON** and **CSV** files are plain text files, whose content is formatted in an efficient, machine-readable way. They are **extremely large files, not intended to be opened in typical text editors or productivity applications** and used manually**.**

GLEIF Golden Copy Files in **JSON** and **XML** formats cannot be directly opened with e.g., Excel or Access. Normally a specialized tool is needed. Any XML or JSON parser can be used to incorporate the content into a given environment. It is typically imported directly into a database or parsed and analyzed using bespoke software.

GLEIF does not provide tool or application support; instead, we recommend consulting your IT team for any complex tasks.

1.7 What if an LEI Issuer's source file is not technically valid?

Each type of LEI Issuer source file must be compliant with the latest version of the relevant Common Data File format.

This means that LEI Issuer source files which were **not** compliant with the Common Data File format at upload are **excluded** from creating or updating records in the GLEIF Golden Copy Files. Data from an earlier compliant version of the **entire** source file, if available, is used in the Golden Copy File in this case.

1.8 How are the GLEIF Golden Copy Files created?

1.8.1 LEI Issuer – file upload

The LEI Issuers upload their original source files to GLEIF. Each LOU must upload at least once per day (counted from 00:00:00 UTC-0) and may provide up to 10 successful intraday updates total per day.

1.8.2 GLEIF – Golden Copy production

Three times daily, GLEIF updates the central LEI database and produces a set of Golden Copy Files:

1. Individual LEI Issuer **source file headers** are stored for reference but not included in the Golden Copy Files.
2. **New LEI records** are created if the LEI has never existed in the LEI database before.
3. **New, current relationship and reporting exception records** are created per existing LEI.
4. **Duplicate LEI records (and historical relationship/reporting exception records, and those for unknown LEIs) are excluded** from the database but always stored separately for audit purposes.
5. **Existing** LEI, relationship and reporting exception records are **updated** if changes are detected since the last update.
6. **Geocoding information** is added to all LEI records.
7. **Golden Copy Files** are produced by **concatenating all current records of a single file type** (LEI, relationship, or reporting exception) and adding a **GLEIF file header** to each of the three XML files.
8. Golden Copy Files in **JSON and CSV formats** are produced from each of the three XML files.
9. The Golden Copy files are made available through the www.gleif.org website.

1.9 Does GLEIF validate the LEI Issuers' original source files?

The content of the original LEI Issuer source files is not validated by GLEIF. They are only checked technically to verify compliance with the XML Schema of the respective Common Data File format.

Content issues should be communicated to the managing LEI Issuer associated with the data in question.

1.10 What extra information is added by GLEIF?

No data is changed by GLEIF, but a number of enhancements are included in the Golden Copy files.

GLEIF adds geocoded versions of addresses found in the LEI data to each LEI record, using the `<lei:Extension>` data element foreseen for this purpose. These additional versions do not replace or change the original LEI data provided by the LEI Issuer.

The geocoded addresses add:

- Normalized address fields which offer a more consistent format across all data records.
- Longitude / latitude coordinates for automatic processing of the address location.

The additional data will assist in data visualization and automatic / statistical comparisons for data quality checking.

1.11 What future developments are planned?

GLEIF continually enhances the scope of its service to include data quality assurance, user search capability, and other file access options.

Please see the GLEIF website for announcements of all new developments.

2 How do I download the GLEIF Golden Copy Files and Delta Files?

2.1 Manual download

To download the GLEIF Golden Copy Files and Delta Files manually:

1. Go to the Golden Copy Files and Delta Files Download page and select the **desired Common Data File format (LEI-CDF for LEI Records, RR-CDF for Relationship Records, Reporting Exceptions Format for Reporting Exceptions)**.
2. Click **either**
    1. the most recent GLEIF Golden Copy File (highlighted at the top of the page) **or**
    2. any of the previous GLEIF Golden Copy Files.

> **Please note:** It is possible that the download of the Golden Copy Files can take a bit longer than expected due to a large number of parallel download requests being processed. It is advised to perform the download with a random interval of 1 - 120 minutes from the proposed time (02:00 UTC, 10:00 UTC, 18:00 UTC) to avoid heavy traffic and to support load balancing.

Delta files can also be manually downloaded. They always provide the most recent version of the records they contain (i.e. as of the current Golden Copy). However, to define which records are included they must be specified in terms of:

- **File type** – the content and format of the Golden Copies the Delta File will be based on:
    - Level 1
        - LEI-CDF V3.1
    - Level 2
        - RR-CDF V2.1
        - Reporting Exceptions V2.1
- **Delta type –** the time period since the previous update (e.g., the previous Delta File you downloaded, or the original full Golden Copy File used to create your local copy):
    - Intra-day (since previous Golden Copy; eight hours earlier);
    - Day (since three Golden Copies ago; 24 hours earlier);
    - Week (seven days ago);
    - One month (31 days ago).

2.2 Automated download

To download the GLEIF Golden Copy Files and Delta Files automatically, you can use a computer program to request the files, e.g., cURL, etc.

2.2.1 File Publication

To download the GLEIF Golden Copy Files and Delta Files automatically, please ensure that your download process executes at or shortly after 02:00 UTC, 10:00 UTC, 18:00 UTC to be certain of a reliable process and up-to-date LEIs.

2.2.2 File retrieval URLs – Full and Delta Files

A list of published files including specific download URLs can be obtained via the following URL: https://goldencopy.gleif.org/api/v2/golden-copies/publishes

The Golden Copy API is available through two domains**, goldencopy.gleif.org** and **leidata-preview.gleif.org** (legacy). The URLs may differ, but the behaviour does not change.

The above URL returns a paginated listing for Golden Copy files of all CDF types (lei2, rr, repex) and displays both the Full Files as well as the Delta Files (Intra-day, Day, Week, One Month). Each file type and the corresponding Full File or Delta File are available in formats CSV, JSON, XML.

> **Please note:** The 'lei2' keyword used in the API URLs and JSON response attributes is used regardless of the LEI CDF version for legacy purpose to ensure backwards compatibility.

The 'cdf_version' field included in the API response indicates the exact CDF version the user can expect.

Following endpoints can be appended to above URL for additional or more specific functionality:

- ***/latest*:** always returns an updated list of the '*latest*' published golden copy files for all CDF formats.
  Example: https://goldencopy.gleif.org/api/v2/golden-copies/publishes/latest

  The '*/latest*' endpoint provides Full File and Delta Files in formats CSV, JSON, XML.

- ***/{filetype}**:* the '*filetype*' endpoint will only return the CDF type specified
  Example: https://goldencopy.gleif.org/api/v2/golden-copies/publishes/lei2
  - The filetypes available are as follows:
    - lei2 (LEI-CDF);
    - rr (RR-CDF);
    - repex (Reporting Exceptions);

- ***/{filetype}/latest**:* always returns the '*latest*' published files based on the CDF type specified
  Example: https://goldencopy.gleif.org/api/v2/golden-copies/publishes/lei2/latest

- ***/{filetype}/latest.{format}**:* will provide a prompt to download/save the latest file of the specified CDF type in the desired for '*format*'
  Example: https://goldencopy.gleif.org/api/v2/golden-copies/publishes/lei2/latest.csv

  - The formats available are as follows:
    - csv
    - xml
    - json

- ***/{filetype}/{publish date}**:* the 'publish date' endpoint allows for the file dates to be explicit, for example, https://goldencopy.gleif.org/api/v2/golden-copies/publishes/lei2/20200613-0000. In addition, the 'publish date' endpoint also supports direct download by format (xml, json, csv), for example, https://goldencopy.gleif.org/api/v2/golden-copies/publishes/lei2/20200613-0000.csv

  - The *'publish date'* is the day's calendar date in YYYYMMDD format.
  - The *'publish date'* must also include the Golden Copy publishing time as per the example provided.
  - There are three timeframes available are as follows:
    - 0000;
    - 0800;
    - 1600;

- ***/{filetype}/{publish date}.{format}?delta={deltaType}**:* Delta files can also be downloaded with the *'deltatype'* endpoint. The endpoint will provide a prompt to download/save the specified Delta file in the specified format. The xml/csv/json export endpoint also supports delta file downloads by providing a 'delta' query parameter with an appropriate delta type.

Please note: The *{publish date}* could be replaced with value *'latest'*; and this will download the latest Golden Copy files.

Example: https://goldencopy.gleif.org/api/v2/golden-copies/publishes/lei2/20200421-0800.csv?delta=IntraDay

- Delta types to be included in URL as follows:
  - IntraDay
  - LastDay
  - LastWeek
  - LastMonth

Please note: "**LastDay**, **LastWeek**, **LastMonth**" delta files are only retained for a period of 31 days. "**IntraDay**" are however retained for a longer duration in accordance with the filetypes "lei2, rr, repex".

3 How can I interpret the GLEIF Golden Copy Files data once downloaded?

3.1 Data element ("attribute") definitions

To understand the definitions of the standardized codes in LEI data fields, please see the detailed **technical specifications** (human readable documentation) for the LEI Common Data File formats.

3.2 Technical validation and database import

Software applications may require the **XML Schema Definition (XSD) file** to process the Concatenated Files. The latest versions of the technical specifications and XSDs for all CDF formats can be found www.gleif.org.

> **Please note:** The GLEIF Golden Copy Files are not a database and so there is no documentation detailing tables, relationships between tables or database validation rules.
> The GLEIF Golden Copy File and the CDF formats are also not intended as database design guidance, though they could be used to inform such a process. GLEIF does not provide tool support; instead, we recommend consulting your IT team for any complex tasks.

The JSON and CSV versions of the Golden Copy Files are based directly on the XML versions each file type as described above.

Therefore, although they cannot be directly validated using an XML schema, their data content will conform to the requirements of the corresponding CDF format schema XML, e.g. in terms of code structures, enumerated values, character set and string length of free text fields, etc.

3.3 Data management rules

LEI Issuers are also required to create and update CDF files according to the **State Transition and Validation Rules (ST/VR)** for the relevant CDF format.

These data management rules are provided by GLEIF in addition to the CDF XML Schemas, and LEI Issuers must follow them in order to achieve high data quality scores, but they are not necessarily all automatically enforced by GLEIF.

Please find the State Transition/Validation Rules at the GLEIF Common Data File Formats pages on www.gleif.org.

4 Where can I find further information?

4.1 General questions

Please address any queries which are not specifically technical in nature to:

info@gleif.org

4.2 Technical support

4.2.1 LEI Issuer files

If you have any questions regarding the original source files, please contact the respective LEI Issuer via the respective LOU website.

Contact details for all LEI Issuers can be found at www.gleif.org

4.2.2 Whom should I contact for further questions?

If you have any questions regarding the GLEIF Golden Copy Files downloaded from the GLEIF Website, please contact GLEIF directly at: **info@gleif.org**.