

External timesheet format

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Abstract

This document describes the external timesheet format used by the timesheeting program to export timesheet data.

Revision History

Revision	Date	Author(s)	Description
1.0	26OCT2024	TH	Creation

Reference documents

Index	Title	Reference	Revision	Author
RD1	timesheeting specification document	PRJ1-SPE1	v1.0	Thomas HOULLIER
RD2	List of tz database time zones	[2]	1246415064	Wikipedia

Document distribution

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Acronyms

CLI Command line interface
CSV Comma-separated values
UTC Coordinated universal time

1 Introduction

1.1 Context

In support of the project requirement R-DEX-010 [RD1], we provide a format for timesheet data export to a file.

The format is meant to be interoperable, *ie* it is meant to be easily usable with a wide selection of external programs. The external programs typically targetted are spreadsheet programs (*Libreoffice Calc*, *Gnumeric*), Command line interface (CLI) text programs (*less*, *vi*), and Python libraries such as *pandas*.

We prioritize ease of use and readability for the exported format over compactness and efficiency.

1.2 Document structure

The document is structured as follows. First, definitions are given (Section 2), then the requirements for the exported file are listed (Section 3) and finally an example of a compliant export file is given (Section 4).

2 Definitions

The file refers to the external timesheet data file generated by the timesheeting program's export function.

3 Requirements

The requirements for the timesheet exported file format are listed here. They are split into general, header and body sections.

3.1 General

The general requirements apply to the *file* as a whole.

IRS1-GEN-010 – File type The *file* shall be a text file.

IRS1-GEN-020 – File extension The *file* extension shall be `.csv`.

IRS1-GEN-030 – File encoding The *file* shall be encoded in `UTF-8`.

IRS1-GEN-040 – Line endings The *file* shall use UNIX line endings (LF).

IRS1-GEN-050 – File ending The *file* shall end with a newline character.

IRS1-GEN-060 – File structure The *file* shall contain

- a header,
- a body.

IRS1-GEN-070 – Header location The header of the *file* shall be a contiguous set of text lines at the beginning of the *file*.

IRS1-GEN-080 – Body location The body of the *file* shall be a contiguous set of text lines immediately following the header lines (*ie* without gap or empty lines in between).

3.2 Header

The header requirements apply to the header part of the *file*.

IRS1-HED-010 – Header format Every line in the header shall begin with a `#` character followed by a whitespace.

IRS1-HED-020 – Header export date The header shall contain the date at which the *file* was generated.

Note the time reference is the local system clock, as is the case in the rest of the program.

IRS1-HED-030 – Period start date The header shall contain the start date for the time period specified during the export.

IRS1-HED-040 – Period stop date The header shall contain the stop date for the time period specified during the export.

IRS1-HED-050 – Header dates timezone The dates in the header shall be expressed in the timezone set in the program at the time of export.

IRS1-HED-060 – Header timezone The timezone used to generate the dates in the header shall be indicated with a TZ identifier string (*eg* `Europe/Paris`). The list of current TZ identifiers may be found at [RD2].

IRS1-HED-070 – Header program version The version of the program at the time of export shall be written in the header.

IRS1-HED-080 – Program version string The program version (R-REL-010 [AD1]) shall be indicated by a string `xx.yy`. With,

- `xx`: The major program version (*eg* `03`),
- `yy`: The minor program version (*eg* `26`).

A dot character separates the major version and minor version. Note the program version string has a fixed size.

IRS1-HED-090 – Header date format The dates in the header shall conform to the format `DDMMYYYY HH:MM:SS`. Where,

- `DD` is the number of the day of the month (*eg* `09`),
- `MMM` is the abbreviated month name, with first letter capitalized and remaining letters in lower case (*eg* `Oct`),
- `YYYY` is the year number (*eg* `2024`),
- `HH` is the hours number (*eg* `07`),
- `MM` is the minutes number (*eg* `39`)

A `:` separator is present between hours and minutes, and between minutes and seconds.

Note the corresponding `strftime` [1] format string for the date format is `%d%b%Y %H:%M:%S`. Note the date is always represented with a fixed number of characters.

IRS1-HED-100 – Export date format The export date shall be written on a single text line beginning with `Export date:` followed by a whitespace and the export date formatted according to IRS1-HED-090.

An example line is,

```
# Export date: 26Oct2024 14:52:28
```

IRS1-HED-110 – Period start date format The export period start date shall be written on a single text line beginning with `Export start date:` followed by a whitespace and the period start date formatted according to IRS1-HED-090.

An example line is,

```
# Export start date: 01Jan2024 00:00:00
```

IRS1-HED-120 – Period stop date format The export period stop date shall be written on a single text line beginning with `Export stop date:` followed by a whitespace and the period stop date formatted according to IRS1-HED-090.

An example line is,

```
# Export stop date: 31Dec2024 23:59:59
```

IRS1-HED-130 – Header timezone format The header timezone shall be written on a single text line beginning with `Header timezone:` followed by a whitespace and the TZ identifier string (IRS1-HED-060).

An example line is,

```
# Header timezone: Europe/Paris
```

IRS1-HED-140 – Program version format The program version shall be written in the header on a single text line beginning with `timesheeting version:` followed by a whitespace and the program version string (IRS1-HED-080).

An example line is,

```
# timesheeting version: 03.26
```

IRS1-HED-150 – Header ordering The elements of the header shall be ordered as follows,

1. Export date (IRS1-HED-020),
2. Period start date (IRS1-HED-030),
3. Period stop date (IRS1-HED-040),
4. Header timezone (IRS1-HED-060),
5. Program version (IRS1-HED-070).

3.3 Body

IRS1-BDY-010 – CSV format The body of the *file* shall be in Comma-separated values (CSV) format.

IRS1-BDY-020 – CSV delimiter The delimiter character used by the CSV format shall be a comma followed by a whitespace (,).

IRS1-BDY-030 – Body structure The body of the *file* shall contain,

- A line of column names at the top,
- Timesheet data entries.

IRS1-BDY-040 – Column list The body CSV columns shall be, in order,

1. Entry ID,
2. Project ID,
3. Project name,
4. Task ID,
5. Task name,
6. Location ID,
7. Location name,
8. Start date,
9. Stop date.

IRS1-BDY-050 – No empty fields The timesheet entries in the *file* body shall not contain any empty fields.

IRS1-BDY-060 – Id format The ID fields in timesheet entries shall be represented as a number string of variable length.

IRS1-BDY-070 – Timesheet date format The date fields in timesheet entries shall be represented as a Coordinated universal time (UTC) UNIX timestamp in seconds.

IRS1-BDY-080 – Timesheet name format The name fields in timesheet entries shall be represented as a string which may contain whitespace.

4 Example file

We provide an example of compliant file format in [Listing 1](#).

```
1 # Export date: 26Oct2024 14:52:28
2 # Export start date: 01Jan2024 00:00:00
3 # Export stop date: 31Dec2024 23:59:59
4 # Header timezone: Europe/Paris
5 # timesheeting version: 03.26
6 Entry ID, Project ID, Project name, Task ID, Task name, Location ID
  , Location name, Start date, Stop date
7 4, 1, Project1, 3, Task3, 1, Location1, 1729952454, 1729953654
8 8, 1, Project1, 11, Task11, 1, Location1, 1729953659, 1729953789
9 9, 15, Project15, 5, Task5, 3, Location3, 1729953888, 1729953988
```

Listing 1: Compliant exported timesheet file.

References

- [1] CPP Reference. *std::strptime*. [Online; accessed 26-October-2024]. 2024. URL: <https://en.cppreference.com/mwiki/index.php?title=cpp/chrono/c/strptime&oldid=161518>.
- [2] Wikipedia contributors. *List of tz database time zones* — *Wikipedia, The Free Encyclopedia*. [Online; accessed 26-October-2024]. 2024. URL: https://en.wikipedia.org/w/index.php?title=List_of_tz_database_time_zones&oldid=1246415064.