BRITISH COLUMBIA | Ministry of Health

British Columbia

Health Information Standards

Date and Time Health Information Standard and Guidance

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Table of Contents

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1.0 Acknowledgements

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1.1. Territorial Acknowledgement

We acknowledge with respect and gratitude that this standard was developed on the territory of the Lək'ʷəŋən peoples, and recognize the Songhees, Esquimalt (Xwsepsum), and W̱SÁNEĆ Nations whose deep connections with this land continue to this day.

We also gratefully acknowledge the contributions of the following people and organizations to this standard:

1.2. Clinical and Informatics Advisors

- William Clifford OBC, BMedSci, MScF, MD, FCFP

1.3. Governance

B.C. Health Information Standards, such as the B.C. Health Date and Time Standard, are endorsed by ministry executives and developed in consultation with health program areas, subject matter experts, and advisory reference groups that include representation at the provincial and pan-Canadian level.

2.0 Background

The standards in this document are based on the International Standards Organization's (ISO) 8601 Extended Date/Time Format (EDTF) and ISO/TS 22220: 2008 'Health Informatics – Identification of subjects of health care' which can be used by providers who want to use a standardized way of presenting date and time.

The BC Health Information Date and Time Standard defines a wide range of notations of dates, times, date and time accuracy indicators and time intervals with features as follows:

- All values are organized from most to least significant digits.
- Each value has a fixed number of digits which must be padded with a leading zero.
- ISO provides two types of notation format:
    - Basic (a basic format is a notation with a minimal number of characters),
    - Extended formats (an extended format is a notation with separators to enhance human readability), and
    - The standard permits a dash separator between date elements and a colon between time elements. An optional "T" or blank space is allowed between date and time elements.
- Partial date and time are allowed. Any number of fields may be dropped from the representation, but the least significant fields must be dropped first.
- It allows an optional 'time zone' indicator. Without a time zone indicator, the context of the value is local time of day.
- It allows a date and time accuracy indicator to indicate the level of accuracy that a date and time has been collected.
- Intervals, represented by a start date (minimum) and an end date (maximum), define a period beginning sometime during a start date and ending sometime during an end date.

The key strengths of ISO standard 8601 is that it works across languages (language-independent), it is easy to read for both humans and machines, and ensures alphabetical order matches chronological order. In Canada, the Standards Council has formally adopted ISO standards, provinces reference ISO 8601, DICOM follows ANSI standards, which reference ISO, and CDISC explicitly references ISO 8601, unless otherwise noted.

2.1. Purpose of this Standard and Guidance

The British Columbia Health Information Date and Time Standard defines **standardized formats, minimum data capture requirements, and reporting expectations** for the use of date and time within British Columbia's health care community.

The accurate recording and interpretation of dated entries is fundamental to the delivery of health care services, supporting clinical reporting, analytics, and regulatory use.

This standard also establishes:

- Minimum required precision for date and time by clinical use case,
- Requirements for capturing event time semantics,
- Rules for handling unknown, estimated, or incomplete date/time values, and
- Conformance expectations for interoperability, analytics, and reporting.

To avoid confusion and achieve clarity, the date/time format needs to be consistent to address ambiguity in clinical documentation and presentation in electronic health records.

This includes:

- Stored Date and Time Standard - "machine readable" date and/or time stored in electronic media (databases and spreadsheets) and,
- Displayed Date and Time - "human readable" date and/or time representation for external display (computer screens, reports, data entry screens, and picklists).

2.2. Target Audience

The target audience for the health information date and time standard includes clinicians, health information management professionals, and information technology specialists. It also targets digital health solution (DHS) vendors, such as electronic medical record (EMR), clinical information system (CIS), and pharmacy management system (PMS) providers. Additionally, this standard serves a broader general audience having either an interest in health information or date time standards in general.

3.0 Scope of Standard

The Standard and Guide specify representations of dates, based on the Gregorian calendar, and times based on the 24-hour timekeeping system. The formats of these data element representations include:

- calendar dates expressed using calendar year, month and day of the month
- local time using 24-hour format
- Coordinated Universal Time (UTC) of day
- local time and the difference from UTC
- combination of date and time of day
- time intervals
- recurring time intervals
- date accuracy indicator
- date/time accuracy indicator.

Central attributes of the date and time notation in the standard are use of:

- 4-digit (YYYY) year (must be adhered to for both stored and displayed formats),
    - 2-digit month
    - 2-digit day
    - 2-digit hour (i.e., 00 - 23)
    - 2-digit minute
    - 2-digit second
    - any number of digits for fractions of seconds, all in descending order from most significant (and least precise) to least significant (and most precise) element
- the three date elements separated by hyphens (-')

- the three time-of-day elements separated by colons (:')
    - a decimal point between entire seconds and fractions of seconds
- the date part and the time-of-day part separated either by 'T' or a space character terminated by the time zone
- time zone indicated by its offset from UTC, or, in case of UTC itself, by 'Z'

While ISO 8601 does not address alphanumeric dates (2025-Jan-01), some examples are included in Section 7 -Displayed Date and Time, that may be used for business reasons.

3.1. Data Capture and Reporting Requirements

This standard SHALL apply to both:

- Representation (format of date/time)
- Usage (when and how date/time must be captured, stored, and exchanged).

Usual Minimum Precision Requirements

Clinical Context	Minimum Required Representation
Emergency visits	Date + time (minute precision)
Medication events	Date + time (minute or second)
Surgical events	Date + time (minute or second)
Public health reporting	Date (time optional)

Where a time component is required, omission SHALL be considered a data quality defect unless explicitly permitted.

4.0 Date and Time Standard

4.1. Definition of Standard Components

This standard comprises two core components of ISO 8601 for use in British Columbia. Elements of Date and Time are described in the following sections, 4.3 and 5.0.

Component	ISO Definition	Example
Calendar Date	Date representing a particular calendar day by its calendar year, its calendar month and its ordinal number within its calendar month: YYYY-MM-DD • Four-digit year where YYYY is the year in the usual Gregorian calendar, • Two-digit month where MM is the month of the year between 01 (January) and 12 (December), and • Two-digit day where DD is the day of the month between 01 and 31.	2025-11-05T08:15:30-08:00 corresponds to November 5, 2025, 8:15:30 am, Pacific Time. 2025-11-05T16:15:30Z corresponds to the same instant but at the prime (“zero”) meridian with an offset of +00.00.

Component	ISO Definition	Example
Standard Time	Time of the day is represented as: hh:mm:ss • Two-digits where hh is the number of complete hours that have passed since midnight (00-23), • Two-digits where mm is the number of complete minutes that have passed since the start of the hour (00-59), and • Two-digits where ss is the number of complete seconds since the start of the minute (00-59). If the hour value is 24, then the minute and second values must be zero. Time scale is derived from Coordinated Universal Time (UTC)[1], by appending the symbol "Z" without spaces to any of the local time of day or fractional local time of day formats (23:50:30Z). Offset between local and UTC times: +/- hh: ss (+13:00) as established in a given location by the competent authority[2] with a time zone offset in hours and minutes. A standard referencing this profile should permit one or both ways of handling time zone offsets.	See above.

[1] UTC is the accepted protocol for abbreviating Coordinated Universal Time. Since the introduction of an international atomic time scale, almost all existing civil time zones are now related to UTC.

[2] UTC is the modern implementation of Greenwich Mean Time. The National Research Council (NRC) is responsible (competent authority) for official standard time in Canada. The NRC, along with other countries' time laboratories, use atomic clocks to construct the internationally accepted UTC scale of time.

4.2. Event Time Semantics

Date and time values SHALL be categorized according to event type:

Clinical Context	Minimum Required Representation
Occurrence Time	When the event actually occurred
Recorded Time	When the event was documented
System Time	When the system captured the data

Note: These align with FHIR and clinical audit requirements.

Implementations SHALL distinguish between:

- Clinical event time (actual occurrence)
- Documentation time
- System ingestion time

Clinical Context example:

Clinical examples	Minimum Required Representation
Medication administered at	08:00
Documented at	08:15
System recorded time	08:16

Reduced precision SHALL NOT be used in the following contexts:

- Medication administration
- Surgical events
- Emergency care timestamps

Reduced precision MAY be used to prevent loss of clinical sequencing:

- For historical or patient-reported data
- When accompanied by a Date Accuracy Indicator

4.3. Calendar Date Elements

Calendar Date is made up of the following elements, expressed in order of significance.

Element	ISO Definition
Year	Duration of 365 or 366 calendar days depending on the start and/or the end of the corresponding time interval within the specific calendar year.
Month	Duration of 28, 29, 30 or 31 calendar days depending on the start and/or end of the corresponding time interval within the specific calendar month.
Day	Duration of any time interval which starts at a certain time of day at a certain calendar day and ends at the same time of day at the next calendar day.

The ISO 8601 specification supports other forms of date representation, including ordinal date and week date. These forms are minimally described here, not being in common use. Use of these forms is discouraged in BC, but if required, follow the ISO standard.

4.3.1. Date Representation

In date format representations, characters are used to represent characters in the date representations as follows:

- [Y] = represents a digit used in the date element “year”
- [M] = represents a digit used in the date element “month”
- [D] = represents a digit used in the date element “day”
- [W] = represents a digit used in the date element “week” (counted from the first week of the year)

In date representations, a hyphen (-) is used as separators between date elements “year” and “month”, “year” and “week”, “year” and “day”, “month” and “day”, and “week” and “day”.

A date string represents one of the following:

- year, month, and day (e.g., 2025-12-31)
- year and month (e.g., 2025-12)
- year (e.g., 2025)
- year and week (e.g., 2025-W01 or 2025W01)

Note(s): For example, the first week of the year 2026 lasts from 2025-12-28 to 2026-01-03 and can be written in standard notation as 2026-W01. For day of week (DOW) reference, please refer to Table 9.

4.3.2. Date Description

Date elements have the following representation and description:

Element	Representation	Description
Year	YYYY	• Numeric representation of year • Must be four digits; valid range (0000-9999)
Month	MM	• Numeric representation of month • Must be two digits • Range between 01 (Jan) and 12 (Dec)
Month	Mon	• Alphabetic representation of the month • Accepted three letter abbreviations as follows: • Jan, Feb, Mar, Apr, May, Jun, Jul, Aug, Sep, Oct, Nov & Dec • Month, fully spelled out, is also allowed
Day	DD	• Numeric representation of day • Must be two digits. • Range is between 01 and 31 • Leap day is observed

4.3.3. Complete Dates

For transmission or storage, complete dates may be expressed in either of the following formats:

- YYYYMMDD
- YYYY-MM-DD

4.3.4. Display Dates

Dates should always be displayed with the month alpha-numerically:

- YYYY-Apr-DD

For example: 2025-04-05 could be misinterpreted as May 4 rather than April 5. To avoid confusion, the date should be expressed as 2025 Apr-05.

4.3.5. Date Representation with Reduced Precision

Reduced precision SHOULD NOT be used in the following contexts:

- Medication administration
- Surgical events
- Emergency care timestamps

Reduced precision MAY be used:

- For historical or patient-reported data
- When accompanied by a Date Accuracy Indicator

Note: This is to prevent loss of clinical sequencing.

Partial dates can be represented with the least significant field being dropped first.

Partial Date Example	Before	After
Reduced precision for year and month: [year] ["-"] [month]	• 2025-01-24 would become • 202501 would become	• 202501 • 2025
Reduced precision for year: [year]	• '202501' refers to calendar month January with month precision	• 2025
Calendar year with year precision	• '2025' refers to calendar year would become	• 2025

Note: Sending and receiving applications must confirm compatibility of partial date specifications.

4.3.6. Date Representation as an Interval

An interval is defined by a start date and an end date, representing a period that begins at some time within the start date and ends at some time within the end date. The exact beginning and ending moments are only as precise as the date formats used (year, year-month, or year-month-day). The end date must be the same as or later than the start date.

Intervals are expressed as two dates separated by a forward slash. They can represent ranges with varying levels of precision and can be converted without losing meaning. This structure also supports very long or indefinite periods while allowing systems to store simplified date values (e.g., defaulting to the first day of a month or year).

Note: Start and end dates are both defined in section 4.3.1. Either endpoint may be a year, year-month, or year-month-day. The endpoint must be later than or equal to the start endpoint.

Examples: Interval (start/end)

Example	Details
2025/2026	• Interval beginning sometime in 2025 and ending sometime in 2026 (Year Precision).
2025-06/2026-06	• Interval begins sometime in June 2025 and ends in June 2026 (Month precision).
2025-03-01/2026-05-08	• Interval begins on March 1, 2025, and ending on May 8, 2026 (Day precision).
2025-03-01/2026-05	• Interval begins sometime on March 1, 2025 and ends sometime in May 2026. • Since the start endpoint precision (day) is different than that of the endpoint (month) the precision of the date interval is undefined.
2025-03-01/2026	• Interval begins at some time on March 1, 2025 and ends at some time in 2026. • Since the start endpoint has calendar day precision and the endpoint has calendar year precision, the date interval is undefined.

Example	Details
2025/2026-05	• Interval begins sometime in 2025 and ends sometime in May 2026. • Since the start endpoint has calendar year precision and the endpoint has calendar year and month precision, the date interval is undefined.

4.3.7. Date Accuracy Indicator

A **date accuracy indicator** identifies the accuracy of the components (year, month, day) in a reported date when formatted as YYYYMMDD (or another format, depending on representation).

It is used to:

- Reflect the **level of certainty or accuracy** of the components of a recorded date.
- Support situations such as storage in database where a valid precise date must be provided even if some components are **estimated or unknown**.
- Indicate whether the recorded date may require **future verification or refinement** to reach the desired level of accuracy.

Overall, it enables systems to track both the **value of a date** and the **confidence in its accuracy**.

Example: Initial demographic data collected in emergency situations such as when a patient is unconscious may be inaccurate (e.g., date of birth). As more reliable information becomes available later, it can be corrected. The Date Accuracy Indicator helps identify such entries and signals when follow-up or verification is needed.

Date Accuracy Indicator: An indicator of the accuracy of the components of a reported date as represented as a code for dates in YYYYMMDD format. Where the date is represented in an alternative presentation class the code would differ.

- Representation class = Code
- Data type = Coded Text String
- Format = AAA
- Maximum character length = 3

- Data Domain = Any combination of the values A, E, U representing the level of accuracy of each date component of the reported date

This data element example:

- is valid only for use with dates that are reported/exchanged in the format (YYYYMMDD), and
- contain positional fields (YMD) that reflect the order of the date components of the reported date:
    - Field 1 (Y) – refers to the accuracy of the day component
    - Field 2 (M) – refers to the accuracy of the month component
    - Field 3 (D) – refers to the accuracy of the day component

Value Domain Attributes:

Data accuracy	Date component (for a format YYYYMMDD)		
	(Y)ear	(M)onth	(D)ay
Accurate / Verified	A	A	A
Estimated / Approximate	E	E	E
Unknown / Absent	U	U	U

Use of the Date Accuracy Indicator SHALL be mandatory in the following cases:

- Unknown or partially known date of birth,
- Patient-reported event dates and/or retrospectively entered records.
- If reduced precision is used, an accuracy indicator MUST be present**.**

Examples of Values:

Permissible Values	Meaning
AAA	Year, month, and day are accurate
AAE	Year and month are accurate, day is estimated
AAU	Year and month are accurate, day is unknown
AEE	Year is accurate, month and day are estimated
AEU	Year is accurate, month is estimated, day is unknown
AUU	Year is accurate, month and day are unknown
AUA	Year is accurate, month is unknown, day is accurate
AUE	Year is accurate, month is unknown, day is estimated
AEA	Year is accurate, month is estimated, day is accurate
EAA	Year is estimated, month and day are accurate
EAE	Year is estimated, month is accurate, day is estimated
EAU	Year is estimated, month is accurate, day is unknown
EEA	Year and month are estimated, day is accurate
EEE	Year, month and day are estimated
EEU	Year and month are estimated, day is unknown
EUA	Year is estimated, month is unknown, day is accurate
EUE	Year is estimated, month is unknown, day is estimated
EUU	Year is estimated, month and day are unknown
UAA	Year is unknown, month and day are accurate
UAE	Year is unknown, month is accurate, day is estimated
UAU	Year is unknown, month is accurate, day is unknown

Permissible Values	Meaning
UEA	Year is unknown, month is estimated, day is accurate
UEE	Year is unknown, month and day are estimated
UEU	Year is unknown, month is estimated, day is unknown
UUA	Year and month are unknown, day is accurate
UUE	Year and month are unknown, day is estimated
UUU	Year, month and day are unknown

5.0 Time Elements

The ISO standard is based on the 24-hour timekeeping system. Time elements below are expressed in order of significance.

Element	ISO Definition
Hour	Unit of time equal to 60 minutes.
Minute	Unit of time equal to 60 seconds.
Second	Base unit of measurement of time in the International System of Units (SI) as defined by the International Committee of Weights and Measures .

Time intervals are included in the ISO 8601 standard and are part of the time axis limited by two instants and, unless otherwise stated, the limiting instants themselves.

Refer to the ISO 8601 standard for more details.

5.1. Time Representation

In time format representations, characters are used to represent characters in the time representations as follows:

- [h] = represents a digit used in the time element “hour”
- [m] = represents a digit used in the time element “minutes”
- [s] = represents a digit used in the time element “seconds”

In time representations, a colon (:) is used as separators between “hour” and “minute”, and “minute” and “second”.

It is also possible to add fractions of a second after a decimal dot or comma, for instance the time 5.8 ms before midnight can be written as;

Example: 23:59:59.9942 or 235959,9942

5.2. Time Description

Time elements have the following representation and description:

Element	Representation	Description
Hour	hh	• Numeric • Represents the hour that the event takes place • Must be two digits • Range from 00 to 24 • 24 is only used to denote end of a calendar day, precisely midnight (24:00:00)
Minute	mm	• Numeric • Range 00 to 59
Second	ss	• Numeric • Range 00 to 60; the representation of the second by sixty is only allowed to indicate a positive leap second • **Note(s):** Although allowed by the ISO 8601 standard, use of sixty as a leap second is strongly discouraged in BC.

5.3. Complete Times

Complete time (hour, minute, second) should be expressed as follows:

- hhmmss = 232050
- hh:mm:ss = 23:20:50

A decimal fraction of a second may be expressed after the seconds by a period, separating the decimal fraction and the time. Decimal fractions shall be at least one digit. Complete time with decimal fraction for seconds is expressed as follows:

- hhmmss.ss = 232050.15
- hh:mm:ss.ss = 23:20:50.15

5.4. Time Representation with Reduced Precision

Complete time representation (hour, minute, second) should be recorded whenever possible; however, if partial times are required, they will be expressed as follows:

- hour and minute = hhmm or hh:mm
- hour = hh

Hour-only representation (hh) SHOULD NOT be permitted for clinical event reporting.

Minimum precision SHOULD be:

- Minute-level for clinical workflows
- Second-level where sequencing is critical

5.5. Time Accuracy Indicator

An indication of the accuracy of a reported time at the time component level for times represented in HHMMSS format. Where the time is represented in an alternative presentation the code groups would differ.

The Time Accuracy Indicator can be useful for operational purposes to indicate the level of accuracy that a time has been collected at any point. Provision of time is often an optional requirement in data collection such as ‘a valid time format must be used for input of information for unknown data components’; the Time accuracy indicator could be used along with the date as a method of accurately reflecting estimated times.

The Time Accuracy Indicator can indicate whether the reported time needs to be followed up until it reaches the intended minimal required accuracy.

For example, if a person was brought unconscious to a hospital emergency department and the only information available was from a relative who estimated the time of injury happened ‘around 1:00 pm’ then the indicator could be used (EUU). The Time Accuracy Indicator provides information on the accuracy of the entered times that may require further action.

Time Accuracy Indicator: An indicator of the accuracy of the components of a reported time as represented as a code for times in HHMMSS format. Where the time is represented in an alternative presentation class the code would differ.

- Representation class = Code
- Data type = Coded Text String

- Format =AAA
- Maximum character length = 3
- Data Domain = Any combination of the values A, E, or U representing the level of accuracy of each time component of the reported time

This data element;

- is valid only for use with times that are reported/exchanged in the format (HHMMSS), and
- contain positional fields (HMS) that reflect the order of the time components of the reported time:
    - Field 1 (H) – refers to the accuracy of the hour component,
    - Field 2 (M) – refers to the accuracy of the minute component, and
    - Field 3 (S) – refers to the accuracy of the second component.

Time Accuracy Indicators SHALL be required when:

- Time is estimated
- Time is unknown but required
- Time is derived from non-clinical sources

Value Domain Attributes

Data accuracy	Time component (for a format HHMMSS)		
	(H)our	(M)inute	(S)econd
Accurate / Verified	A	A	A
Estimated / Approximate	E	E	E
Unknown / Absent	U	U	U

Examples of Values

Permissible Values	Meaning
AAA	Hour, minute and second are accurate.
AAE	Hour and minute are accurate, second is estimated.
AAU	Hour and minute are accurate, second is unknown.
AEE	Hour is accurate, minute and second are estimated.
AEU	Hour is accurate, minute is estimated, second is unknown.
AUU	Hour is accurate, minute and second are unknown.
EEE	Hour, minute and second are estimated.
EEU	Hour and minute are estimated, second is unknown.
EUU	Hour is estimated, minute and second are unknown.
UUU	Hour, minute and second are unknown.

5.5.1. Display Times

Complete times should be displayed as follows:

- hh:mm:ss = 23:20:50
- hh:mm = 23:20

Other acceptable displays, not part of the ISO standard, include:

- hh:mm am/pm = 11:57 am or 11:57 pm

5.5.2. Midnight

Midnight can be expressed as:

- 24:00:00 (end of a calendar day) or
- 00:00:00 (beginning of a calendar day).

Midnight must be displayed as:

- 00:00 or 00:00:00.
- The midnight display should never be 24:00.

The last minute of the day is expressed as:

- 23:59 or
- 11:59 pm.

5.5.3. High Precision and Real-Time Time Capture

Systems capturing device or monitoring data SHALL:

- Support fractional seconds (minimum milliseconds)
- Maintain synchronization with UTC
- Preserve original time precision during exchange

5.5.4. Coordinated Universal Time

Coordinated Universal Time (UTC) replaces Greenwich Mean Time. According to the ISO 8601 standard, UTC corresponds exactly in rate with international atomic time but differs

from it by an integral number of seconds. To express UTC of day, time representations will be followed immediately, without space, by the UTC designator “Z”.

- hhmmssZ = 232050Z
- hh:mm:ssZ = 23:20:50Z

5.5.5. Local Time of Day

Local time of day is expressed as the time in hours ahead or behind UTC. An example of a local BC time for Pacific Time (Pac) is 232050-07. This indicates that the local time of day is 11:20:50 PM Pacific Time and that local time of day is 7 hours behind UTC time. The notation for expressing local time of day is as follows:

- hhmmss±hh = 232050+01, 232050-01

British Columbia observes Pacific Time year-round (UTC-07) in accordance with provincial legislation. Seasonal changes between standard time and daylight-saving time do not apply unless otherwise specified by jurisdiction.

In the case of the BC time zones, the following offsets apply:

- Pacific Time = UTC-07 (year-round)
- Mountain Standard Time (select localities) = UTC-07 (no seasonal change)

Implementations must not infer daylight saving adjustments for Pacific Time within British Columbia.

5.6. Time Zones and UTC Offset Implementation

BC includes two time zones. Applications collecting and comparing times from across the province should carefully consider this and ISO standards for transmission, storage and display of time data. This BC standard recommends that implementations dealing with time from across the province always SHALL:

- Store all date/time values in **UTC with explicit offset**
- Maintain original local time representation where required
- Apply deterministic conversion rules for display

Date and Time are in the format YYYYMMDDhhmm±ZZzz where the ±ZZzz represents the time-zone expressed as offset from UTC. In British Columbia, this offset will typically be -0700 (Pacific Time, year-round). Select localities observing Mountain Standard Time will also use -0700 (no seasonal adjustment).

Systems exchanging data across jurisdictions SHALL NOT assume:

- Fixed UTC offsets
- Absence of daylight-saving adjustments

Examples:

March 3rd, 2025, 7:27 AM MST.

- Date Time value = 2025-03-03:0727-0700

March 3rd, 2025, 7:27 AM Pac.

- Date Time value = 2025-03-03:0727-0700

The use of -0800 (Pacific Standard Time) and -0700 (Pacific Daylight Time) as seasonal alternates is deprecated for British Columbia implementations.

Implementations must:

- Use UTC offsets (e.g., -0700) for all storage, exchange, and computation purposes.
- Avoid reliance on legacy seasonal time zone designations (e.g., PST/PDT).
- Ensure consistency with legislated Pacific Time observance

5.7. Jurisdictional Time Zone Naming and Abbreviations

While ISO 8601 specifies the use of UTC offsets for date and time representation, jurisdictional naming conventions may be required for human readability, policy alignment, and interoperability with external systems.

In British Columbia, the following conventions apply:

Legislative Time Zone Name

- **Pacific Time**
    - The authoritative term as defined in provincial legislation
    - Must be used in policy, legal, and formal documentation

Preferred Abbreviation (Non-ISO)

- **PacT**
    - Represents Pacific Time (British Columbia, year-round)
    - Recommended for systems requiring a time zone code or abbreviation

Alternate Abbreviation

- **Pac**
    - May be used in systems limited to three-character identifiers

Usage Guidance

- UTC offsets (e.g., -0700) SHALL be used for:
    - Data storage
    - Data exchange
    - System-to-system interoperability
- Pacific Time / PacT MAY be used for:
    - user interfaces and display,
    - clinical documentation and reporting, and

    - jurisdiction-specific context where human interpretation is required.

Legacy abbreviations (e.g., PST, PDT) SHALL NOT be used for new implementations within British Columbia systems, as they imply seasonal variability not aligned with current legislation.

Note(s):

- Time zone abbreviations are provided for usability and backward compatibility only.
- These abbreviations MUST not replace UTC offsets in storage/exchange
- These must not be used as the sole representation of time zone information in interoperable data.
- These are non-ISO, display/interoperability aids only

6.0 Store Date and Time Standards

This section addresses the standards for stored dates and times. A stored date/time is a "machine readable" date stored in electronic media such as a database, or spreadsheet. There are two acceptable formats for these standards:

- Basic-without separators,
- Extended-with separators (-) for stored date and (:) for stored time.

6.1. Stored Date

6.1.1. Numeric Basic Format

Standard	Example(s)	Details
YYYYMMDD	20250301	• where YYYY is a 4-digit year • MM is 2-digit month • DD is a 2-digit day

6.1.2. Numeric Separated Format

Standard	Example(s)	Details
YYYY-MM-DD	2025-03-01	• where YYYY is a 4-digit year • MM is a 2-digit month • DD is a 2-digit day
YYYY/MM/DD	2025/03/01	
YYYY MM DD	2025 03 01	

6.1.3. Ordinal Date Format

To accommodate legacy applications and systems there is a requirement for a stored Ordinal Date Standard (replaces Julian Date standard). See Section 10.0 – Calendar Months.

By definition, the Ordinal Date:

- sees each day assigned a three character (include leading zeros) numeric value from 1-365 (+1 for leap years) relative to its place in the current calendar year.

For example, March 1, 2025, would be assigned the value of 060.

Standard	Example(s)	Details
YYYYDDD	2025060 (for March 1, 2025) 2024061 (for March 1, 2024; leap year)	• where YYYY is a 4-digit year • DDD is a 3-digit day • No leading zeros

Note(s): Reference to Julian Date was removed from this section to comply with the ISO 8601 ordinal date format.

6.2. Stored Time

6.2.1. Basic Format

Standard	Example(s)	Details
hhmmss	132404	• where hh refers to hour (24 hr clock) • mm refers to minutes 00-59 • ss refers to seconds 00-59

Note(s):

- If no time zone information is given, the time is assumed to be local time of day.
- Partial seconds-comma or decimal point after the seconds placeholder (132423,5).

6.2.2. Extended Format

Standard	Example(s)	Details
hh:mm:ss	13:24:04	• where hh refers to hour (24 hr clock) • mm refers to minutes 00-59 • ss refers to seconds 00-59

Note(s):

- If no time zone information is given, then the time is assumed to be local time of day.
- Partial seconds-comma or decimal point after the seconds placeholder (13:24:23.5).

6.2.3. Null and Unknown Values

Systems SHALL distinguish between:

- Unknown
- Not recorded
- Not applicable

Placeholder values (e.g., 1900-01-01) SHALL NOT be used.

6.3. Stored Date and Time

6.3.1. Combined Format

It is possible to combine stored date and time, and storage formats with two possible structures. Important here is maintaining the order of significance requirement with the date/time information.

Standard	Example(s)	Details
<date>T<time> single date format	20250301T132404 2025-03-01 13:24:04 2025-03-01:13:24:04	• where <date> follows allowable storage formats • T is the time designator (T, space or:) • <time> follows allowable storage format • Format used for single date
<date>T<time> date range format	Low value = 20250301T112404 High value = 20250310T131430	• where <date> follows allowable storage formats • T is the time designator (T, space or:) • <time> follows allowable storage format • Date range required (e.g., admission and discharge times) • Two child elements each with a date value • Low value is start date • High value is end date
	Low value = 2025-03-01 11:24:04 High value = 2025-03-10 13:14:30	
	Low value = 2025-03-01:11:24:04 High value = 2025-03-10:13:14:30	

6.4. Conformance Requirements

All implementations SHALL enforce:

- ISO-compliant formatting
- Mandatory fields by use case
- Valid time zone offsets

6.4.1. Validation Rules

- Reject partial time where full time is required
- Reject invalid offsets
- Require accuracy indicators where applicable

7.0 Display Date and Time Standards

This section addresses the standards for displayed dates and times.

A display date/time is a “human readable” date and/or time representation for external display (computer screen, report, data entry screen, picklist) and must be formatted and displayed in a consistent and familiar manner for presentation to users within electronic systems.

7.1. Display Date

There is more flexibility around display date and time as they are “business driven” which means operational requirements may dictate the format be a variation of the ISO 8601 and ISO/TS 22220 standard.

When developing a display for date/time keep the following in mind:

- Use the 24-hr clock if applicable. An am/pm designation must be included otherwise.
- Always display numeric date/time in the order of significance (see requirements above).
- There are five separators for display date and times: dash (-), slash (/), space (), null (no space), and colon (:) which is for time only.
- Alphanumeric dates are acceptable for representing month and day (both long and short forms-acceptable, abbreviations for both are included at the end of the document, Section 9.0 & 10).
- Display date/time must be converted to an acceptable machine-readable date for storage as per the stored date and time standards.

A date shall maintain a visual pattern that is consistent and eliminates any opportunities of being misinterpreted by the user.

Displays SHALL indicate uncertainty when accuracy indicators are not “A” (accurate). Example:

- “Approx. March 2025”
- “Unknown Day – March 2025”

A date format shall comply with the following specifications:

- **Day Values (Standard):** Displayed as a two-digit number, including a leading zero for values less than 10 (e.g., 03).
- **Day Values (Ordinal):** When formatted as an ordinal number, the two-letter suffix must be lowercase, superscripted, and placed immediately after the number (e.g., 1st, 2nd, 3rd).
- **Day of the Week:** When included, the approved abbreviated day of the week must immediately precede the day value, separated by a single space (e.g., Tue March 12, 2025).
- **Month Values:** Displayed textually rather than numerically, using title case where only the first letter is capitalized (e.g., Dec or December).
- **Year Values:** Always displayed as a four-digit number (e.g., YYYY).
- **Null Dates:** Represented by an approved placeholder value (e.g., Unknown or Not Recorded) in accordance with established business rules.

7.1.1. Alphanumeric Month-Long Format

A date shall be displayed by electronic systems in two permissible date formats of long date form and short date form:

Standard	Example(s)	Details
Month DD YYYY	March/01/2025 March-01-2025 March 01 2025	• where Month is unabbreviated alpha month • DD is a 2-digit date • YYYY is a 4-digit year

7.1.2. Alphanumeric Month Short Format

Standard	Example(s)	Details
MMM DD YYYY	Mar/01/2025 Mar-01-2025 Mar 01 2025	• where Month is abbreviated alpha month • DD is a 2-digit date • YYYY is a 4-digit year

7.1.3. Alphanumeric with Day of Week Format

This standard allows for display dates that require day of week (DOW) in both abbreviated and unabbreviated formats. DOW should be first in order of significance for this standard.

Standard	Example(s)	Details
DOW Month DD YYYY	Saturday March-2-2025 Sat Mar/02/2025 Saturday Mar 02 2025	• where DOW is day of week • Month (or MMM) alpha • Day DD is 2-digit day • YYYY is 4-digit year

Note(s): Abbreviated and non-abbreviated formats can be combined for this display standard.

7.1.4. Fiscal Year Format

Standard	Example(s)	Details
YYYY/YYYY	2024/2025	• where YYYY 4-digit start of fiscal year • YYYY 4-digit end of fiscal year

Note(s):

- The fiscal year for the Government of British Columbia spans calendar years running from April 1 to March 31.
- The example date of March 1, 2025, would be in the final month of fiscal 2024/2025

7.2. Display Time

A time shall maintain a visual pattern that is consistent and eliminates any opportunities of being misinterpreted by the user.

A time format shall display:

- time using the 24-hour clock only; and
- time in both hours and minutes (and may also display seconds) with:
    - hours using two digits (i.e., hh),
    - minutes using two digits (i.e., mm),
    - seconds using two digits (i.e., ss), and
    - any values less than 10 using a leading 0.

Estimated times SHALL be displayed with qualifiers (e.g., **"~13:00"**).

7.2.1. Numeric Basic Format

Standard	Example(s)	Details
hhmm	0933 1304 2300	• where hh refers to hour (24 hr clock) • mm refers to minutes 00-59
hhmmss	093301 130424 230005 230005,5	• where hh refers to hour (24 hr clock) • mm refers to minutes 00-59 • ss refers to seconds 00-59

Note(s):

- If no time zone information is given, then the time is assumed to be local time of day.
- Partial seconds-comma or decimal point after the second placeholder (132423,5).

7.2.2. Numeric Separated Format

Standard	Example(s)	Details
hh:mm	09:33 13:00 23:59	• where hh refers to hour (24 hr clock) • mm refers to minutes 00-59
hh:mm:ss	09:33:01 13:00:30 23:59:59	• where hh refers to hour (24 hr clock) • mm refers to minutes 00-59 • ss refers to seconds 00-59

Note(s):

- If no time zone information is given, then the time is assumed to be local time of day.
- Partial seconds-comma or decimal point after the second placeholder (132423,5).

7.3. Combined Date and Time

For display date and time combinations please adhere to standards 6.1.1 to 6.2 as the foundation. Order of significance should be followed with date coming before time.

Standard	Example(s)	Details
Single date	2025-03-01 13:04:24 March 01 2025 13:04:24 Mar/01/2025 13:04:24 Friday Mar-1-2025 13:04:24	• where <date> follows allowable display formats • T is the time designator (T, space or :) • <time> follows allowable display format
Multiple date range format	Low value = March 01 2025 11:24:24 High value = March 10 2025 13:14:30	• where <date> follows allowable display formats • T is the time designator (T, space or :) • <time> follows allowable storage format • Date range required (e.g., admission and discharge times) • Two child elements each with a date value • Low value is start date • High value is end date
	Low value = 20250301 112424 March-01-2025 11:24 High value = 20250310 131430 March-10-2025 13:14	
	Low value = 20250301:112424 March/01/2025 11:24:24 High value = 20250310:131430 March/10/2025 13:14:30	

7.4. Date and Time Representation

Date and time representation are expressed in the following sequence:

- year,
- month,
- day of the month,
- time designator [T],
- hour,
- minute,
- second, and
- zone designator.

Date and Time Representation examples: complete representation

Format	Example
YYYYMMDDThhmmss	20250412T101530
YYYYMMDDThhmmssZ	20250412T101530Z
YYYYMMDDThhmmss±hh	20250412T101530+04
YYYY-MM-DDThh:mm:ss	2025-04-12T10:15:30
YYYY-MM-DDThh:mm:ssZ	2025-04-12T10:15:30Z
YYYY-MM-DDThh:mm:ss±hh	2025-04-12T10:15:30+04

Display Date and Time

Format	Example
YYYY-Mon-DD hh:mm:ss	2025-Apr-12 10:15:30
YYYY-Mon-DD hh:mm:ssZ	2025-Apr-21 0:15:30Z
YYYY-Mon-DD hh:mm:ss±hh	2025-Apr-12 10:15:30+04

8.0 Interoperability and Standards Alignment

8.1. Interoperability

This standard aligns with:

- HL7 v2 date/time formats
- HL7 FHIR (date, dateTime, instant)

Where discrepancies exist, implementations SHALL:

- Preserve precision
- Preserve accuracy if present
- Preserve time zone information

Use Case Profiles

Use Case	Required Precision	Required Precision
ED arrival	DateTime (minute)	Required
Surgery	DateTime (minute/second)	Optional
Immunization	Date (time optional)	Required

Legacy data SHALL:

- Be normalized to ISO format
- Retain original precision where possible
- Avoid introduction of artificial values

8.1.1. HL7 v2 date/time formats

HL7 v2, date and time standards are defined by two data types:

- DTM (Date/Time), and
- DT (Date).

Both follow Coordinated Universal Time (UTC) with optional offset, are formatted in 24-hour clock notation, and allow variable precision by truncating the end of the string.

DTM (Date/Time) Data Type

The DTM format combines date and time and follows the structure:

YYYY[MM[DD[HH[MM[SS[.S[S[S[S]]]]]]]]][+/-ZZZZ]

- Year (Required): YYYY
- Month, Day, Hour, Minute: Optional, added in that specific sequence (MMDDHHMM).
- Second & Fraction of a second: SS[.S...] (up to 4 decimal places).
- Timezone Offset: [+/-ZZZZ] represents the offset from UTC in HHMM format (e.g., -0500)

DT (Date) Data Type

For fields where time is unnecessary (such as birth dates), the DT data type is used.

It strictly follows the format: **YYYY[MM[DD]]**

- Year (Required): YYYY
- Month & Day: Optional (MM and DD).
- Note: Unlike DTM, the truncation character is never used with DT. If you omit the month or day, the date string remains valid but is truncated at the year or month level.

8.1.2. HL7 FHIR (date, dateTime, instant)

FHIR (Fast Healthcare Interoperability Resources) relies on the ISO 8601 standard for all date and time representations. FHIR defines three core primitive data types for handling temporal data, depending on the required precision.

Core FHIR Data Types

date: Used when only a year, month, or day is needed (e.g., birth dates).

- Format: YYYY, YYYY-MM, or YYYY-MM-DD.
- Constraint: Timezones and exact times shall not be included.

dateTime: Used when more precision is required for most clinical events, allowing time and timezone offsets.

- Format: YYYY-MM-DDThh:mm:ss+zz:zz.
- Flexibility: Precision is flexible. You can express it down to the year, month, day, hour, minute, second, or millisecond. Timezones are optional but recommended.

instant: A machine-generated timestamp used for audit logs, system timestamps, and updates.

- Format: YYYY-MM-DDThh:mm:ss.sss+zz:zz.
- Constraint: It must always include the time, to seconds or greater, and a valid time zone offset (Z for UTC or an explicit ± offset).

Key Rules and Considerations

- Precision: FHIR allows partial dates (e.g., "1984" or "2020-05") for a patient's historical records where the exact day isn't known.
- Time zones: When a dateTime or instant lacks an explicit time zone (e.g., 2025-06-02T14:42:00), it means the exact local time is unknown. Implementations must safely treat it as a floating time or local to the server, rather than assuming it is UTC.
- Extensions: For special use cases, such as attaching an IANA Timezone Code to a dateTime value, implementations SHOULD utilize official extensions to preserve regional context. For exact structure definitions and exhaustive invariant rules, consult the official HL7 FHIR Datatypes Documentation.

9.0 Alphanumeric Abbreviations (DOW and MMM)

Both day of week (DOW) and month (MMM) may be abbreviated under the Display Date Standard.

This standard works off a 3-character DOW and MMM.

The following are the acceptable abbreviations under the standard:

Term	Abbreviation	Term	Abbreviation
Day of Week	DOW	March	Mar
Monday	Mon	April	Apr
Tuesday	Tue	May	May
Wednesday	Wed	June	Jun
Thursday	Thu	July	Jul
Friday	Fri	August	Aug
Saturday	Sat	September	Sep
Sunday	Sun	October	Oct
Month	MMM	November	Nov
January	Jan	December	Dec
February	Feb	February	Feb

10.0 Calendar Months

The Gregorian calendar distinguishes common years of 365 consecutive calendar days and leap years of 366 consecutive calendar days. A leap year is a year whose year number is divisible by four an integral number of times. However, a centennial year is not a leap year unless its year number is divisible by four hundred an integral number of times.

In the Gregorian calendar each calendar year is divided into twelve sequential calendar months, each consisting of a specific number of calendar days as indicated in the following table:

Calendar Month			Ordinal Dates of the Days	
#	Name	Number of Days	Common Years	Leap Years
01	January	31	001-031	001-031
02	February	28 (leap year 29)	032-059	032-060
03	March	31	060-090	061-091
04	April	30	091-120	092-121
05	May	31	121-151	122-152
06	June	30	152-181	153-182
07	July	31	182-212	183-213
08	August	31	213-243	214-244
09	September	30	244-273	245-274
10	October	31	274-304	275-305
11	November	30	305-334	306-335
12	December	31	335-365	336-366

11.0 Related Standards

Type	Standard
National	• Government of Canada: **Data Reference Standard on Date and Time Format** • Standards Council of Canada
International	• ISO -Date and time - Concepts • ISO 8601 – Date and time format • ISO – TS 22220:2011 • Australian – National Standards and specifications • Australian Government – Date and time • Date-accuracy indicator • HL7 FHIR - Datatypes

12.0 Glossary

Term	Definition
24-Hour Clock	Clock that subdivides a calendar day into 24 clock hours. **Note(s):** UTC forms the basis of today's 24-hour clocks and is used in this document as a type of 24-hour clock.
Approximate	An estimate whose value is asserted to be possibly correct, and if not, close to correct (where 'close to correct' means "close enough, for the application").
Basic Format	Date and time representation that does not include separators between its time scale components.
Calendar	Time scale that uses the time scale unit of calendar day as its basic unit. **EXAMPLE:** The Gregorian calendar is a type of calendar. **Note(s):** Calendar month and calendar year are time scale units often included in a calendar.
Calendar Date	Particular calendar day represented by its calendar year its calendar month and its calendar day of month.
Calendar Day	Time scale unit starting at the beginning of the day and ending with the beginning of the next day, the latter being the starting instant of the next calendar day. **Note(s):** • Calendar day is in common parlance often referred to as day, however in this document calendar day and day have different definitions. • The duration of a calendar day using the 24-hour clock is 24 hours; except if modified by the insertion or deletion of: leap seconds, by decision of the IERS, or other time intervals, as may be prescribed by local authorities to alter the time scale of local time.

Term	Definition
Calendar Month	Time scale unit resulting from a defined division of a calendar year, each containing a specific number of calendar days. **Note(s):** • A calendar month is in common parlance often referred to as month. • However, in this document calendar month and month have different definitions.
Calendar Week	Time scale unit of seven calendar days which begin on Monday and end on Sunday, according to the week calendar.
Calendar Year	Time scale unit defined by the calendar system.
Centennial Year	Calendar year in the Gregorian calendar whose year number is divisible without remainder by one hundred.
Clock	Time scale suited for intra-day time measurements. **EXAMPLE:** The 24-hour clock is a type of clock. **Note(s):** Clock second, clock minute and clock hour are often time scale units included in a clock.
Clock Hour	Time scale unit whose duration is one hour. **Note(s):** • Clock hour is in common parlance often referred to as hour. • However, in this document clock hour and hour have different definitions.
Clock Minute	Time scale unit whose duration is one minute. **Note(s):** • Clock minute is in common parlance often referred to as minute. • However, in this document clock minute and minute have different definitions.

Term	Definition
Clock Second	Time scale unit whose duration is one second. **Note(s):** • Clock second is in common parlance often referred to as second. • However, in this document clock second and second have different definitions.
Common Year	Calendar year in the Gregorian calendar that has 365 calendar days.
Complete Representation	Date and time representation that includes all the time scale components associated with the expression.
Date	Time point representing a calendar day on a time scale consisting of an origin and a succession of calendar days. **Note(s):** Common forms of date include calendar date, ordinal date or week date.
Date Accuracy Indicator	Indication of the accuracy of a reported date at the date component level for dates represented in YYYYMMDD format.
Date and Time Representation	Representation of the format of one or more date and time expressions. **EXAMPLE:** • [date] is a date and time representation that can be expanded as [year][month][day], which itself can be expanded into [YYYY][MM][DD]; and • '20180801' is a date and time expression that conforms to this representation which identifies 01 August 2018.
Date String	A finite sequence of characters representing a date. **Note(s):** A date string represents one of the following: • year, month, and day (e.g., 2001-02-03) • year and month (e.g., 2008-12) • year (e.g., 2008)

Term	Definition

Date/Time String	A finite sequence of characters representing date and time.
	Note(s):
	• A date/time string MUST be composed according to one of three representations as illustrated in the following three examples:
	  ○ 2001-02-03T09:30:01
	  ○ 2004-01-01T10:10:10Z
	  ○ 2004-01-01T10:10:10+05:00
	• 'T' separating date and time must be upper case.
	  ○ The date/time string MUST use extended form (i.e., date with hyphen, time with colon). Zone-offset may be omitted or included.
	  ○ Extended format time zone designation consists of either a 'Z' to indicate UTC, or a '+' or '-' to indicate "ahead of UTC" or "behind UTC", followed by a 2-digit hour, followed optionally by a colon and the 2-digit minutes.

Day	Duration of a calendar day. **Note(s):** The term “day” applies also to the duration of any time interval which starts at a certain time of day on a certain calendar day and ends at the same time of day on the next calendar day.

Term	Definition
Duration	Non-negative quantity of time equal to the difference between the final and initial instants of a time interval. **Note(s):** • The duration is one of the base quantities in the International System of Quantities (ISQ) on which the International System of Units (SI) is based. ○ The term “time” instead of “duration” is often used in this context and for an infinitesimal duration. • For the term “duration”, expressions such as “time” or “time interval” are often used, but the term “time” is not recommended in this sense and the term “time interval” is deprecated in this sense to avoid confusion with the concept of “time interval”. • The exact duration of a time scale unit depends on the time scale used. **Example:** The durations of a year, month, week, day, hour, or minute, may depend on when they occur in a Gregorian calendar. A calendar month can have a duration of 28, 29, 30, or 31 days; in a 24-hour clock, a clock minute can have a duration of 59, 60, or 61 seconds, etc. Therefore, the exact duration can only be evaluated if the exact duration of each is known.
Extended Format	Extension of the basic format that includes separators between its time scale components.
Gregorian Calendar	Calendar in general use that defines a calendar year that closely approximates the tropical year. **Note(s):** In this document the term “Gregorian calendar” is used to refer to the time scale.
Hour	Duration of 60 minutes. **Note(s):** The duration of an hour is 60 minutes except if modified by the insertion or deletion of a leap minute.

Term	Definition
Instant	Point on the time axis. **Note(s):** An instantaneous event occurs at a specific instant.
Interval	An interval, as represented by a start date (minimum) and an end date (maximum), is a period beginning sometime during the start date and ending sometime during the end date. The actual instant at which the interval begins, or ends can be narrowed down only to the precision of the start or end date. The start and end dates are both as prescribed in date string. Either endpoint may be a year, year-month, or year-month-day. The end endpoint must be later than or equal to the start endpoint.
Interval String	A string representing the start and end date of an interval.
Leap Second	Intentional time step of one second to adjust UTC to ensure appropriate agreement with UT1, a time scale based on the rotation of the Earth. **Note(s):** • An inserted second is called a positive leap second and an omitted second is called a negative leap second. • A positive leap second is inserted after [23:59:59Z] and can be represented as [23:59:60Z]. • A negative leap second is achieved by the omission of [23:59:59Z]. • Insertion or omission takes place as determined by the International Earth Rotation and Reference Systems Service (IERS), normally on 30 June or 31 December, but if necessary on 31 March or 30 September.
Leap Year	Calendar year in the Gregorian calendar that has 366 calendar days. **Note(s):** A leap year is a calendar year whose year number is divisible by four and is not a centennial year, or a centennial year whose year number is divisible by four hundred.
Local Time of Day	Time of day in a local time scale.

Term	Definition
Local time Scale	Locally-applicable time scale such as standard time or a non-UTC based time scale.
Minute	Duration of 60 seconds. **Note(s):** The duration of a minute is 60 seconds except if modified by the insertion or deletion of a leap second.
Month	Duration of a calendar month. **Note(s):** • The term “month” applies also to the duration of any time interval which starts at a certain time of day at a certain calendar day of the calendar month and ends at the same time of day at the same calendar day of the next calendar month, if it exists. • In certain applications a month is considered as a duration of thirty calendar days.
Ordinal Date	Particular calendar day represented by its calendar year and its calendar day of year.
Precision	When a date string is cited, for purposes of indicating when an event occurred (or will occur), the precision of that date string is its measure of completeness expressed as a date/time units, e.g., "year precision". **Example:** If an event is known to have occurred: • in 1984, then '1984', cited as the date when the event occurred, is said to have "year" precision. • in December of 1984, then that date has "month" precision. December 12, 1984, then that date has "day" precision.
Recurring Time Interval	Series of consecutive time intervals of identical duration. **Note(s):** If the duration of the time intervals is measured in calendar entities, the duration of each time interval depends on the calendar dates of its start and end.

Term	Definition

Representation with Reduced Precision	Abbreviation of a date and time representation by omission of lower order time scale components.
	Note(s):
	• If partial dates are required, the least significant field must be dropped first (e.g., 2025-01-24 would become 202501).
	• If required, partial times are expressed as follows:
	  ○ hour and minute = hhmm or hh:mm
	  ○ hour = hh

Second	Base unit of duration measurement in the International System of Units (SI). **Note(s):** Second is defined by the CGPM (Conférence générale des poids et mesures, General Conference on Weights and Measures) on the proposal of the CIPM (Comité international des poids et mesures, International Committee of Weights and Measures).
Standard Time	Time scale derived from UTC, by a time shift established in a given location by the competent authority. **EXAMPLE 1:** Some standard times do not vary within a year, such as US Eastern Standard Time (EST), US Eastern Daylight Time (EDT), Australia Western Standard Time (AWST), China Standard Time (CST), Hong Kong Standard Time (HKT), Korea Standard Time (KST) and Japanese Standard Time (JST). **EXAMPLE 2:** Some standard times vary within a year, such as US Eastern Time (ET) and Australian Central Standard Time (ACST). **Note(s):** The time shift of a standard time may vary during a year, such as due to daylight savings.

Term	Definition
Time	Mark attributed to an instant or a time interval on a specified time scale. **Note(s):** The term “time” is often used in common languagewever, it should only be used if the meaning is clearly visible from the context. • On a timeline consisting of successive time intervals, such as a clock or calendar, distinct instants may be expressed by the same time.
Time Accuracy Indicator	Indication of the accuracy of a reported time at the time component level for times represented in HHMMSS format.
Time Axis	Mathematical representation of succession in time according to the space-time model of instantaneous events along a unique axis. **Note(s):** According to the theory of special relativity, the time axis depends on the choice of a spatial reference frame.
Time Interval	Part of the time axis limited by two instants and, unless otherwise stated, the limiting instants themselves.
Time of Day	Time occurring within a calendar day. **Note(s):** • Generally, time of day relates to the duration elapsed after the beginning of the day. o However, this correlation breaks when changes occur in the time scale that applies to the time of day, such as time shifts and leap seconds. • This definition corresponds closely with the definition of “clock time” given except that the concepts of duration and time scale are not used in this definition.

Term	Definition

Time Scale	System of ordered marks which can be attributed to instants on the time axis, one instant being chosen as the origin.
	Note(s):
	• A time scale may amongst others be chosen as:
	  ○ continuous, e.g., international atomic time (TAI) (see IEC 60050-713:1998, 713-05-18).
	  ○ continuous with discontinuities, e.g., UTC due to leap seconds , standard time due to summertime and winter time;
	  ○ successive steps, e.g., calendars , where the time axis is split up into a succession of consecutive time intervals and the same mark is attributed to all instants of each time interval;
	  ○ discrete, e.g., in digital techniques.
	• Customary time scales use various units of measurement in combination, such as second, minute, hour, or various time intervals of the calendar such as calendar day, calendar month, and calendar year.
	• A time scale has a reference point which attributes one of the marks of the time scale to one of the instants, thus determining the attribution of marks to instants for the time scale.

Term	Definition
Time Scale Component	Representation of a time scale unit within a date and time expression or representation. **EXAMPLE 1:** Calendar year, calendar month, calendar day, clock hour, clock minute, clock second are time scale components of a complete representation. **EXAMPLE 2:** The calendar year time scale component is considered of a higher order than the calendar month time scale component, which is in turn of a higher order than the calendar daytime scale component. **Note(s):** • A time scale component is considered of a higher order of another, if the time scale unit it represents has a strictly larger time interval than that of another; the latter time scale component is therefore, considered to be of a lower order. • Common usage of this term often omits the leading phrase “time scale”, such as representing a “time scale component calendar year” by just “calendar year component”. ○ This usage is deemed accepted in this document.
Time Scale Unit	Unit of measurement of a duration. **EXAMPLE 1:** Calendar year, calendar month and calendar day are time scale units of the Gregorian calendar. **EXAMPLE 2:** Clock hour, clock minutes and clock seconds are time scale units of the 24-hour clock.
Time Shift	Constant duration difference between times of two time scales.
Uncertain	A date or date/time is considered "uncertain" when the process by which it is constructed (e.g., a user or some machine process extracting or converting data or metadata) determines algorithmically or based on rules of operation, that its source is dubious.
Unspecified	The value is unstated. It could be because the date (or part of the date) has not (yet) been assigned (it might be assigned in the future), or because it is classified, or unknown, or for any other reason.

Term	Definition
UTC (Coordinated Universal Time)	Time scale with the same rate as International Atomic Time (TAI), but differing from TAI only by an integral number of seconds. **Note(s):** • UTC is the standard commonly used across the world from which local time is derived. • UTC is produced by the Bureau International des Poids et Mesures (BIPM), i.e., the International Bureau of Weights and Measures. • TAI is a continuous time scale produced by the BIPM based on the best realizations of the SI second. ○ TAI is a realization of Terrestrial Time (TT) with the same rate as that of TT, as defined by the International Astronomical Union Resolution B1.9 (2000).
UTC of Day	Time of day in UTC
Week	Duration of a calendar week. **Note(s):** The term "week" applies also to the duration of any time interval which starts at a certain time of day at a certain calendar day and ends at the same time of day at the same calendar day of the next calendar week.
Week Calendar	Calendar based on an unbounded series of contiguous calendar weeks that uses the time scale unit of calendar week as its basic unit to represent a calendar year. According to the rule that the first calendar week of a calendar year is the week including the first Thursday of that year, and that the last one is the week immediately preceding the first calendar week of the next calendar year. **Note(s):** • This rule is based on the principle that a week belongs to the calendar year to which the majority of its calendar days belong. • In the week calendar, calendar days of the first and last calendar week of a calendar year may belong to the previous and the next calendar year respectively in the Gregorian calendar.

Term	Definition

Year	Duration of a calendar year.
	Note(s):
	• In the Gregorian calendar, a year has 365 or 366 days.
	  ○ The duration is 366 days if the corresponding time interval begins February 28 or earlier in a leap year or March 2 or later in a year immediately preceding a leap year.
	  ○ If the interval begins February 29, or March 1 of a year preceding a leap year, the end date must be agreed on.
	  ○ Otherwise, the duration is 365 days.
	• The term “year” applies also to the duration of any time interval which starts at a certain time of day at a certain calendar date of the calendar year and ends at the same time of day at the same calendar date of the next calendar year with the exception noted in Note 1 to entry.