# Statistical Working GroupStatistical Guidelines

**CL\_FREQ
Code list for Frequency**

**Version 2.1 – 13/2/2021**

**Name**: Code list for concept "Frequency" (ID "FREQ").

**Description**: This code list provides a set of values indicating the "frequency" of the data (e.g. weekly, monthly, quarterly). The concept “frequency” may refer to various stages in the production process, e.g. data collection or data dissemination. For example, a time series could be disseminated at annual frequency, but the underlying data are compiled monthly. The code list is applicable for all different uses of “frequency”.

The code list below presents the set of basic codes recommended for expressing frequency; the code list is mapped to the ISO 8601 durations representation for the ease of reference for users using this standard. For additional more complex frequencies, please refer to section "Recommendations for the creation of additional frequencies".

**Established international standard(s) used as input for the code list**: None.

|  |  |  |  |
| --- | --- | --- | --- |
| **Recommended code value** | **Recommended code description** | **Annotation** | **ISO 8601 equivalent** |
| **A** | Annual | To be used for data collected or disseminated every year | P1Y |
| **A2** | Biennial | To be used for data collected or disseminated every two years | P2Y |
| **A3** | Triennial | To be used for data collected or disseminated every three years | P3Y |
| **A4** | Quadrennial | To be used for data collected or disseminated every four years | P4Y |
| **A5** | Quinquennial | To be used for data collected or disseminated every five years | P5Y |
| **A10** | Decennial | To be used for data collected or disseminated every ten years | P10Y |
| **A20** | Bidecennial | To be used for data collected or disseminated every twenty years | P20Y |
| **A30** | Tridecennial | To be used for data collected or disseminated every thirty years | P30Y |
| **A\_3** | Three times a year | To be used for data collected or disseminated three times a year |  |
| **S** | Half-yearly, semester | To be used for data collected or disseminated every semester | P0.5Y |
| **Q** | Quarterly | To be used for data collected or disseminated every quarter |  |
| **M** | Monthly | To be used for data collected or disseminated every month | P1M |
| **M2** | Bimonthly | To be used for data collected or disseminated every two months | P2M |
| **M\_2** | Semimonthly | To be used for data collected or disseminated twice a month | P0.5M |
| **M\_3** | Three times a month | To be used for data collected or disseminated three times a month |  |
| **W** | Weekly | To be used for data collected or disseminated every week | P1W |
| **W2** | Biweekly | To be used for data collected or disseminated every two weeks | P2W |
| **W3** | Triweekly | To be used for data collected or disseminated every three weeks | P3W |
| **W4** | Four-weekly | To be used for data collected or disseminated every four weeks | P4W |
| **W\_2** | Semiweekly | To be used for data collected or disseminated twice a week | P0.5W |
| **W\_3** | Three times a week | To be used for data collected or disseminated three times a week |  |
| **D** | Daily | To be used for data collected or disseminated every day | P1D |
| **D\_2** | Twice a day | To be used for data collected or disseminated twice a day | P0.5D |
| **H** | Hourly | To be used for data collected or disseminated every hour | PT1H |
| **H2** | Bihourly | To be used for data collected or disseminated every two hours | PT2H |
| **H3** | Trihourly | To be used for data collected or disseminated every three hours | PT3H |
| **B** | Daily – businessweek | Similar to "daily", however there are no observations for Saturdays and Sundays (so, neither “missing values” nor “numeric values” should be provided for Saturday and Sunday)  |  |
| **N** | Minutely | While N denotes "minutely", usually, there may be no observations every minute (for several series the frequency is usually "irregular" within a day/days). And though observations may be sparse (not collected or disseminated every minute), missing values do not need to be given for the minutes when no observations exist: in any case the time stamp determines when an observation is observed | PT1M |
| **I** | Irregular | To be used with irregular time series that stores data for a sequence of arbitrary timepoints. Irregular time series are appropriate when the data arrives unpredictably, such as when the application records every stock trade or when random events are recorded (the interval between each element can be a different length)  |  |
| **OA** | Occasional annual | The event occurs occasionally with an infrequent update that could span from 1 year to several years between events. It implies a survey that experiences a gap for several years prior to the next survey update (this is commonly linked to funding available to run a specific survey (i.e. health surveys), whereas a regular annual survey refers typically to ‘programs’ that are funded regularly and fall under the Statistics Act, and therefore never experience a gap) |  |
| **OM** | Occasional monthly | The event occurs occasionally with an infrequent update that could span from 1 month to several months between events. It implies a survey that experiences a gap for several months prior to the next survey update |  |
| **\_O** | Other | To be used when the qualitative or quantitative values that a variable takes in a data set is associated to multiple occurrences with frequency other than the already defined ones (for example every 5 hours and 32 minutes etc.) |  |
| **\_U** | Unspecified | To be used when a set of values are reported within a time range but not associated to sub ranges. Often this could happen in case of missing or sparse information. (Let’s say we have two observations for 2020 but we do not know if they are part of a monthly reporting or quarterly reporting)  |  |
| \_Z | Not applicable | To be used when the qualitative or quantitative values that a variable takes in a data set is not associated to multiple occurrences (only single occurrence exists) one can use the \_Z as frequency |  |

**Remarks**

This code list is used to provide values, usually, for the concept "frequency" typically used to inform users about the releases that may appear in various frequencies (e.g. monthly, quarterly, annually). The appropriate value to choose for a series should correspond to the highest frequency at which the series may be observed. For example, sometimes there are series that may change or have a new observation every two-three months, with or without a prefixed pattern. In this case the code "M" (=monthly) should be used (denoting the highest possible frequency that could be observed in the series).

**Recommendations for the creation of additional frequencies**

The proposed syntax for creating additional frequencies needed is the following:

[CL\_FREQ\_CodeListValue][Multiplier](e.g. AN where N is a positive integer represents every N years;)

***Examples***

|  |  |  |
| --- | --- | --- |
| **Value** | **Description** | **ISO 8601** |
| A6 | Every six years | P6Y |
| M7 | Every seven months | P7M |
| W6 | Every six weeks | P6W |
| etc. | etc. |  |

[CL\_FREQ\_CodeListValue]\_[Multiplier](e.g. A\_N where N is an integer greater than 1 represents N times a year)

|  |  |  |
| --- | --- | --- |
| **Value** | **Description** | **ISO 8601** |
| **A\_3** | Three times a year |  |
| M\_2 | Semimonthly | P0.5M |
| D\_2 | Twice a day | P0.5D |
| etc. | etc. |  |

The syntax above should be used only when the requested frequency is not listed in the code list. This syntax should not be used to indirectly construct frequencies, which are already present in the code list (e.g. “M3” to represent quarterly frequency or “D7” to represent weekly frequency). Implementers should in all cases take from the code list the frequency codes which best suit their needs.

**Time period**

The valid syntax to represent the time period of an observation depends on the frequency. The time period can either be a Gregorian calendar period, a standard reporting period, a distinct point in time, or a time range with a specific date and duration. In case a new frequency is created following the proposed syntax for creating additional frequencies, it is recommended to use a time range with a specific date and duration (if local infrastructure supports this option).  Example: for a frequency of every 6 years (A6), and considering a starting point on the 1st of January 2000, the time period would be "2000-01-01T00:00:00Z/P6Y". For additional information, please see the [SDMX Technical Notes](https://sdmx.org/wp-content/uploads/SDMX_2-1_SECTION_6_TechnicalNotes_2020-07.pdf).

**Possible ways for implementing CL\_FREQ**

In order to handle series with a frequency different from the standard ones included in the above list (e.g. data observed every 6 years), two different solutions exist. These two approaches are presented and discussed below.

1) For a given time series, choose the corresponding highest frequency at which the series may be observed (e.g. annual frequency for series observed every 6 years).

2) Create *ad hoc* codes based on the recommendations for the creation of additional frequencies specified above (e.g. A6 for series observed every 6 years).

It is recommended to apply solution 2 because it refers to a more precise frequency and avoids missing values in the series.

However, the way FREQ is managed by statistical packages is also an important parameter to take into account in choosing between the two solutions as statistical packages usually treat only standard frequencies (solution 1) and further developments could be required to treat different ones.

**Changes compared to version 2.0**

* The ISO 8601 equivalent mapping was added
* New codes were added (see table below)

|  |  |  |  |
| --- | --- | --- | --- |
| **Recommended code value** | **Recommended code description** | **Annotation** | **ISO 8601 equivalent** |
| **A2** | Biennial | To be used for data collected or disseminated every two years | P2Y |
| **A3** | Triennial | To be used for data collected or disseminated every three years | P3Y |
| **A4** | Quadrennial | To be used for data collected or disseminated every four years | P4Y |
| **A5** | Quinquennial | To be used for data collected or disseminated every five years | P5Y |
| **A10** | Decennial | To be used for data collected or disseminated every ten years | P10Y |
| **A20** | Bidecennial | To be used for data collected or disseminated every twenty years | P20Y |
| **A30** | Tridecennial | To be used for data collected or disseminated every thirty years | P30Y |
| **A\_3** | Three times a year | To be used for data collected or disseminated three times a year |  |
| **M2** | Bimonthly | To be used for data collected or disseminated every two months | P2M |
| **M\_2** | Semimonthly | To be used for data collected or disseminated twice a month | P0.5M |
| **M\_3** | Three times a month | To be used for data collected or disseminated three times a month |  |
| **W2** | Biweekly | To be used for data collected or disseminated every two weeks | P2W |
| **W3** | Triweekly | To be used for data collected or disseminated every three weeks | P3W |
| **W4** | Four-weekly | To be used for data collected or disseminated every four weeks | P4W |
| **W\_2** | Semiweekly | To be used for data collected or disseminated twice a week | P0.5W |
| **W\_3** | Three times a week | To be used for data collected or disseminated three times a week |  |
| **D\_2** | Twice a day | To be used for data collected or disseminated twice a day | P0.5D |
| **H2** | Bihourly | To be used for data collected or disseminated every two hours | PT2H |
| **H3** | Trihourly | To be used for data collected or disseminated every three hours | PT3H |
| **I** | Irregular | An irregular time series stores data for a sequence of arbitrary timepoints. Irregular time series are appropriate when the data arrives unpredictably, such as when the application records every stock trade or when random events are recorded (the interval between each element can be a different length).  |  |
| **OA** | Occasional annual | The event occurs occasionally with an infrequent update that could span from 1 year to several years between events. It implies a survey that experiences a gap for several years prior to the next survey update (this is commonly linked to funding available to run a specific survey (i.e. health surveys), whereas a regular annual survey refers typically to ‘programs’ that are funded regularly and fall under the Statistics Act, and therefore never experience a gap) |  |
| **OM** | Occasional monthly | The event occurs occasionally with an infrequent update that could span from 1 month to several months between events. It implies a survey that experiences a gap for several months prior to the next survey update |  |
| **\_O** | Other | Used when the qualitative or quantitative values that a variable takes in a data set is associated to multiple occurrences with frequency other than the already defined ones (for example every 5 hours and 32 minutes etc.) |  |
| **\_U** | Unspecified | In case set of values are reported within a time range but not associated to sub ranges. Often this could happen in case of missing or sparse information. (Let’s say we have two observations for 2020 but we do not know if they are part of a monthly reporting or quarterly reporting) |  |
| \_Z | Not applicable | If the qualitative or quantitative values that a variable takes in a data set is not associated to multiple occurrences (only single occurrence exists) one can use the \_Z as frequency. |  |