



BSI Standards Publication

## Management of observed hydrometric data - Recommendations

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## National foreword

This Published Document is the UK implementation of CEN/TS 17171:2018.

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A list of organizations represented on this committee can be obtained on request to its secretary.

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English Version

## Management of observed hydrometric data - Guidance

Gestion des données hydrométriques  
observées - Recommandations

Management gemessener hydrometrischer  
Datensätze - Empfehlungen

This Technical Specification (CEN/TS) was approved by CEN on 26 February 2018 for provisional application.

The period of validity of this CEN/TS is limited initially to three years. After two years the members of CEN will be requested to submit their comments, particularly on the question whether the CEN/TS can be converted into a European Standard.

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## Contents

Page

<b>European foreword</b> .....	<b>iv</b>
<b>Introduction</b> .....	<b>v</b>
<b>1 Scope</b> .....	<b>6</b>
<b>2 Normative references</b> .....	<b>6</b>
<b>3 Terms and definitions</b> .....	<b>6</b>
<b>4 Principles of hydrometric data management</b> .....	<b>7</b>
4.1 The requirement for data management.....	7
4.2 The sequence of data management.....	7
4.3 Duty of care.....	8
4.3.1 General.....	8
4.3.2 Legacy data.....	8
4.4 Data types and terminology.....	9
4.5 Time series data.....	9
4.5.1 General.....	9
4.5.2 Time of observation.....	9
4.5.3 Derived data terminology.....	11
4.5.4 Resolution of data storage.....	11
4.5.5 Uncertainty.....	11
4.6 Metadata and descriptive material.....	12
4.7 Maximizing data utility.....	12
4.7.1 Availability of metadata.....	12
4.7.2 Data quality control.....	12
4.7.3 Data gap infilling.....	13
4.7.4 Regular data reviews.....	13
4.8 Data storage considerations.....	14
4.8.1 Data storage.....	14
4.8.2 Changes to data.....	14
4.8.3 Data disposal.....	14
4.8.4 Electronic data storage system considerations.....	14
4.8.5 Tapes, charts and other data in paper format.....	15
4.8.6 Data security.....	15
4.8.7 Data rescue.....	15
4.9 Archiving hydrometric data: national collections.....	15
4.10 Electronic transfer of data.....	16
<b>5 Metadata</b> .....	<b>17</b>
5.1 General.....	17
5.2 Monitoring station/site/point metadata.....	17
5.2.1 General.....	17
5.2.2 Station identifier.....	17
5.2.3 Station description.....	18
5.2.4 Geographical location.....	18
5.2.5 Operating period.....	18
5.3 Observation metadata.....	19
5.3.1 General.....	19
5.3.2 Data set metadata.....	19
5.3.3 Data flags and comments.....	19
<b>6 Precipitation data</b> .....	<b>19</b>
6.1 Raw data.....	19
6.1.1 Data to be recorded.....	19
6.1.2 Additional raw data for manual observations.....	20
6.2 Resolution of data storage.....	20
6.3 Data processing and formatting.....	20

6.3.1	General	20
6.4	Quality control of precipitation data	20
6.4.1	General	20
6.4.2	Levels of quality control of precipitation data	20
6.4.3	Methods for quality control of precipitation data	20
6.4.4	Quality control of frozen precipitation	21
6.5	Precipitation specific metadata	21
<b>7</b>	<b>Water level data</b>	<b>21</b>
7.1	Raw data	21
7.1.1	Data to be recorded	21
7.1.2	Types of level data	22
7.1.3	Regular measurements and event data	22
7.1.4	Additional raw data for continuous measurements	23
7.1.5	Groundwater levels and water levels in reservoirs	23
7.2	Quality control of water level data	24
7.2.1	General	24
7.2.2	Levels of quality control of water level data	24
7.2.3	Methods for quality control of water level data	24
7.2.4	Data estimation and infilling	25
7.3	Water level specific metadata	26
<b>8</b>	<b>Velocity and discharge data</b>	<b>26</b>
8.1	Raw data	26
8.1.1	Data to be recorded	26
8.1.2	Additional raw data for irregular/spot measurements	26
8.1.3	Additional raw data for regular or fixed site measurements	27
8.2	Data processing	27
8.2.1	General	27
8.2.2	Discharge data derived from water levels	27
8.2.3	Discharge data from time of flight ultrasonic systems	29
8.2.4	Discharge data from velocity index method	29
8.2.5	Discharge data from electromagnetic systems	29
8.2.6	Combining discharge data from multiple methods	29
8.3	Resolution of data storage	29
8.4	Derived data	30
8.4.1	Daily mean flow	30
8.4.2	Peak discharges	30
8.5	Naturalization of discharge data	30
8.6	Quality control of discharge data	30
8.6.1	Levels of quality control of discharge data	30
8.6.2	Methods for quality control of discharge data	31
8.6.3	Review of extreme flows	32
8.6.4	Data estimation and infilling	32
8.7	Discharge specific metadata	34
8.7.1	Additional monitoring station/site/point metadata	34
8.7.2	Additional observation metadata	34
<b>9</b>	<b>Volume data</b>	<b>35</b>
9.1	General	35
9.2	Level/storage relationships	35
9.3	Frequency of sampling and processing	35
9.4	Resolution of data storage	35
9.5	Volume data specific metadata	35
	<b>Bibliography</b>	<b>36</b>

## European foreword

This document (CEN/TS 17171:2018) has been prepared by Technical Committee CEN/TC 318 "Hydrometry", the secretariat of which is held by BSI.

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. CEN shall not be held responsible for identifying any or all such patent rights.

According to the CEN/CENELEC Internal Regulations, the national standards organisations of the following countries are bound to announce this Technical Specification: Austria, Belgium, Bulgaria, Croatia, Cyprus, Czech Republic, Denmark, Estonia, Finland, Former Yugoslav Republic of Macedonia, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Norway, Poland, Portugal, Romania, Serbia, Slovakia, Slovenia, Spain, Sweden, Switzerland, Turkey and the United Kingdom.

## Introduction

Water management decisions and policies ought to be based upon quantitative knowledge of the hydrological system. Commonly, such knowledge results from observational hydrometric data, the collection of which is the subject of other standards, e.g. EN ISO 18365. The subsequent management of such hydrometric data provides the linkage between field measurement and the eventual use of processed data to address a wide range of strategic and operational water management applications. As both the demand for and complexity of hydrometric data increase, it is important that the procedures and processes used to manage these data are standardized to allow greater integration of data and ensure their protection for future use.

The availability of high-quality observational data are vital to developing an understanding of the hydrological cycle. Optimizing data management systems helps ensure that the maximum benefits are achieved from those resources invested in hydrometric monitoring. Effective standardized procedures for data transmission, manipulation, quality control, expression of uncertainty and storage are vitally important and their use should be promoted throughout hydrometric observation networks.

Those responsible for hydrometric data management are encouraged by this Technical Specification to adopt the ethos of professional stewardship and to remember their role as guardians of an important national, and sometimes international, resource.

This Technical Specification is designed for use by all organisations and individuals collecting, processing or storing hydrometric data. Some of the clauses contained in standard are only applicable for those maintaining national or regional collections of hydrometric data (for example, 4.9). However most recommendations are widely applicable to all users, including organisations, companies or individuals involved in: hydropower production, water supply, environmental protection, scientific research or flood risk management.

This Technical Specification is concerned with general aspects of good practice in data management. Techniques for managing data are recommended, covering metadata collection, data storage and quality control. This Technical Specification assumes that the raw data have been collected and transmitted from the field in line with other European Standards for hydrometry, so this Technical Specification concentrates on the subsequent processing and management of these hydrometric data.

## 1 Scope

This document gives recommendations for the management of observed hydrometric data, including raw data and other data as well as statistics derived from these observations. Although the principles of data management can be applied to all hydrometric observations, particular focus is placed on measurements of precipitation, water level (including stage), volume and discharge in open channels.

NOTE The range of sites where water levels, and sometimes flow, are measured includes lakes, reservoirs, rivers, canals, tidal waters, sewers, wells, and boreholes.

The document covers metadata associated with hydrometric data, including recommendations for the production and management of descriptive, analytical and statistical material relating to sites where and measuring techniques, by which hydrometric data are collected. The recommendations of this document can be applied to some forms of data directly derived from observational records (for example, summary time series of monthly mean river flows). While not primarily designed for the management of data resulting from more complex numerical models or spatially aggregated data sets (for example, remotely-sensed data), many of the recommendations are applicable for such types of data.

This document does not cover the field collection of data or its transmission, but focuses on the management of data once they have been received in a hydrometric information management system.

## 2 Normative references

The following documents are referred to in the text in such a way that some or all of their content constitutes requirements of this document. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

EN ISO 772, *Hydrometry — Vocabulary and symbols (ISO 772)*

## 3 Terms and definitions

For the purposes of this document, the terms and definitions given in EN ISO 772 and the following apply.

ISO and IEC maintain terminological databases for use in standardization at the following addresses:

- IEC Electropedia: available at <http://www.electropedia.org/>
- ISO Online browsing platform: available at <http://www.iso.org/obp>

### 3.1

#### **data flag**

indicator relating to the quality and characteristics of an observation

### 3.2

#### **derived data**

information calculated, or deduced, from raw data (3.5)

### 3.3

#### **precipitation**

water or ice derived from the atmosphere and deposited at ground level

NOTE Measured in terms of the depth in millimetres (mm) of its liquid equivalent.

### 3.4

#### **quality control**

process of confirming that the data held are a reliable representation of the variable being measured or derived