SLOVENSKI STANDARD
oSIST prEN 15430-3:2026

01-julij-2026

Oprema za vzdrževalna dela zimske službe in službe za vzdrževanje cest - Zajem in prenos podatkov - 3. del: Protokol za prenos podatkov med aplikacijskimi strežniki

Winter and road service area maintenance equipment - Data acquisition and transmission - Part 3: Protocol for data transfer between application servers

Winterdienst- und Straßenbetriebsdienstausstattung - Datenerfassung und -übertragung - Teil 3: Protokoll für den Datentransfer zwischen Client Anwenderservern

Matériels de viabilité hivernale et d'entretien des dépendances routières - Acquisition et transmission des données - Partie 3: Protocole pour le transfert de données entre les serveurs d'application

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ICS:

35.240.60	Uporabniške rešitve IT v prometu	IT applications in transport
43.160	Vozila za posebne namene	Special purpose vehicles

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English Version

Winter and road service area maintenance equipment - Data acquisition and transmission - Part 3: Protocol for data transfer between application servers

Matériels de viabilité hivernale et d'entretien des dépendances routières - Acquisition et transmission des données - Partie 3: Protocole pour le transfert de données entre les serveurs d'application

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This draft European Standard is submitted to CEN members for enquiry. It has been drawn up by the Technical Committee CEN/TC 337.

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European foreword

This document (prEN 15430-3:2026) has been prepared by Technical Committee CEN/TC 337 “Road operation equipment and products”, the secretariat of which is held by AFNOR.

This document is currently submitted to the CEN Enquiry.

This document is part of the series EN 15430 *"Winter and road service area maintenance equipment - Data acquisition and transmission"* which consists of the following parts:

— *Part 1: In vehicle data acquisition*

— *Part 3: Protocol for data transfer between application servers*

A list of all parts in a series can be found on the CEN website: www.cencenelec.eu.

Introduction

This document is the third part of EN 15430, the standard for data acquisition and transmission in the field of municipal vehicles. The goal of EN 15430 is to allow interoperability between systems (hardware and software) of different vendors. A customer should be able to combine:

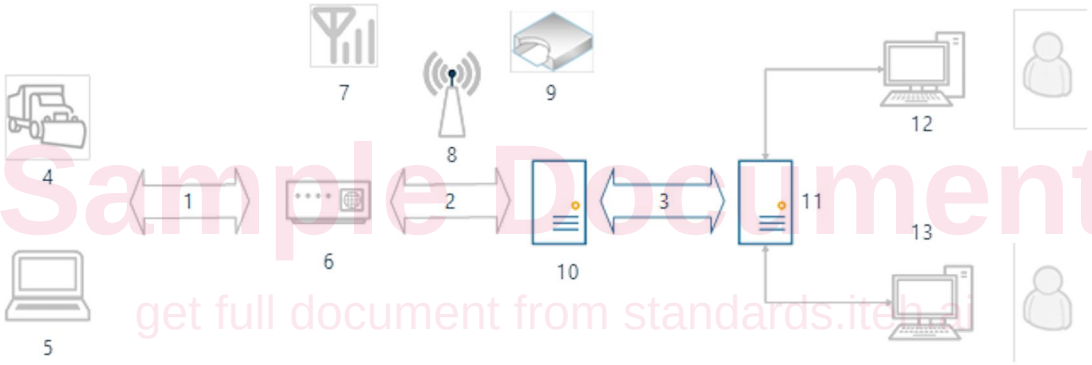
— any equipment (e.g. spreaders and ploughs),

— any data acquisition systems (e.g. board computers or enhanced control boxes),

— any client application software (e.g. data bases, analysing or accounting software),

as long as they follow EN 15430.

EN 15430-1:2024 defines the on-board communication (flow 1) between equipment (data handler) and data acquisition systems (board computer). This document is meant to describe the data structure, types, ranges, protocol and initial settings required by the Producer and Consumer to be able to send data generated by vehicles in near real time to any third-party data client over the internet. Figure 1 represents the whole data flow chain from vehicle to office system.



Key

1	flow 1
2	flow 2
3	flow 3
4	data handler 1
5	data handler n
6	board computer
7	gsm/gprs
8	wlan
9	m-card
10	producer
11	consumer
12	client application 1
13	client application n

Figure 1 — Transmission flow

Data collected is operating data of the vehicles, which contain time information, geo reference data and machine status data. This data is stored in different memories: on the vehicle, in the facility where the vehicles are maintained and in office, where data is retrieved and analysed. Because the collected data is used not only to supervise work contents and results, but also as proof in case of accidents, the integrity and the correctness of the data is important and indispensable.

This document contains seamless integration of mechanisms to deliver data secure from a Producer to a Consumer (flow 3). It does not define any specific rules for items belonging to flow 1 or flow 2. During data transfer between Producer and Consumer, the reduction of data or use of lossy compression methods is not allowed.

Figure 1 defines the interface between devices and board computer, as described in EN 15430-1:2024, and addresses the combination of data from different streams and the transmission to a generic information supplier server. The blue section addresses the data transfer (flow 3) between the Producer and the Consumer and is the purpose of this document.

1 Scope

The function of EN 15430 is to combine any vehicle equipment with different board computers to any client application server.

This document specifies the interface and protocol needed between the information supplier server and the client application server (flow 3 as illustrated in Figure 1) to allow distribution of data without any restrictions to the technology used to gather the data like manufacturer specific protocols, WLANS systems, memory cards, etc.

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 15430-1:2024, *Winter and road service area maintenance equipment — Data acquisition and transmission — Part 1: In-vehicle data acquisition*

ISO 8601-1:2019, *Date and time — Representations for information interchange — Part 1: Basic rules*

3 Terms and definitions

For the purposes of this document, the following terms and definitions apply.

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

— ISO Online browsing platform: available at https://www.iso.org/obp/

— IEC Electropedia: available at https://www.electropedia.org/

3.1
producer
entity able to distribute previously stored vehicle and/or equipment information to Consumers using the interface and protocol described in this document

3.2
consumer
entity able to retrieve the information provided by the *producer* (3.1)

3.3
64-bit Integer
signed integer with a maximum value of 9223372036854775807 and a minimum value of −9223372036854775808

Note 1 to entry: A known issue exists when JavaScript is used as the programming language. Guidance on how to address this issue is provided in Annex D.

[SOURCE: https://en.wikipedia.org/wiki/Integer_(computer_science)]

4 Abbreviated terms

For the purposes of this document, the following abbreviations apply.

ASCII American national Standard Code for Information Interchange

API Application Programming Interface

HTTP Hyper Text Transfer Protocol

HTTPS Hyper Text Transfer Protocol Secure

JSON JavaScript Object Notation

REST Representational state transfer

RFC Request For Comments

UTC Coordinated Universal Time

WAN Wide Area Network

5 System overview

5.1 General

A system is built of one or more Producers connected to one or more Consumers. See Figure 2.

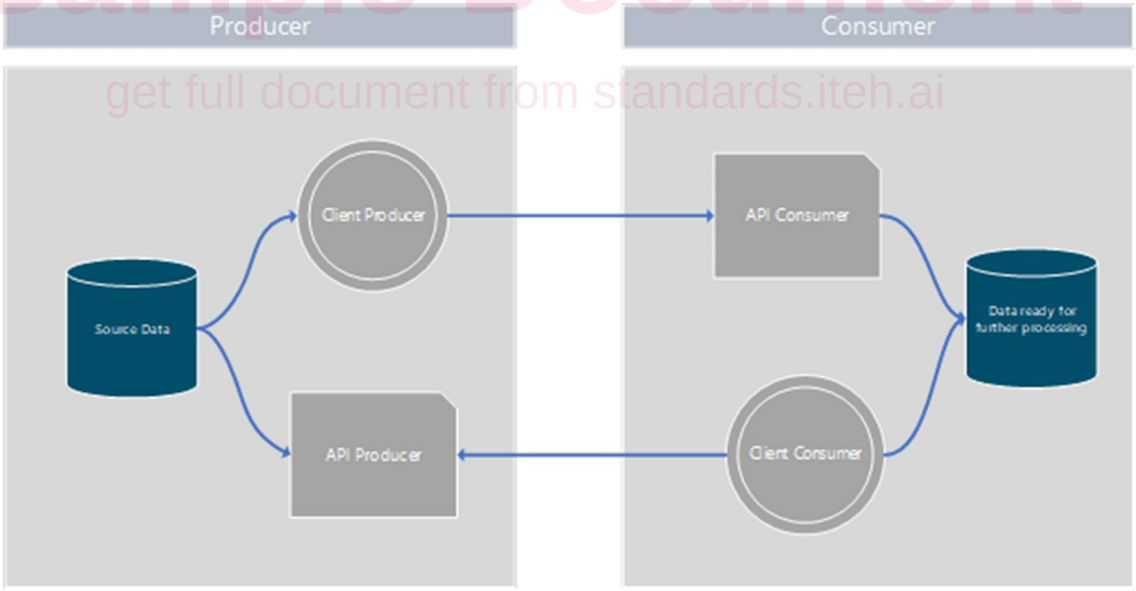


Figure 2 — System overview

Each Consumer and Producer should have an Application Programming interface (API) that listens to and handles configuration and other messages, and a client that dispatches messages to its corresponding API. Together they form a DataExchange system.

The API should be REST-web services. The protocol used is JSON (ECMA-4-4) over HTTPS. Data should be provided in EN 15430-1 format converted to JSON enhanced with meta info like unique and record identifier.

The Consumers client should connect to the Producers API to manage configuration information and complete (missing) data.

The Producer's API should provide an interface to manage configuration information and to get data.

The Producer's client should Post (push) new data to the Consumer's API.

The Consumer's API should provide an interface to receive new data.

With this data exchange system (from here on called DataExchange) it is possible to stream data to partner systems. It is a one-way data stream.

When configuring API and client systems to assume both the Consumer and the Producer roles, it is possible to create a two-way system.

A Keep-Alive Message shall be posted every minute to the Consumer. A Keep-Alive message is a message with serialNumberId 1 and does not contain EN 15430 data. Using this Keep-Alive Message, the Consumer can check if the post mechanism is running. If no Keep-Alive messages are received, the Consumer shall switch to a get mechanism, and the Consumer shall notify the support parties.

5.2 Flow

5.2.1 Normal operation flow

Normal operational flow is shown in the following sequence diagram. See Figure 3.

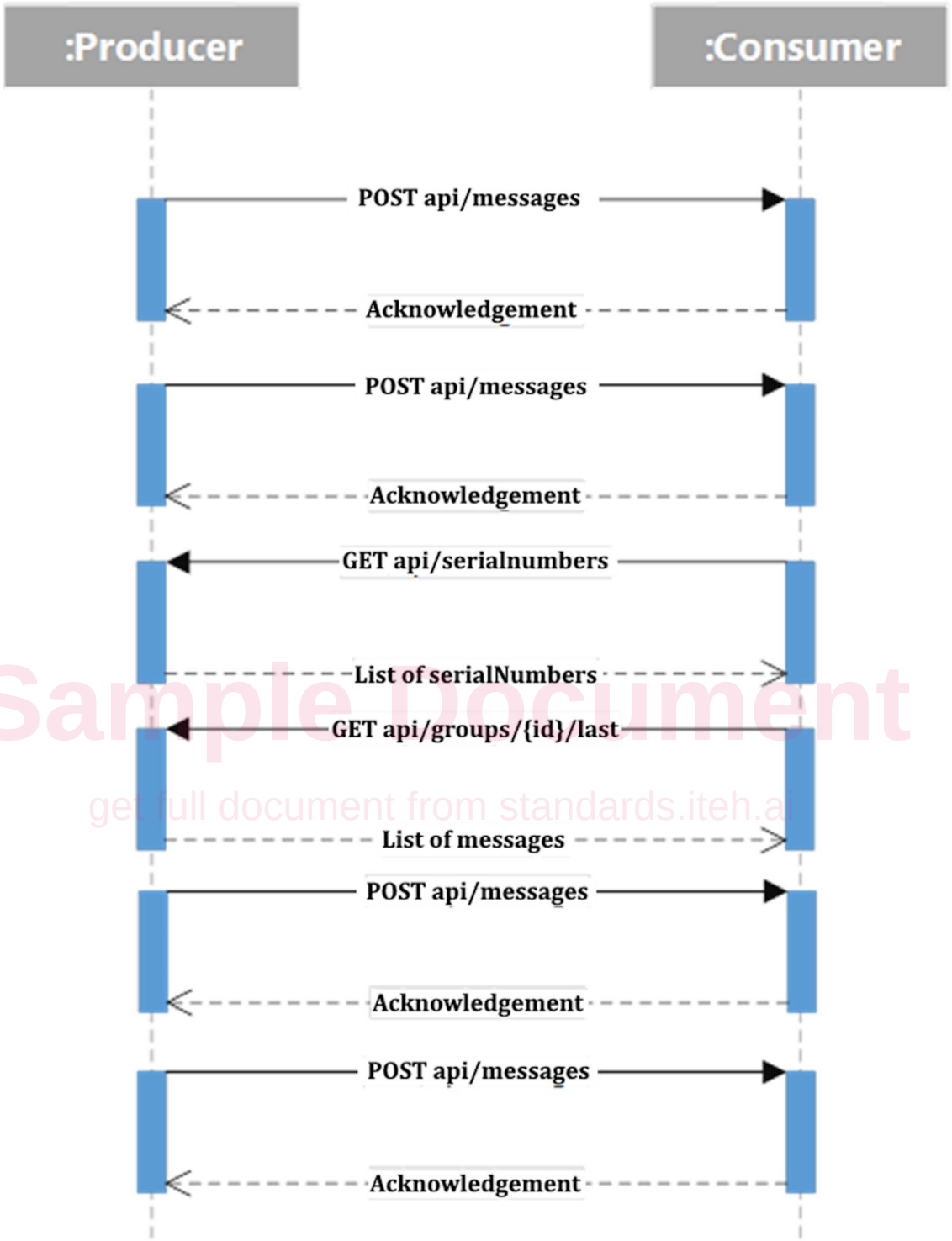


Figure 3 — Normal operation flow

New data should be posted by the Producer's client at a maximum rate of once per second. When there is no new data, there should be no posts. The Consumer's API should check the id for gaps in the data flow and other parameters of the data and store/process it. New data should only be posted once. At most every minute, the Consumer's client process requests the last messages for all the serial numbers it is expecting data from and checks if all data is complete.

At most once per minute, and should be once every hour or even once a day, the Consumer's client process requests if there are any new serial numbers available.

5.2.2 Missing messages detected flow

In case the Consumer's API detects data is missing, normal flow is interrupted. See Figure 4.

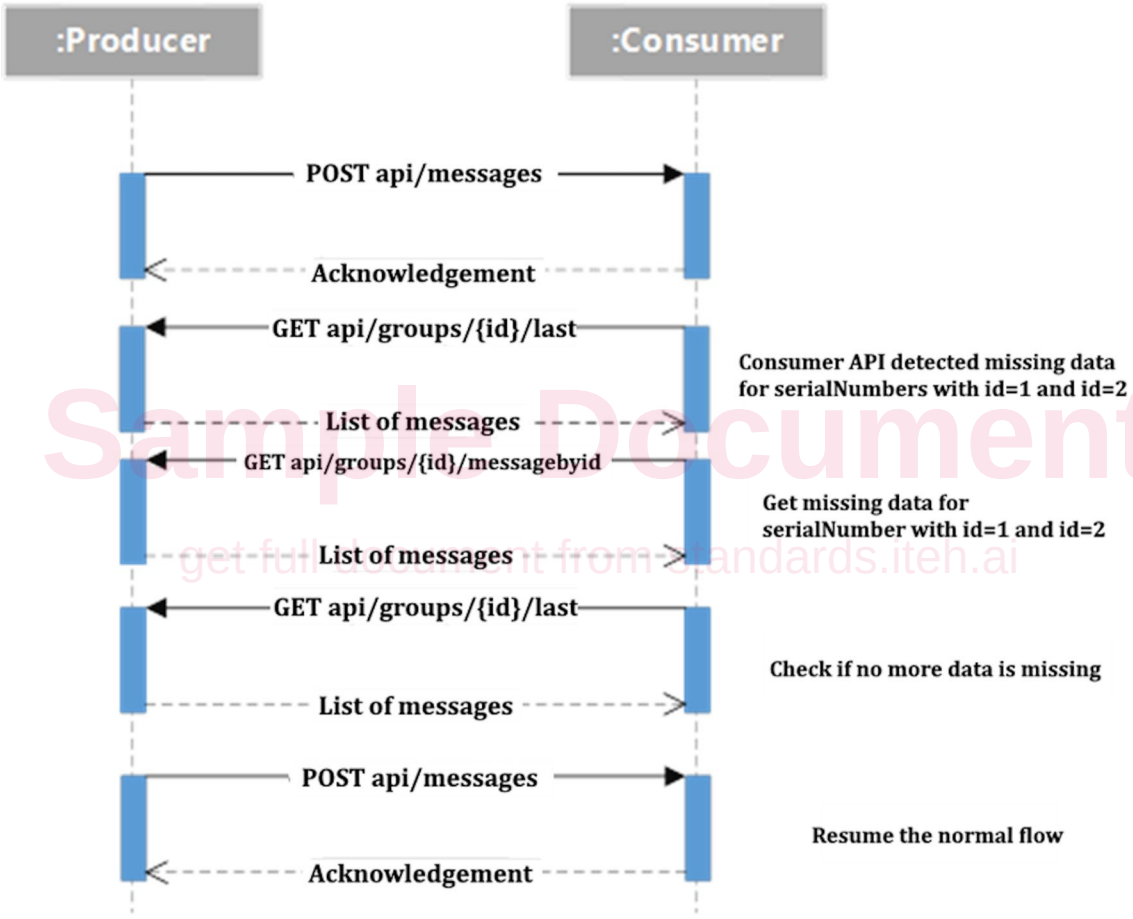


Figure 4 — Missing messages detected flow

The completeness of the data shall be ensured by the Consumer (see Annex E for examples).

5.2.3 A new serial number is available flow

In case the Consumers client detects that a new serial number is available for message retrieval, normal program flow is not interrupted. The following sequence diagram shall apply. See Figure 5.