ICS 35.240.60, 43.160 SLOVENSKÁ TECHNICKÁ NORMA Február 2025

STN	**Údržbárske zariadenia zimnej a cestnej služby Zber dát a ich prenos Časť 1: Zber dát vo vozidle**	**STN EN 15430-1 30 3352**

Winter and road service area maintenance equipment - Data acquisition and transmission - Part 1: In-vehicle data acquisition

Táto norma obsahuje anglickú verziu európskej normy.
This standard includes the English version of the European Standard.

Táto norma bola oznámená vo Vestníku ÚNMS SR č. 01/25

Obsahuje: EN 15430-1:2024

Oznámením tejto normy sa ruší
STN EN 15430-1 (30 3352) z februára 2016

139975

EUROPEAN STANDARD
NORME EUROPÉENNE
EUROPÄISCHE NORM

EN 15430-1

December 2024

ICS 35.240.60; 43.160 Supersedes EN 15430-1:2015

English Version

Winter and road service area maintenance equipment - Data acquisition and transmission - Part 1: In-vehicle data acquisition

Matériels de viabilité hivernale et d'entretien des dépendances routières - Acquisition et transmission des données - Partie 1 : Acquisition des données véhiculaires

Winterdienst- und Straßenbetriebsdienstausstattung - Datenerfassung und -übertragung - Teil 1: Datenerfassung im Fahrzeug

This European Standard was approved by CEN on 23 September 2024.

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This European Standard exists in three official versions (English, French, German). A version in any other language made by translation under the responsibility of a CEN member into its own language and notified to the CEN-CENELEC Management Centre has the same status as the official versions.

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EUROPEAN COMMITTEE FOR STANDARDIZATION
COMITÉ EUROPÉEN DE NORMALISATION
EUROPÄISCHES KOMITEE FÜR NORMUNG

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Ref. No. EN 15430-1:2024 E

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European foreword

This document (EN 15430-1:2024) has been prepared by Technical Committee CEN/TC 337 "Road operation equipment and products", the secretariat of which is held by AFNOR.

This European Standard shall be given the status of a national standard, either by publication of an identical text or by endorsement, at the latest by June 2025, and conflicting national standards shall be withdrawn at the latest by June 2025.

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.

This document supersedes EN 15430-1:2015.

The following changes have been implemented in this new edition:

— Multiple corrections and clarifications;

— Replaced ASCII with extended ASCII, Basic Date notes, correction of typing errors;

— Excluded semicolon from the STRING_X specification;

— Added ManufVersion to the general variables;

NOTE 1 This allows distinguishing between different interpretations of the manufacturer.

— Changed type of GeoAlt to allow negative altitudes;

— Added MaxVehSpd indicating the maximum speed over the last period;

NOTE 2 This allows a more precise interpretation of the spread amount.

— Both SprCntBrineL and SprCntBrineKg are mandatory;

NOTE 3 Both are needed for the data processing systems, but only mandatory one is removed.

— Added Weight system data record;

NOTE 4 Allowing transmission of weight data collected by weighing cells.

— Several corrections on the sweeper variables and the sweeper data record.

Any feedback and questions on this document should be directed to the users' national standards body. A complete listing of these bodies can be found on the CEN website.

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

Introduction

The protocol described in this document is meant to be used for data acquisition in fleet management applications in the field of municipal vehicles. The purpose of the protocol is to define how data of a vehicle or equipment is generated, stored and transferred to a board-computer system in the vehicle and from the board-computer to the software application in the office (refer to Figure 1). On the equipment or vehicle the data is generated by a “Data generator”. This data is stored, if present, into a buffer-memory. The “Data transmission handler” will send the data present in the buffer-memory to the “Board-computer” or “Data Acquisition System”. The buffer-memory is there to ensure that data does not get lost in case there is no transmission possible. The size or type of the buffer is not defined in this proposal. If there is no buffer or the buffer is too small to store new data, data will get lost.

To synchronize time-stamps of the vehicle/equipment with the Board-computer, a special record for time synchronization is defined.

In this part, the data acquisition and communication from vehicle/equipment to the Board-computer is defined.

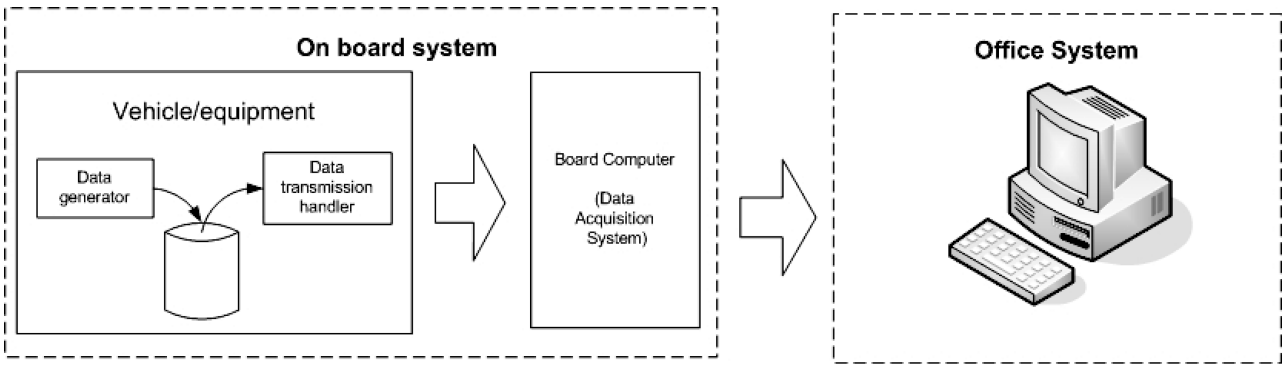

Figure 1 — Architecture

In general, the data is a semi-colon (“;”) separated extended ASCII text for separation of record codes and values of variables. CR+LF is used for separation of records (one record is one line of text).

Examples of an on-board system configuration.

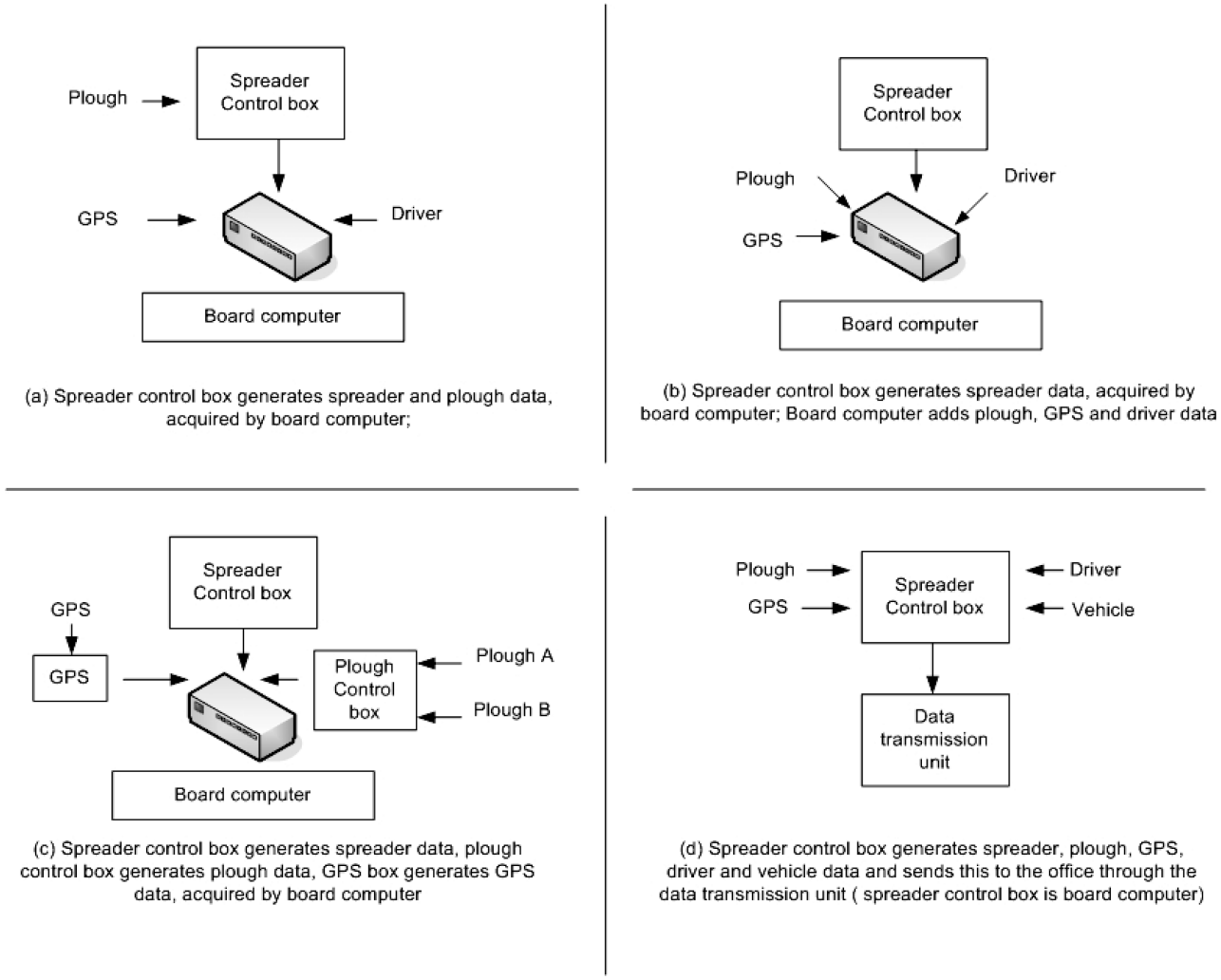

Figure 2 — Diagram of possible connections

1 Scope

This document specifies a protocol for downloading data from the control box of the equipment to an in-vehicle board computer to ensure interchangeability between a vehicle and different equipment that the same vehicle can carry.

It specifies the interface connection as well as variables, records and reports which permit the protocol to cover applications with the greatest possible variety of equipment for performing winter maintenance and road service area maintenance.

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.

ISO/IEC 8859-1, *Information technology — 8-bit single-byte coded graphic character sets — Part 1: Latin alphabet No. 1*

NMEA 0183, *Interface Standard*

TIA-232-F, *Interface between data terminal equipment and data circuit-terminating equipment employing serial binary data interchange (RS232)*

SAE J1939/71, *Recommended practice for serial control and communications vehicle network — Vehicle application layer*