INTERNATIONAL STANDARD

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Tractors and machinery for agriculture and forestry — Serial control and communications data network —

Part 8: Power train messages

Tracteurs et matériels agricoles et forestiers — Réseaux de commande et de communication de données en série —

Partie 8: Messages de gestion de la transmission (boîte de vitesses)

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Foreword

ISO (the International Organization for Standardization) is a worldwide federation of national standards bodies (ISO member bodies). The work of preparing International Standards is normally carried out through ISO technical committees. Each member body interested in a subject for which a technical committee has been established has the right to be represented on that committee. International organizations, governmental and non-governmental, in liaison with ISO, also take part in the work. ISO collaborates closely with the International Electrotechnical Commission (IEC) on all matters of electrotechnical standardization.

International Standards are drafted in accordance with the rules given in the ISO/IEC Directives, Part 2.

The main task of technical committees is to prepare International Standards. Draft International Standards adopted by the technical committees are circulated to the member bodies for voting. Publication as an International Standard requires approval by at least 75 % of the member bodies casting a vote.

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

ISO 11783-8 was prepared by Technical Committee ISO/TC 23, *Tractors and machinery for agriculture and forestry*, Subcommittee SC 19, *Agricultural electronics*.

ISO 11783 consists of the following parts, under the general title *Tractors and machinery for agriculture and forestry — Serial control and communications data network*:

— *Part 1: General standard for mobile data communication*

— *Part 2: Physical layer*

— *Part 3: Data link layer*

— *Part 4: Network layer*

— *Part 5: Network management*

— *Part 6: Virtual terminal*

— *Part 7: Implement messages application layer*

— *Part 8: Power train messages*

— *Part 9: Tractor ECU*

— *Part 10: Task controller and management information system data interchange*

— *Part 11: Mobile data element dictionary*

— *Part 13: File Server*

The following part is under preparation:

— *Part 12: Diagnostics*

Automated functions is to form the subject of a future part 14.

Introduction

Parts 1 to 11 of ISO 11783 specify a communications system for agricultural equipment based on the CAN 2.0 B [1] protocol. SAE J 1939 documents, on which parts of ISO 11783 are based, were developed jointly for use in truck and bus applications and for construction and agriculture applications. Joint documents were completed to allow electronic units that meet the truck and bus SAE J 1939 specifications to be used by agricultural and forestry equipment with minimal changes. This part of ISO 11783 is harmonized with SAE J 1939/81 [2]. General information on ISO 11783 is to be found in ISO 11783-1.

The purpose of ISO 11783 is to provide an open, interconnected system for on-board electronic systems. It is intended to enable electronic control units (ECUs) to communicate with each other, providing a standardized system.

The International Organization for Standardization (ISO) draws attention to the fact that it is claimed that compliance with this part of ISO 11783 may involve the use of a patent concerning the controller area network (CAN) protocol referred to throughout the document.

ISO takes no position concerning the evidence, validity and scope of this patent.

The holder of this patent has assured ISO that he is willing to negotiate licences under reasonable and non-discriminatory terms and conditions with applicants throughout the world. In this respect, the statement of the holder of this patent right is registered with ISO. Information may be obtained from:

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Attention is drawn to the possibility that some of the elements of this part of ISO 11783 may be the subject of patent rights other than that those identified above. ISO shall not be held responsible for identifying any or all such patent rights.

Tractors and machinery for agriculture and forestry — Serial control and communications data network —

Part 8: Power train messages

1 Scope

This part of ISO 11783 specifies a serial data network for control and communications on forestry or agricultural tractors, mounted, semi-mounted, towed or self-propelled implements. Its purpose is to standardize the method and format of transfer of data between sensor, actuators, control elements, information storage and display units whether mounted or part of the tractor, or any implements. This part of ISO 11783 describes the messages required by tractors and self-propelled implements.

2 Normative references

The following referenced documents are indispensable for the application 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 11783-1, *Tractors and machinery for agriculture and forestry — Serial control and communications data network — Part 1: General standard for mobile data communication* [1)]

ISO 11783-7, *Tractors and machinery for agriculture and forestry — Serial control and communications data network — Part 7: Implement messages application layer*

SAE [2)] J 1939/71, *Recommended Practice for Serial Control and Communications Data Network — Part 71: Application Layer*

3 Terms and definitions

For the purposes of this document, the terms and definitions given in ISO 11783-1 apply.

4 Technical requirements

4.1 General

This message set supports the needs of monitoring and control of a power train on a tractor or self-propelled implement.

1) To be published.

2) US Society of Automotive Engineers.

4.2 Message parameter definitions

This part of ISO 11783 references SAE J 1939/71 for the definition of those parameters required for control of a tractor and self-propelled implement's power train. Any parameters defined in SAE J 1939/71 that are also given in ISO 11783-7 shall use the parameter definitions according to ISO 11783-7.

4.3 Message parameter group definitions

This part of ISO 11783 references SAE J 1939/71 for the definition of those parameter groups required for control of a tractor and self-propelled implement's power train. Any parameter groups defined in SAE J 1939/71 that are also given in ISO 11783-7 shall use the parameter group definitions according to ISO 11783-7.

Bibliography

[1] CAN Specification Version 2.0 Part B, Robert Bosch GmbH, September 1991

[2] SAE J 1939/81, *Recommended Practice for Serial Control and Communications Data Network — Part 81: Network Management*

[3] ISO 7498, *Information processing systems — Open Systems Interconnection — Basic Reference Model*

[4] ISO 11519-1, *Road Vehicles — Low-speed serial data communication — Part 1: General and definitions*

[5] ISO 11898, *Road vehicles — Interchange of digital information — Controller area network (CAN) for high-speed communication*

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