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

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

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

*Partie 10: Contrôleur de tâches et échange de données des systèmes
d'information de gestion*



PDF disclaimer

This PDF file may contain embedded typefaces. In accordance with Adobe's licensing policy, this file may be printed or viewed but shall not be edited unless the typefaces which are embedded are licensed to and installed on the computer performing the editing. In downloading this file, parties accept therein the responsibility of not infringing Adobe's licensing policy. The ISO Central Secretariat accepts no liability in this area.

Adobe is a trademark of Adobe Systems Incorporated.

Details of the software products used to create this PDF file can be found in the General Info relative to the file; the PDF-creation parameters were optimized for printing. Every care has been taken to ensure that the file is suitable for use by ISO member bodies. In the unlikely event that a problem relating to it is found, please inform the Central Secretariat at the address given below.

This document is a preview generated by EVS



COPYRIGHT PROTECTED DOCUMENT

© ISO 2009

All rights reserved. Unless otherwise specified, no part of this publication may be reproduced or utilized in any form or by any means, electronic or mechanical, including photocopying and microfilm, without permission in writing from either ISO at the address below or ISO's member body in the country of the requester.

ISO copyright office
Case postale 56 • CH-1211 Geneva 20
Tel. + 41 22 749 01 11
Fax + 41 22 749 09 47
E-mail copyright@iso.org
Web www.iso.org

Published in Switzerland

Contents

Page

Foreword	iv
Introduction.....	v
1 Scope.....	1
2 Normative references.....	1
3 Terms and definitions	1
4 Abbreviations.....	2
5 General description.....	2
5.1 Task management.....	2
5.2 Task management on FMIS computer.....	4
5.3 Preselection and assignment of working sets	4
5.4 Task-controller interface driver	4
5.5 Task-controller user interface.....	4
6 Task-controller requirements.....	5
6.1 Task selection and execution.....	5
6.2 Logging of time and position	5
6.3 Logging parameters from parameter groups	6
6.4 Connection management.....	6
6.4.1 Task-controller initialization.....	6
6.4.2 Working-set initialization with the task controller	6
6.5 Connection management.....	7
6.6 Data exchange on the network	9
6.6.1 Site-specific application	9
6.6.2 Data logging	12
7 Data transfer	14
7.1 General	14
7.2 Extensible Markup Language.....	15
7.3 Extensible schema definition	15
7.4 XML schema definition	16
7.5 XML data transfer files.....	18
7.6 Binary data transfer files	20
7.6.1 General	20
7.6.2 Grid binary file structure.....	20
7.6.3 Log data binary file structure	23
7.7 Device description data	25
Annex A (normative) Device description objects	29
Annex B (normative) Message definitions	36
Annex C (normative) XML elements relationship diagram	48
Annex D (normative) XML elements and attributes	50
Bibliography	101

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 11783-10 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 12: Diagnostics services*
- *Part 13: File server*
- *Part 14: Sequence control*

Introduction

ISO 11783 specifies a communications system for agricultural equipment based on the CAN 2.0 B^[2] protocol. SAE J1939^[3] 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 J1939^[3] specifications to be used by agricultural and forestry equipment with minimal changes.

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:

Robert Bosch GmbH
Wernerstrasse 51
Postfach 30 02 20
D-70442 Stuttgart-Feuerbach
Germany

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 those identified above. ISO shall not be held responsible for identifying any or all such patent rights.

This document is a preview generated by EVS

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

Part 10:

Task controller and management information system data interchange

1 Scope

ISO 11783 as a whole specifies a serial data network for control and communications on forestry or agricultural tractors and mounted, semi-mounted, towed or self-propelled implements. Its purpose is to standardize the method and format of transfer of data between sensors, actuators, control elements and information storage and display units, whether mounted on, or part of, the tractor or implement. This part of ISO 11783 describes the task-controller applications layer, which defines the requirements and services needed for communicating between the task controller and electronic control units. The data format to communicate with the farm-management computer, the calculations required for control and the message format sent to the control function are defined in this part of ISO 11783.

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*

ISO 11783-3, *Tractors and machinery for agriculture and forestry — Serial control and communications data network — Part 3: Data link layer*

ISO 11783-5, *Tractors and machinery for agriculture and forestry — Serial control and communications data network — Part 5: Network management*

ISO 11783-6, *Tractors and machinery for agriculture and forestry — Serial control and communications data network — Part 6: Virtual terminal*

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

ISO 11783-11, *Tractors and machinery for agriculture and forestry — Serial control and communications data network — Part 11: Mobile data element dictionary*

3 Terms and definitions

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