ISO 11783-5:2019 (E)

Tractors and machinery for agriculture and forestry — Serial control and communications data network — Part 5: Network management

Contents

Foreword

Introduction

1 Scope

2 Normative references

3 Terms and definitions

4 Technical requirements

4.1 General
4.2 Address configuration capabilities
4.2.1 General
4.2.2 Non-configurable address
4.2.3 Self-configurable address
4.2.4 Service-configurable address
4.2.5 Command-configurable address
4.3 NAME and address requirements
4.3.1 General
4.3.2 NAME
4.3.3 Address
4.3.3.1 General
4.3.3.2 Preferred address
4.3.3.3 Self-configurable address
4.3.3.4 Initial address
4.3.3.5 NULL address
4.3.3.6 Global address
4.4 Network-management procedures
4.4.1 General
4.4.2 Address-management messages and procedures
4.4.2.1 Address-management-message functions
4.4.2.2 Request-for-address-claimed message
4.4.2.3 Address-claimed message
4.4.2.4 Cannot-claim-source-address message
4.4.2.5 Commanded–address message
4.4.3 NAME management message and procedures
4.4.3.1 General
4.4.3.2 NAME management (NM) message
4.4.3.3 NAME management (NM) message parameters
4.4.3.3.1 NAME checksum/Error code
4.4.3.3.2 Qualifier flags
4.4.3.3.3 NM Control Mode Indicator
4.4.3.3.3.1 General
4.4.3.3.3.2 Mode 0 — Set Pending NAME
4.4.3.3.3.3 Mode 1 — Pending NAME
4.4.3.3.3.4 Mode 2 — Current NAME
4.4.3.3.3.5 Mode 3 — NAME ACK
4.4.3.3.3.6 Mode 4 — NAME NACK
4.4.3.3.3.7 Mode 5 — Request pending NAME
4.4.3.3.3.8 Mode 6 — Request current NAME
4.4.3.3.3.9 Mode 7 — Adopt pending NAME
4.4.3.3.3.10 Mode 8 — Request NAME address claim

4.4.3.3.3.11 Modes 9-15 — Reserved for future use
4.4.3.3.4 Commanded parameters
4.4.3.3.4.1 General
4.4.3.3.4.2 Commanded manufacturer code
4.4.3.3.4.3 Commanded function instance
4.4.3.3.4.4 Commanded ECU instance
4.4.3.3.4.5 Commanded function
4.4.3.3.4.6 Commanded device class
4.4.3.3.4.7 Commanded self-configurable address capable
4.4.3.3.4.8 Commanded industry group
4.4.3.3.4.9 Commanded device class instance
4.4.3.4 NAME management procedures
4.4.3.4.1 NAME management message support
4.4.3.4.2 Set pending NAME
4.4.3.4.3 Adopt Pending NAME
4.4.3.4.4 Verifying NAME Source Address
4.4.3.4.5 Rules for use of the NM message
4.4.4 Network-error management
4.4.4.1 General
4.4.4.2 Unable to claim address
4.4.4.3 Address violation
4.5 Network initialization
4.5.1 Acquisition of a unique address
4.5.2 Address claim requirements
4.5.3 Other basic requirements for initialization
4.5.4 Message sequences
4.5.4.1 Initialization without contention
4.5.4.2 Address-claim prioritization
4.5.4.3 Identical identifiers
4.5.5 CF unable to obtain an address

Annex A (informative) Examples of NAME construction

A.1 ECU serving the engine of a single-engined tractor
A.2 Non-self-configurable ECU serving the ABS system of the first trailer of an on-highway, heavy-duty tractor
A.3 Two agricultural planters connected in a system with separate row guidance on eight individual rows, each of two ECUs
A.4 Address-to-NAME association table

Page count: 30