

ISO/DTS 26048-1.2

ISO/TC 204

ISO/TS 26048-1:2024(en)

Date: 2025-02-01

Secretariat: -ANSI

Date: 2025-04-28

**Intelligent transport systems — Field device Simple Network
Management Protocol (SNMP) data interface — ~~Part 1:~~
~~Global objects~~**

Part 1:
Global objects

*Systèmes de transports intelligents — Interface de données Simple Network Management Protocol (SNMP)
pour les équipements en bord de route terrain —*

Partie 1: objets globaux

ISO/DTS 26048-1.2

<https://standards.iteh.ai/catalog/standards/iso/f9dc43d2-f5b9-43e4-9206-9ca2f756a74b/iso-dts-26048-1-2>

ISO/~~AWI-TS~~DTS 26048-1:2024(2:(en)

© ISO 20242025

All rights reserved. Unless otherwise specified, or required in the context of its implementation, no part of this publication may be reproduced or utilized otherwise in any form or by any means, electronic or mechanical, including photocopying, or posting on the internet or an intranet, without prior written permission. Permission can be requested from either ISO at the address below or ISO's member body in the country of the requester.

ISO copyright office
CP 401 • Ch. de Blandonnet 8
CH-1214 Vernier, Geneva
Phone: + 41 22 749 01 11
E-mail: copyright@iso.org
Website: www.iso.org

Published in Switzerland

iTeh Standards
(<https://standards.iteh.ai>)
Document Preview

ISO/DTS 26048-1.2

<https://standards.iteh.ai/catalog/standards/iso/f9dc43d2-f5b9-43e4-9206-9ca2f756a74b/iso-dts-26048-1-2>

Contents

Foreword viii

1 Scope..... 1

2 Normative references 1

3 Terms and definitions 2

4 Symbols and abbreviated terms 5

5 Conventions and architecture 6

6 User needs..... 14

7 High-level design..... 18

8 Requirements..... 35

9 Dialogues..... 96

10 Security..... 103

Annex A (informative) Conformance 105

Annex B (informative) Management information base (MIB) summary 108

Bibliography 110

Foreword viii

Part 1: Global objects..... 1

1 Scope..... 1

2 Normative references 1

3 Terms and definitions 2

4 Symbols and abbreviated terms 5

5 Conventions and architecture 6

5.1 ISO maintenance portal..... 6

5.2 MIB files 6

5.3 ASN.1 6

5.4 Conformance 7

5.5 SNMP terminology 7

5.6 Architecture..... 7

5.6.1 ITS services..... 7

5.6.2 Functional view of interface 7

5.6.3 Physical view..... 7

5.6.4 Communications view 8

5.7 Constraints..... 9

5.7.1 Table design constraint..... 9

5.7.2 Access constraints 9

5.8 Outline..... 9

5.9 Requirements pattern 9

6 User needs..... 11

6.1 Authenticate users..... 11

6.2 Control access to data 11

6.3 Monitor failed access to the field device 11

6.4 Manage the field device..... 12

6.5	Monitor field device components	12
6.5.1	Monitor ambient environment	12
6.5.2	Monitor field device enclosure	12
6.5.3	Manage enclosure climate control components	12
6.5.4	Monitor field device power	13
6.5.5	Manage auxiliary ports	14
6.6	Receive notification of triggers firing	14
6.7	Manage device-specific notifications	14
6.8	Log system events	14
6.9	Log user-defined data snapshots	14
6.10	Record a series of data snapshots	15
6.11	Issue trigger-based commands	15
6.12	Configure a complex device	15
6.13	Efficient exchange of data	15
6.14	Future user needs	15
6.14.1	Software update	15
6.14.2	Start-up configuration	16
7	High-level design	16
7.1	Authenticate users design overview	16
7.2	Control access to data design overview	16
7.3	Monitor failed access to the field device	17
7.4	Manage the field device design overview	17
7.5	Monitor field device components	17
7.6	Receive notification of triggers firing design overview	17
7.6.1	General	17
7.6.2	Triggers	18
7.6.3	Action selection	18
7.6.4	Notification Factory	19
7.6.5	Notification channel	19
7.7	Manage device-specific notifications design overview	19
7.8	Log system events design overview	19
7.9	Log user-defined data snapshots design overview	20
7.10	Record a series of data snapshots design overview	20
7.11	Issue trigger-based commands design overview	21
7.12	Configure a complex device design overview	22
7.13	Efficient exchange of data design overview	23
7.14	Triggers	23
7.14.1	General	23
7.14.2	Scheduled triggers design overview	23
7.14.3	Day-plan triggers design overview	24
7.14.4	Condition-based triggers design overview	24
8	Requirements	25
8.1	Action feature	25
8.1.1	Action feature definition	25
8.1.2	Action feature data exchange requirements	26
8.1.3	Action feature functional requirements	27
8.2	Clock feature	27
8.2.1	UTC Clock	27
8.2.2	Local clock	29
8.2.3	Daylight saving time	30
8.3	Command feature	30
8.3.1	Command feature definition	30
8.3.2	Command feature data exchange requirements	31

8.3.3	Command feature capability requirements	32
8.3.4	Command feature functional requirements	32
8.4	Conditional trigger feature	32
8.4.1	Conditional trigger feature definition	32
8.4.2	Conditional trigger feature data exchange requirements	32
8.4.3	Conditional trigger feature functional requirements	33
8.4.4	Conditional trigger feature capability requirements	33
8.5	Controller feature	39
8.5.1	Controller feature definition	39
8.5.2	Controller feature data exchange requirements	39
8.5.3	Controller feature capability requirements	41
8.5.4	Controller performance requirements	41
8.6	Day plan feature	41
8.6.1	Day plan feature definition	41
8.6.2	Day plan feature data exchange requirements	41
8.6.3	Day plan feature functional requirements	43
8.7	Dynamic object feature	43
8.7.1	Dynamic object feature definition	43
8.7.2	Dynamic object feature data exchange requirements	43
8.7.3	Dynamic object feature capability requirements	44
8.7.4	Dynamic object feature performance requirements	45
8.8	Field device feature	46
8.8.1	Field device definition	46
8.8.2	General field device features	46
8.8.3	Ambient air temperature	47
8.8.4	Ambient light	48
8.8.5	Ambient relative humidity	48
8.8.6	Auxiliary bi-directional port	48
8.8.7	Auxiliary input port	48
8.8.8	Auxiliary output port	48
8.8.9	Field device air conditioner	49
8.8.10	Field device battery	49
8.8.11	Field device dehumidifier	50
8.8.12	Field device doors	50
8.8.13	Field device fans	50
8.8.14	Field device generator	51
8.8.15	Field device heaters	51
8.8.16	Field device humidity	52
8.8.17	Field device mains power	52
8.8.18	Field device power supply	52
8.8.19	Field device processor temperature	53
8.8.20	Field device solar power	53
8.8.21	Field device temperature	53
8.8.22	Field device thermostat	53
8.8.23	Field device wind power	54
8.9	File feature	54
8.9.1	File feature definition	54
8.9.2	File feature data exchange requirements	54
8.10	Logging feature	54
8.10.1	Logging feature definition	54
8.10.2	Logging feature data exchange requirements	54
8.10.3	Logging feature functional requirements	56
8.10.4	Logging feature capability requirements	56
8.11	Notification feature	57

8.11.1 Notification channel.....	59
8.11.2 Notification factory.....	68
8.11.3 Independent notification.....	69
8.11.4 Notification aggregator.....	70
8.12 Owner feature.....	73
8.12.1 Owner feature definition.....	73
8.12.2 Owner feature data exchange requirements.....	73
8.13 Recording feature.....	74
8.13.1 Recording feature definition.....	74
8.13.2 Recording feature data exchange requirements.....	74
8.13.3 Recording feature capability requirements.....	76
8.13.4 Recording feature functional requirement.....	76
8.14 Scheduled trigger feature.....	76
8.14.1 Scheduled trigger feature definition.....	76
8.14.2 Scheduled trigger feature data exchange requirements.....	76
8.14.3 Scheduled trigger feature functional requirements.....	77
8.14.4 Scheduled trigger feature capability requirements.....	77
8.15 Secure communications feature.....	77
8.15.1 Secure communications feature definition.....	77
8.15.2 Secure communications protocol requirements.....	77
8.15.3 Secure communications conformance requirements.....	78
8.16 SNMP target feature.....	78
8.16.1 SNMP target feature definition.....	78
8.16.2 SNMP target feature data exchange requirements.....	78
8.16.3 SNMP target feature capability requirements.....	79
8.17 Start-up feature.....	79
8.17.1 Start-up feature definition.....	79
8.17.2 Start-up feature data exchange requirements.....	79
8.18 Supplemental roadside sensors and actuators (SRSA) feature.....	80
8.18.1 SRSA feature definition.....	80
8.18.2 SRSA feature data exchange requirements.....	80
8.18.3 SRSA feature capability requirements.....	81
8.18.4 SRSA feature performance requirements.....	81
8.18.5 SRSA feature supplemental requirements.....	82
8.19 System log feature.....	82
8.19.1 System log feature definition.....	82
8.19.2 System log feature data exchange requirements.....	82
8.19.3 System log feature capability requirements.....	83
8.20 System log filter feature.....	83
8.20.1 System log filter feature definition.....	83
8.20.2 System log filter data exchange requirements.....	84
8.21 Transaction feature.....	84
8.21.1 Transaction feature definition.....	84
8.21.2 Transaction feature data exchange requirements.....	84
8.21.3 Transaction feature functional requirements.....	85
8.22 View-based access control model (VACM) feature.....	85
8.22.1 VACM feature definition.....	85
8.22.2 VACM feature data exchange requirements.....	85
9 Dialogues.....	86
9.1 General dialogue rules.....	86
9.1.1 Management station initiated.....	86
9.1.2 SNMP agent performance requirements.....	86
9.1.3 Generic and custom dialogues.....	86
9.2 Generic dialogues.....	86

9.2.1	Get elemental data	86
9.2.2	Set elemental data	86
9.2.3	Walk data	86
9.2.4	Get bulk data	87
9.2.5	Get tabular data	87
9.2.6	Set tabular data	87
9.2.7	Get data column	87
9.2.8	Get counters	87
9.2.9	Get data from dynamic table entry	88
9.2.10	Get row status of dynamic table entry	88
9.2.11	Configure entry of a dynamic table	88
9.2.12	Configure entry of a dynamic table with TestAndIncr	90
9.2.13	Toggle active status of a dynamic table entry	90
9.2.14	Delete entry from a dynamic table	91
9.2.15	Send a notification	91
9.2.16	Retrieve dynamic object data in one step	91
9.2.17	Retrieve dynamic object data in two steps	91
9.2.18	Set dynamic object in one step	92
9.2.19	Set dynamic object data in two steps	92
9.2.20	Retrieve a file	93
9.2.21	Generate a file	93
10	Security	93
10.1	Vulnerabilities	93
10.2	Authentication and access control	94
10.3	Encryption	94
10.4	Security recommendation	94
Annex A	Conformance	95
A.1	Overview	95
A.1.1	General	95
A.1.2	Conformance tables	96
A.1.3	Conformance table references	96
A.2	Conformance codes	96
A.3	Parent items	96
A.4	Qualifiers	97
A.5	Option groups	97
Annex B	Management information base (MIB) summary	98
B.1	Included MIBs	98
B.2	Referenced MIBs	98
Bibliography		115