

ISO/TS 19468:2022-02 (E)

Intelligent transport systems - Data interfaces between centres for transport information and control systems - Platform-independent model specifications for data exchange protocols for transport information and control systems

Contents		Page
	Foreword	vi
	Introduction	viii
1	Scope	1
2	Normative references	1
3	Terms and definitions	1
4	Symbols and abbreviated terms	4
5	Exchange modeling framework	5
5.1	Overview.....	5
5.2	Business scenarios and functional exchange profiles.....	5
5.3	Requirements, features and exchange patterns.....	6
5.4	Business scenario: information delivery.....	7
5.4.1	Overview.....	7
5.4.2	Requirements.....	9
5.4.3	Data delivery exchange pattern.....	9
5.4.4	Specific exchange pattern specification PIMs included in this document.....	9
5.5	Business scenario: collaborative ITS services.....	9
5.5.1	Overview.....	9
5.5.2	Data exchange-enabling service request and feedback paradigm.....	10
5.5.3	Requirements.....	11
5.6	Exchange data model.....	11
5.7	Data exchange features.....	11
5.7.1	Context diagram.....	11
5.7.2	Features.....	12
5.8	Exchange pattern modeling using UML.....	16
6	Snapshot pull	20
6.1	Overview.....	20
6.2	Exchange pattern messages definition.....	21
6.2.1	Overall presentation.....	21
6.2.2	Exchange pattern definition.....	22
6.2.3	Relevant exchange information in exchange data model.....	23
6.2.4	Exchange messages.....	23
6.3	State diagrams.....	23
6.4	Features implementation description.....	23
6.4.1	Overview.....	23
6.4.2	Subscription contract.....	24
6.4.3	Session.....	24
6.4.4	Information management.....	24
6.4.5	Data delivery.....	25
6.4.6	Self-description.....	27
6.4.7	Communication.....	27
6.4.8	General optimization issues.....	27
7	Snapshot push	27
7.1	Overview.....	27
7.2	Exchange pattern messages definition.....	28
7.2.1	Overall presentation.....	28

7.2.2	Basic exchange pattern.....	28
7.2.3	Relevant exchange information in exchange data model.....	29
7.2.4	Exchanged messages.....	30
7.3	State diagrams.....	30
7.4	Features implementation description.....	30
7.4.1	Subscription contract.....	31
7.4.2	Session.....	31
7.4.3	Information management.....	31
7.4.4	Data delivery.....	31
7.4.5	Self-description.....	33
7.4.6	Communication/protocol.....	33
7.4.7	General optimization issues.....	33
8	Simple push.....	33
8.1	Overview.....	33
8.2	Exchange pattern messages definition.....	34
8.2.1	Overall presentation.....	34
8.2.2	Basic exchange pattern.....	35
8.2.3	Relevant exchange information from exchange data model.....	36
8.2.4	List of exchanged messages.....	37
8.3	State diagrams.....	38
8.4	Features implementation description.....	40
8.4.1	Overview.....	40
8.4.2	Subscription contract.....	40
8.4.3	Session.....	40
8.4.4	Information management.....	42
8.4.5	Data delivery.....	42
8.4.6	Self-description.....	43
8.4.7	Communication/protocol.....	43
8.4.8	General optimization issues.....	43
9	Stateful push.....	43
9.1	Overview.....	43
9.2	Exchange pattern messages definition.....	44
9.2.1	Overall presentation.....	44
9.2.2	Basic exchange pattern.....	45
9.2.3	Relevant exchange information from exchange data model.....	47
9.2.4	List of exchanged messages.....	48
9.3	State Diagrams.....	48
9.4	Features implementation description.....	50
9.4.1	Overview.....	50
9.4.2	Subscription contract.....	51
9.4.3	Session.....	51
9.4.4	Information management.....	53
9.4.5	Data delivery.....	53
9.4.6	Self-description.....	54
9.4.7	Communication.....	54
9.4.8	General optimization issues.....	54
10	Simple CIS.....	55
10.1	Overview.....	55
10.2	Exchange pattern and messages definition.....	55
10.2.1	Overall presentation.....	55
10.2.2	Basic exchange pattern.....	56
10.2.3	Relevant exchange information from exchange data model.....	58
10.2.4	Exchanged messages.....	59
10.3	State diagrams.....	60
10.4	Features implementation description.....	61
10.4.1	Overview.....	61
10.4.2	Subscription contract.....	61
10.4.3	Session.....	61
10.4.4	Information management.....	61
10.4.5	Self-description.....	66
10.4.6	Communication/protocol.....	66
11	Stateful CIS.....	66
11.1	Overview.....	66

11.2	Exchange pattern and messages definition.....	67
11.2.1	Overall presentation	67
11.2.2	Basic exchange pattern.....	68
11.2.3	Relevant exchange information from exchange data model.....	70
11.2.4	Exchanged messages	71
11.3	State diagrams.....	73
11.4	Features implementation description	74
11.4.1	Overview	74
11.4.2	Subscription contract.....	75
11.4.3	Session.....	75
11.4.4	Information management.....	75
11.4.5	Self-description.....	76
11.4.6	Communication.....	76
12	Other PIM definitions	76
Annex A	(informative) Methodology presentation.....	77
Annex B	(normative) Definition of requirements	79
Annex C	(normative) Basic exchange data model and data dictionary	84
Annex D	(informative) Introduction to communications and protocols	117
Annex E	(informative) Major functional exchange profile and exchange patterns for information delivery.....	122
Annex F	(informative) Data delivery background: stateless and stateful information with information life cycle management.....	124
Annex G	(informative) Collaborative ITS services (CIS) background	126
Bibliography	139