

ISO 21622-3:2024-03 (E)

Irrigation techniques - Remote monitoring and control for irrigation - Part 3: Interoperability

Contents

Page

Foreword.....	vi
Introduction.....	vi
1 Scope	1
2 Normative reference	1
3 Terms and definitions.....	2
4 Interoperability I: System architecture	4
4.1 Levels and components of an interoperable architecture.....	4
4.2 Interface specifications	6
5 Interoperability II: exchange of data from irrigation entities.....	20
5.1 General outline	20
5.2 Static data of the irrigation entities	20
5.3 Structure of an irrigation entity identifier (EntityID).....	28
5.4 Properties.....	28
5.5 Entity events.....	35
6 Interoperability III: Exchange of data from procedural elements performed in irrigation entities	37
6.1 General outline	37
6.2 Statuses and actions	37
6.3 Types of Operation recipes	37
6.4 Types of Unit Procedure recipes	56
6.5 Types of Procedure recipes	58
6.6 Report	59
6.7 Procedural element events	62
Annex A (normative) Management interface with SOAP 1.2	64
A.1 Overview	64
A.2 Requirements.....	64
A.3 Implementation classes for web services	66
A.4 Implementation classes for authorization server	87
A.5 WSDL	88
Annex B (normative) Subsystem interface with SOAP 1.2	104
B.1 Overview	104
B.2 Requirements.....	104
B.3 Implementation classes for web services	106
B.4 Implementation classes for authorization server	121
B.5 WSDL	122
Annex C (normative) Event interface with SOAP 1.2	135
C.1 Overview	135
C.2 Requirements.....	135
C.3 Implementation classes for web services	137
C.4 Implementation classes for authorization server	140
C.5 WSDL	140

Annex D (informative) Interoperability test protocol.....	144
D.1 Overview.....	144
D.2 General description	144
D.3 IT infrastructure	145
D.4 Test bed description	146
D.5 Test procedure	148
D.6 Tests over subsystems.....	151
D.7 Tests over coordination brokers.....	235
D.8 Tests over management information systems	243
D.9 Tests report.....	245
Annex E (informative) Coordination broker software requirement specifications	247
E.1 Overview	247
E.2 Data model.....	249
E.3 Minimal functions — Coordination broker	255
E.4 Desirable functions	259
E.5 Specific requirements.....	267
E.6 Request management	285
E.7 Cases of use.....	294
Annex F (normative) Management interface with REST	295
F.1 Overview	295
F.2 Requirements	295
F.3 Implementation method for web services	297
F.4 ComplexType definition	307
F.5 Implementation methods for authorization	321
F.6 WADL	322
F.7 ComplexTypeF	325
Annex G (normative) Subsystem interface with REST	334
G.1 Overview	334
G.2 Requirements	334
G.3 Implementation method for web services	336
G.4 ComplexType definition	342
G.5 Implementation methods for authorization	353
G.6 WADL	354
G.7 ComplexTypeG	356
Annex H (normative) Event interface with REST	363
H.1 Overview	363
H.2 Requirements	363
H.3 Implementation methods for web services — NewEvent method	364
H.4 ComplexType definition	365
H.5 Implementation methods for authorization	368
H.6 WADL	369
H.7 ComplexTypeH	370
Bibliography.....	371