ISO 18201:2013-06 (E)

Space data and information transfer systems - Mission operations reference model

Contents

Page

1 INTRODUCTION 1-1

1.1 PURPOSE OF THIS RECOMMENDED PRACTICE 1-1
1.2 SCOPE 1-1
1.3 APPLICABILITY 1-1
1.4 RATIONALE 1-1
1.5 DOCUMENT STRUCTURE 1-1
1.6 DEFINITIONS 1-2
1.7 CONVENTIONS 1-4
1.8 NORMATIVE REFERENCES 1-7

2 MISSION OPERATIONS SERVICE CONCEPT 2-1

2.1 OVERVIEW 2-1
2.2 PATTERNS OF INTERACTION 2-2
2.3 MESSAGE ABSTRACTION 2-2
2.4 MISSION OPERATIONS SERVICES 2-3
2.5 MISSION OPERATIONS FRAMEWORK 2-5
2.6 INTEROPERABILITY, APPLICATION PORTABILITY, AND DEPLOYMENTS 2-6

3 MO CONTEXT AND CONCEPTS 3-1

3.1 OVERVIEW 3-1
3.2 SERVICE CONTEXT 3-1
3.3 SERVICE DECOMPOSITION 3-2
3.4 SERVICE MESSAGES 3-3
3.5 SERVICE DEPLOYMENT 3-4
3.6 SECURITY AND ACCESS CONTROL 3-7
3.7 QUALITY OF SERVICE 3-13
3.8 COMMON OBJECT MODEL 3-19

4 MO ARCHITECTURE MODEL 4-1

4.1 OVERVIEW OF MO ARCHITECTURE MODEL 4-1
4.2 TOP-LEVEL ARCHITECTURE MODEL 4-2
4.3 MO SERVICE ADAPTION LAYER ARCHITECTURE 4-5
4.4 MESSAGE ABSTRACTION LAYER ARCHITECTURE 4-8
4.5 TRANSPORT LAYER ARCHITECTURE 4-14

5 MO SERVICE INTERACTIONS **5-1**

5.1 OVERVIEW 5-1
5.2 SECURITY AND LOGIN 5-1
5.3 SECURITY CHALLENGE 5-2
5.4 INITIAL COMMUNICATION 5-3

ANNEX A DEFINITION OF ACRONYMS (INFORMATIVE) **A-1**
ANNEX B INFORMATIVE REFERENCES (INFORMATIVE) **B-1**

Figure

1-1 Service Extension Drawing Convention 1-5
1-2 Component Drawing Convention 1-5
1-3 Layering Drawing Convention 1-6
2-1 Generic Service Model 2-1
2-2 Complex Service Model Example 2-1
2-3 Service Stack View 2-4
2-4 Example Entity Interoperability 2-7
2-5 Protocol Bridge Example 2-8
2-6 Service Extension Example 2-9
3-1 Basic MO Service Deployment 3-1
3-2 Layered MO Service Decomposition 3-2
3-3 Authentication and Authorisation Sending Sequence 3-10
3-4 Authentication and Authorisation Reception Sequence 3-10
3-5 Security Bridging 3-13
3-6 COM Structure 3-19
4-1 Top-Level MO Service Architecture 4-2
4-2 High-Level Sending Sequence 4-3
4-3 High-Level Reception Sequence 4-4
4-4 MO Service Adaption Layer Architecture 4-5
4-5 MO Service Adaption Layer Sending Sequence 4-6
4-6 MO Service Adaption Layer Reception Sequence 4-7
4-7 MAL Architecture 4-8
4-8 MAL Sending Sequence 4-9
4-9 MAL Reception Sequence 4-11
4-10 Access Control Processing Sequence 4-13
4-11 Transport Layer Architecture 4-14
4-12 Transport Layer Sending Sequence 4-16
4-13 Transport Layer Reception Sequence 4-18

Figure Page

5-1 Login Sequence 5-1
5-2 Security Challenge Sequence 5-2
5-3 Initial Communications Sequence 5-3

Table

3-1 Standard QoS Properties 3-18