

DRAFT INTERNATIONAL STANDARD

ISO/IEC DIS 21000-22

ISO/IEC JTC 1/SC 29

Secretariat: **JISC**

Voting begins on:
2021-01-20

Voting terminates on:
2021-04-14

Information technology — Multimedia framework (MPEG-21) —

Part 22: User Description

Technologies de l'information — Cadre multimédia (MPEG-21) —

Partie 22: Description de l'utilisateur

ICS: 35.040.40

iTeh STANDARD PREVIEW (standards.iteh.ai)

[ISO/IEC DIS 21000-22](#)

<https://standards.iteh.ai/catalog/standards/sist/13b78981-9ca4-42fb-a75b-5606ce2ef748/iso-iec-dis-21000-22>

THIS DOCUMENT IS A DRAFT CIRCULATED FOR COMMENT AND APPROVAL. IT IS THEREFORE SUBJECT TO CHANGE AND MAY NOT BE REFERRED TO AS AN INTERNATIONAL STANDARD UNTIL PUBLISHED AS SUCH.

IN ADDITION TO THEIR EVALUATION AS BEING ACCEPTABLE FOR INDUSTRIAL, TECHNOLOGICAL, COMMERCIAL AND USER PURPOSES, DRAFT INTERNATIONAL STANDARDS MAY ON OCCASION HAVE TO BE CONSIDERED IN THE LIGHT OF THEIR POTENTIAL TO BECOME STANDARDS TO WHICH REFERENCE MAY BE MADE IN NATIONAL REGULATIONS.

RECIPIENTS OF THIS DRAFT ARE INVITED TO SUBMIT, WITH THEIR COMMENTS, NOTIFICATION OF ANY RELEVANT PATENT RIGHTS OF WHICH THEY ARE AWARE AND TO PROVIDE SUPPORTING DOCUMENTATION.

This document is circulated as received from the committee secretariat.



Reference number
ISO/IEC DIS 21000-22:2021(E)

© ISO/IEC 2021

iTeh STANDARD PREVIEW (standards.iteh.ai)

[ISO/IEC DIS 21000-22](#)

<https://standards.iteh.ai/catalog/standards/sist/13b78981-9ca4-42fb-a75b-5606ce2ef748/iso-iec-dis-21000-22>



COPYRIGHT PROTECTED DOCUMENT

© ISO/IEC 2021

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
Fax: +41 22 749 09 47
Email: copyright@iso.org
Website: www.iso.org

Published in Switzerland

Copyright notice

This ISO document is a working draft or committee draft and is copyright-protected by ISO. While the reproduction of working drafts or committee drafts in any form for use by participants in the ISO standards development process is permitted without prior permission from ISO, neither this document nor any extract from it may be reproduced, stored or transmitted in any form for any other purpose without prior written permission from ISO.

Requests for permission to reproduce this document for the purpose of selling it should be addressed as shown below or to ISO's member body in the country of the requester:

[Indicate the full address, telephone number, fax number, telex number, and electronic mail address, as appropriate, of the Copyright Manager of the ISO member body responsible for the secretariat of the TC or SC within the framework of which the working document has been prepared.]

Reproduction for sales purposes may be subject to royalty payments or a licensing agreement.

Violators may be prosecuted.

**iTeh STANDARD PREVIEW
(standards.iteh.ai)**

[ISO/IEC DIS 21000-22](#)
<https://standards.iteh.ai/catalog/standards/sist/13b78981-9ca4-42fb-a75b-5606ce2ef748/iso-iec-dis-21000-22>

Table of Content

Foreword	xviii
1 Scope	2
2 Normative references	3
3 Terms and definitions	3
3.1 MPEG-21 UD	3
3.2 user description UD	3
3.3 context description CD.....	3
3.4 service description SD	4
3.5 recommendation description RD	4
3.6 user	4
3.7 service	4
3.8 context	4
3.9 application..... iTeh STANDARD PREVIEW	4
3.10 manager..... (standards.itech.ai)	4
3.11 recommendation engine	5
ISO/IEC DIS 21000-22	
4 General description https://standards.itech.ai/catalog/standards/sist/13b78981-9ca4-42fb-a75b-5606ce2ef748/iso-iec-dis-21000-22	5
4.1 commonAttributes	5
4.1.1 Syntax	5
4.1.2 Semantics	5
4.1.3 Examples.....	5
4.2 ValueTypes	5
4.2.1 Syntax	6
4.2.2 Semantics	7
4.2.3 Examples.....	8
4.3 TimeType	8
4.3.1 Syntax	8
4.3.2 Semantics	8
4.3.3 Examples.....	9
4.4 ExtendedTimeType	9
4.4.1 Syntax	9
4.4.2 Semantics	10
4.4.3 Examples.....	11
4.5 LocationType	11

4.5.1	Syntax.....	11
4.5.2	Semantics	11
4.5.3	Examples.....	11
4.6	ClassificationSchemeAliasType.....	12
4.6.1	Syntax.....	12
4.6.2	Semantics	12
4.6.3	Examples.....	13
4.7	ObjectType	13
4.7.1	Syntax.....	13
4.7.2	Semantics	14
4.7.3	Examples.....	14
4.8	InformationAccessUserGroup.....	15
4.8.1	Syntax.....	15
4.8.2	Semantics	15
5	User description	15
5.1	UserDescriptionType	15
5.1.1	Syntax.....	15
5.1.2	Semantics	16
5.2	UserProfileType https://standards.iteh.ai/catalog/standards/sist/13h78981-9ca4-42fb-a75b-5606ce2ef748/iso-iec-dis-21000-22.....	18
5.2.1	Syntax.....	18
5.2.2	Semantics	19
5.2.3	Examples.....	19
5.3	PersonProfileType	19
5.3.1	Syntax.....	19
5.3.2	Semantics	20
5.3.3	Examples.....	20
5.4	OrganizationProfileType.....	20
5.4.1	Syntax.....	20
5.4.2	Semantics	21
5.4.3	Examples.....	21
5.5	DeviceProfileType	21
5.5.1	Syntax.....	21
5.5.2	Semantics	22
5.5.3	Examples.....	22
5.6	GroupedProfileType	22
5.6.1	Syntax.....	22

5.6.2	Semantics	22
5.6.3	Examples.....	23
5.7	UsageHistoryType	23
5.7.1	Syntax	23
5.7.2	Semantics	24
5.7.3	Examples.....	24
5.8	EventType	25
5.8.1	Syntax	25
5.8.2	Semantics	26
5.8.3	Examples.....	26
5.9	InteractionAtomType.....	26
5.9.1	Syntax	26
5.9.2	Semantics	27
5.9.3	Examples.....	28
5.10	ArtefactType	28
5.10.1	Syntax .. iTeh STANDARD PREVIEW	28
5.10.2	Semantics .. (standards.itech.ai)	29
5.10.3	Examples.....	29
5.11	ObservableType.....	29
	<small>https://standards.itech.ai/catalog/standards/sist/13b78981-9ca4-42fb-a75b-5606ce2ef748/iso-iec-dis-21000-22</small>	
5.11.1	Syntax	29
5.11.2	Semantics	30
5.11.3	Examples.....	30
5.12	MultimediaExperienceType.....	31
5.12.1	Syntax	31
5.12.2	Semantics	31
5.12.3	Examples.....	31
5.13	StateType.....	33
5.13.1	Syntax	33
5.13.2	Semantics	34
5.13.3	Examples.....	34
5.14	PreferenceType.....	35
5.14.1	Syntax	35
5.14.2	Semantics	35
5.15	TextPresentationPreferencesType	36
5.15.1	Syntax	37
5.15.2	Semantics	37
5.15.3	Example.....	38

5.16 WebLinkPreferenceType.....	38
5.16.1 Syntax.....	38
5.16.2 Semantics	39
5.16.3 Example	39
5.17 WebLinkUsageHistoryType.....	39
5.17.1 Syntax.....	39
5.17.2 Semantics	40
5.18 ServicePreferenceType	40
5.18.1 Syntax.....	40
5.18.2 Semantics	40
5.18.3 Examples.....	40
5.19 GeneralAudioPreferenceType.....	41
5.19.1 Syntax.....	41
5.19.2 Semantics	42
5.19.3 Examples.....	43
5.20 AudioPresentationPreferencesType.....	43
5.20.1 Syntax.....	43
5.20.2 Semantics	43
5.21 AudioPresentationEnvironmentPreferenceType.....	43
5.21.1 Syntax.....	43
5.21.2 Semantics	44
5.21.3 Examples.....	45
5.22 TranslationPreferencesType	47
5.22.1 Syntax.....	47
5.22.2 Semantics	47
5.22.3 Examples.....	48
5.23 SpeechStylePreferenceType.....	48
5.23.1 Syntax.....	48
5.23.2 Semantics	48
5.24 GenderType.....	48
5.24.1 Syntax.....	49
5.24.2 Semantics	49
5.24.3 Examples.....	49
5.25 EmotionType.....	49
5.25.1 Syntax.....	49
5.25.2 Semantics	50

5.25.3 Examples.....	52	
5.26 ScheduleType.....	52	
5.26.1 Syntax	53	
5.26.2 Semantics	53	
5.27 ScheduleEventType.....	53	
5.27.1 Syntax	53	
5.27.2 Semantics	54	
5.27.3 Examples.....	54	
5.28 ActivityType	54	
5.28.1 Syntax	55	
5.28.2 Semantics	56	
5.28.3 Examples.....	57	
5.29 IntentionType	58	
5.29.1 Syntax	58	
5.29.2 Semantics	58	
5.29.3 Examples.....	58	
5.30 LanguageType	59	
<i>iTeh STANDARD PREVIEW</i>		
5.30.1 Syntax	59	
5.30.2 Semantics	ISO/IEC DIS 21000-22 https://standards.iteh.ai/catalog/standards/sist/13b78981-9ca4-42fb-a75b-5606ce2ef748/iso-iec-dis-21000-22	60
5.30.3 Examples.....	62	
5.31 LanguageCompetenceReferenceType.....	64	
5.31.1 Syntax	64	
5.31.2 Semantics	64	
5.32 CompetenceLevelType	65	
5.32.1 Syntax	65	
5.32.2 Semantics	65	
5.33 AccessibilityType.....	65	
5.33.1 Syntax	66	
5.33.2 Semantics	66	
5.33.3 Examples.....	67	
5.34 SocialInformationType.....	67	
5.34.1 Syntax	67	
5.34.2 Semantics	68	
5.35 KnowledgeType.....	68	
5.35.1 Syntax	68	
5.35.2 Semantics	69	
5.36 ObjectSharingType	71	

5.36.1	Syntax.....	71
5.36.2	Semantics	71
5.36.3	Examples.....	71
5.37	ObjectAccessibilityType.....	72
5.37.1	Syntax.....	72
5.37.2	Semantics	72
5.37.3	Examples.....	72
5.38	UsagePatternType	72
5.38.1	Syntax.....	72
5.38.2	Semantics	73
5.38.3	Examples.....	73
5.39	LoudnessPreferencesType.....	73
5.39.1	Syntax.....	73
5.39.2	Semantics	75
5.40	VisualExpressionType	76
5.40.1	Syntax.....	76
5.40.2	Semantics	78
5.41	BaseUserType	78
5.41.1	Syntax.....	78
5.41.2	Semantics	78
5.42	ConsecutiveVibrationPreferenceType.....	79
5.42.1	Syntax.....	79
5.42.2	Semantics	79
6	Context description	80
6.1	ContextDescriptionType	80
6.1.1	Syntax.....	80
6.1.2	Semantics	81
6.1.3	Examples.....	82
6.2	ContextIdentificationType	82
6.2.1	Syntax.....	82
6.2.2	Semantics	83
6.2.3	Examples.....	83
6.3	DeviceCharacteristicsType	83
6.3.1	Syntax.....	83
6.3.2	Semantics	84
6.3.3	Examples.....	84

6.4 NetworkInfoType	85
6.4.1 Syntax	85
6.4.2 Semantics	85
6.4.3 Examples.....	86
6.5 WeatherType	86
6.5.1 Syntax	86
6.5.2 Semantics	87
6.5.3 Examples.....	88
6.6 OtherEnvironmentalInfoType.....	88
6.6.1 Syntax	89
6.6.2 Semantics	89
6.7 AudioEnvironmentType	89
6.7.1 Syntax	89
6.7.2 Semantics	90
6.8 RecordingEnvironmentType.....	90
6.8.1 Syntax	90
6.8.2 Semantics	90
6.8.3 Examples.....	90
6.9 LoudnessEnvironmentType ISO/IEC DIS 21000-22 https://standards.itech.ai/catalog/standards/sist/13b78981-9ca4-42fb-a75b- 5606ce2ef748/iso-iec-dis-21000-22.....	91
6.9.1 Syntax	91
6.9.2 Semantics	93
6.10 VisualExpressionType.....	94
6.10.1 Syntax	94
6.10.2 Semantics	95
6.11 BaseContextType	96
6.11.1 Syntax	96
6.11.2 Semantics	96
6.12 ContextDescriptionType.....	96
6.12.1 Syntax	96
6.12.2 Semantics	97
7 Sevice description.....	98
7.1 BaseServiceType	98
7.1.1 Syntax	98
7.1.2 Semantics	99
7.2 ServiceDescriptionType	99
7.2.1 Syntax	99

7.2.2	Semantics	100	
7.3	ServiceGeneralInformationType.....	101	
7.3.1	Syntax.....	101	
7.3.2	Semantics	101	
7.4	ServiceTargetInformationType.....	102	
7.4.1	Syntax.....	102	
7.4.2	Semantics	102	
7.5	ServiceTargetModelType	103	
7.5.1	Syntax.....	103	
7.5.2	Semantics	104	
7.6	VocabularySetType	104	
7.6.1	Syntax.....	104	
7.6.2	Semantics	105	
7.7	ServiceInterfacesType.....	105	
7.7.1	Syntax.....	105	
7.7.2	Semantics	iTech STANDARD PREVIEW	
7.8	ServiceInterfaceType	(standards.itech.ai) 105	
7.8.1	Syntax.....	105	
7.8.2	Semantics	ISO/IEC DIS 21000-22 https://standards.itech.ai/catalog/standards/sist/13b78981-9ca4-42fb-a75b-5606ce2ef748/iso-iec-dis-21000-22	106
7.9	RequiredInputDataType.....	106	
7.9.1	Syntax.....	106	
7.9.2	Semantics	106	
7.10	InternalServicesType	106	
7.10.1	Syntax.....	107	
7.10.2	Semantics	107	
7.11	InternalServicesType	107	
7.11.2	Semantics	107	
7.12	AudioDBType.....	108	
7.12.1	Syntax.....	108	
7.12.2	Semantics	109	
7.13	AudioDBDescriptorType.....	109	
7.13.1	Syntax.....	109	
7.13.2	Semantics	109	
7.14	VideoDBType	110	
7.14.1	Syntax.....	110	
7.14.2	Semantics	111	

7.15 VideoDBDescriptorType	111
7.15.1 Syntax	111
7.15.2 Semantics	111
7.16 ServiceObjectType	111
7.16.1 Syntax	111
7.16.2 Semantics	112
7.17 LoudnessInfoType.....	113
7.17.1 Syntax	113
7.17.2 Semantics	114
7.18 VisualExpressionInfoType	114
7.18.1 Syntax	114
7.18.2 Semantics	118
7.19 ConsecutiveVibrationServiceType	119
7.19.1 Syntax	119
7.19.2 Semantics	120
8 Recommendation description	iTeh STANDARD PREVIEW 120
8.1 RecommendationDescriptionType.....(standards.iteh.ai).....	120
8.1.1 Syntax	120
8.1.2 Semantics	121
8.2 compactUsageDescriptionType	122
8.2.1 Syntax	122
8.2.2 Semantics	123
8.2.3 Example.....	123
8.3 QueryDescriptionType.....	124
8.3.1 Syntax	124
8.3.2 Semantics	124
8.4 ProcessChainType	125
8.4.1 Syntax	125
8.4.2 Semantics	125
8.5 RecommendationInformationType.....	126
8.5.1 Syntax	126
8.5.2 Semantics	126
8.6 RecommendableResourceType.....	127
8.6.1 Syntax	127
8.6.2 Semantics	128
8.7 Resource.....	128

8.7.1	Syntax.....	128
8.7.2	Semantics	129
8.8	resourceUsageType.....	129
8.8.1	Syntax.....	129
8.8.2	Semantics	129
8.9	clusteringType	130
8.9.1	Syntax.....	130
8.9.2	Semantics	131
8.10	genericClusteringType	131
8.10.1	Syntax.....	131
8.10.2	Semantics	132
8.11	hierarchicalClusteringType.....	132
8.11.1	Syntax.....	132
8.11.2	Semantics	133
8.12	SequentialClusteringType	133
8.12.1	Syntax.....	133
8.12.2	Semantics	133
8.13	costFunctionMinimisationClusteringType	134
8.13.1	Syntax.....	134
8.13.2	Semantics	134
8.14	clusterStructureType	134
8.14.1	Syntax.....	134
8.14.2	Semantics	135
8.15	genericAggregateType	136
8.15.1	Syntax.....	136
8.15.2	Semantics	136
8.16	setMemberType	136
8.16.1	Syntax.....	136
8.16.2	Semantics	137
8.17	orderedSetMemberType	137
8.17.1	Syntax.....	137
8.17.2	Semantics	138
8.18	genericSetType.....	138
8.18.1	Syntax.....	139
8.18.2	Semantics	139
8.19	labelledSetType.....	139

8.19.1 Syntax	139
8.19.2 Semantics	140
8.20 orderedSetType.....	141
8.20.1 Syntax	141
8.20.2 Semantics	141
8.21 equivalenceSetType.....	141
8.21.1 Syntax	142
8.21.2 Semantics	142
8.22 linkageSetType	142
8.22.1 Syntax	142
8.22.2 Semantics	143
8.23 Member	143
8.23.1 Syntax	143
8.23.2 Semantics	143
8.24 OrderedMember	143
8.24.1 Syntax iTeh STANDARD PREVIEW	143
8.24.2 Semantics (standards.itech.ai)	144
8.25 queryClauseType.....	144
8.25.1 Syntax https://standards.itech.ai/catalog/standards/sist/13b78981-9ca4-42fb-a75b-5606ce2ef748/iso-iec-dis-21000-22	144
8.25.2 Semantics	145
8.25.3 Example.....	146
8.26 ORqueryClauseType	146
8.26.1 Syntax	146
8.26.2 Semantics	146
8.27 ANDqueryClauseType	147
8.27.1 Syntax	147
8.27.2 Semantics	147
8.28 LoudnessControlType	147
8.28.1 Syntax	147
8.28.2 Semantics	148
8.29 VisualExpressionType.....	148
8.29.1 Syntax	148
8.29.2 Semantics	149
9 Reference software	149
9.1 General	149
9.2 Development environment	149

9.3 Structure of reference software.....	150
9.4 Reference software classes and method	150
9.4.1 General	150
9.4.2 Encoder	150
9.4.3 Decoder.....	151
9.4.4 Validator	152
9.5 Example using the encoder	152
9.6 Example using the decoder	153
9.7 Example of the validator for reference software.....	153
10 Implementation guidelines	154
10.1 Application 1: Remote Responsive User Interface	154
10.1.1 General	154
10.1.2 Workflow	155
10.1.3 Validation	155
10.2 Application 2: Lossless audio service.....	157
10.2.1 General	157
10.2.2 Workflow	157
10.2.3 Validation	157
10.3 Application 3: Visual communication system.....	159
10.3.1 General	159
10.3.2 Workflow	159
10.3.3 Validation	160
10.4 Application 4: Translation preferences	161
10.4.1 General	161
10.4.2 Workflow	162
10.4.3 Validation	162
10.5 Application 5: Recommending multimedia services.....	163
10.5.1 General	163
10.5.2 Workflow	164
10.5.3 Validation	164
10.6 Application 6: User-centric application personalization in a Cloud	165
10.6.1 General	165
10.6.2 Workflow	165
10.6.3 Validation	166
11 References	167