

ISO 24617-1:2012-01 (E)

Language resource management - Semantic annotation framework (SemAF) - Part 1: Time and events (SemAF-Time, ISO-TimeML)

Contents		Page
Foreword		vi
Introduction		vii
1	Scope	1
2	Normative references	1
3	Terms and definitions	1
4	Overview	4
5	Motivation and requirements	4
6	Basic concepts and metamodel	5
7	Specification of ISO-TimeML	8
7.1	Overview	8
7.2	Abstract syntax	8
7.2.1	Introduction	8
7.2.2	Conceptual inventory	9
7.2.3	Syntax rules	9
7.3	Concrete XML-based syntax	10
7.3.1	TimeML vs. ISO-TimeML: Stand-off annotation and other differences	10
7.3.2	Naming conventions	12
7.3.3	Example annotations	12
7.3.4	Basic elements: <EVENT>, <TIMEX3>, and <SIGNAL>	12
7.3.5	Link elements: <TLINK>, <SLINK>, <ALINK> and <MLINK>	18
7.3.6	Other tags: <CONFIDENCE>, <CERTAINTY> and <ISO-TimeML>	22
8	Towards a semantics for ISO-TimeML	26
8.1	Overview	26
8.2	Tense and aspect in language	26
8.2.1	Tense	26
8.2.2	Aspect	26
8.3	Temporal relations	27
8.4	An interval-based semantics for ISO-TimeML	28
8.4.1	Technical preliminaries for interval temporal logic	28
8.4.2	Basic event-structure	29
8.4.3	The interpretation of <TIMEX3>	31
8.4.4	Interpretive rule summary	36
8.5	An event-based semantics for ISO-TimeML	37
8.5.1	Introduction	37
8.5.2	Defining an event-based semantics	38
Annex A (normative)	Core annotation guidelines	41
A.1	Introduction	41
A.2	ISO-TimeML elements and their attributes	41
A.2.1	The <EVENT> element	41
A.2.2	The <TIMEX3> element	48

A.2.3	The <SIGNAL> element	55
A.3	The link elements: <TLINK>, <SLINK>, <ALINK> and <MLINK>	56
A.3.1	Overview	56
A.3.2	The <TLINK> element	56
A.3.3	The <SLINK> element	59
A.3.4	The <ALINK> element	61
A.3.5	The <MLINK> element	62
Annex B (informative) Completely annotated examples		63
B.1	Complex TIMEX3 examples	63
B.2	Complex TLINK and SLINK examples	64
B.3	Causative examples	67
Annex C (informative) Event and temporal annotations for Chinese		68
Annex D (informative) Annotation for Italian fragment		74
D.1	Introduction	74
D.2	Basic references	74
D.3	ISO-TimeML elements and their attributes	74
D.3.1	How to annotate EVENTS	74
D.3.2	Event identification and tag span	75
D.3.3	What NOT to tag	78
D.3.4	Introductory note	78
D.4	The <SIGNAL> element	81
D.5	The link tags	82
D.6	Informative: Examples of tense, aspect and mood annotation in Italian	82
D.7	Sample of Italian annotation	84
Annex E (informative) Temporal annotation of predicates in Korean		89
E.1	Introduction	89
E.2	Basic references	89
E.3	Morphology of Korean predicates	89
E.4	Temporal structure: informative	91
E.5	Temporal annotation of non-Latin texts	92
E.6	Tense	93
E.6.1	Tense markers	93
E.6.2	Annotation guidelines for the attribute @tense	95
E.6.3	Contextual interpretation of tense	96
E.7	Aspect	114
E.7.1	Aspect markers	114
E.7.2	Annotation of aspect markers	115
E.7.3	Interpretation of aspectual features	116
E.7.4	Interpretation conditions of aspect	118
E.8	Modality	118
E.8.1	Conjectural modal markers	118
E.8.2	Annotation of modality CONJECTURAL	119
E.8.3	Interpretation of modality CONJECTURAL	120
E.9	Mood	120
E.9.1	Mood markers	120
E.9.2	Annotation of mood RETROSPECTIVE	121
E.9.3	Interpretation of RETROSPECTIVE mood	122
E.10	Specific values for <EVENT> attributes in Korean	122
E.11	Summary	122
Annex F (informative) Past and current activities on temporal and event annotation		124
F.1	Introductory remarks	124
F.2	Annotating temporal expressions	124
F.3	Annotating events	125

F.4	Annotating relations between times and events	127
F.4.1	Ways of capturing time-event relational information	127
F.4.2	Subordinating and aspectual relations	129
Annex G (informative) Tools and templates		130
G.1	Overview	130
G.2	Annotation tools and templates	130
G.2.1	Overview	130
G.2.2	The ALEMBIC workbench	131
G.2.3	The CALLISTO toolkit	131
G.2.4	The TANGO temporal relation editor	131
G.3	Analytic tools	132
G.3.1	Overview	132
G.3.2	The TARSQI toolkit	132
G.3.3	The IBM TimeML annotator	133
G.3.4	The Amsterdam temporal component extractor	133
G.3.5	The Time Calculus analyser	133
Annex H (normative) Specification		134
H.1	Requirement	134
H.2	Attribute classes	134
H.2.1	att.anchored	134
H.2.2	att.annotate	135
H.2.3	att.id	135
H.2.4	att.lang	135
H.2.5	att.linguistic	136
H.2.6	att.pointing	138
H.2.7	att.typed	138
H.3	Elements	139
H.3.1	<ALINK>	139
H.3.2	<CONFIDENCE>	139
H.3.3	<EVENT>	140
H.3.4	<MLINK>	141
H.3.5	<SIGNAL>	141
H.3.6	<SLINK>	142
H.3.7	<TIMEX3>	143
H.3.8	<TLINK>	145
H.3.9	<div>	146
H.3.10	<isoTimeML>	146
H.3.11	<s>	146
H.3.12	<w>	146
Bibliography		147