

Proposal for the Structure and Content of the Body of an OLIF2 File

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1 General

The original structure of an OLIF file, as defined for the OTELO project, was characterised by a *header*, which contained data that was relevant to all of the lexical/terminological entries in the file, and the *body*, which contained the entries themselves. We propose to maintain this basic structure in OLIF2 with only minor changes.

In this document, we present a description of the proposed structure and content of the body of the OLIF2 file. For the consortium proposal on the OLIF2 file header, see Christian Lieske's updated proposal documents for OLIF2 administrative features and DTD.

2 The Structure of the Body of an OLIF2 File¹

The body of an OLIF2 file is a list of entries that contain data that is grouped according to the linguistic/lexical/terminological character of the information being represented. The groups are sub-lists of feature/value pairs (represented in XML as tags that reflect the element types, attributes, and values defined in the XML schema). An OLIF2 entry is structured as a monolingual entry with optional links to represent cross-reference and transfer relations. Accordingly, the proposed groups for an OLIF2 entry are:

- **monolingual:** defines monolingual data.
- **cross-reference:** defines cross-reference relations between the given entry and other entries in the lexicon in the same language.
- **transfer:** defines bilingual transfer relations between the given entry and other entries in the lexicon in different languages.

(Following the proposal of Sail Labs, the **allo** group, which explicitly defined allomorphic variants in the original OTELO OLIF, has been eliminated. In its place in OLIF2 is a more comprehensive analysis in which allomorphic variation is subsumed under inflection class coding (see section 3.2.2.2).)

The OLIF2 entry is itself defined as a semantic unit that is identified uniquely by a set of five features:

- **canonical form:** the entry string, represented in canonical form in accordance with OLIF2 guidelines (to be published in conjunction with SALT).
- **language:** the language represented by the entry string.
- **part of speech:** the part of speech, or word class, represented by the entry string.
- **subject field:** the knowledge domain to which the lexical/terminological entry is assigned.
- **semantic reading:** the semantic class identifier used to distinguish readings for entries with identical values for *canonical form*, *language*, *part of speech*, and *subject field*.

As with the original OLIF, this set of features is required in the monolingual group of the entry in order to identify the entry itself. In addition, it is used as well in the cross-reference group of the entry (with the exception of the *language* feature²) in order to identify the entry that is pointed to in the cross-reference relation, and in the transfer group of the entry, in order to identify the entry that is pointed to in a transfer relation.

¹ Section 2 is adapted from the Sail labs proposal submitted to the consortium on 15.6.2000 by Gregor Thurmair.

² For the cross-reference group, the feature *language* is not required since cross-reference relations are defined as intralingual links.

Since the specification of cross-reference and transfer links are optional, a minimal well-formed OLIF2 entry contains a monolingual group with the obligatory features *canonical form*, *language*, *part of speech*, *subject field*, and *semantic reading*.

The proposed structure of the OLIF2 entry maintains the straightforwardness of the first version of OLIF, the purpose of which was to facilitate the description of a lexical/terminological entry to the extent that an NLP vendor such as Logos or Sail Labs can generate a basic, usable entry of its own from an OLIF record.

3 The Content of OLIF2 Entries

Features and values for OLIF2 are referred to in the tables and descriptions that follow as **element types** (or **elements**) and **values**, in accordance with the conventions defined for XML. Element names are, where possible, coordinated with the names of Martif data categories (ISO 12620), and generally follow Martif naming conventions.

3.1 Table of Element Types

The elements listed in the following table comprise the proposed set of elements available to the user for specifying an OLIF2 entry. The values associated with these elements are described in Section 3.3 of this document. (Please note that header elements are described separately as part of the technical group's proposal.)

Please note:

- Within an OLIF2 entry, element/value pairs may theoretically be listed in any order within the group tags that delimit them.
- The current proposal specifies that the following elements may appear 'zero or more' times within a group: *project*, *product*, *depSynonym*, *abbrev*, *orthvar*, *company*, *note*, *example*, *usage*

Element group	Element name	Description
<i>Basic:</i> <i>Obligatory</i>		The basic elements are those elements that are required for a minimal well-formed OLIF2 entry.
	<entry>	The entry element delimits the OLIF entry.
	<mono>	The monolingual element delimits the monolingual data within an entry.
	<canForm>	The canonical form is the entry string, represented in canonical form as specified in OLIF guidelines (to be published in concert with SALT)
	<language>	Indicates the language represented by the entry string
	<ptOfSpeech>	Indicates the part of speech represented by the entry string. (In cases of phrases/multiword entries, the part of speech of the head element usu. indicates the value for part of speech.)
	<subjField>	The subject field refers to the knowledge domain to which the lexical/terminological entry is assigned.
	<semReading>	The semantic reading is the semantic class identifier used to distinguish readings for entries with identical values for <i>canonical form</i> , <i>language</i> , <i>part of speech</i> , and <i>subject field</i> .
<i>General:</i> <i>Optional</i>		General elements are optional elements that can be used in any of the groups (<i>mono</i> , <i>cross-reference</i> , or <i>transfer</i>)
	<updater>	The updater is the individual who last modified

		the entry.
	<modDate>	The modification date indicates the date that the entry was last modified.
	<example>	The example is a sample text or portion of text that contains the entry string as an illustration of usage.
	<usage>	Indicates usage note for entry string
	<note>	Refers to note , or commentary, on entry by lexicographer/terminologist.
<i>Monolingual:</i> <i>Optional</i>		Optional monolingual elements may be used only within the monolingual group.
<i>administrative:</i>	<userDesignat>	The user designator of the entry string; used if the obligatory canonical form does not closely resemble the surface form.
	<syllabification>	Indicates syllable boundaries within entry string.
	<geogUsage>	Refers to the geographical usage , or dialect, represented by entry string.
	<entryType>	The entry type Indicates shape/structure of the entry string.
	<phraseType>	Further specifies the type of phrasal entry string.
	<entryStatus>	Indicates the entry status of an entry within a given lexicon/termbase.
	<entrySource>	Refers to the entry source , or the lexicon/termbase that the entry originated from.
	<entryID>	The entry ID is a user-defined numeric identifier associated with the entry.
	<originator>	The originator is the individual who originated the entry.
	<adminStatus>	Indicates the administrative status of an entry relative to a given work environment
	<company>	Indicates company/organisation for whom entry is valid.
	<abbrev>	Indicates an abbreviated form of the entry string.
	<orthVariant>	Indicates orthographic variant for entry string
	<depSynonym>	Indicates a rejected or deprecated synonym for the entry string.
	<timeRestrict>	Refers to time restriction , or the period of time during or since which usage of the entry is valid.
	<product>	Indicates product for which entry is valid.
	<project>	Indicates project for which entry is valid
<i>morphological:</i>	<morphStruct>	Indicates the morphological structure of the entry string.
	<inflection>	Encodes the inflection pattern(s) of the entry word or head of multiword/phrasal entry.
	<head>	Indicates the head word in a multiword/phrasal entry string.
	<gender>	Indicates grammatical gender ..

	<case>	Indicates grammatical case designation.
	<number>	Indicates grammatical number .
	<person>	Indicates person .
	<tense>	Indicates verb tense .
	<mood>	Indicates mood or mode.
	<aspect>	Indicates verbal aspect .
	<degree>	Indicates adjectival degree type .
	<auxType>	Indicates the auxiliary type for an auxiliary verb.
<i>syntactic:</i>	<synType>	The syntactic type describes the general syntactic behavior of the entry string.
	<synPosition>	The syntactic position describes the unmarked positioning of the entry string syntactically.
	<transType>	Describes the transitivity type of a verb.
	<synStruct>	Indicates the constituent structure of a multiword entry string.
	<synFrame>	Describes the syntactic frame elements for the entry string (subcategorisation).
	<prep>	Preposition ; used to further specify syntactic frame elements.
	<verbPart>	Verb particle ; used to further specify syntactic frame elements.
<i>semantic:</i>	<definition>	The definition is a prose definition of the entry string.
	<natGender>	The natural gender refers to the biological gender associated with the entry.
	<semType>	The semantic type represents the status of the entry string with respect to a semantic type classification structure.
<i>Cross-Reference:</i> <u>Optional</u>		If a cross-reference link is specified in an entry, the basic features <i>canonical form</i> , <i>part of speech</i> , <i>subject field</i> , and <i>semantic reading</i> are obligatory within the group.
	<crossRefer>	The cross-reference element delimits the cross-reference data within an entry.
	<crLink>	Indicates a cross-reference link to another entry in the same language..
<i>Transfer:</i> <u>Optional</u>		If a transfer link is specified in an entry, the basic features <i>canonical form</i> , <i>language</i> , <i>part of speech</i> , <i>subject field</i> , and <i>semantic reading</i> are obligatory within the group.
	<transfer>	The transfer element delimits the transfer data within an entry.
	userDesignat	The equivalence element refers to the degree of transfer relationship between words/phrases in two different languages.
	<transCond>	Delimits a transfer condition (selectional restriction).
	<context>	Indicates the context for a given translation of a source word/phrase into a target word/phrase.

	<transTest>	Delimits a transfer test associated with the context.
	<featTest>	Indicates feature being tested in a transfer test; actual feature is expressed as a type attribute of the element <i>featTest</i> .
	<stringTest>	Indicates string being tested in a transfer test.
	<transAct>	Delimits transfer action(s) .
	<addToHead>	Transfer action to add an element to the head element in the target translation; type attribute is part-of-speech value.
	<addToContext>	Transfer action to add an element to a context element in the target translation; type attribute is part-of-speech value.
	<delFromHead>	Transfer action to delete an element from the head element in the target translation; type attribute is part-of-speech value.
	<delFromContext>	Transfer action to delete an element from a context element in the target translation; type attribute is part-of-speech value.
	<changeVrbFrm>	Transfer action to change the verb form from the source to target.
	<changeRole>	Transfer action to change the role of a verb argument from source to target.
	<contextTrans>	Transfer action to assign a translation to a context element
	<assignCase>	Transfer action to assign case to an element in the transfer

3.2 Values

3.2.1 Values for BASIC Elements

⇒ All BASIC elements occur obligatorily in an entry in the monolingual group; they are also required within the cross-reference and/or transfer groups, if these groups are contained in the entry.

(Again, please note the exception of the *language* element in the cross-reference group.)

Canonical Form <canForm>

- ⇒ Entry string in canonical form
- ⇒ Value: string

The shape of the canonical form is based on language-specific guidelines issued by OLIF2 in cooperation with the SALT project.

Language <language>

- ⇒ Language represented by entry string
- ⇒ Value: any valid designator from ISO 639

Part of Speech <ptOfSpeech>

- ⇒ Part of speech of entry string
- ⇒ Values:

VALUE	DESCRIPTION
noun	noun
verb	verb
adj	adjective
adv	adverb
prep	preposition
conj	conjunction
det	determiner
part	verb particle
auxverb	auxiliary verb
pron	pronoun
punc	punctuation
other	other pos to be determined by user

- Some meeting participants spoke for constraining the set of pos values to open word classes. Others were concerned about this approach not being flexible enough. Suggestion was to provide for 5 open word classes (N, V, Adj, Adv, Prep), which are supported by the format specification, but also to allow for user definition of other word classes.

- In discussions subsequent to the meeting, concern was expressed that the broad user definition could inhibit exchange, e.g., if developers define several word classes for nouns, which then can't be easily identified with nouns from other systems.
- Compromise suggested by Sail Labs and SAP: to explicitly specify as values the word classes as listed in the above table, but also allow users to specify their own, which they must figure out how to interpret in their own support programs.

Subject Field <subjField>

- ⇒ Knowledge domain to which lexical/terminological entry is assigned.
- ⇒ Values: currently string; in future, two options for specific OLIF2-supported subject field values:
 - SALT participants review the subject field classifications of OLIF2 MT providers and provide a basic classification schema (top 30 to 50 nodes) for use by OLIF2.
 - Users attach their own values/values schema.

Semantic Reading <semReading> - New index feature

- ⇒ Identifier used to distinguish readings for entries with identical values for *canonical form, language, part of speech, and subject field*
- ⇒ Values: several possibilities/issues to be discussed:
 - The requirement of a semantic reading that actually reflects a lexical semantic analysis has the potential for inhibiting data exchange rather than facilitating it,
 - e.g., different users interpret the semantic class hierarchies differently, or, since they don't pay attention to these differences at all in their lexical data (e.g., they have only a few cases where they require a distinction & thus have most of their entries with no semantic reading designation), must make these judgments for the purpose of OLIF2 only.
 - Numeric semantic identifier assigned by the user has the same problem that a reading no. has in terms of its meaning possibly not being valid outside of the particular data set
 - Some suggestions:
 - Have a pre-ordained set of values (e.g., from SIMPLE), but also allow a value of 'unspecified' for the masses of entries for which there is only one reading – allowing users an opt-out from making these judgments for each entry.
 - As an option, allow the user to use numeric identifiers from an authority (specified in the header) for the given language.
 - Do not use the semantic reading as part of the primary key at all, but rather as a 'backup' secondary key, to be used for disambiguation purposes only.

3.2.2 Values for GENERAL Elements

⇒ General features are optional features that can be used in any of the groups (*monolingual, cross-reference, or transfer*).

Updater <updater>

- ⇒ Refers to individual who last modified entry
- ⇒ Value: string

Modification date <modDate>

- ⇒ Date entry was last modified
- ⇒ Value: date

Example <example>

- ⇒ Sample text or portion of text in which entry string occurs
- ⇒ Value: string

Usage Note <usage>

- ⇒ Open field for notes on usage of entry string
- ⇒ Value: string

Note <note>

- ⇒ Open field for commentary by lexicographers/terminologists
- ⇒ Value: string

3.2.3 Values for Optional MONOLINGUAL Elements

⇒ The following elements are optional within the monolingual group.

3.2.3.1 Administrative MONOLINGUAL Elements

User Designation <userDesignat> - New element

- ⇒ Indicates entry string in a more ‘user-friendly’ way if the obligatory canonical form does not closely resemble the surface form.
- ⇒ Values: string

Syllabification <syllabification> - New element

- ⇒ Indicates syllable boundaries within entry string.
- ⇒ Values: string formulated based on following guideline:
 - a syllable boundary is designated by the presence of the ‘-’ character placed between the two characters where the boundary occurs, e.g., *can-dle*

Geographical Usage <geogUsage>

- ⇒ Dialect represented by entry string
- ⇒ Value: any valid designator as specified in ISO 12620 (A.2.3.2) using ISO 3166 (Represent combined language-country codes, e.g., de-CH, en-GB)

Entry Type <entryType>

- ⇒ Indicates shape/structure of entry string
- ⇒ Attributes: **productName, trademark, orthVariant**
- ⇒ Values: as follows

VALUE	DESCRIPTION
abb	abbreviation
acr	acronym
sgl	single word
cmp	compound
phr	phrase
un	unspecified

Phrase Type <phraseType> - New element, added to reconcile the lexical vs. terminological definitions of *multiword*.

⇒ Further specifies the phrasal entry string

⇒ Values: as follows

VALUE	DESCRIPTION
mw	multiword
set-phr	fixed, lexicalized phrase
coll	collocation
idiom	idiom
un	unspecified

Entry Status <entryStatus>

⇒ Indicates status of entry within given lexicon/termbase

⇒ Values: as follows:

VALUE	DESCRIPTION
word	general vocabulary item
term	specific to non-general domain
concept	concept
stopword	stopword
un	unspecified

Entry Source <entrySource>

⇒ Indicates lexicon/termbase that entry originated from

⇒ Value: string

Originator <originator>

⇒ Refers to individual who created entry

⇒ Value: string

Administrative status <adminStatus>

- ⇒ Indicates administrative status of an entry relative to a given work environment
- ⇒ Values: as follows

VALUE	DESCRIPTION
new	new entry
ver	verified
def	defaulted
mt	for MT only
obs	obsolete
un	unspecified

Company <company>

- ⇒ Indicates company/organisation for whom entry is valid
- ⇒ Value: string

Abbreviation <abbrev>

- ⇒ Abbreviated form of entry string (alternative to cross-reference representation)
- ⇒ Value: string

Orthographic Variant <orthVariant>

- ⇒ Indicates orthographic variant for entry string (alternative to cross-reference representation)
- ⇒ Value: string

Deprecated Synonym <depSynonym>

- ⇒ Indicates rejected synonym for entry string
- ⇒ Value: string

Time Restriction <timeRestrict>

- ⇒ Indicates period of time during or since which usage of entry is valid
- ⇒ Value: string

Product <product>

- ⇒ Identifies product for which entry is valid
- ⇒ Value: string

Project <project>

- ⇒ Identifies project for which entry is valid
- ⇒ Value: string

3.2.3.2 Morphological MONOLINGUAL Elements

Morphological Structure <morphStruct>

- ⇒ Indicates the morphological structure of the entry string
- ⇒ Value: the value is formulated based on the following guidelines:
 - ‘#’ designates a word boundary
 - ‘+’ designates boundary between affix-root or affix-affix
 - ‘.’ designates boundary between elements of a compound

Inflection <inflection>

- ⇒ Encodes the language-specific inflection pattern(s) of the entry word or head of multiword/phrasal entry.
- ⇒ Value: two value types possible:
 1. ‘Inflects like’ value (provided by Logos for all languages)
 2. User-specified schema (e.g., use of Wahrig numbered patterns for German)

Representation: This is still open; there are several possibilities, among them 1) having separate features that correlate with the different value types, 2) defining the different value types as attributes of the element, or 3) declaring the preference for infl. class value type in the header.

Head Word <head>

- ⇒ Indicates the head word in a multiword/phrasal entry string.
Value: string (representing the actual head word)

Gender <gender>

- ⇒ Indicates grammatical gender.
- ⇒ Value: as follows:

VALUE	DESCRIPTION
m	masculine
f	feminine
n	neuter
c	common
un	unspecified

Case <case>

- ⇒ Indicates case designation.
- ⇒ Value: as follows:

VALUE	DESCRIPTION
n	nominative
g	genitive
d	dative
a	accusative
obj	objective
subj	subjective
loc	locative
prp	prepositional
inst	instrumental
un	unspecified

Number <number>

- ⇒ Indicates number.
- ⇒ Value: as follows:

VALUE	DESCRIPTION
sg	singular
pl	plural
sgt	singularetantum
plt	pluraletantum
du	dual
invar	invariant
un	unspecified

Person <person>

- ⇒ Indicates person.
- ⇒ Value: as follows:

VALUE	DESCRIPTION
first	first person
sec	second person
third	third person
un	unspecified

Tense <tense>

- ⇒ Indicates verb tense.
- ⇒ Value: as follows:

VALUE	DESCRIPTION
pres	present
past	past
fut	future
un	unspecified

Mood <mood>

- ⇒ Indicates mood (or mode).
- ⇒ Value: as follows:

VALUE	DESCRIPTION
indic	indicative
subj	subjunctive
imper	imperative
cond	conditional
sup	supine
un	unspecified

Aspect <aspect>

- ⇒ Indicates verbal aspect.
- ⇒ Value: as follows:

VALUE	DESCRIPTION
simp	simple
perf	perfective
imperf	imperfective
dur	durative
habit	habitual
iter	iterative
un	unspecified

Degree Type <degree>

- ⇒ Indicates degree type for adjective.
- ⇒ Value: as follows:

VALUE	DESCRIPTION
pos	positive
comp	comparative
sup	superlative
ela	elative
un	unspecified

Auxiliary Type <auxType>

- ⇒ Indicates type of auxiliary verb.
- ⇒ Value: as follows:

VALUE	LANGUAGE DESCRIPTION
have	da
være	da
have	en
be	en
être	fr
avoir	fr
laisser	fr
faire	fr
haben	de
sein	de
werden	de
lassen	de
ter	pt
estar	pt
estar	es
haber	es
un	unspecified

3.2.3.3 Syntactic MONOLINGUAL Elements

Syntactic Type <synType>

- ⇒ Describes the general syntactic behavior of the entry string.
- ⇒ Value: as follows:

PART OF SPEECH	VALUE	DESCRIPTION
Noun	cnt	countable noun
	mass	mass noun
	mass-cnt	countable mass noun
	prop	proper noun
	coll	collective noun
	quant	quantitative noun
	def	definite noun
	indef	indefinite noun
Verb	recip	reciprocal verb
	refl	reflexive verb
	aux	auxiliary verb
	main-vb	main verb
	modal	modal verb
Adjective	attrib	attributive adjective
	pred	predicative adjective
	poss-adj	possessive adjective
	able-adj	-able participle
	ppart	past participle
	prespart	present participle
Adverb	degree	indicates degree, e.g., 'too'
	adv-mod	modifies adverb
	adj-mod	modifies adjective
	cls-mod	modifies clause
	np-mod	modifies noun phrase
	nu-mod	modifies numeral
	prep-mod	modifies preposition
	det-mod	modifies determiner
	quant-mod	modifies quantifier
Preposition	loc	locative preposition
	dir	directional preposition
	temp	temporal preposition
Conjunction	conj	conjunction
	comp-conj	comparative conjunction
	subj-conj	subjunction
Determiner	def-det	definite determiner
	indef-det	indefinite determiner
	interr-det	interrogative determiner
	poss-det	possessive determiner
	rel-det	relative determiner
	demonst-det	demonstrative determiner
	quant-det	quantitative determiner
	part-det	partitive determiner
Pronoun	def-pro	definite pronoun
	indef-pro	indefinite pronoun
	interr-pro	interrogative pronoun
	poss-pro	possessive pronoun

	rel-pro	relative pronoun
	demonst-pro	demonstrative pronoun
	quant-pro	quantitative pronoun
	pers-pro	personal pronoun
	part-pro	partitive pronoun
	refl-pro	reflexive pronoun
	wh-pro	Wh-type pronoun
	un	unspecified

Syntactic Position <synPosition>

- ⇒ Describes the unmarked positioning of the entry string syntactically.
- ⇒ Value: as follows:

PART OF SPEECH	VALUE	DESCRIPTION
Adjective	prenoun	before noun
	postnoun	following noun
Adverb	preverb	before main verb
	postverb	following main verb
	cl-init	clause-initial
	cl-final	clause-final
	deg-post	degree adverb after morpheme
	deg-pre	degree adverb before morpheme
Preposition	prep	prepositional to noun head
	postp	postpositional to noun head
	circumprep	preposition in circum position
	circumpostp	postposition in circum position
	un	unspecified

Transitivity Type <transType>

- ⇒ Describes the transitivity behaviour of verbs and deverbal nouns
- ⇒ Value: as follows:

PART OF SPEECH	VALUE	DESCRIPTION
Verb, Deverbal Noun	trans	transitive
	intr	intransitive
	ditrans	ditransitive
	refl	reflexive
	mid	middle
	caus	causative
	unacc	unaccusative intransitive
	unerg	unergative intransitive
	un	unspecified

Syntactic Structure <synStruct>

- ⇒ Indicates the constituent structure of a multiword entry string.
- ⇒ Value: pending; based on formalism to be provided by Systran

Syntactic Frame <synFrame>

- ⇒ The syntactic frame describes the subcategorisation of the entry word/phrase. The approach taken here adapts and expands on the original OLIF analysis, which was essentially a slot-grammar approach. The lexicographer builds the frame by specifying individual frame elements from the slot values table below. (Slot fillers are implied with many of the slot values, but fillers are language-specific and we don't have a formal representation of them for the languages we're covering – need a decision here on whether to handle the fillers with OLIF2 or to leave it to the vendors to construe.)

The syntax for the frame specifies the following conventions:

- the syntactic frame is enclosed in square ([]) brackets
- slots are separated by commas (,)
- slots that are or'ed together are enclosed in parentheses and separated by vertical slashes, e.g., (.|.|.|.|.)

Example of a possible syntactic frame for the English verb *try*:

[subj, (dobj-opt | dobj-sent-ing-opt | dobj-sent-inf-opt)]

(Note: Specific prepositions or particles that fill a pp or part slot are specifiable with the features *prep* and *part* (description follows).)

- ⇒ Value: as follows:

PART OF SPEECH	VALUE	DESCRIPTION
Verb	subj	subject NP required
	subj-sent-opt	sentential subject optional (e.g., finite clause, infinitive clause, -ing clause, wh-, finite with 'that', 'dass')
	subj-imps-opt	impersonal subject optional (e.g., "It is raining")
	dobj	direct object NP required
	dobj-opt	direct object NP optional
	dobj-sent-opt	sentential direct object optional (e.g., finite clause, infinitive clause, -ing clause, wh-, finite with 'that', 'dass')
	dobj-sent-fin-opt	finite clause direct object optional
	dobj-sent-inf-opt	infinitive clause direct object optional
	dobj-sent-ing-opt	-ing clause direct object optional
	dobj-sent-that-opt	that/dass-clause direct object optional
	dobj-sent-wh-opt	wh-clause direct object optional
	dobj-comp-opt	e.g., "They elected him <i>president</i> "
	iobj	indirect object NP required
	iobj-opt	indirect object NP optional
	iobj-sent-opt	sentential indirect object optional
	genobj	genitive object required
	genobj-opt	genitive object optional

PART OF SPEECH	VALUE	DESCRIPTION
	pred-opt	predicate nominal (incl.sentential)/predicate adj. optional
	vcomp-opt	sentential verb complement optional (e.g., finite clause, infinitive clause, -ing clause, wh-, finite with 'that', 'dass')
	vcomp-fin-opt	finite clause verb complement optional
	vcomp-inf-opt	infinitive clause verb complement optional
	vcomp-ing-opt	-ing clause verb complement optional
	vcomp-that-opt	that/dass-clause verb complement optional
	vcomp-wh-opt	wh-clause verb complement optional
	part	verb particle required
	part-opt	verb particle optional
Noun	gencomp-opt	Genitive phrase optional (e.g., "the book of John", "the reading of the will")
	ncomp-opt	sentential noun complement optional (e.g., finite clause, infinitive clause, -ing clause, wh-, finite with 'that')
	ncomp-fin-opt	finite clause noun complement optional
	ncomp-inf-opt	infinitive clause noun complement optional
	ncomp-ing-opt	-ing clause noun complement optional
	ncomp-that-opt	that-type clause noun complement optional
	ncomp-wh-opt	wh-clause noun complement optional
Adjective	adjcomp-opt	sentential adj complement optional (e.g., finite clause, infinitive clause, -ing clause, wh-, finite with 'that')
	adjcomp-fin-opt	finite clause adj complement optional
	adjcomp-inf-opt	infinitive clause adj complement optional
	adjcomp-ing-opt	-ing clause adj complement optional
	adjcomp-that-opt	that-type clause adj complement optional
	ncomp-wh-opt	wh-clause adj complement optional
Noun, Verb, Adjective		
	pp	prepositional phrase required
	pp-opt	prepositional phrase optional
	pp-loc	locational/directional prepositional phrase required
	pp-loc-opt	locational/directional prepositional phrase optional
	pp-temp	temporal prepositional phrase required
	pp-temp-opt	temporal prepositional phrase optional

Preposition <prep>

- ⇒ Used to further specify syntactic frame elements.
- ⇒ Value: string:

Verb particle <verbPart>

- ⇒ Used to further specify syntactic frame elements.
- ⇒ Value: string

3.2.3.4 Semantic MONOLINGUAL Elements

Definition <definition>

- ⇒ Prose definition of entry string.
- ⇒ Value: string

Natural Gender <natGender>

- ⇒ Refers to the biological gender associated with the entry string.
- ⇒ Value: as follows

VALUE	DESCRIPTION
m	masculine
f	feminine
un	unspecified

Semantic Type <semType>

- ⇒ Represents the status of the entry string with respect to a semantic type classification structure.
- ⇒ Value: The following values table is adapted from a proposal from Logos Corp. See Appendix II for the complete proposal.

PART OF SPEECH	VALUE	DESCRIPTION	
Noun	abs	abstract, e.g., <i>format, rapidity, poverty, type</i>	
	abs-ag	abstract agent, e.g., <i>efficiency, cause, method, goal, event</i>	
	abs-gen	general abstract concept, e.g., <i>truth, idea, justice</i>	
	abs-nonag	non-verbal abstract, e.g., <i>shape, condition, class, feature</i>	
	abs-nonag-orig	non-verbal abstract origin, e.g., <i>reserve, lineage, origin</i>	
	anim	animate, e.g., <i>manager, committee, subscriber, buyer</i>	
	anim-ani	animal, e.g., <i>deer, bacteria, gnat, weasel</i>	
	anim-hum	human, e.g., <i>employee, scientist, Professor, Mrs.</i>	
	anim-hum-func	office, title, e.g., <i>Dr., President, General</i>	
	anim-hum-pn	human proper name, e.g., <i>John, Mr. Smith, Marie</i>	
	anim-soc	social institution, e.g., <i>agency, company, bureau, business</i>	
	anim-soc-org	specific organization, e.g., <i>EC, United Nations, NASA</i>	
		asp	aspective, e.g., <i>prototype, majority, piece</i>
		cnc	concrete, e.g., <i>table, battery, ligament, missile</i>
	cnc-ag	concrete agent, e.g., <i>camera, radio, truck, explosives</i>	
	cnc-amor	amorphous, e.g., <i>breeze, tide, atmosphere</i>	
	cnc-atom	atomistic, e.g., <i>electron, granule, nucleus</i>	

PART OF SPEECH	VALUE	DESCRIPTION
	cnc-class	classifier, e.g., <i>compound, substance, element</i>
	cnc-color	color, e.g., <i>olive, orange, cherry</i>
	cnc-ednm	edible (non-mass), e.g., <i>cracker, lemon, pork chop</i>
	cnc-func	functional, e.g., <i>box, wall, pipe, circuit, shirt</i>
	cnc-light	impulse/light, e.g., <i>beacon, ray, tone, flare</i>
	cnc-mark	mark/blemish, e.g., <i>boil, blemish, scratch</i>
	cnc-nat	natural, e.g., <i>cloud, pebble, flower</i>
	cnc-nat-plant	plant, e.g., <i>violet, clove, lilac</i>
	inform	information, e.g., <i>newspaper, symbol, rule, ballistics</i>
	inform-sen	semiotic system, e.g., <i>address, signal, code, number</i>
	loc	locative, e.g., <i>office, zone, city, room, Munich</i>
	mass	mass, e.g., <i>iron, water, sand, fiber, fire, heat</i>
	mass-mat	material, e.g., <i>aluminum, wool, plastic, glass</i>
	meas	measure, e.g., <i>pressure, quantity, gram, rpm, voltage</i>
	meas-abs	abstract measure, e.g., <i>temperature, length, velocity</i>
	meas-disc	discrete measurable concept, e.g., <i>increment, sum, count</i>
	meas-unit	unit of measure, e.g., <i>inch, cm, hour, volt, hertz, kph</i>
	proc	process, e.g., <i>correction, analysis, call, removal</i>
	tmp	temporal, e.g., <i>summer, morning, September, Friday</i>
Verb	achiev	achievement
	act	unspecified activity
	emot	emotion
	event	event
	ment-act	mental activity
	mov	movement
	mov_motdir	directed motion, e.g., <i>dance, depart, fly, go</i>
	mov_motnd	non-directed motion, e.g., <i>depart, go, walk</i>
	noise	noise-producing
	phys-act	physical activity, e.g., <i>persist, refrain, appear</i>
	percept	perceptive
	perm	permission verb
	pha	phasal verb
	pro	process
	sense	sense
	situat	situation
	stat	stative, e.g., <i>grow, become, sound</i>
Adjective	color	color, e.g., <i>red, yellow</i>
	cnt	countable
	deg	degree, e.g., <i>acute, intense, substantial</i>
	indef	indefinite
	loc	locative, e.g., <i>above, forward, regional</i>
	man	manner, e.g., <i>charismatic, intrepid, personable</i>
	mea	measure, e.g., <i>approximate, huge, minimal</i>
	seq	sequence, e.g., <i>consecutive, daily, former</i>
	shape	shape
Adverb	conn	connective
	deg	degree, e.g., <i>merely, approximately, completely</i>
	freq	frequency, e.g., <i>again, once, twice</i>
	man	manner, e.g., <i>by hand, electronically, simultaneously</i>
	prob	probability, e.g., <i>conceivably, by chance, maybe</i>
	seq	sequence, e.g., <i>primarily, lastly, first</i>

PART OF SPEECH	VALUE	DESCRIPTION
	spa	space, e.g., <i>anywhere, to the right, inside</i>
	stat	stative, e.g., <i>alike, at ease, out of commission</i>
	tmp	time, e.g., <i>still, yet, already, at one time</i>
Prep	cau	causal, e.g., <i>as a result of, because of</i>
	cau-neg	causal-negation, e.g., <i>despite, in the absence of</i>
	comb	combinatorial, e.g., <i>with, in combination with</i>
	con	connective
	concess	concessive
	cond	conditional
	cor	correlative
	cor-neg	correlative-negation
	dir	direction
	incl	inclusive, e.g., <i>in addition to, inclusive of</i>
	incl-neg	inclusive-negation, e.g., <i>except for, instead of, without</i>
	instr	instrumental, e.g., <i>by, by means of, by way of</i>
	loc	locative
	loc-ext	locative-extensive
	loc-from	locative-from, e.g., <i>from, off of, out of</i>
	loc-path	locative-path
	loc-to	locative-to, e.g., <i>to</i>
	man	manner
	mea	measure
	mod	modal
	orig	origin
	path	path
	purp	purpose, e.g., <i>for, for the benefit of</i>
	qual	qualitative
	quant	quantitative
	tmp	time, e.g., <i>at the beginning of, during, prior to</i>
	tmp_ext	temporal_extensive
	tmp_from	temporal_from
	tmp_id	temporal_identical
	tmp_to	temporal_to
	unit	unit
	un	unspecified

3.2.4 Values for CROSS-REFERENCE Elements

Note: In addition to the features specified here for the cross-reference group, users must also nest the obligatory basic features *canonical form*, *part of speech*, *subject field* and *semantic reading* within each set of <crossRefer> tags in the entry in order to identify the entry that is pointed to in the cross-reference relation.

Cross-Reference Link <crLink>

- ⇒ Indicates word-relation link to another entry in the same language.
- ⇒ Value: as follows

Cross-reference relations have been augmented by ISO relations (most of which formally apply to concepts rather than the terms themselves, but have adapted them here for the purposes of OLIF2) and the analysis contained in EuroWordNet (July, 2000).

VALUE	DESCRIPTION
synonym	synonym of
near-synonym	near synonym of
antonym	antonym of
near-antonym	near antonym of
has-hyperonym	is kind of (subordinate)
has-hyponym	has kind (superordinate)
has-holonym	part of
has-meronym	whole of
has-holo-member	member of (member-set)
has-mero-member	set (member-set)
has-holo-portion	portion of
has-mero-portion	has portion
has-holo-madeof	ingredient of
has-mero-madeof	has ingredient
has-holo-location	more specific place
has-mero-location	wider place
causes	cause of
is-caused-by	effect of
has-subevent	(between verbs/gerunds) e.g., sleep ~ <i>snore</i>
is-subevent-of	(between verbs/gerunds) e.g., snore ~ <i>sleep</i>
role	activity that something (noun) is involved in
involved	thing (noun) involved in activity represented by verb
role-agent	typical activity of agent, e.g., teaching ~ <i>teacher</i>
involved-agent	typical agent of activity, e.g., teacher ~ <i>teaching</i>
role-patient	activity undergone by patient, e.g., learning ~ <i>learner</i>
involved-patient	typically undergoes activity, e.g., learner ~ <i>learning</i>
role-result	activity that results in object, e.g., crystallising ~ <i>crystal</i>
involved-result	object resulting from activity, e.g. crystal ~ <i>cystallising</i>
role-instrument	activity instrument is used for, e.g., hammering ~ <i>hammer</i>
involved-instrument	instrument used for activity, e.g., hammer ~ <i>hammering</i>
role-location	activity typical of a place, e.g., teaching ~ <i>school</i>
involved-location	place where activity occurs, e.g., school ~ <i>teaching</i>
role-direction	activity from/to/over/across/thru a place, e.g., crossing ~ <i>river</i>
involved-direction	place from/to/over/thru,etc. which activity occurs, e.g., river ~ <i>cross</i>
produces	producer of

is-product-of	product of
process-step	step in a process
in-sequence	element in a sequence
is-spatial-rel	related spatially
is-associated	associated term
is-child-of	offspring of
is-parent-of	parent of
is-used-for	is used for
use	use to which something is put
in-manner	(verb ~ adv) snore ~ <i>noisily</i>
manner-of	(adv ~ verb) noisily ~ <i>snore</i>
be-in-state	(noun ~ adj) tycoon ~ <i>wealthy</i>
state-of	(adj ~ noun) wealthy ~ <i>tycoon</i>
previous	previous version of entry
no-synonym	not allowed as synonym
has-no-syn	has disallowed synonym
is-derived-from	derivational morphology
has-derived	derivational morphology
pertains-to	(adj ~ noun) chemical ~ <i>chemistry</i>
is-pertained-to	(noun ~ adj) chemistry ~ <i>chemical</i>
has-instance	class
belongs-to-class	instance of class
keyword	keyword
acronym	acronym
has-acronym	has acronym
orth-variant	orthographical variant -> see attribute table that follows
has-orth-variant	has orthographical variant
abbreviation	abbreviated form
has-abbrev	has abbreviated form
headword	head word of compound/phrase
has-headword	has head word
fuzzynym	(noun ~ noun; verb ~ verb) fuzzy semantic relation
repl-controlled	replace with controlled language
<i>Compound noun codes:</i>	<i>Indicate relations between compnd nouns and compnd elements</i>
co-role	general relation between compound noun and compound element
co-agent-patient	<i>criminal</i> ~ <i>crime victim</i>
co-patient-agent	<i>crime victim</i> ~ <i>criminal</i>
co-agent-instrument	<i>guitar player</i> ~ <i>guitar</i>
co-instrument-agent	<i>guitar</i> ~ <i>guitar player</i>
co-agent-result	<i>novel writer</i> ~ <i>novel</i>
co-result-agent	<i>novel</i> ~ <i>novel writer</i>
co-patient-instrument	<i>ice</i> ~ <i>ice saw</i>
co-instrument-patient	<i>ice saw</i> ~ <i>ice</i>
co-patient-result	<i>pastry dough</i> ~ <i>pastry</i>
co-result-patient	<i>pastry</i> ~ <i>pastry dough</i>
co-instrument-result	<i>movie camera</i> ~ <i>movie</i>
co-result-instrument	<i>movie</i> ~ <i>movie camera</i>
un	relation unspecified

Linguatrec has requested the following attributes for the values *orth-variant* – *has orth-variant* for German:

Attribute	Description	Example
german-1	Match vowels to stem	Schänke/Schenke
german-2	"selbstständig" instead of "selbständig"	unselbstständig/unselbändig
german-3	German spelling of non-German words	Soße/Sauce
german-4	Write "f" instead of "ph"	Fantasie/Phantasie
german-5	Write "r" instead of "rh"	Katarr/Katarrh
german-6	Write "t" instead of "th"	Tunfisch/Thunfisch
german-7	Write "zi" instead of "ti"	differenziell/differentiell
german-8	Plural "ices" instead of "izes"	Indices/Indizes
german-9	New spelling of non-German words	Campagne/Kampagne
german-10	Repeat three letters without a hyphen	Schiffahrt/Schiff-Fahrt
german-11	Write preposition and "weak" noun as two words	im Stande/imstande
german-12	Write "nicht" in compound adjectives as a separate word	nicht öffentlich/nichtöffentlich
german-13	Write "rein" in compound adjectives as a separate word	rein seiden/reinseiden
german-14	Write "wohl" in compound adjectives as a separate word	wohl tuend/wohltuend
german-15	Write non-German words with multiple parts as a single word	Bluejeans/Blue Jeans
german-16	Write non-German words with multiple parts with a hyphen	Fall-out/Fallout

3.2.5 Values for TRANSFER Elements

Note: In addition to the features specified here for the transfer group, users must also nest the obligatory basic features *canonical form*, *language*, *part of speech*, *subject field* and *semantic reading* within each set of <transfer> tags in the entry in order to identify the entry that is pointed to in the transfer relation.

Degree of Equivalence <equival>

- ⇒ The degree of transfer relationship between words/phrases in two different languages.
- ⇒ Value: as follows:

VALUE	DESCRIPTION
full	full equivalence
partial	partial equivalence
alt	alternate transfer
none	no equivalence
un	unspecified

For a more detailed explanation of the following elements, see Appendix III, 'Transfer Conditions and Actions.'

Transfer Condition <transCond>

- ⇒ Delimits a transfer condition (selectional restriction).

Context <context>

- ⇒ Indicates the context for a given translation of a source word/phrase into a target word/phrase.
- ⇒ Value: as follows:

VALUE	DESCRIPTION
head	the source word itself or the head of the source string
pp	prepositional phrase
genobj	possessive phrase, eg., "of n"
adj	descriptive/predicate adjective
prep	prep in phrase in which source noun is prep object
subj	subject noun
dobj	direct object noun
iobj	indirect object noun
comp	sentential complement
adv	adverb
prepobj	noun object of preposition

VALUE	DESCRIPTION
string	refers to phrase that must be matched word-for-word; phrase itself is specified as value of feature <transTest>

Transfer Test <transTest>

⇒ Delimits a transfer test associated with the context.

Feature Test <featTest>

- ⇒ Indicates feature being tested in a transfer test.
- ⇒ Attribute: OLIF element name that represents feature to be tested.
- ⇒ Value: value of tested feature.

String Test <stringTest>

- ⇒ Indicates string being tested in a transfer test.
- ⇒ Value: string

Transfer Action <transAct>

⇒ Delimits transfer actions.

Add to Head <addToHead>

- ⇒ Transfer action to add an element to the head in the target translation
- ⇒ Attribute: *adj, det, prep, noun, adv* (part-of-speech value of element to be added).
- ⇒ Value: string representing canonical form of word/phrase being added.

Add to Context <addToContext>

- ⇒ Transfer action to add an element to a context element in the target translation.
- ⇒ Attribute: *adj, det, prep, noun, adv* (part-of-speech value of element to be added).
- ⇒ Value: string representing canonical form of word/phrase being added.

Delete from Head <delFromHead>

- ⇒ Transfer action to delete an element from the head phrase in the target translation, e.g., delete determiner from noun phrase.
- ⇒ Attribute: *adj, det, prep, noun, adv* (part-of-speech value of element to be added).
- ⇒ Value: string representing canonical form of word/phrase being deleted.

Delete from Context <delFromContext>

- ⇒ Transfer action to delete an element from the context element in the target translation.
- ⇒ Attribute: *adj, det, prep, noun, adv* (part-of-speech value of element to be added).
- ⇒ Value: string representing canonical form of word/phrase being deleted.

Change Verb Form <changeVrbFrm>

- ⇒ Transfer action to indicate that the target verb will not be the standard equivalent of the source verb in form.
- ⇒ Value: as follows:

VALUE	DESCRIPTION
active	target is active voice
passive	target is passive voice
causative	target is causative
reflexive	target is reflexive

Change Role <changeRole>

- ⇒ Transfer action to indicate that the argument of a source verb will not play the corresponding role in the target.
- ⇒ Value: as follows:

VALUE	DESCRIPTION
subj-dobj	source subject is target direct object
dobj-subj	source direct object is target subject
dobj-iobj	source direct object is target indirect object
iobj-dobj	source indirect object is target direct object
subj-iobj	source subject is target indirect object
iobj-subj	source indirect object is target subject

Change Transfer of Context Element <contextTrans>

- ⇒ Assigns transfer to a specified context element.
- ⇒ Value: string

Assign Case <assignCase>

- ⇒ Assigns case to a transfer element.
- ⇒ Value: as follows:

VALUE	DESCRIPTION
n	nominative
g	genitive
d	dative
a	accusative
obj	objective
subj	subjective
loc	locative
prp	prepositional
inst	instrumental
un	unspecified

Appendix I:

STTS - Stuttgart-Tübingen Tagset

(in "Guidelines für das Tagging deutscher Textcorpora mit STTS", by A. Schiller, S. Teufel and C. Thielen, September 1995, pp. 7-8)

POS	Beschreibung	Beispiele
ADJA ADJD	attributives Adjektiv adverbiales oder prädikatives Adjektiv	[das] große [Haus] [er fährt] schnell [er ist] schnell
ADV	Adverb	schon, bald, doch
APPR APPRART APPO APZR	Präposition; Zirkumposition links Präposition mit Artikel Postposition Zirkumposition rechts	in [der Stadt], ohne [mich] im [Haus], zur [Sache] [ihm] zufolge, [der Sache] wegen [von jetzt] an
ART	bestimmter oder unbestimmter Artikel	der, die, das, ein, eine
CARD	Kardinalzahl	zwei [Männer], [im Jahre] 1994
FM	Fremdsprachliches Material	[Er hat das mit "] A big fish [" übersetzt]
ITJ	Interjektion	mhm, ach, tja
KOUI KOUS	unterordnende Konjunktion mit "zu" und Infinitiv unterordnende Konjunktion mit Satz	um [zu leben], anstatt [zu fragen] weil, daß, damit, wenn, ob
KON KOKOM	nebenordnende Konjunktion Vergleichspartikel, ohne Satz	und, oder, aber als, wie
NN NE	normales Nomen Eigennamen	Tisch, Herr, [das] Reisen Hans, Hamburg, HSV
PDS PDAT	substituierendes Demonstrativ- pronomen attribuierendes Demonstrativ- pronomen	dieser, jener jener [Mensch]
PIS PIAT PIDAT	substituierendes Indefinit- pronomen attribuierendes Indefinit- pronomen ohne Determiner attribuierendes Indefinit- pronomen mit Determiner	keiner, viele, man, niemand kein [Mensch], irgendein [Glas] [ein] wenig [Wasser], [die] beiden [Brüder]
PPER	irreflexives Personalpronomen	ich, er, ihm, mich, dir
PPOSS PPOSAT	substituierendes Possessiv- pronomen attribuierendes Possessivpronomen	meins, deiner mein [Buch], deine [Mutter]

PRELS PRELAT	Relativpronomen substituierend attribuierend	[der Hund,] der [der Mann ,] dessen [Hund]
PRF	reflexives Personalpronomen	sich, einander, dich, mir
PWS	substituierendes Interrogativpronomen	wer, was
PWAT	attribuierendes Interrogativpronomen	welche [Farbe], wessen [Hut]
PWAV	adverbiales Interrogativ- oder Relativpronomen	warum, wo, wann, worüber, wobei
PAV	Pronominaladverb	dafür, dabei, deswegen, trotzdem
PTKZU	"zu" vor Infinitiv	zu [gehen]
PTKNE	Negationspartikel	nicht
PTKVZ	abgetrennter Verbzusatz	[er kommt] an, [er fährt] rad
PTKANT	Antwortpartikel	ja, nein, danke, bitte
PTKA	Partikel bei Adjektiv oder Adverb	am [schönsten], zu [schnell]
TRUNC	Kompositions-Erstglied	An- [und Abreise]
VVFIN	finites Verb, voll	[du] gehst, [wir] kommen [an]
VVIMP	Imperativ, voll	komm [!]
VVINFIN	Infinitiv, voll	gehen, ankommen
VVIZU	Infinitiv mit "zu", voll	anzukommen, loszulassen
VVPP	Partizip Perfekt, voll	gegangen, angekommen
VAFIN	finites Verb, auxiliar	[du] bist, [wir] werden
VAIMP	Imperativ, auxiliar	sei [ruhig !]
VAINFIN	Infinitiv, auxiliar	werden, sein
VAPP	Partizip Perfekt, auxiliar	gewesen
VMFIN	finites Verb, modal	dürfen
VMINFIN	Infinitiv, modal	wollen
VMPP	Partizip Perfekt, modal	[er hat] gekonnt
XY	Nichtwort, Sonderzeichen enthaltend	D2XW3
\$,	Komma	
\$.	Satzbeendende Interpunktion	. ? ! ; : ' ,
\$(sonstige Satzzeichen; satzintern	{ [] ()

Appendix II:

Proposal for Semantic Type Feature Values Brigitte Orliac, Logos August 2000

Current OLIF semantic types: to be edited for OLIF2

1.1 Semantic type definition table

1.1.1 Nouns

I've reorganized most noun values (organized them in a tree structure). Values from the existing Semantic type definition table which have been attached to a higher level node are in italics. New values (in green) do not have a Semantic Type ID. Values in red are questionable. These values do not have a corresponding value in the SAL taxonomy. My recommendation is to get rid of them. We should also get rid of redundant values *bpart*, *cnc*, *col*, *nonh*, *prof*, and *vn* (See reason below).

SEMANTIC TYPE ID	SHORT FORM	SEMANTIC TYPE	EXAMPLES
21	abs	abstract	format, rapidity, poverty, type
35	<i>abs_ag</i>	<i>abstract_agent</i>	<i>efficiency, cause, method, goal, event</i>
	abs_gen	abstract_general abstract concepts	truth, Americanism, justice, idea
	abs_nonag	abstract_non-verbal abstracts	shape, condition, class, feature
18	<i>abs_nonag_orig</i>	<i>abstract_non-verbal abstracts_origin</i>	<i>reserve, lineage, origin</i>
1	age	age	
23	anim	animate	manager, committee, subscriber, buyer
22	<i>anim_ani</i>	<i>animate_animal</i>	<i>deer, bacteria, gnat, weasel</i>
16	<i>anim_hum</i>	<i>animate_human</i>	<i>employee, scientist, Professor, Mrs.</i>
36	<i>anim_hum_func</i>	<i>animate_human_office-title</i>	1 Mr., Dr., President, General
38	<i>anim_hum_pn</i>	<i>animate_human_name</i>	2 John, Mr. Smith, Marie
31	<i>anim_soc</i>	<i>animate_social institution</i>	<i>agency, company, bureau, business</i>
40	<i>anim_soc_org</i>	<i>animate_social institution_organisation</i>	3 Logos, EEC, United Nations, NASA
	as	4 aspective	5 prototype, majority, piece
24	bpart	body part of living beings (delete; in <i>concrete_agent</i> or <i>concrete_functional</i>)	
25	cnc	concrete	table, battery, ligament, missile
35	<i>cnc_ag</i>	<i>concrete_agent</i>	<i>camera, radio, truck, explosives</i>

	cnc_amor	6 concrete_amorphous	7 breeze, tide, atmosphere
	cnc_atom	8 concrete_atomistic	9 electron, granule, nucleus
	cnc_class	10 concrete_classifiers	11 compound, substance, element
2	<i>cnc_clr</i>	<i>concrete_color</i>	<i>olive, orange, cherry</i>
	cnc_ednm	concrete_edibles (non mass)	cracker, pork chop, lemon
	cnc_func	11.1.1 concrete_functional	11.1.2 box, wall, pipe, circuit, shirt
	cnc_light	12 concrete_impulses/lights	13 beacon, ray, tone, flare
	cnc_mark	14 concrete_marks/blemishes	15 boil, blemish, scratch
	cnc_nat	16 concrete_natural	17 cloud, pebble, flower
27	<i>cnc-nat-plant</i>	<i>concrete_natural_plant</i>	<i>violet, clove, lilac</i>
3	cnt	countable (delete; in syntactic type)	
33	col	collective (delete; implicit in animate_social institution)	
15	con	connective	
12	deg	degree	
13	dir	direction	
4, 6	ind	indefinite	
	17.1 inf	18 information	19 newspaper, symbol, rule, ballistics
30	<i>inf_sem</i>	<i>information_semiotic system</i>	<i>address, signal, code, number</i>
5	loc	locative	office, zone, city, room, Munich
17	man	manner	
	mass	20 mass	21 iron, water, sand, fiber, fire, heat
26	<i>mass_mat</i>	<i>mass_material</i>	<i>aluminum, wool, plastic, glass</i>
6	mea	measure	pressure, quantity, gram, rpm, voltage
	mea_abs	measure_masurable abstract concepts	temperature, length, velocity, duration
	mea_dis	measure_discrete measurable concepts	increment, sum, valence, count
32	<i>mea_unit</i>	<i>measure_unit</i>	<i>inch, hour, mph, volt, hertz</i>
19	21.1 mod	modal	
34	nonh	non-human (delete; implicit in concrete, etc.)	
28	pot	potent	
29	pro	process	correction, analysis, call, removal

37	prof	job title (delete; see anim_hum_func above)	
11	qual	qualitative	
14	quant	quantitative	
7	seq	sequence	
8	shp	shape	
9	siz	size	
20	spa	spatial	
10	tmp	temporal	summer, morning, September, Friday
39	vn	first name (delete; see anim_hum_pn above)	

1.1.2 Verbs

Intransitive verbs are adequately described with values *mov*, *motdir*, *motnd*, *pact* and *stat*. I've reorganized *movdir* and *motnd* (attach them to *mov*). Transitive verb SALs are strongly syntactic (supported by Syntactic frame). SALs which fall outside of Syntactic frame are too idiosyncratic for values in existing Semantic type: a distinction made between two types of transitive verbs, the reciprocal (a) and the objective (b), is based on the perceived effect of the verb on its arguments: effect on both subject and object in (a), on object alone in (b). Values in red below do not have a corresponding value in the SAL taxonomy. I really don't know how to organize them in a tree structure. My recommendation is to leave them in (for now).

SEMANTIC TYPE ID	SHORT FORM	SEMANTIC TYPE	EXAMPLES
70	achiev	achievement	
71	act	unspecified activity	
68	emot	emotion	
75	event	event	
73	mact	mental activity	
65	mov	movement	dance, depart, fly, go
63	<i>mov_motdir</i>	<i>movement_directed motion</i>	<i>depart, go, walk</i>
64	<i>mov_motnd</i>	<i>movement_non-directed motion</i>	<i>dance, sail</i>
67	noise	noise producing	
72	pact	physical activity	persist, refrain, appear
66	percept	perceptive	
62	perm	permission verb	
61	pha	phasal verb	
29	pro	process	
69	sen	sense	
76	situat	situation	
74	stat	stative	grow, become, sound

1.1.3 Adjectives

Adjective SALs are strongly syntactic (supported by Syntactic frame). Adjectives in the SAL high level node *Adverbial* (always have an adverb counterpart) are adequately described with values *deg*, *loc*, *man*, *mea*, and *seq* (I applied values *deg* and *man* to adjectives also). Adjectives in other SAL nodes are supported by Syntactic position, Syntactic type, and Syntactic frame. Participial adjectives were not represented. I added values for them in Syntactic type. Values in red are questionable. These values do not have a corresponding value in the SAL taxonomy. My recommendation is to get rid of them. We should also get rid of redundant value *siz* (See reason below).

SEMANTIC TYPE ID	SHORT FORM	SEMANTIC TYPE	EXAMPLES
1	age	age	
2	clr	color	
3	cnt	countable	
12	<i>deg</i>	<i>degree</i>	<i>acute, intense, substantial</i>
16	hum	human	
4, 6	ind	indefinite	

5	loc	locative	above, forward, regional
17	man	manner	charismatic, intrepid, personable
6	mea	measure	approximate, huge, minimal
7	seq	sequence	consecutive, daily, former
8	shp	shape	
9	siz	size (delete; in measure)	

1.1.4 Adverbs

Adverbs in the SAL high level node *Locative* are adequately described with values *freq*, *seq*, *spa*, *stat*, and *tmp* (I added new value *freq* and applied values *spa* and *stat* to adverbs also). Adverbs in the SAL high level node *Non-locative* are also adequately described with values *deg*, *man*, and *prob* (I added new value *prob*). Adverbs in other SAL nodes are supported by Syntactic position and/or Syntactic type. Values in red are questionable. These values do not have a corresponding value in the SAL taxonomy. My recommendation is to get rid of them. We should also get rid of redundant value *dir* (See reason below).

SEMANTIC TYPE ID	SHORT FORM	SEMANTIC TYPE	EXAMPLES
15	con	connective	
12	deg	degree	merely, approximately, completely
13	dir	direction (delete; in space)	
	freq	frequency	again, once, twice
17	man	manner	by hand, electronically, simultaneously
19	mod	modal	
18	orig	origin	
	prob	probability	conceivably, by chance, certainly, maybe
11	qual	qualitative	
14	quant	quantitative	
7	seq	sequence	primarily, lastly, first
20	spa	space	anywhere, to the right, inside
74	stat	stative	alike, at ease, out of commission
10	tmp	time ³	still, yet, already, at one time

1.1.5 Prepositions

I've reorganized *loc_from* and *loc_to* (attach them to *loc*). I don't know what to do with the values in red (the other values have corresponding values in the SAL taxonomy). My recommendation is to leave them in (for now). Values below only represent a subset of the SAL values for prepositions. As with nouns and verbs, I didn't think I could "dump" the complete set of SAL values for this part of speech, mostly because of proprietary issues, but also because the extra SAL values are very often specific to Logos (non standard values). The result is a compromise which I hope we can revisit (and update) in the future.

SEMANTIC TYPE ID	SHORT FORM	SEMANTIC TYPE	EXAMPLES
41	cau	causal	as a result of, because of
42	cau-neg	causal-negation	despite, in the absence of
43	comb	combinatorial	with, in combination with
15	con	connective	???
50	concess	concessive	???
44	cond	conditional	???
45	cor	correlative	???
46	cor-neg	correlative-negation	???
13	dir	direction	???

³ Links to Aspect.

47	incl	inclusive	in addition to, inclusive of
48	incl-neg	inclusive-negation	except for, instead of, without
49	instr	instrumental	by, by means of, by way of
5	loc	locative	
51	loc_ext	locative_extensive	???
52	<i>loc_from</i>	<i>locative_from</i>	<i>from, off of, out of</i>
53	loc_path	locative_path	???
54	<i>loc_to</i>	<i>locative_to</i>	<i>to</i>
17	man	manner	???
6	mea	measure	???
19	mod	modal	???
18	orig	origin	???
55	path	path	???
56	purp	purpose	for, for the benefit of
11	qual	qualitative	???
14	quant	quantitative	???
10	tmp	time	at the beginning of, during, prior to
57	tmp_ext	temporal_extensive	???
58	tmp_from	temporal_from	???
59	tmp_id	temporal_identical	???
60	tmp_to	temporal_to	???
32	unit	unit	???

1.1.6 Conjunctions

None of the values have corresponding values in the SAL taxonomy. I recommend to leave them in (for now). Conjunction SALs are too idiosyncratic for values in existing Semantic type: for example, SAL values distinguish two classes of disjunctive conjunctions (*yet, but, than, etc.*): the disjunctive conjunctions which are also adverbs, and the disjunctive conjunctions which are not. Also, unique SALs exist for all subordinating conjunctions.

SEMANTIC TYPE ID	SHORT FORM	SEMANTIC TYPE	EXAMPLES
15	con	connective	???
12	deg	degree	???
13	dir	direction	???
5	loc	locative	???
17	man	manner	???
19	mod	modal	???
18	orig	origin	???
11	qual	qualitative	???
14	quant	quantitative	???
7	seq	sequence	???
10	tmp	time	???

1.2 Syntactic Position

I need to add the following values (in green) to further categorize degree adverbs.

PART OF SPEECH	VALUE	DESCRIPTION	EXAMPLES
Adverb	cl-final	clause-final	
	cl-init	clause-initial	
	deg-post	degree adverb after morpheme	apiece, enough
	deg-pre	degree adverb before morpheme	less, very, hardly, slightly, fully
	postverb	following main verb	
	preverb	before main verb	

1.3 Syntactic Type

Noun and adverb values in red are redundant (See reason below). My recommendation is to get rid of them. I also need to add the following values (in green) to further categorize adjectives.

PART OF SPEECH	VALUE	DESCRIPTION	EXAMPLES
Noun	cnt	countable noun	
21.2	coll	collective noun (delete; in semantic type)	
	mass	mass noun (moved to semantic type)	
	mass-cnt	countable mass noun (delete)	
	prop	proper noun	
	quant	quantitative noun	
21.3 Adjective	-able	-ABLE participle	consignable, obtainable
	attrib	attribute adjective	
	past	past participle	seen, revised, displayed
	pred	predicative adjective	
	pres	present participle	hoping, designing, realizing
Adverb	adjmod	modifies adjective	
	advmod	modifies adverb	
	clsmode	modifies clause	
	detmod	modifies determiner (delete; implicit in npmod)	
	npmod	modifies noun phrase	
	numod	modifies numeral	
	prepmode	modifies preposition	
	quantmod	modifies quantifier (delete; implicit in npmod)	

1.4 Transitivity Type

I need to apply all values in Transitivity type to nouns and verbs (to adequately categorize process nouns).

21.3.1.1 PART OF SPEECH	VALUE	DESCRIPTION	
Noun, Verb	ditrans	ditransitive	give, provide, send
	intr	intransitive	
	mid	middle	
	refl	reflexive	
	trans	transitive	
	un	unspecified	
	unacc	unaccusative intransitive	
	unerg	unergative intransitive	

1.5 Syntactic Frame

Values *pp* and *pp-loc* should link to Preposition.

PART OF SPEECH	21.4 VALUE	DESCRIPTION	EXAMPLES
Noun, Verb, Adjective	pp ⁴	prepositional phrase required	
	pp-opt	prepositional phrase optional	
	pp-loc ⁵	locational/directional prepositional phrase required	

⁴ Links to Preposition.

⁵ Links to Preposition.

	pp-loc-opt	locational/directional prepositional phrase optional	
--	------------	--	--

Appendix III:

Proposed OLIF2 handling for Transfer Conditions and Actions (from OTELO report for WP LR 1.2)

⇒ *Transfer Condition (transCond)*

- ✓ A transfer condition specifies a condition in the source language under which a given translation is valid.
- ✓ Transfer conditions are definable for the following parts-of-speech:
 - Noun
 - Verb
 - Adjective
 - Adverb
 - Preposition
- ✓ There are two basic components to a transfer condition:
 - a) The *context(s)* for a given translation of a source word/phrase into a target word/phrase.
 - b) *Test(s)* on the features/values associated with the context
- ✓ The context may be:
 - a) The source word/phrase itself
 - b) Distinct context elements that occur with the source word/phrase within the clause. (These elements usu. fall within the syntactic frame defined for that particular word/phrase.) The context elements are categorised based on their part-of-speech.
 - c) Phrases that must be matched word-for-word for the condition to be satisfied, e.g., *trip the light fantastic, be in hot water.*

(Tests on context types (a) and (b) can be tests on feature values that are assigned in the lexicon, as well as feature values that are assigned in a system analysis process.)
- ✓ Context elements differ depending on the part-of-speech of the word/phrase:

Context elements for nouns:

- Attached prep phrase(s) = N PP...
- Attached possessive phrase = N (of) N
- Descriptive adjective = Adj N
- Prep in phrase in which noun is object of prep = Prep N

Context Elements for Verbs:

- Noun arguments = V N(Subj), N(DO), N(IO)
- Attached prep phrase(s) = V PP...
- Adverb = V Adv
- Predicate adjective = V Adj
- Sentential complement = V Comp

Context Elements for Adjectives:

- Head noun = **Adj** N
- Adverb = Adv **Adj**
- Attached prep phrase(s) = **Adj** PP... (predicate adjective)

Context Elements for Adverbs:

- Prep phrase = **Adv** PP

Context Elements for Prepositions:

- Noun object of prep = **Prep** N
- Prep phrase = **Prep** N PP

✓ When the context is the source word/phrase itself and the source string is a phrase, the context is defined as the *head* of the phrase.

✓ Tests on context types (a) and (b) are tests on values for the following features:

- Canonical form (canForm)
- Part of Speech (ptOfSpeech)
- Semantic type (semType)
- Syntactic type (synType)
- Grammatical gender (gender)
- Natural gender (natGender)
- Case (case)
- Number (number)
- Degree (degree)
- Voice (voice)
- Tense (tense)
- Aspect (aspect)
- Subject field (subjField)
- Product (product)
- Company (company)

✓ The test for the source phrase that must be matched word-for-word (context type (c)) is the context string itself.

The representation of transfer conditions in OLIF2:

(Have to work out XML here)

- ✓ A transfer condition is stated as a block within the transfer block of an entry..
- ✓ The transfer condition block must contain a *context* feature and a *transTest* feature; for context types (a) and (b), the transfer test consists of a test on a feature and value, the actual feature being represented as a type attribute of the *featTest*

```
<transCond>
  <context>value</context>
  <transTest>
    <featTest type="type">value</featTest>
  </transTest>
</transCond>
```

- ✓ The user may specify multiple contexts and multiple transfer tests, but they are well-formed only if the context(s) precede directly the transfer tests that apply to them. Thus, in (1), the two transfer tests apply to both of the contexts that precede them:

```
1) <transCond>
    <context>value</context>
    <context>value</context>
    <transTest>
      <featTest type="type">value</featTest>
    </transTest>
    <transTest>
      <featTest type="type">value</featTest>
    </transTest>
  </transCond>
```

- ✓ Multiple *context* tags listed one after the other in a *transCond* block, as in (1), represent an 'or' relationship.
- ✓ Multiple *transTest* tags listed one after the other in a *transCond* block, as in (1), represent an 'or' relationship.

- ✓ To 'and' contexts within a transfer condition, each *context* tag (or 'or'ed *context* tags) is followed by its relevant transfer test(s):

```

2)      <transCond>
          <context>feature value</context>+
          <transTest>
              <featTest type="type">value</featTest>
          </transTest>+
          <context>feature value</context>+
          <transTest>
              <featTest type="type">value</featTest>
          </transTest>+
      </transCond>

```

- ✓ To 'and' transfer tests within a transfer condition, they are nested in the *transTest* tag:

```

3)      <transCond>
          <context>feature value</context>
          <transTest>
              <featTest1 type="type">value</featTest>
              <featTest2 type="type">value</featTest>
              <featTest3 type="type">value</featTest>
              .....
          </transTest>
      </transCond>

```

- ✓ Specifying several contexts, each with a different test that applies to it, is represented as multiple transfer conditions if the contexts are not in an 'and' relationship:

```

4)      <transCond>
          <context>feature value</context>
          <transTest>
              <featTest type="type">value</featTest>
          </transTest>
      </transCond>

      <transCond>
          <context>feature value</context>
          <transTest>
              <featTest type="type">value</featTest>
          </transTest>
      </transCond>

```

- ✓ Suggested values for feature **context** are:

	VALUE	DESCRIPTION
context type (a):	head	the source word itself or the head of the source string
context type (b):	pp	prepositional phrase
	genobj	possessive phrase, eg., "of n"
	adj	descriptive/predicate adjective
	prep	prep in phrase in which source noun is prep object
	subj	subject noun
	dobj	direct object noun
	iobj	indirect object noun
	comp	sentential complement
	adv	adverb
	prepobj	noun object of preposition
context type (c)	string	refers to phrase that must be matched word-for-word; phrase itself is specified as value of feature <transTest>

- ✓ A **transTest** is a valid feature/value pair expressed as the type attribute of *featTest*, plus the value, e.g.,

```

<transCond>
  <context>head</context>
  <transTest>
    <featTest type="case">d</featTest>
  </transTest>
</transCond>           "If source word is in the dative case"

```

```

<transCond>
  <context>pp</context>
  <transTest>
    <featTest type="canForm">out</featTest>
  </transTest>
  <transTest>
    <featTest type="canForm">out of</featTest>
  </transTest>
</transCond>         "If source word has attached prep, either
                       'out' or 'out of'"

```

Or the actual string that you are testing for a word-for-word match, expressed as the value of *stringTest*:

```

<transCond>
  <context>string</context>
  <transTest>
    <stringTest>the light fantastic</stringTest>
  </transTest>
</transCond>      "If source word occurs with 'the light
fantastic'"

```

⇒ **Transfer Action (transAct)**

- ✓ Transfer actions are definable for the following parts-of-speech:
 - Noun
 - Verb
 - Adjective
 - Preposition

- ✓ Actions generally reflect what translators view as addition or deletion of elements in the target; some actions reorder elements or change a feature value:

Noun Actions

- Add preposition to context noun = $\underline{N} N \rightarrow \underline{N} \text{ Prep } N$
- Delete preposition from attached PP; assign case/role to N = $\underline{N} \text{ Prep } N \rightarrow \underline{N} N$
- Add determiner to N = $\underline{N} \rightarrow \text{Det } \underline{N}$
 $\underline{N} N \rightarrow \underline{N} \text{ Det } N$
 $\underline{N} \text{ Prep } N \rightarrow \underline{N} \text{ Prep Det}$

- N
- Delete determiner from N = $\text{Det } \underline{N} \rightarrow \underline{N}$
 $\underline{N} \text{ Det } N \rightarrow \underline{N} N$
 $\underline{N} \text{ Prep Det } N \rightarrow \underline{N} \text{ Prep } N$
- Add descriptive adjective = $\underline{N} \rightarrow \text{Adj } \underline{N}$
- Delete descriptive adjective = $\text{Adj } \underline{N} \rightarrow \underline{N}$

Verb Actions

- Add noun argument; Assign case/role to N = $\underline{V} \rightarrow \underline{V} N$
- Delete noun argument = $\underline{V} N \rightarrow \underline{V}$
- Add preposition to object N = $\underline{V} N \rightarrow \underline{V} \text{ Prep } N$
- Delete preposition from attached PP; assign case/role to N = $\underline{V} \text{ Prep } N \rightarrow \underline{V} N$
- Reorder cases/roles of argument N's = $\underline{V} N1 N2 \rightarrow \underline{V} N2 N1$
- Change voice of verb; adjust cases/roles of noun arguments = $\underline{V}(\text{active}) \rightarrow \underline{V}(\text{passive})$
 $\underline{V}(\text{passive}) \rightarrow \underline{V}(\text{active})$
- Add adverb = $\underline{V} \rightarrow \underline{V} \text{ Adv}$

- Delete adverb = V Adv -> V
- Add predicate adjective = V -> V Adj
- Delete predicate adjective = V Adj -> V

Adjective Actions

- Add adverb = Adj -> Adv Adj
- Delete adverb = Adv Adj -> Adj

Preposition Actions

- Add determiner for noun object = Prep N -> Prep Det N
- Delete determiner for noun object = Prep Det N -> Prep N
- Add descriptive adjective = Prep N -> Prep Adj N
- Delete descriptive adjective = Prep Adj N -> Prep N

The representation of transfer actions in OLIF2:

- ✓ There are eight basic transfer actions proposed:
 - add to head element (addToHead)
 - add to context element (addToContext)
 - delete from head element (delFromHead)
 - delete from context element (delFromContext)
 - change verb form (changeVrbFrm) -> active to passive, causative
 - change arg roles (changeRole)
 - change transfer of context element (contextTrans)
 - assign case to noun (assignCase)
- ✓ Each of the *add* and *delete* actions has type attributes for part-of-speech values for the elements that are added or deleted. These type attributes are *adj*, *det*, *prep*, *noun*, *adv*; feature values of the *add* and *delete* actions are the canonical forms of the words/phrases being added/deleted:

e.g., <addToHead type="adj">strong</addToHead>

- ✓ Transfer actions follow the *context* and *transTest* tags that they refer to within the transfer condition block.

```

<transCond>
  <context>head</context>
  <transTest>
    <featTest type="case">d</featTest>
  </transTest>
  <transAct>
    <addToHead type="prep">for</addToHead>
  </transAct>
</transCond>

```

```
</transAct>
</transCond>
```

"If source is in dative, make it the object of the prep 'for' in the target"

- ✓ If the transfer action requires case assignment in the target, this is done in the *transAct* block:

```
<transCond>
  <context>pp</context>
  <transTest>
    <featTest type="canForm">to</featTest>
  </transTest>
  <transAct>
    <delFromContext
type="prep">to</delFromContext>
    <assignCase>d</assignCase>
  </transAct>
</transCond>
```

"If the source noun occurs with pp with 'to', the prep does not have a prep correlate in the target and the noun is assigned dative case"

- ✓ Similarly, source verbs can be assigned passive voice in the target:

```
<transCond>
  <context>subj</context>
  <transTest>
    <featTest type="semType">hum</featTest>
  </transTest>
  <transAct>
    <changeVrbFrm>passive</changeVrbFrm>
  </transAct>
</transCond>
```

"If the source verb occurs with a human subject, the target verb is passive"

- ✓ The roles of argument nouns in the target can be defined:

```
<transCond>
  <context>subj</context>
  <transTest>
    <featTest type="semType">hum</featTest>
  </transTest>
  <transAct>
    <changeRole>subj-dobj</changeRole>
  </transAct>
</transCond>
```

"If the source verb occurs with a human subject, the source subject is handled as a direct object in the target"

- ✓ The transfer of a context element can be assigned:

```
<transCond>  
  <context>pp</context>  
  <transTest>  
    <featTest type="canForm">to</featTest>  
  </transTest>  
  <transAct>  
    < contextTrans>nach</contextTrans>  
  </transAct>  
</transCond>
```

*"If the source occurs with an attached prep
'to', the transfer of 'to' should be 'nach'"*