



NEWS Ontology II

Author:	Norberto Fernández García, Luis Sánchez Fernández, Jesús Villamor Lugo, Vicente Luque Centeno, Antonio Rodríguez de las Heras Pérez, José María Blázquez del Toro, Ansgar Bernardi, Lars Zapf
Number of deliverable:	D2.5
Work package:	WP3 – Ontologies, Multilingual Thesauri and Semantic Web Standards
Nature of document:	Structured Data + Report
Version:	Final
Classification:	Public
Date of delivery:	22.11.05

Project title:	NEWS – News Engine Web Services
Project number:	FP6-001906
Project duration:	01. April 2004 – 31. March 2006
Project coordinator:	DFKI Kaiserslautern (Germany)
Project partners:	Textology (Israel) Agenzia ANSA S. C. A R. L. (Italy) Agencia EFE S.A. (Spain) Universidad Carlos III de Madrid (Spain)

FP6-001906
NEWS is funded
by



Abstract: We present here a second version of the NEWS Ontology. In this second version we have reviewed the Content module and multilingual aspects. We include in this deliverable as an annex documentation of the classes and properties defined in the content module.

1	INTRODUCTION.....	3
2	REVISION OF THE NEWS ONTOLOGY CONTENT MODULE.....	3
2.1	REPRESENTATION LANGUAGE	3
2.2	REVISION OF CONCEPTS IN THE ONTOLOGY	4
2.2.1	News Event Model in the NEWS Ontology	5
2.2.2	Other classes and properties in the content module: discussion	7
3	MULTILINGUAL ASPECTS	8
4	CONCLUSIONS.....	10
5	REFERENCES.....	10
A.	NEWS ONTOLOGY CONTENT MODULE DOCUMENTATION.....	11

1 Introduction

In this deliverable we present a second version of the NEWS Ontology. We have taken into account the experience gained during the first year of the NEWS project together with some recommendations of the reviewers to make some changes and extensions of the NEWS Ontology.

The main goal of this second version is to make the NEWS Ontology customizable. This goal is achieved by:

1. The Management Metadata module is interoperable with the IPTC [IPTC] standards NewsML [NewsML] and NITF [NITF] (see D2.3)
2. The Categorization module follows the IPTC Subject Codes [NewsCodes] standard
3. The Content module will contain only a set of core concepts that could be extended according to each News Agency needs (see section 2 of this deliverable)

In this revision we decided to leave untouched the Management Metadata module and the Categorization module. They are based on IPTC standards, so they should only be changed if these standards change. Therefore, we concentrate on the revision of the Content module (section 2) and multilingual aspects (section 3).

2 Revision of the NEWS Ontology Content module

We divide this section in two parts. The first subsection deals with representation language requirements taking into account scalability and expressiveness. The second subsection presents the concepts (classes and properties) available in the second version of the NEWS Ontology Content module.

2.1 Representation language

The question of which are the requirements with respect to the representation language for content annotation of news items is too complex to be answered in a single statement. As starting point we can examine the following facts:

1. A news item can refer to any known concept, therefore an Ontology for the news domain should model the whole world.
2. A News Agency deals with huge amounts of content, therefore a content management system that stores News Agency content should be very efficient.

Clearly, the above facts are contradictory (apart from the fact that developing an Ontology that models the whole world requires infinite resources), because of the well known trade off in knowledge representation languages between expressiveness and complexity.

A trade-off is needed, and can be found analysing the user requirements. First, in D1.1 it is said:

- NEWS Ontological annotations must identify real world entities such as people, organizations, locations and happenings/events with properties and relations that characterize the entities' attributes and role in their context.
- NEWS query and inference service based on RDF metadata annotations must have a good response when using big amounts of information (EFE).

Based on our experience, the use of inference engines (either Horn logic or DL reasoners) over instances in big knowledge bases is time expensive and not scalable.

Therefore, the use of inference engines (in our case, TRIPLE) should be restricted to query expansion.

However, rules defined in the ontology could be efficiently used to implement predefined queries by means of imperative algorithms. For instance, assuming that the ontology contains a rule that states that if organization A is suborganization of organization B and organization B is suborganization of organization C then organization A is suborganization of organization C, it would be possible to write down an imperative algorithm that could answer the question “tell me the suborganizations of organization X”, taking into account the above mentioned rule. The use of this kind of mechanisms is not foreseen in the NEWS project, but they could be implemented in a customized version of the NEWS system, according to the needs of a specific NEWS agency.

In conclusion, we have decided to restrict the use of the ontology for:

1. Query expansion over the tree of classes of the category and content modules of the NEWS Ontology
2. Multilingual support (see section 3)

This leads us to a pure RDF Schema lightweight ontology. The second version of the NEWS Ontology will provide a taxonomy of classes (with associated properties) to represent basic concepts that can occur in a news item: locations, persons, organizations and so on. The main extension here is the definition of a detailed concept of event which was not present in the first version. This and other changes that have been made are detailed in section 2.2.

2.2 Revision of concepts in the Ontology

The experience gained during the time the NEWS project has been running has shown us the importance of the customization of the data models used by the News Agencies. Despite the use of standards like IPTC NewsML and NITF, each News Agency, for cultural, environmental and internal reasons, wants to define its in-house data models. The fact that NewsML and also NITF provide a general framework where many optional and user-defined metadata are available is just a reflection of this fact. The IPTC designed these standards being aware of this customization needs and that is the reason of so flexible standards.

Therefore, we have decided to follow a similar strategy for the NEWS Ontology Content module. We have decided to define a core Content module. Each News Agency could adapt it to its needs by adding classes, properties and/or instances. The Content module will ensure at certain degree interoperability between different News Agencies in the same way that NewsML and NITF do, because the classes defined by the News Agencies should be linked to the classes in the core Ontology.

The core Ontology will be based on SUMO and MILO. Basically what we have done is to review the first version of the NEWS Ontology, taking into account the experience gained in the NEWS project and the requirements of the News Agencies.

We want our NEWS Ontology Content module to be general so to make it useful for any News Agency. Therefore, we made an additional pruning of the first version of our Ontology, to select those classes and properties that represent concepts of common use in the news domain. We also added some new concepts whose need was detected.

As we have said, we want that each News Agency could adapt the NEWS Ontology to its needs. For that task it would be needed to have appropriate tools. Although this topic will be dealt with in deep in D2.6, we foresee that the addition of new properties and classes could be done by means of public available ontology editors like Protegé [Protegé] or InferEd [InferEd]. However, the creation of new instances will require the development of

a specialized tool, because they will be created during the process creation workflow. More details on this will be described in deliverable D2.6.

The rest of this section is organized as follows. First we present the model that we have developed for news events. This is the main novelty in the second version of the Ontology. Then we will present the rest of the NEWS Ontology content module, with a discussion on which classes and properties are kept and which are removed compared to the first version of the NEWS Ontology.

2.2.1 News Event Model in the NEWS Ontology

An event in the news domain is defined as “something that happens and is subject to news coverage” (according to the IPTC EventsML 1.0 Business Requirements Specification, draft 4). Of course, materialising this definition in concrete mechanisms to identify events is difficult. In NEWS we propose to identify an event as a set of SPO structures (subject, predicate, object), where the subject and the object are a set of instances of the NEWS ontology (e.g. Bush junior, Bush senior) plus (possibly) a number of instances occurring in the news item and that are relevant with respect to the event. The predicate is a property of the NEWS ontology which interconnects the subject and the object set in a semantic meaningful relation. The SPO describes a relevant event described by the news item. A timestamp can provide also information about the date of occurrence of the event.

To give an example:

```
Timestamp:      20051102
Subject:        Autonomy Inc. (Ontology Instance ID85663)
Predicate:      Buys (Ontology Property ID34221)
Object:         Verity Inc. (Ontology Instance ID74563),
                Google Inc. (Ontology Instance ID45288)
```

In practice, we expect that most events could be classified according to a number of event types. Each event type will have associated one or several compatible news item categories, and could be matched with one or several patterns. A pattern is composed of one or several properties and/or instances in the ontology that should occur in the news item. From the property itself plus domain and range information, a property could be matched to a relevant SPO in the news item. This provides a mechanism to identify event types.

Example of Event Type:

```
Label:          Company acquisition
SRS Category:   Economy
Pattern:        Content:buyCompany
Domain of Content:buyCompany:  Content:Company
Range of Content:buyCompany:    Content:Company
```

A matching with the above mentioned event will find that the SPO “Autonomy Inc. Buys Verity Inc.” matches with the pattern `Content:buyCompany`.

News events are modelled in the Ontology by means of the class `Content:NewsEvent`, subclass of class `Content:Process`. An event can have an associated type, of class `Content:NewsEventType`. Hierarchies of event types could be defined by defining subclasses of `Content:NewsEventType` if necessary. The type of an event is defined by means of the property `Content:hasEventType`. Properties are provided to define the instances, SPOs and timestamp of a news event (see the content module documentation annex).

For a news event type (instances of class `Content:NewsEventType`) we can define the compatible categories by means of the property `Content:hasCompatibleCategory` and a number of patterns that would allow to identify the event type (property `Content:hasPattern`). For each pattern (instance of class `Content:NETPattern`) we can define one or several instances and/or properties that compose the pattern.

The following table shows an RDF example of an event of type "Company Acquisition" consisting on the acquisition of "RedHat Inc." by "Microdoft Inc.". The same RDF graph is also graphically represented at <http://www.it.uc3m.es/luis/NEWS/EventExample.gif>.

```
<?xml version='1.0' encoding='UTF-8'?>
<!DOCTYPE rdf:RDF [
<!ENTITY core 'http://www.w3.org/2004/02/skos/core#'>
<!ENTITY instance
'http://www.news-project.com/Ontology/NEWSContentInstance#'>
<!ENTITY iptc_subject
'urn:newsml:iptc.org:20001006:topicset.iptc-subjectcode:15#'>
<!ENTITY Content 'http://www.news-project.com/Ontology/Content#'>
<!ENTITY rdf 'http://www.w3.org/1999/02/22-rdf-syntax-ns#'>
<!ENTITY rdfs 'http://www.w3.org/2000/01/rdf-schema#'>
]>
<rdf:RDF xmlns:Content="&Content;"
xmlns:core="&core;"
xmlns:instance="&instance;"
xmlns:iptc_subject="&iptc_subject;"
xmlns:rdf="&rdf;"
xmlns:rdfs="&rdfs;">
<Content:NewsEventType rdf:about="&instance;NET97000001">
<core:prefLabel xml:lang="en">Company
acquisition</core:prefLabel>
<!-- Economy category -->
<Content:hasCompatibleCategory
rdf:resource="&iptc_subject;sr04000000"/>
<Content:hasPattern rdf:resource="&instance;NETP97000002" />
</Content:NewsEventType>

<Content:NETPattern rdf:about="&instance;NETP97000002">
<Content:NETPatternHasProperty
rdf:resource="&Content;buyCompany" />
</Content:NETPattern>

<Content:NewsEvent rdf:about="&instance;NE97000003">
<Content:hasEventType rdf:resource="&instance;NET97000001" />
<Content:has_SPO rdf:resource="_:1" />
</Content:NewsEvent>

<rdf:Statement rdf:about="_:1">
<rdf:subject rdf:resource="&instance;org92003656" />
<rdf:predicate rdf:resource="&Content;buyCompany" />
<rdf:object rdf:resource="&instance;org92004573" />
</rdf:Statement>

<Content:Corporation rdf:about="http://www.news-
project.com/Ontology/NEWSContentInstance#org92003656">
<core:altLabel>MSFT</core:altLabel>
<core:definition>Microsoft Corporation</core:definition>
<core:prefLabel>Microsoft Corporation</core:prefLabel>
</Content:Corporation>

<Content:Corporation rdf:about="http://www.news-
```

```
project.com/Ontology/NEWSContentInstance#org92004573">
  <core:altLabel>RHAT</core:altLabel>
  <core:definition>Red Hat, Inc.</core:definition>
  <core:prefLabel>Red Hat, Inc.</core:prefLabel>
</Content:Corporation>
</rdf:RDF>
```

2.2.2 Other classes and properties in the content module: discussion

Here we present a short discussion about the classes and properties selected for the second version of the NEWS Ontology Content module. This section is divided in two parts: first we discuss what we keep in the NEWS Ontology and then we discuss what has been removed.

In annex A we present the documentation of all the classes and properties that compose the NEWS Ontology Content module.

2.2.2.1 Parts of the content module that remain

We keep the first two levels and part of the third level (the subclasses of `Content:PhysicalContent:Object` and `Content:Process`) of the original SUMO Ontology unchanged to make very easy to make future addition of classes to the Ontology and as a top level structure of the Ontology. We removed part of the subclasses of `Content:Abstract` for two reasons: 1) some of them seem not needed in the news domain (`Content:SetOrClass`, `Content:Relation`, `Content:Graph` ...) and 2) they are used in SUMO as part of the underlying semantics, but we are using RDF and RDF Schema for that purposes.

We keep the Classes in SUMO that correspond to basic entities of interest of the News Agencies: locations (`Content:Region`), persons (`Content:Human`) and organizations (`Content:Organization`), together with relevant subclasses.

We keep the class `Content:ContentBearingObject` that represents the class of objects that express content and its subclasses that represent concepts commonly used in news items: `Content:Agreement`, `Content:Book`, `Content:Certificate`, ... including the class `Content:NewsItem` itself.

We keep the class `Content:GroupOfPeople` together with classes of groups of people that can appear often in news items: `Content:AgeGroup`, `Content:EthnicGroup`, `Content:BeliefGroup`, `Content:CountryNationals`.

We keep the class `Content:Artifact` together with two common concepts in news items: `Content:Building` and `Content:Product` (for instance, in economy news items).

We also keep the class `Content:Drug` and its superclass `Content:Substance`.

Finally, we also keep a few subclasses of `Content:Abstract` for representing addresses, functions or social roles, units of measure and the ternary predicate `Content:FunctionPredicate` that relates a person with the position or function that person occupies in an organization.

2.2.2.2 Parts of the first version of the content module that have been removed

In addition to the time and units of measure modules that have been removed because they can be implemented with imperative algorithms, the following parts of the content module have been removed. Examples of that are these:

- All subclasses of the `Content:Process` class that were taken from SUMO, because they are related to physical, chemical, geological or biological changes and are not interesting for the news domain.
- Some classes that were located at intermediate levels and are not relevant for the news domain. An example is the class `Content:Human`. In the second version of the content module this class is direct subclass of `Content:Agent`. We have removed several intermediate subclasses as `Content:Hominid`, `Content:Animal` and so on.
- We have removed some subclasses of `ContentBearingObject` according to their relevance for the news domain. For instance, we have removed the classes `Content:Identifier`, `Content:Icon`, etc., but we have kept the classes `Content:NewsItem`, `Content:Book` (a book can be mentioned in a news item), etc
- We have removed most subclasses of `Content:Abstract`, like `Content:Number`, `Content:Quantity`, etc.

In summary, we have removed all the concepts that do not often occur in a news item. Of course, as we have already said, news agencies will be able to add classes to the content module according to their needs.

With properties we have followed a similar approach. For instance, we have removed all properties that have as domain or range classes that have been removed from the ontology. The core of the properties available in the second version of the content module is composed by those whose domain and range are (sub)classes of `Content:Region`, `Content:Organization` and `Content:Human`, which are the classes that map to the entities that the annotation tool can recognise and the most relevant for the news domain according to news agencies requirements (as stated in deliverable D1.1).

3 Multilingual aspects

Following the experience gained during the first year of the NEWS project, together with some remarks made by the reviewers at the first NEWS Project Review, we decided to modify the set of properties defined in the NEWS Ontology for multilingual support.

First of all, we revisit the expected uses of such properties:

- Language independent queries. A user could make a query using terms in one language and find news items that contain those terms in the same or other language.
- Disambiguation of queries. A user wants to find news items in which a given instance appears (for instance the user is interested in Rome, the capital of Italy). The user enters the word "Rome" in her query. However two instances that match with Rome are available: Rome the capital of Italy and Rome a city in the state of Georgia (USA). The system should present to the user a description of both instances so she can choose.
- Disambiguation of entity annotations. A news item is processed at the Annotation and Categorization System, developed by Ontology Ltd. As a result, the named entities are tagged. The news item is then sent to the Hddb, where an instance matching and disambiguation process is performed to match the named entities in the news item with the instances in the ontology.

To meet these three goals we have decided (according also with other initiatives like SKOS [SKOS1, SKOS2, SKOS3], see below) to define three properties:

- Preferred label: this is the label that will be shown to the user as representation of an instance. For each instance and language there should be at most one preferred label. It is not forbidden that two instances have the same preferred label, although this situation should be avoided.
- Alternative labels: these are alternative names that could be used to represent an instance. It plays a similar role as synsets in EuroWordNet. For each instance and language there could be many alternative labels. It is allowed without any restriction that two instances have alternative labels in common.
- Description. A description is one or several natural language sentences that describe an instance, so that it can be perfectly identified. For each instance and language there should be only one description. It is forbidden that two instances have the same description.

These properties will be used as follows:

- Language independent queries and disambiguation of queries. Whenever a user introduces in the query GUI one term to identify an instance, the term is sent to the HDDB, where the term will be matched against the preferred and alternative labels. For each matching, the GUI will show the preferred label. If the user is not sure, she then could ask for the description of some instances. Then she will decide which the instance she is interested is.
- Disambiguation of entity annotations. The preferred and alternative labels will be matched against the tagged entities as part of the instance matching and disambiguation process.

One of the rules we have followed in the design of the NEWS Ontology is the use, whenever possible, available standards. Therefore, we looked to the W3C SKOS (Simple Knowledge Organization System) Core initiative. SKOS Core provides a model for expressing the basic structure and content of concept schemes (thesauri, classification schemes, subject heading lists, taxonomies, terminologies, glossaries and other types of controlled vocabulary). As part of the work of the SKOS Core, a SKOS Core Vocabulary Specification is being defined. The SKOS Core Vocabulary Specification is since 10 May 2005 a Working Draft.

We looked to the SKOS Core Vocabulary Specification and found that they have defined the properties we need, so we decided to use them in the NEWS Ontology. These properties are defined as follows:

Name	URI	Description
altLabel	http://www.w3.org/2004/02/skos/core#altLabel	An alternative lexical label for a resource.
prefLabel	http://www.w3.org/2004/02/skos/core#prefLabel	The preferred lexical label for a resource, in a given language.
definition	http://www.w3.org/2004/02/skos/core#definition	A statement or formal explanation of the meaning of a concept.

We have populated the content module with about 10000 instances with their multilingual labels and definitions attached, including:

- All the countries that have an ISO code
- All the capitals of those countries plus many of other main cities around the world
- All the current heads of state of those countries

- All the functions/social roles available at EuroWordNet
- All the companies at NASDAQ

We have obtained those instances (plus the multilingual information) by using EuroWordNet and Web crawling. We have explored the use of other resources like the results of the NAMIC project. However, in the case of NAMIC, both ANSA and EFE (they were partners of the NAMIC project) have not been able to provide the NAMIC knowledge bases to the NEWS project and it seems that they are not publicly available.

4 Conclusions

This deliverable has presented a new version of the NEWS Ontology. The new version has been designed with two goals in mind: to address the issues that have been detected during the first year of the NEWS project and to make the NEWS Ontology highly customizable to each News Agency needs. As part of this deliverable, we provide documentation for the NEWS Ontology Content module (annex A).

5 References

[IPTC] International Press Telecommunications Council. Home page at <http://www.iptc.org/> (browsed on 27-08-2005).

[NewsML] NewsML Functional Specification. Version 1.2. International Press Telecommunications Council.
http://www.newsml.org/IPTC/NewsML/1.2/specification/NewsML_1.2-spec-functionalspec_7.html (browsed on 27-08-2005).

[NITF] Documentation for NITF. Version 3.2. International Press Telecommunications Council.
<http://www.nitf.org/IPTC/NITF/3.2/documentation/nitf-documentation.html> (browsed on 27-08-2005).

[NewsCodes] The IPTC News Codes.
<http://www.iptc.org/NewsCodes/> (browsed on 27-08-2005).

[Protegé] The Protegé Ontology Editor and Knowledge Acquisition System.
<http://protege.stanford.edu/> (browsed on 27-08-2005).

[InferEd] InferEd Web Page.
<http://www.intellidimension.com/default.rsp?topic=/pages/site/products/infered/default.rsp> (browsed on 27-08-2005).

[SKOS1] SKOS Core Guide. Working Draft 10 May 2005.
<http://www.w3.org/TR/swbp-skos-core-guide/> (browsed on 27-08-2005).

[SKOS2] SKOS Core Vocabulary Specification. Working Draft 10 May 2005.
<http://www.w3.org/TR/swbp-skos-core-spec/> (browsed on 27-08-2005).

[SKOS3] Quick Guide to Publishing a Thesaurus on the Semantic Web. Working Draft 10 May 2005.
<http://www.w3.org/TR/swbp-thesaurus-pubguide/> (browsed on 27-08-2005)

A. NEWS Ontology Content module documentation

Class Hierarchy for *NEWS* Project

- [Content:Entity](#)
 - [Content:Abstract](#)
 - [Content:Attribute](#)
 - [Content:Address](#)
 - [Content:Function](#)
 - [Content:NETPattern](#)
 - [Content:NewsEventType](#)
 - [Content:Predicate](#)
 - [Content:FunctionPredicate](#)
 - [Content:UnitOfMeasure](#)
 - [Content:CurrencyMeasure](#)
 - [Content:Physical](#)
 - [Content:Object](#)
 - [Content:Agent](#)
 - [Content:GeopoliticalArea](#)
 - [Content:City](#)
 - [Content:CityDistrict](#)
 - [Content:Country](#)
 - [Content:County](#)
 - [Content:StateOrProvince](#)
 - [Content:Group](#)
 - [Content:GroupOfPeople](#)
 - [Content:AgeGroup](#)
 - [Content:BeliefGroup](#)
 - [Content:CountryNationals](#)
 - [Content:EthnicGroup](#)
 - [Content:FamilyGroup](#)
 - [Content:Organization](#)
 - [Content:BandOrOrchestra](#)
 - [Content:Corporation](#)
 - [Content:GovernmentOrganization](#)
 - [Content:Government](#)
 - [Content:NonProfitOrganization](#)
 - [Content:OrganizationOfNations](#)
 - [Content:PoliticalOrganization](#)
 - [Content:ReligiousOrganization](#)

- [Content:SportsLeague](#)
 - [Content:SportsTeam](#)
 - [Content:TerroristOrganization](#)
 - [Content:Human](#)
 - [Content:Man](#)
 - [Content:Woman](#)
- [Content:Artifact](#)
 - [Content:Building](#)
 - [Content:Product](#)
- [Content:Collection](#)
 - [Content:Archipelago](#)
 - [Content:Group](#)
 - [Content:GroupOfPeople](#)
 - [Content:AgeGroup](#)
 - [Content:BeliefGroup](#)
 - [Content:CountryNationals](#)
 - [Content:EthnicGroup](#)
 - [Content:FamilyGroup](#)
 - [Content:Organization](#)
 - [Content:BandOrOrchestra](#)
 - [Content:Corporation](#)
 - [Content:GovernmentOrganization](#)
 - [Content:Government](#)
 - [Content:NonProfitOrganization](#)
 - [Content:OrganizationOfNations](#)
 - [Content:PoliticalOrganization](#)
 - [Content:ReligiousOrganization](#)
 - [Content:SportsLeague](#)
 - [Content:SportsTeam](#)
 - [Content:TerroristOrganization](#)
- [Content:ContentBearingObject](#)
 - [Content:AgreementDocument](#)
 - [Content:Book](#)
 - [Content:Certificate](#)
 - [Content:FinancialInstrument](#)
 - [Content:Patent](#)
 - [Content:Language](#)
 - [Content:LegalDocument](#)
 - [Content:MotionPicture](#)
 - [Content:MusicalComposition](#)
 - [Content:NewsItem](#)

- [Content:Region](#)
 - [Content:AstronomicalBody](#)
 - [Content:GeographicArea](#)
 - [Content:GeopoliticalArea](#)
 - [Content:City](#)
 - [Content:CityDistrict](#)
 - [Content:Country](#)
 - [Content:County](#)
 - [Content:StateOrProvince](#)
 - [Content:LandArea](#)
 - [Content:Archipelago](#)
 - [Content:Cemetery](#)
 - [Content:Continent](#)
 - [Content:Forest](#)
 - [Content:Island](#)
 - [Content:Park](#)
 - [Content:WaterArea](#)
 - [Content:Gulf](#)
 - [Content:Lake](#)
 - [Content:Ocean](#)
 - [Content:River](#)
 - [Content:Sea](#)
 - [Content:Transitway](#)
 - [Content:Airport](#)
 - [Content:Bridge](#)
 - [Content:Canal](#)
 - [Content:Railway](#)
 - [Content:Roadway](#)
 - [Content:Tunnel](#)
 - [Content:Substance](#)
 - [Content:Drug](#)
- [Content:Process](#)
 - [Content:NewsEvent](#)

Project: NEWS

Class Content:Entity

Concrete Class Extends

:THING

Direct Instances:

None

Direct Subclasses:

1. [Content:Abstract](#)
2. [Content:Physical](#)

Class Documentation:

Documentation on Entity(SUMO): The universal class of individuals.This is the root node of the ontology.

Template Slots				
Slot name	Documentation	Type	Allowed Values/ Classes	Default
<i>core: altLabel</i>	An alternative lexical label for a resource	String		
<i>core: definition</i>	A statement or formal explanation of a resource that identifies it unambiguously.	String		
<i>core: prefLabel</i>	The preferred lexical label for a resource, in a given language.	String		

[Return to class hierarchy](#)

Generated on Sun Nov 20 20:19:38 CET 2005

Project: NEWS

Class Content:Abstract

Concrete Class Extends

[Content:Entity](#)

Direct Instances:

None

Direct Subclasses:

1. [Content:Attribute](#)
2. [Content:NETPattern](#)
3. [Content:NewsEventType](#)
4. [Content:Predicate](#)
5. [Content:UnitOfMeasure](#)

Class Documentation:

Documentation on Abstract(SUMO): Properties or qualities as distinguished from any particular embodiment of the properties/qualities in a physical medium. Instances of Abstract can be said to exist in the same sense as mathematical objects such as sets and relations, but they cannot exist at a particular place and time without some physical encoding or embodiment.

Template Slots				
Slot name	Documentation	Type	Allowed Values/ Classes	Default
<i>core:altLabel</i>	An alternative lexical label for a resource	String		
<i>core:definition</i>	A statement or formal explanation of a resource that identifies it unambiguously.	String		
<i>core:prefLabel</i>	The preferred lexical label for a resource, in a given language.	String		

[Return to class hierarchy](#)

Generated on Sun Nov 20 20:19:38 CET 2005

Project: NEWS

Class Content:Attribute

Concrete Class Extends

[Content:Abstract](#)

Direct Instances:

None

Direct Subclasses:

1. [Content:Address](#)
2. [Content:Function](#)

Class Documentation:

Documentation on Attribute(SUMO): Qualities which we cannot or choose not to reify into subclasses of Object. The classes inspired by Topic Types which describe NewsItem properties, as Priority, are typically included as subclasses of Attribute.

Template Slots				
Slot name	Documentation	Type	Allowed Values/ Classes	Default
<i>core: altLabel</i>	An alternative lexical label for a resource	String		
<i>core: definition</i>	A statement or formal explanation of a resource that identifies it unambiguously.	String		
<i>core: prefLabel</i>	The preferred lexical label for a resource, in a given language.	String		

[Return to class hierarchy](#)

Generated on Sun Nov 20 20:19:38 CET 2005

Project: NEWS

Class Content:Address

Concrete Class Extends

[Content:Attribute](#)

Direct Instances:

None

Direct Subclasses:

None

Class Documentation:

Documentation on Address(MILO): An Attribute that indicates an address where an Agent can regularly be contacted. In NITF v3.2 the element "postaddr" can be used to annotate addresses in the item's content, for instance, inside a "p" element.

Template Slots				
Slot name	Documentation	Type	Allowed Values/Classes	Default
<i>core:altLabel</i>	An alternative lexical label for a resource	String		
<i>core:definition</i>	A statement or formal explanation of a resource that identifies it unambiguously.	String		
<i>core:prefLabel</i>	The preferred lexical label for a resource, in a given language.	String		

[Return to class hierarchy](#)

Generated on Sun Nov 20 20:19:38 CET 2005

Project: NEWS

Class Content:Function

Concrete Class Extends

[Content:Attribute](#)

Direct Instances:

None

Direct Subclasses:

None

Class Documentation:

Documentation on Function(SUMO=SocialRole): The Class of all Attributes that specify the position or status of an Agent within an Organization or other Group. In NITF v3.2 the element "function" can be used to annotate roles in the item's content. In the IPTC NewsCodes the Topic Type "Job" is defined with a similar purpose.

Template Slots				
Slot name	Documentation	Type	Allowed Values/ Classes	Default
<i>core: altLabel</i>	An alternative lexical label for a resource	String		
<i>core: definition</i>	A statement or formal explanation of a resource that identifies it unambiguously.	String		
<i>core: prefLabel</i>	The preferred lexical label for a resource, in a given language.	String		

[Return to class hierarchy](#)

Generated on Sun Nov 20 20:19:38 CET 2005

Project: NEWS

Class Content:NETPattern

Concrete Class Extends

[Content:Abstract](#)

Direct Instances:

None

Direct Subclasses:

None

Class Documentation:

A pattern (one or several properties) that can be used to identify a news event type

Template Slots				
Slot name	Documentation	Type	Allowed Values/ Classes	Default
<i>core:altLabel</i>	An alternative lexical label for a resource	String		
<i>core:definition</i>	A statement or formal explanation of a resource that identifies it unambiguously.	String		
<i>core:prefLabel</i>	The preferred lexical label for a resource, in a given language.	String		
<i>Content: NETPatternHasInstance</i>	An instance that should occur in an event of the event type linked to the specified pattern. An example could be the instance "King" of class Content:Function in an event type "King murder".	Instance	Content: Entity	
<i>Content: NETPatternHasProperty</i>	One of the properties that will be matched against SPO (subject, predicate, object) of news items	Instance	rdf: Property	

[Return to class hierarchy](#)

Generated on Sun Nov 20 20:19:38 CET 2005

Project: NEWS

Class Content:NewsEventType

Concrete Class Extends

[Content:Abstract](#)

Direct Instances:

None

Direct Subclasses:

None

Class Documentation:

A type of event that can occur in news items belonging to one or several categories.

Template Slots				
Slot name	Documentation	Type	Allowed Values/ Classes	Default
<i>core:altLabel</i>	An alternative lexical label for a resource	String		
<i>core:definition</i>	A statement or formal explanation of a resource that identifies it unambiguously.	String		
<i>core:prefLabel</i>	The preferred lexical label for a resource, in a given language.	String		
<i>Content:hasCompatibleCategory</i>	An SRS category. States that an event of the specified type can occur in a news item belonging to the specified SRS category.	Instance	rdfs:Class	
<i>Content:hasPattern</i>	One of the patterns that can be used to identify the type of an event	Instance	Content:NETPattern	

[Return to class hierarchy](#)

Generated on Sun Nov 20 20:19:38 CET 2005

