



NoTube

*Networks and ontologies for the transformation and unification of
broadcasting and the Internet*

FP7 – 231761

D6.2 NoTube Integrated System 1st Prototype

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EXECUTIVE SUMMARY

This document presents NoTube platform from an integrated point of view, further demonstrated by the three implementation stages of the three planned application scenarios.

The main aim of this document is to represent a technical reference useful for developers integrating NoTube services, in part or as a whole, providing low level details such as the foreseen/already implemented interfaces, data formats, entry points, etc. during the current and the following project phases.

The description of the individual prototypes is not part of the integrated system reporting, which is more focused on the integration technical approach adopted for the whole platform, but instead of the WP7.a/b/c, as the core activity of each foreseen test case.

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Abstract (for dissemination)	<p>This document presents NoTube platform from an integrated point of view, further demonstrated by the three implementation stages of the three planned application scenarios.</p> <p>The main aim of this document is to represent a technical reference useful for developers integrating NoTube services, in part or as a whole, providing low level details such as the foreseen/already implemented interfaces, data formats, entry points, etc. during the current and the following project phases.</p> <p>The description of the individual prototypes is not part of the integrated system reporting, which is more focused on the integration technical approach adopted for the whole platform, but instead of the WP7.a/b/c, as the core activity of each foreseen test case.</p>
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List of Acronyms

Acronym	Description
AMI	Ambient Intelligence
EPG	Electronic Program Guide
FOAF	Friend Of A Friend
OWL	Web Ontology Language
PDA	Personal Digital Assistant
PEPG	Personalised EPG
RDF	Resource Description Framework
RDFS	RDF Vocabulary Description Language
SEE	Semantic Execution Environment
SKOS	Simple Knowledge Organisation System
SOA	Service-Oriented Architecture
SOAP	Simple Object Access Protocol
SPARQL	Simple Protocol and RDF Query Language
STB	Set-Top Box
SWS	Semantic Web Services
UDDI	Universal Description and Discovery Interface
WSDL	Web Services Description Language
WSMO	Web Service Modeling Ontology
XML	eXtensible Markup Language

1. Introduction

1.1. Document scope

The aim of this document is to present, together with the revised D6.1, an overview of the NoTube platform to support the developers during the integration tasks to be carried out during the project. While the D6.1 is focused on the general architecture, applied to the three foreseen use cases, this one describes the NoTube platform in terms of available services.

D6.2 is a companion to the software prototypes planned in WP7's three sub-sequential releases giving a more general description of the NoTube platform in terms of overall capabilities, including the currently available as well as the planned one.

The envisaged services are derived from the platform requirements in respect to NoTube's goals, specific application scenarios and technical issues emerged at the time of reporting. We consider it a good basis in the forthcoming development activities since it provides a wide and detailed vision about reusable services by specifying input and output parameters, software dependencies and the physical entry point of the considered functionality.

1.2. Document outline

This document is composed by two main sections: the first one (Chapter 2) presents the idea behind each application scenario integration, including the involved subset of services. The second section (Chapter 3) provides a detailed description of the NoTube platform services, grouped by categories in respect to the architectural mappings described in D6.1b.

2. Use-Cases Integrated Prototypes Overview

This chapter aims at providing an overview of the M13 prototypes integration approach, for each one of the planned use cases. It's not intended to provide neither a detailed description of each use case components nor technical details, which is part of WP7 work.

The main goal is to present the rationale behind the current status of integration of a chosen subset of the available baseline services in terms of interconnections, in light of their purpose within each application scenario.

Planned integration activities are sketched as well, leveraging on the double possibility of directly dealing with exposed services or demand this task to the Service Broker depicted in D6.1a/b and detailed in D5.1a/b, by setting generic/specific goals.

2.1. Personalized Semantic News

The Personalized Semantic News scenario integrates a subset of the NoTube services from the described categories, in particular:

- Metadata-oriented services for extraction, injection and conversion. The focus is to transparently manage News Items Containers in terms of Prestospace-derived and TV-Anytime formats. This task requires integration with WP2, the infrastructure has been designed and coded into M13 prototype even if not including the real services implementation due to the fact the WP2 services are not yet available.
- Metadata-oriented services for News Items enrichment. It is important to provide additional related sources of information and external linking with News' main topics in order to deepen the user experience. This task requires integration with WP4. The integration is foreseen in the forthcoming phases of the project.
- Audiovisual content processing, in order to perform smart cropping, cutting and transcoding of A/V News Items. This task requires integration with WP4 in particular at service provider side. The integration is foreseen in the forthcoming phases of the project. Nevertheless during the development of the home ambient back-end, some internal a/v processing routines have been developed, mainly to extract pieces of Newscasts obtaining individual audiovisual News.
- Semantic-oriented services to transparently retrieve Italian EPGs, smart resolution of best audiovisual contents given a list of equivalent News Items and the chosen device. This task requires integration with WP5. It's partially included in the first prototype, as described below.
- User-oriented services to manage user identification, dynamic profiling through personal activities aggregation and context management. This task requires integration with WP3 (Beancounter). It's been fully included in the M13 prototype with respect to available services at the time of reporting.

The first prototype (M13) integration approach includes direct integration with the NoTube baseline services mentioned above as well as through the adoption of semantic brokering provided by WP5, in particular for what concerning the Italian EPG retrieval (see Table 80 for more details). The complete M13 integration doesn't foresee a full-fledged semantic broker-centric approach, in order to quickly experiment with newly developed services provided by the technological partners (in particular WP3) during the first year of the project. One other reason is related to potential performance hit that the broker may introduce at this stage, since performance optimisations is a task that will be addressed later on. Provided that, the choice has been to rely on the broker for lightweight activities like the updated EPG retrieval

for Italian TV channels, at both service provider and home ambient sides, and by the proposal and definition of specific goals of future interest for the WP7.a use case. As described in D5.1b Section 5, the idea is to further leverage on the Broker's semantic capabilities by giving in input a user request for content (News Items) and the current user device; the Broker will then select either the content delivery service that provides the appropriate quality content for the device or the appropriate format-conversion service that can transform the generic content feed format.

To obtain more detailed implementation descriptions about the M13 prototype please refer to D7a.2.

2.2. Personalized TV Guide with Adaptive Advertising

As described in D6.1b the integration approach for the WP7.b use case is much more centred on the role of the Semantic Broker as the unique entry point for accessing NoTube baseline services other than directly integrating them. The following picture provides the integration approach foreseen and followed in the M13 prototype development:

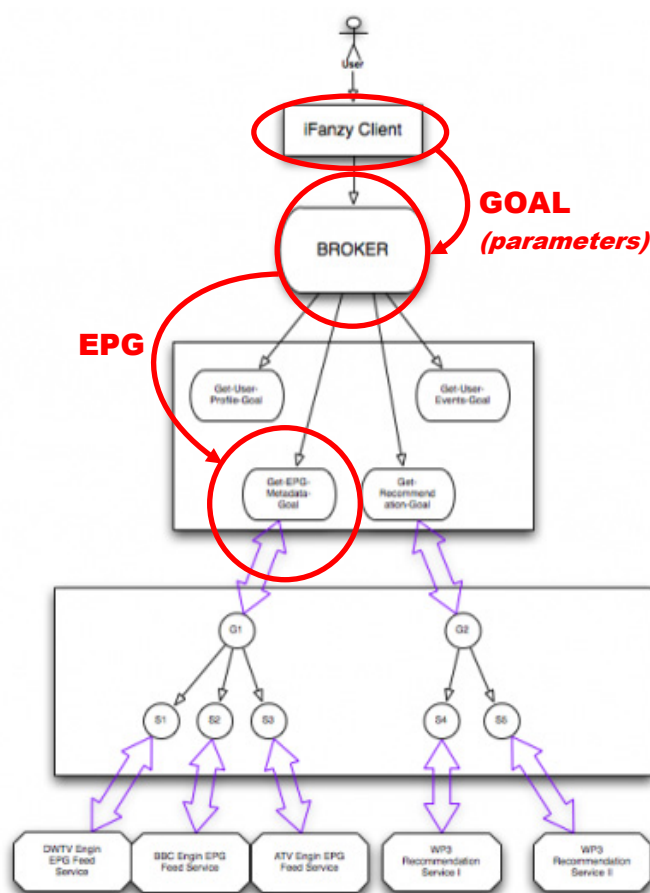


Figure 1 – WP7.b Integration Diagram

The integration process for the considered use case supported the direct interaction between the Broker and the iFanz client; in the first prototype the involved partners focused on the implementation of the communication infrastructure in terms of interfaces and protocols, demonstrated by the integration of one semantic service (working on metadata) which can search the different Engin EPG feeds for programme information that falls within a given time period. The iFanz client is enabled to leverage transparently on this functionality thanks to the Semantic Broker. The simple scenario envisages the WP7.b application logic

(i.e. the iFancy client) to require a goal, invocable through the Broker that can retrieve EPG for a specific period, returning as response, an EPG as initially expected. At the current stage of development the Broker exposes EPG feeds through a layer of semantic descriptions and goal definitions. In a way similar to WP7.a, these feeds can be selected basing on user language, reinforced here with the introduction of filtering keywords that can help to further achieve the specific goal.

The integration plan for the forthcoming project phases is to rely on the role of the Semantic Broker to augment the iFancy capabilities with additional functionalities provided by the NoTube platform in terms of user profiling and recommendation with particular attention to advertising.

2.3. Internet TV in the Social Web

The WP7.c use case centres on the goal of enabling the user to watch TV programmes (broadcast/on-demand), ask for more information and be presented with personalised recommendation based on his/her social activities (i.e: through common social networks). In order to simplify things in the first prototyping phase, WP7.c partners decided to focus on BBC data only. This in turns required to adapt/develop ad-hoc internal services for recommendations to be effective. On the other hand, user profile management is still part of the work referred several times in NoTube’s documentation with the name “Beancounter”, sharing common requirements with general-purpose WP3 services. Provided that we have experienced for this particular application scenario, during the first year of the project, a huge work of requirements harmonisation and standalone prototyping, as part of the first step in the integration process. Below is a diagram showing the connections between the various involved elements:

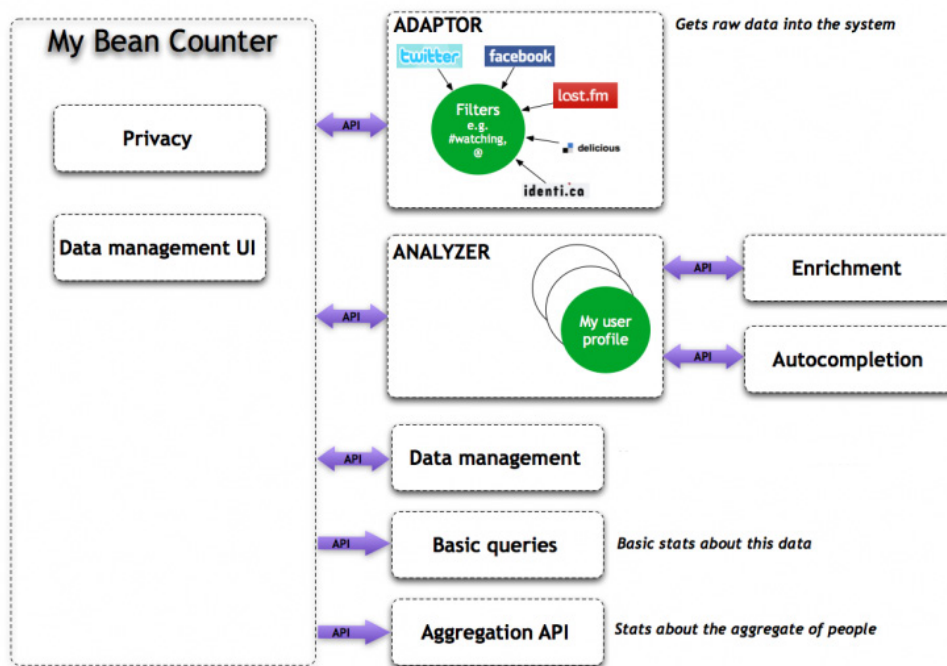


Figure 2 – WP7.c elements connection for integration

The Beancounter is a crucial component for the whole platform since it’s capable of collecting and aggregating user activities coming from heterogeneous sources (box “Adaptors”) in a pretty standardised way (Data Management, Basic Queries, Aggregation API). The M13 prototype for Internet TV in Social Web foresees the direct integration of a

customised installation of this same component (My Beancounter) provided by WP3 in support of User-oriented services.

Concerning Metadata-oriented services, the Semantic Broker has been recognized to be the ideal middleware with the aim of providing recommendations to the end user using an EPG-like format. For this reason the intended scenario has been to integrate the Service Broker with the goal of orchestrating a service that retrieves a given user's interest(s) provided by an "interest graph", and services aimed at providing EPG feeds.

Moreover, in light of WP3 Recommendation Services adapted on BBC's data, the Broker is capable of selecting between different recommendations services basing on user's feedback. More details are provided in D5.1b Section 5.3.

Later on during the project, the integration of an additional subset of metadata oriented services, namely enrichment services, will be considered as well.

3. NoTube Services Description

3.1. Overview

The rationale behind this chapter is to introduce NoTube baseline services provided in turn by the technological workpackages, designed according to the application scenario requirements emerged during the first year of the project. The detailed specification is included in the Annex I.

Such services have been grouped in categories, following the general architecture design depicted in D6.1a,b, in order to easily understand the field of competence during the integration tasks.

User Profile



- Identity Management and Authentication with privacy preservation
- User preferences management and customisation
- Activity Logging and Retrieval

Metadata



- Importing services (scheduler, tubelets/modelets, Newscast transcription, etc.)
- Metadata Conversion Tools
- TV programmes classification services
- Content Enrichment (TV-programmes, News, ADS)
- Recommendation services for TV programmes and ADS
- Semantic services for content quality/device resolution
- News filtering
- TV programmes filtering
- User rating services (feedback)

Content Data



- Hybrid ingestion services (broadcast, on-demand)
- Audiovisual summarisation and video processing (cropping)
- Transcoding services
- Streamig services

With respect to the end-user, interacting with through the GUI with the usecase-specific application logic, there're a number of services that can be grouped in 3 categories, namely:

- User Oriented
- Content Oriented
- Metadata Oriented
- Service-brokerage oriented

The latter is somewhat hidden in the above color-based classification since it has a cross-functional role strictly dependant to the application scenario specific goals.

With reference to the general architecture, below is a high level mapping of the abovementioned categories:

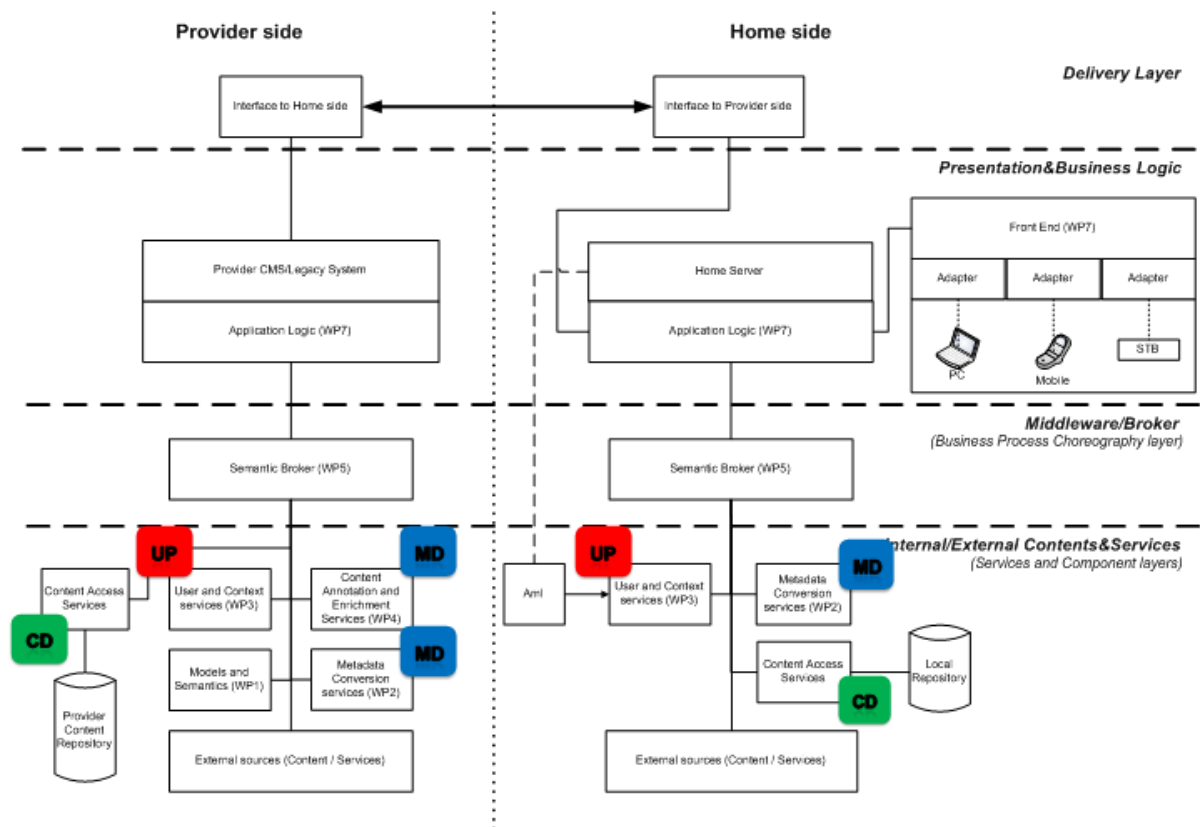


Figure 3 – Services Categories/General Architecture high-level mapping

We've organised the Annex creating a subsection for each category. Within each section a list of tables have been provided with extensive descriptions of reusable services that enclose: the service name, its high level category, the physical entry point (Web URI or server's relative path), a textual description, related functionality if needed (similar to description but more technical: for instance it could be helpful in metadata transformation services by giving a synopsis of the expected result), the adopted schemas (references to data models, standards, etc.), the reference person within the Consortium, the current status at the time of reporting, envisaged licensing for exploitation and dissemination purposes, extensive documentation or links to it, communication protocol (interface – i.e.: SOAP Web Service, RESTful services, socket-based method, etc.), software dependencies for deployment and/or local integration and the intended user. The latter field is indicative since

represents the original requirement that led to the considered service however it remains implicit that every baseline service is intended to be part of the NoTube platform and thus has been designed and developed to maximise the reusability as well as the platform extensibility.

The content of the Annex is then very useful to understand the NoTube overall capabilities, at the lowest level, but most important it represents an important reference point for the integration occurring for each individual application scenarios, from a developer's point of view. The effort of the Consortium has been put in order to go beyond the current implementation and provide interfaces for the planned services as well, in order to enable each use case developer to work in turn on its own higher level goals.

Of course we don't have the ambition to define at M13 all the final services for the project. To support this iterative process typical of research activities, the Consortium has started working in parallel using collaborative Web tools in order to enable further refinements and editing during the remaining project period, according to the DoW schedule.

3.2. Services Status

As a quick overview, the following tables provide a summary about the status of the services, distinguishing between already developed, in development, and planned.

3.2.1. Developed

Name	Description	Provider	URI	Interface
ViewAllTVShow Recordings	Returns the list of all scheduled recordings with their state	TXT	http://demos.txt.it/Notube/HA_API/Ingestion_Service.smx?op=ViewAllTVShowRecordings	SOAP
AddTVShowRecording	Permits to schedule a new recording	TXT	http://demos.txt.it/Notube/HA_API/Ingestion_Service.smx?op=AddTVShowRecording	SOAP
ReadTVShowRecordingDetails	Returns the description of a single TVShow recorded or scheduled	TXT	http://demos.txt.it/Notube/HA_API/Ingestion_Service.smx?op=ReadTVShowRecordingDetails	SOAP
DeleteTVShowRecording	Deletes an already scheduled Recording, if the TVShow is already recorded no data will be deleted	TXT	http://demos.txt.it/Notube/HA_API/Ingestion_Service.smx?op=DeleteTVShowRecording	SOAP
UpdateTVShowRecording	Updates the already stored data of a TVShow recording that is not already started or finished.	TXT	http://demos.txt.it/Notube/HA_API/Ingestion_Service.smx?op=UpdateTVShowRecording	SOAP
Add a scheduling	Allows to add a scheduling.	AS	http://moth.notube.tv:9998/scheduler/scheduling/add	REST
Remove a scheduling	Allows to remove the scheduling for a certain tubelet.	AS	http://moth.notube.tv:9998/scheduler/scheduling/remove/{tubelet}	REST
Get all schedulings	Allows to retrieve all schedulings set for all tubelets.	AS	http://moth.notube.tv:9998/scheduler/schedulings	REST

Get scheduling of a specific tubelet	Allows to retrieve the schedulings set for a specific tubelet.	AS	http://moth.notube.tv:9998/scheduler/scheduling/{tubelet}	REST
Start the scheduler	Allows to start the scheduler.	AS	http://moth.notube.tv:9998/scheduler/start	REST
Stop the scheduler	Allows to stop the scheduler.	AS	http://moth.notube.tv:9998/scheduler/stop	REST
Get the status of the scheduler	Allows to retrieve the status of the scheduler	AS	http://moth.notube.tv:9998/scheduler/status	REST
Get all pipelines	Returns the list of pipelines registered in the container.	AS	http://moth.notube.tv:9998/pipelinecontainer/pipelines	REST
Get the default triple pipeline	Returns the default pipeline that consumes RDF triples exposed by the container.	AS	http://moth.notube.tv:9998/pipelinecontainer/defaultTriplePipeline	REST
Get the default object pipeline	Returns the default pipeline that consumes objects exposed by the container.	AS	http://moth.notube.tv:9998/pipelinecontainer/defaultObjectPipeline	REST
Delete a specific pipeline	Deregisters a pipeline from the container.	AS	http://moth.notube.tv:9998/delete/{pipelineName}	REST
Process RDF data with a specific pipeline	Start the processing of a bunch of RDF data with the default triple pipeline.	AS	http://moth.notube.tv:9998/process/{pipelineName}	REST
Process RDF data with the default triple pipeline	Start the processing of a bunch of RDF data with the default triple pipeline.	AS	http://moth.notube.tv:9998/Process	REST
Process a specific tubelet	Processes a tubelet from the container.	AS	http://moth.notube.tv:9998/tubeletcontainer/process/{identifier}	REST
Get all tubelets	Returns the list of tubelets registered in the container.	AS	http://moth.notube.tv:9998/tubeletcontainer/tubelets	REST
Get a specific tubelet	Returns a specific tubelet exposed by the container.	AS	http://moth.notube.tv:9998/tubelets/{identifier}	REST
Delete a specific tubelet	Deregisters a tubelet from the container.	AS	http://moth.notube.tv:9998/tubelets/{identifier}	REST
Upload a tubelet	Uploads a tubelet in the container.	AS	http://moth.notube.tv:9998/upload	REST
Get the delta of a specific user by a specific tubelet	Get the delta of information related to a specific couple (service, user).	AS	http://moth.notube.tv:9998/deltamanager/{tubelet}/{user}	REST
Register a user	Allows to register a user.	AS	http://moth.notube.tv:9998/triplestorage/store	REST
Get all users	Allows to retrieve all registered users.	AS	http://moth.notube.tv:9998/usermanager/users	REST

Get user by id	Allows to retrieve the user with given id.	AS	http://moth.notube.tv:9998/usermanager/{id}	REST
Get users by name and surname	Allows to retrieve the userIDs of the users with given name and surname.	AS	http://moth.notube.tv:9998/usermanager/{name}/{surname}	REST
Delete a user	Allows to deregister a user.	AS	http://moth.notube.tv:9998/usermanager/{userid}	REST
Register a user credential with an HTTP Basic Authenticator	Allows to register a user credential.	AS	http://moth.notube.tv:9998/usermanager/credentials/basicauth/{userid}/{service}/{username}/{password}	REST
Register a user credential with an anonymous authenticator	Allows to register a user credential.	AS	http://moth.notube.tv:9998/usermanager/credentials/anonymous/{userid}/{service}/{username}	REST
Delete a user credential	Allows to deregister a user credential.	AS	http://moth.notube.tv:9998/usermanager/credentials/{userid}/{service}	REST
Get all user credentials	Allows to retrieve all user credentials of registered services of a specific user.	AS	http://moth.notube.tv:9998/usermanager/credentials/{userid}	REST
Get all user services	Allows to retrieve the list of services to which at least one user is registered.	AS	http://moth.notube.tv:9998/usermanager/credentials/services	REST
SELECT	Perform a SPARQL query	AS	http://moth.notube.tv:9998/triplestorage/sparql	REST
CONSTRUCT	Perform a SPARQL query	AS	http://moth.notube.tv:9998/triplestorage/sparql	REST
DESCRIBE	Perform a SPARQL query	AS	http://moth.notube.tv:9998/triplestorage/sparql	REST
ASK	Perform a SPARQL query	AS	http://moth.notube.tv:9998/triplestorage/sparql	REST
Store RDF	Perform a SPARQL query	AS	http://moth.notube.tv:9998/triplestorage/store	REST
BBC-Programmes RDF keyword query	Queries BBC programmes RDF store at TALIS (just entertainment category) via SPARQL for given set of keywords (separator: ";"); used within WP5 and iZapper demos.	OU	http://luisa.open.ac.uk:8080/axis/bbcProgrammesServices.jws?method=getvideosbykeywords	HTTP GET (SOAP enveloped message ; switch to REST intended)
BBC-Backstage world news keyword query	Queries BBC backstage World news feed for given set of keywords (separator: ";"); used within WP5 and iZapper demos.	OU	http://luisa.open.ac.uk:8080/axis/bbcServices.jws?method=getvideosbykeywords	HTTP GET (SOAP enveloped message ; switch to REST intended)
Youtube-OU-content-metadata-	Queries youtube metadata of OU eLearning content for	OU	http://luisa.open.ac.uk:8080/axis/ouServices.jws?method=getvideosbykeywords	HTTP GET (SOAP

query	given set of keywords (separator: ";"); used within WP5 demo.			envelope message ; switch to REST intended)
Youtube-mobile-content-metadata-query	Queries youtube metadata of mobile suitable content for given set of keywords (separator: ";"); used within WP5 demo.	OU	http://luisa.open.ac.uk:8080/axis/mobileServices.jws?method=getvideosbykeywords	HTTP GET (SOAP envelope message ; switch to REST intended)
Openvideo-metadata-query	Queries openvideo.org video metadata for given set of keywords (separator: ";"); used within WP5 demo.	OU	http://luisa.open.ac.uk:8080/axis/openvideoServices.jws?method=getvideosbykeywords	HTTP GET (SOAP envelope message ; switch to REST intended)
Engin-EPG-metadata-query	Queries Engin Media's EPG feeds metadata for given set of keywords (separator: ";"); used within WP5 demo and to be integrated in 7b demo. Will be exposed as goal via the broker.	OU	http://luisa.open.ac.uk:8080/axis/enginService*CHANNEL-ID*.jws?method=getvideosbykeywords (different services for each channel available via EnginMedia. For instance http://luisa.open.ac.uk:8080/axis/enginService171.jws?method=getvideosbykeywords queries only metadata for channel id 171 which is Deutsche Welle. More infos on channel IDs and the engine feeds at http://www.notube.tv/wiki/index.php/LInk_for_EPG/_I_fanzy	HTTP GET (SOAP envelope message ; switch to REST intended)

Table 1 – Developed Services

3.2.2. Under Development

Name	Description	Provider	URI	Interface
Reframing	Reframes a input stream according to the region of interest	TGV	-	SOAP
Ad Insertion	Insert an ad at the good place at the right time in a video stream	TGV	-	SOAP
LUPEDIA2HTML	Takes a plain text input and returns HTML formatted version of the text, enriched with	OT	http://lupedia.ontotext.com/lookup/text2html	REST

	data about DBPedia entries found in it.			
LUPEDIA2XML	Takes a plain text input and returns XML formatted data about DBPedia entries found in it.	OT	http://lupedia.ontotext.com/lookup/text2xml	REST
LUPEDIA2JSON	Takes a plain text input and returns JSON formatted data about DBPedia entries found in it.	OT	http://lupedia.ontotext.com/lookup/text2json	REST
LUPEDIA2RDFA	Takes a plain text input and returns HTML+RDFa formatted version of the text, enriched with data about DBPedia entries found in it.	OT	http://lupedia.ontotext.com/lookup/text2rdfa	REST
Get Content Relevance	The service returns the relevance of the given NIC (a float value between 0 and 1) for the given user	AS	http://moth.notube.tv:9998/newsrecommender/related?user={userid}&content={NIC xml file as body parameter}	REST
User Interests URIs	Returns the list of user interests in terms of Linked Data URIs	AS	http://moth.notube.tv:9998/people/@me/@self?fields=interests or http://moth.notube.tv:9998/people/{guid}/@self?fields=interests	REST
NIC related URI	The service returns URI recommendation for the given NIC. Probably it will be replaced completely.	AS	-	REST
BBC-2-IMDB	Returns for a bbc-program id an RDF graph containing a matching IMDB description	OU	http://filetrace.net/notube/bbc2imdbrdf	REST, SPARQL-over-REST
IRS-III-SWS-Broker-API-achieve-goal	Achieve goal requests to the SWS broker: are resolved by the broker by reasoning on available SWS descriptions and automatically identifying and orchestrating services suitable to achieve the requested goal.	OU	<ul style="list-style-type: none"> http://notube.open.ac.uk:3000/achieve-goal?... http://notube.open.ac.uk:8080/cs-invocation/achieve-cs-goal-metrics?... http://notube.open.ac.uk:8080/cs-invocation/achieve-cs-goal?... 	REST
Term expansion using DBPedia	If there is resource in DBPedia that matches the concept that is provided in the URL, then the service returns other concepts that are related via the 'owl:sameAs' or 'redirect' relations	OU	-	HTTP GET
Get-video-metadata-goal	Achieve goal request to the SWS broker for	OU	http://notube.open.ac.uk:8080/cs-invocation/achieve-	REST

	<p>video metadata retrieval. Resolved by the broker by reasoning on available SWS descriptions and automatically identifying and orchestrating services suitable to achieve the requested goal. Brokers between video metadata retrieval services as described above. See also: http://www.notube.tv/wiki/index.php/Wp5-goals-documentation#get-video-metadata-goal:_Selection.2Finvocation_of_video_metadata_query_services</p>		<p>cs-goal?ontology=mmpp-goals&goal=get-video-metadata-Goal&....</p>	
Get-EPG-metadata-goal	<p>Achieve goal request to the SWS broker for EPG metadata retrieval. Resolved by the broker by reasoning on available SWS descriptions and automatically identifying and orchestrating services suitable to achieve the requested goal. Brokers between EPG metadata retrieval services provided based on Engin metadata feeds and ZapperWarehouse services. See also: http://www.notube.tv/wiki/index.php/Wp5-goals-documentation#get-EPG-metadata-goal:_Selection.2Forchestrating.2Finvocation_of_EPG_query_services for a full documentation of the goal, its parameters and the underlying Web services.</p>	OU	<p>http://notube.open.ac.uk:8080/cs-invocation/achieve-cs-goal?ontology=mmpp-goals&goal=get-EPG-BY-KEYWORD-AND-DATE-GOAL...</p>	REST

Table 2 – Under Development Services

3.2.3. Planned

Name	Description	Provider	URI	Interface
GetPublicationDate	<p>This method, giving as input a NICid, returns the publication date of the video present into the correspondent NIC as main content. The service will parse the</p>	IRT	-	SOAP

	NIC xml file (TvAnytime file) and retrieve this information			
GetPublicationInfo	This method, giving as input a NICid, returns the publication info of the video present into the correspondent NIC as main content. The service will parse the NIC xml file (TvAnytime file) and retrieve this information	IRT	-	SOAP
GetGenre	This method, giving as input a NICid, returns a list of genre of the video present into the correspondent NIC as main content. The service will parse the NIC xml file (TvAnytime file) and retrieve this information	IRT	-	SOAP
GetContentRef	This method, giving as input a NICid, returns the mms reference to the entire TvShow video which contains the video present into the correspondent NIC as main content. The service will parse the NIC xml file (TvAnytime file) and retrieve this information	IRT	-	SOAP
GetTimecodeStart	This method, giving as input a NICid, returns the start timecode of the video present into the correspondent NIC as main content. The service will parse the NIC xml file (TvAnytime file) and retrieve this information	IRT	-	SOAP
GetDuration	This method, giving as input a NICid, returns the duration in seconds of the video present into the correspondent NIC as main content. The service will parse the NIC xml file (TvAnytime file) and retrieve this information	IRT	-	SOAP
GetLowQualityRef	This method, giving as input a NICid, returns the mms reference to the low quality version of the video present into the correspondent NIC as main content. The service will parse the NIC xml file (TvAnytime file) and retrieve this information	IRT	-	SOAP
GetHighQualityRef	This method, giving as input a NICid, returns the mms reference to the high quality version of the video present into the correspondent NIC as main content. The service will parse the NIC xml file (TvAnytime file) and retrieve this information	IRT	-	SOAP
GetSpeechToText	This method, giving as input a NICid, returns the speech transcription of the video present into the correspondent NIC as main content. The service will parse the NIC xml file (TvAnytime file) and retrieve this information	IRT	-	SOAP
GetEnrichmentData	This method, giving as input a NICid, returns all the enrichment data (URI i.e. dbpedia links) associated to the video present into the correspondent NIC as main content. The service will parse the NIC xml file (TvAnytime file) and retrieve this information	IRT	-	SOAP
UploadNIC	This method receives as input the NIC.xml of a news item and save the contained information locally in order to	IRT	-	SOAP

	accomplish Data Extraction tasks. The example input could change according to the chosen schema (Prestospace - TvAnytime)			
SetPublicationDate	This method sets the publication date of the video present as main content into the NIC identified by the NICid given as input. The service will parse the correspondent NIC xml file and adds or updates this information	IRT	-	SOAP
SetPublicationInfo	This method sets the publication info of the video present as main content into the NIC identified by the NICid given as input. The service will parse the correspondent NIC xml file and adds or updates this information	IRT	-	SOAP
SetGenre	This method sets the list of genres of the video present as main content into the NIC identified by the NICid given as input. The service will parse the correspondent NIC xml file and adds or updates this information	IRT	-	SOAP
SetContentRef	This method sets the mms reference to the entire TvShow video which contains the video present as main content into the NIC identified by the NICid given as input. The service will parse the correspondent NIC xml file and adds or updates this information □	IRT	-	SOAP
SetTimecodeStart	This method sets the start timecode value of the video present as main content into the NIC identified by the NICid given as input. The service will parse the correspondent NIC xml file and adds or updates this information	IRT	-	SOAP
SetDuration	This method sets the duration in seconds of the video present as main content into the NIC identified by the NICid given as input. The service will parse the correspondent NIC xml file and adds or updates this information	IRT	-	SOAP
SetLowQualityRef	This method sets the mms reference to the low quality version of the video present as main content into the NIC identified by the NICid given as input. The service will parse the correspondent NIC xml file and adds or updates this information	IRT	-	SOAP
SetHighQualityRef	This method sets the mms reference to the high quality version of the video present as main content into the NIC identified by the NICid given as input. The service will parse the correspondent NIC xml file and adds or updates this information	IRT	-	SOAP
SetSpeechToText	This method sets the transcription text correspondent to the video present as main content into the NIC identified by the NICid given as input. The service will parse the correspondent NIC xml file and adds or updates this information	IRT	-	SOAP
AddEnrichmentData	This method receives as input a NICid and a new enrichment data for the NIC	IRT	-	SOAP

	itself. The service will parse the correspondent NIC xml file and adds this external link into the dedicated tag			
DeleteAllEnrichments	This method deletes all the enrichment data in the NIC identified by the NICid given as input. The service will parse the correspondent NIC xml file and deletes all the external link from the dedicated tag	IRT	-	SOAP
ConvertPrestoSpaceToTvAnytime	<p>This method is used to convert a given input metadata format into a specified output metadata format. This interface is specified in a generic way to provide much flexibility according to the different needed transformations.</p> <p>For use case 7a PrestoSpace file will be transformed into a Tv-Anytime representation. During this transformation the BMF format is used as the generic intermediate format</p>	IRT	-	SOAP

Table 3 – Planned Services

4. Conclusions

This document represents a companion to the first integrated prototypes developed in WP7 and due M13. Its purpose is to collect and classify the list of available services as designed and planned by the technical workpackages at M13, presenting the overall idea behind their integration within the 3 usecases and providing at the same time a useful technical reference for the project's software engineers to understand the platform's capabilities in terms of low-level services triggering a smarter and more effective integration. The presented contents are subject to be revised in the next two issues, according to the expected updates and improvements.

5. Appendix I

This appendix is intended as a detailed technical reference about NoTube services. The main target is technical partners and project's developers.

Below the current (M13) list of implemented and planned services for the NoTube platform is provided, structuring them in respect to the categories recognized in D6.1b, reflecting updated requirements after the first year of the project.

5.1. Content Oriented.

This section presents planned services for content management, including audiovisuals and text-based. These services are divided in:

- Crawlers, to schedule and/or trigger the ingestion process
- Pipeline managers, to perform content processing after raw ingestion, focused on textual user oriented context
- Adaptors, to enable a transparent connection to external sources (i.e. social networks)
- Audiovisual ingestion
- Audiovisual processing

Apart from the audiovisual services, the idea behind crawlers, pipelines and adaptors (Tubelets/Modelets) is part of the WP3 work and represents the basis of the Beancounter, responsible of managing the user dynamic profile by monitoring his/her activities on the social Web. This is possible through the composition of these services that, at any rate, could be exploited individually thanks to their flexibility, to ingest contents from heterogeneous input sources. As an example, the following picture presents a high-level diagram that visually explains the connection (and thus data flow) between the various components within the Beancounter.

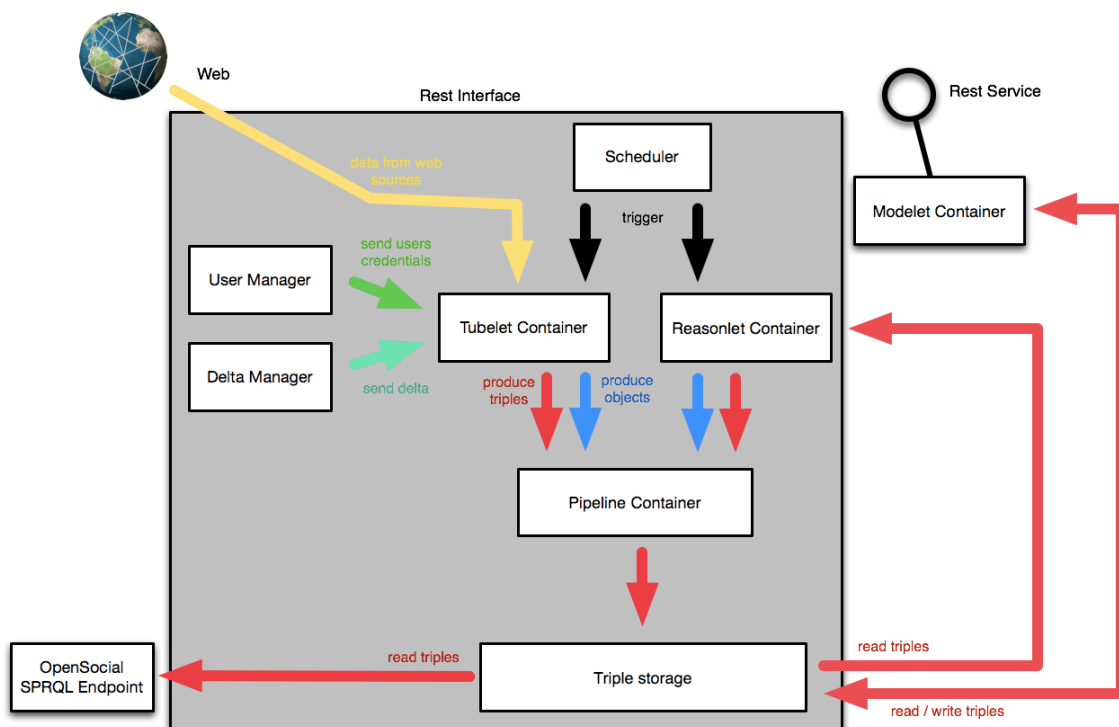


Figure 4 – Scheduler,

5.1.1. Crawlers

Schedulers are responsible of deciding whenever a specific Tubelet (see below) has to be activated and at which rate (every 20 mins, every month, etc...).

5.1.1.1. Scheduler/Daemon

Service name	Add a scheduling
Service category <i>(crawler, adapter, converter recommender, logger)</i>	Scheduler
URLs	http://moth.notube.tv:9998/scheduler/scheduling/add
Description	Allows to add a scheduling.
Functionality	POST request
Examples	INPUT: tubeletName and cronExp OUTPUT:
Schemas <i>(http://purl.org/voc/po)</i>	NIC (Prestospace – TvAnytime - NewsML)
Contact person(s)	(Davide Palmisano) davide@asemantics.com
Status <i>(planned, under-development, finished, cancelled, replaced)</i>	Developed
Licence <i>(e.g. MIT, BSD, not-decided, internal)</i>	MIT
Documentation	Each tubelet can have one and only one scheduling rule assigned.
Interface <i>(e.g. REST, HTML-form, RMI, XMPP, SPARQL-over-REST)</i>	REST
Software dependencies <i>(SMACK-XMPP, PHP-ARC, MySQL)</i>	
Service dependencies <i>(Wordnet-xml, IMDB-website)</i>	
Intended users	Mockup

Table 4 – Add a scheduling

Service name	Remove a scheduling
Service category <i>(crawler, adapter, converter recommender, logger)</i>	Scheduler
URLs	http://moth.notube.tv:9998/scheduler/scheduling/remove/{tubelet}
Description	Allows to remove the scheduling for a certain tubelet.
Functionality	GET request
Examples	INPUT: scheduler/scheduling/remove/{tubelet} OUTPUT:
Schemas <i>(http://purl.org/voc/po)</i>	NIC (Prestospace – TvAnytime - NewsML)
Contact person(s)	(Davide Palmisano) davide@asemantics.com
Status <i>(planned, under-development, finished, cancelled, replaced)</i>	Developed
Licence <i>(e.g. MIT, BSD, not-decided, internal)</i>	MIT
Documentation	Each tubelet can have one and only one scheduling rule assigned.
Interface <i>(e.g. REST, HTML-form, RMI, XMPP, SPARQL-over-REST)</i>	REST
Software dependencies <i>(SMACK-XMPP, PHP-ARC, MySQL)</i>	
Service dependencies <i>(Wordnet-xml, IMDB-website)</i>	
Intended users	Mockup

Table 5 – Remove a scheduling

Service name	Get all schedulings
Service category <i>(crawler, adapter, converter recommender, logger)</i>	Scheduler
URLs	http://moth.notube.tv:9998/scheduler/schedulings

Description	Allows to retrieve all schedulings set for all tubelets.
Functionality	GET request
Examples	<p>INPUT: /scheduler/schedulings</p> <p>OUTPUT: <?xml version="1.0" encoding="UTF-8" standalone="yes"?> <schedulingWrappers> <scheduling> <CRONExpression>0/1 * * * * ?</CRONExpression> <tubeletName>test-tubelet-0</tubeletName> </scheduling> <scheduling> <CRONExpression>0/5 * * * * ?</CRONExpression> <tubeletName>brightkite-tubelet</tubeletName> </scheduling> </schedulingWrappers></p>
Schemas (http://purl.org/voc/po)	NIC (Prestospace – TvAnytime - NewsML)
Contact person(s)	(Davide Palmisano) davide@asemantics.com
Status (planned, under-development, finished, cancelled, replaced)	Developed
Licence (e.g. MIT, BSD, not-decided, internal)	MIT
Documentation	Each tubelet can have one and only one scheduling rule assigned.
Interface (e.g. REST, HTML-form, RMI, XMPP, SPARQL-over-REST)	REST
Software dependencies (SMACK-XMPP, PHP-ARC, MySQL)	
Service dependencies (Wordnet-xml, IMDB-website)	
Intended users	Mockup

Table 6 – Get all scheduling

Service name	Get scheduling of a specific tubelet
Service category (crawler, adapter, converter recommender, logger)	Scheduler
URLs	http://moth.notube.tv:9998/scheduler/scheduling/{tubelet}
Description	Allows to retrieve the schedulings set for a specific tubelet.
Functionality	GET request
Examples	<p>INPUT: /scheduler/scheduling/{tubelet}</p> <p>OUTPUT: <?xml version="1.0" encoding="UTF-8" standalone="yes"?> <scheduling> <CRONExpression>0/1 * * * * * ?</CRONExpression> <tubeletName>test-tubelet-0</tubeletName> </scheduling></p>
Schemas (http://purl.org/voc/po)	NIC (Prestospace – TvAnytime - NewsML)
Contact person(s)	(Davide Palmisano) davide@asemantics.com
Status (planned, under-development, finished, cancelled, replaced)	Developed
Licence (e.g. MIT, BSD, not-decided, internal)	MIT
Documentation	Each tubelet can have one and only one scheduling rule assigned.
Interface (e.g. REST, HTML-form, RMI, XMPP, SPARQL-over-REST)	REST
Software dependencies (SMACK-XMPP, PHP-ARC, MySQL)	
Service dependencies (Wordnet-xml, IMDB-website)	
Intended users	Mockup

Table 7 – Get scheduling of a specific tubelet

Service name	Start the scheduler
Service category (crawler, adapter, converter recommender, logger)	Scheduler
URLs	http://moth.notube.tv:9998/scheduler/start
Description	Allows to start the scheduler.
Functionality	GET request
Examples	INPUT: /scheduler/start OUTPUT:
Schemas (http://purl.org/voc/po)	NIC (Prestospace - TvAnytime - NewsML)
Contact person(s)	(Davide Palmisano) davide@asemantics.com
Status (planned, under-development, finished, cancelled, replaced)	Developed
Licence (e.g. MIT, BSD, not-decided, internal)	MIT
Documentation	Each tubelet can have one and only one scheduling rule assigned.
Interface (e.g. REST, HTML-form, RMI, XMPP, SPARQL-over-REST)	REST
Software dependencies (SMACK-XMPP, PHP-ARC, MySQL)	
Service dependencies (Wordnet-xml, IMDB-website)	
Intended users	Mockup

Table 8 – Start the scheduler

Service name	Stop the scheduler
Service category (crawler, adapter, converter recommender, logger)	Scheduler
URLs	http://moth.notube.tv:9998/scheduler/stop
Description	Allows to stop the scheduler.
Functionality	GET request

Examples	INPUT: /scheduler/stop OUTPUT:
Schemas (http://purl.org/voc/po)	NIC (Prestospace – TvAnytime - NewsML)
Contact person(s)	(Davide Palmisano) davide@asemantics.com
Status (planned, under-development, finished, cancelled, replaced)	Developed
Licence (e.g. MIT, BSD, not-decided, internal)	MIT
Documentation	Each tubelet can have one and only one scheduling rule assigned.
Interface (e.g. REST, HTML-form, RMI, XMPP, SPARQL-over-REST)	REST
Software dependencies (SMACK-XMPP, PHP-ARC, MySQL)	
Service dependencies (Wordnet-xml, IMDB-website)	
Intended users	Mockup

Table 9 – Stop the scheduler

Service name	Get the status of the scheduler
Service category (crawler, adapter, converter recommender, logger)	Scheduler
URLs	http://moth.notube.tv:9998/scheduler/status
Description	Allows to retrieve the status of the scheduler.
Functionality	GET request
Examples	INPUT: /scheduler/status OUTPUT: <status>stopped</status>
Schemas (http://purl.org/voc/po)	NIC (Prestospace – TvAnytime - NewsML)
Contact person(s)	(Davide Palmisano) davide@asemantics.com

Status <i>(planned, under-development, finished, cancelled, replaced)</i>	Developed
Licence <i>(e.g. MIT, BSD, not-decided, internal)</i>	MIT
Documentation	Each tubelet can have one and only one scheduling rule assigned.
Interface <i>(e.g. REST, HTML-form, RMI, XMPP, SPARQL-over-REST)</i>	REST
Software dependencies <i>(SMACK-XMPP, PHP-ARC, MySQL)</i>	
Service dependencies <i>(Wordnet-xml, IMDB-website)</i>	
Intended users	Mockup

Table 10 - Get the status of the scheduler

5.1.2. Pipeline Management

The idea behind pipeline-related services is to manage the output of a Tubelet (see below), adding specific processing stages, till the ingestion in the RDF storage.

Service name	Get all pipelines
Service category <i>(crawler, adapter, converter recommender, logger)</i>	Pipeline Container
URLs	http://moth.notube.tv:9998/pipelinecontainer/pipelines
Description	Returns the list of pipelines registered in the container.
Functionality	GET request
Examples	INPUT: /pipelinecontainer/pipelines OUTPUT: <pre><?xml version="1.0" encoding="UTF-8" standalone="yes"?> <pipelineManifestWrappers> <pipeline> <description>Default triple pipeline.</description> <name>default-triple-pipeline</name></pre>

	<pre> </pipeline> <pipeline> <description>Default object pipeline.</description> <name>default-object-pipeline</name> </pipeline> </pipelineManifestWrappers> </pre>
Schemas (http://purl.org/voc/po)	NIC (Prestospace – TvAnytime - NewsML)
Contact person(s)	(Davide Palmisano) davide@asemantics.com
Status (planned, under-development, finished, cancelled, replaced)	Developed
Licence (e.g. MIT, BSD, not-decided, internal)	MIT
Documentation	
Interface (e.g. REST, HTML-form, RMI, XMPP, SPARQL-over-REST)	REST
Software dependencies (SMACK-XMPP, PHP-ARC, MySQL)	
Service dependencies (Wordnet-xml, IMDB-website)	
Intended users	Mockup

Table 11 – Get all pipelines

Service name	Get the default triple pipeline
Service category (crawler, adapter, converter recommender, logger)	Pipeline Container
URLs	http://moth.notube.tv:9998/pipelinecontainer/defaultTriplePipeline
Description	Returns the default pipeline that consumes RDF triples exposed by the container.
Functionality	GET request
Examples	INPUT: /pipelinecontainer/defaultTriplePipeline OUTPUT: <?xml version="1.0" encoding="UTF-8"

	<pre>standalone="yes"?> <pipeline> <description>Default triple pipeline.</description> <name>default-triple-pipeline</name> </pipeline></pre>
Schemas (http://purl.org/voc/po)	NIC (Prestospace – TvAnytime - NewsML)
Contact person(s)	
Status (planned, under-development, finished, cancelled, replaced)	Developed
Licence (e.g. MIT, BSD, not-decided, internal)	MIT
Documentation	
Interface (e.g. REST, HTML-form, RMI, XMPP, SPARQL-over-REST)	REST
Software dependencies (SMACK-XMPP, PHP-ARC, MySQL)	
Service dependencies (Wordnet-xml, IMDB-website)	
Intended users	Mockup

Table 12 - Get the default triple pipeline

Service name	Get the default object pipeline
Service category (crawler, adapter, converter recommender, logger)	Pipeline Container
URLs	http://moth.notube.tv:9998/pipelinecontainer/defaultObjectPipeline
Description	Returns the default pipeline that consumes objects exposed by the container.
Functionality	GET request
Examples	<p>INPUT: pipelinecontainer/defaultObjectPipeline</p> <p>OUTPUT: <?xml version="1.0" encoding="UTF-8" standalone="yes"?></p>

	<pre><pipeline> <description>Default object pipeline.</description> <name>default-object-pipeline</name> </pipeline></pre>
Schemas (http://purl.org/voc/po)	NIC (Prestospace – TvAnytime - NewsML)
Contact person(s)	(Davide Palmisano) davide@asemantics.com
Status (planned, under-development, finished, cancelled, replaced)	Developed
Licence (e.g. MIT, BSD, not-decided, internal)	MIT
Documentation	
Interface (e.g. REST, HTML-form, RMI, XMPP, SPARQL-over-REST)	REST
Software dependencies (SMACK-XMPP, PHP-ARC, MySQL)	
Service dependencies (Wordnet-xml, IMDB-website)	
Intended users	Mockup

Table 13 - Get the default object pipeline

Service name	Delete a specific pipeline
Service category (crawler, adapter, converter recommender, logger)	Pipeline Container
URLs	http://moth.notube.tv:9998/delete/{pipelineName}
Description	Deregisters a pipeline from the container.
Functionality	POST request
Examples	INPUT: delete/{pipelineName} OUTPUT:
Schemas	NIC (Prestospace – TvAnytime - NewsML)

<i>(http://purl.org/voc/po)</i>	
Contact person(s)	(Davide Palmisano) davide@asemantics.com
Status <i>(planned, under-development, finished, cancelled, replaced)</i>	Developed
Licence <i>(e.g. MIT, BSD, not-decided, internal)</i>	MIT
Documentation	
Interface <i>(e.g. REST, HTML-form, RMI, XMPP, SPARQL-over-REST)</i>	REST
Software dependencies <i>(SMACK-XMPP, PHP-ARC, MySQL)</i>	
Service dependencies <i>(Wordnet-xml, IMDB-website)</i>	
Intended users	Mockup

Table 14 - Delete a specific pipeline

Service name	Process RDF data with a specific pipeline
Service category <i>(crawler, adapter, converter recommender, logger)</i>	Pipeline Container
URLs	http://moth.notube.tv:9998/process/{pipelineName}
Description	Start the processing of a bunch of RDF data with the default triple pipeline.
Functionality	POST request
Examples	INPUT: process/{pipelineName} form parameter: data pipelineName: name of the pipeline. data: the RDF data OUTPUT:
Schemas <i>(http://purl.org/voc/po)</i>	NIC (Prestospace - TvAnytime - NewsML)
Contact person(s)	(Davide Palmisano) davide@asemantics.com
Status <i>(planned, under-development,</i>	Developed

<i>finished, cancelled, replaced)</i>	
Licence (e.g. MIT, BSD, not-decided, internal)	MIT
Documentation	
Interface (e.g. REST, HTML-form, RMI, XMPP, SPARQL-over-REST)	REST
Software dependencies (SMACK-XMPP, PHP-ARC, MySQL)	
Service dependencies (Wordnet-xml, IMDB-website)	
Intended users	Mockup

Table 15 - Process RDF data with a specific pipeline

Service name	Process RDF data with the default triple pipeline
Service category (crawler, adapter, converter recommender, logger)	Pipeline Container
URLs	http://moth.notube.tv:9998/process
Description	Start the processing of a bunch of RDF data with the default triple pipeline.
Functionality	POST request
Examples	INPUT: process form parameter: data data: the RDF data OUTPUT:
Schemas (http://purl.org/voc/po)	NIC (Prestospace – TvAnytime - NewsML)
Contact person(s)	(Davide Palmisano) davide@asemantics.com
Status (planned, under-development, finished, cancelled, replaced)	Developed
Licence (e.g. MIT, BSD, not-decided, internal)	MIT
Documentation	
Interface	REST

(e.g. REST, HTML-form, RMI, XMPP, SPARQL-over-REST)	
Software dependencies (SMACK-XMPP, PHP-ARC, MySQL)	
Service dependencies (Wordnet-xml, IMDB-website)	
Intended users	Mockup

Table 16 - Process RDF data with the default triple pipeline

5.1.3. Adaptors

The following services provide a flexible way to enable seamless accessing of heterogeneous contents from different sources. “Tubelets” and “Modelets” take care of data from a specific input source; their implementation strictly depend on the latter and is left to the developer, although in NoTube a set of these components is foreseen in order to access widely adopted social networks. Tubelets/Modelets, thus, could be seen as plugins. Their containers are managed by the services described below. In particular containers take care of the life cycle of each tubelet, as well as the specific user authentication issues regarding a certain tubelet. They allow to activate a specific Tubelet in a synchronous way. New Tubelets can be deployed into the container on the spot. Please refer to D3.1 for more information.

The following picture provides a snapshot of the typical data flow within a Tubelet:

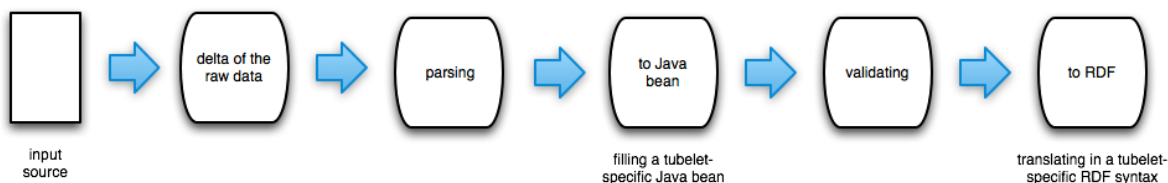


Figure 5 - Tubelet data flow

5.1.3.1. Tubelets/Modelets

Service name	Process a specific tubelet
Service category (crawler, adapter, converter recommender, logger)	Tubelet Container
URLs	http://moth.notube.tv:9998/tubeletcontainer/process/{identifier}
Description	Processes a tubelet from the container.
Functionality	GET request
Examples	INPUT: Identifier: name of the tubelet or a positional number in the list of tubelets. OUTPUT:

Schemas (http://purl.org/voc/po)	NIC (Prestospace - TvAnytime - NewsML)
Contact person(s)	(Davide Palmisano) davide@asemantics.com
Status (planned, under-development, finished, cancelled, replaced)	Developed
Licence (e.g. MIT, BSD, not-decided, internal)	MIT
Documentation	
Interface (e.g. REST, HTML-form, RMI, XMPP, SPARQL-over-REST)	REST
Software dependencies (SMACK-XMPP, PHP-ARC, MySQL)	
Service dependencies (Wordnet-xml, IMDB-website)	
Intended users	Mockup

Table 17 - Process a specific tubelet

Service name	Get all tubelets
Service category (crawler, adapter, converter recommender, logger)	Tubelet Container
URLs	http://moth.notube.tv:9998/tubeletcontainer/tubelets
Description	Returns the list of tubelets registered in the container.
Functionality	GET request
Examples	<p>INPUT:</p> <p>OUTPUT:</p> <pre><?xml version="1.0" encoding="UTF-8" standalone="yes"?> <tubelets> <tubelet> <description>test tubelet 1</description> <name>test-tubelet-1</name> <service>test-service-1</service> </tubelet></pre>

	<pre><tubelet> <description>test tubelet 0</description> <name>test-tubelet-0</name> <service>test-service-0</service> </tubelet> </tubelets></pre>
Schemas (http://purl.org/voc/po)	NIC (Prestospace – TvAnytime - NewsML)
Contact person(s)	(Davide Palmisano) davide@asemantics.com
Status (planned, under-development, finished, cancelled, replaced)	Developed
Licence (e.g. MIT, BSD, not-decided, internal)	MIT
Documentation	
Interface (e.g. REST, HTML-form, RMI, XMPP, SPARQL-over-REST)	REST
Software dependencies (SMACK-XMPP, PHP-ARC, MySQL)	
Service dependencies (Wordnet-xml, IMDB-website)	
Intended users	Mockup

Table 18 - Get all tubelets

Service name	Get a specific tubelet
Service category (crawler, adapter, converter recommender, logger)	Tubelet Container
URLs	http://moth.notube.tv:9998/tubelets/{identifier}
Description	Returns a specific tubelet exposed by the container.
Functionality	GET request
Examples	<p>INPUT: identifier: name of the tubelet or a positional number in the list of tubelets.</p> <p>OUTPUT:</p>

	<pre><?xml version="1.0" encoding="UTF-8" standalone="yes"?> <tubelet> <description>test tubelet 0</description> <name>test-tubelet-0</name> <service>test-service-0</service> </tubelet></pre>
Schemas (http://purl.org/voc/po)	NIC (Prestospace – TvAnytime - NewsML)
Contact person(s)	(Davide Palmisano) davide@asemantics.com
Status (planned, under-development, finished, cancelled, replaced)	Developed
Licence (e.g. MIT, BSD, not-decided, internal)	MIT
Documentation	
Interface (e.g. REST, HTML-form, RMI, XMPP, SPARQL-over-REST)	REST
Software dependencies (SMACK-XMPP, PHP-ARC, MySQL)	
Service dependencies (Wordnet-xml, IMDB-website)	
Intended users	Mockup

Table 19 - Get a specific tubelet

Service name	Delete a specific tubelet
Service category (crawler, adapter, converter, recommender, logger)	Tubelet Container
URLs	http://moth.notube.tv:9998/tubelets/{identifier}
Description	Deregisters a tubelet from the container.
Functionality	DELETE request
Examples	INPUT: identifier: name of the tubelet or a positional number in the list of tubelets. OUTPUT:

Schemas <i>(http://purl.org/voc/po)</i>	NIC (Prestospace – TvAnytime - NewsML)
Contact person(s)	(Davide Palmisano) davide@asemantics.com
Status <i>(planned, under-development, finished, cancelled, replaced)</i>	Developed
Licence <i>(e.g. MIT, BSD, not-decided, internal)</i>	MIT
Documentation	
Interface <i>(e.g. REST, HTML-form, RMI, XMPP, SPARQL-over-REST)</i>	REST
Software dependencies <i>(SMACK-XMPP, PHP-ARC, MySQL)</i>	
Service dependencies <i>(Wordnet-xml, IMDB-website)</i>	
Intended users	Mockup

Table 20 - Delete a specific tubelet

Service name	Upload a tubelet
Service category <i>(crawler, adapter, converter recommender, logger)</i>	Tubelet Container
URLs	http://moth.notube.tv:9998/upload
Description	Uploads a tubelet in the container.
Functionality	POST request
Examples	INPUT: OUTPUT:
Schemas <i>(http://purl.org/voc/po)</i>	NIC (Prestospace – TvAnytime - NewsML)
Contact person(s)	(Davide Palmisano) davide@asemantics.com
Status <i>(planned, under-development, finished, cancelled, replaced)</i>	Developed
Licence	MIT

<i>(e.g. MIT, BSD, not-decided, internal)</i>	
Documentation	
Interface <i>(e.g. REST, HTML-form, RMI, XMPP, SPARQL-over-REST)</i>	REST
Software dependencies <i>(SMACK-XMPP, PHP-ARC, MySQL)</i>	
Service dependencies <i>(Wordnet-xml, IMDB-website)</i>	
Intended users	Mockup

Table 21 - Upload a tubelet

Service name	Get the delta of a specific user by a specific tubelet
Service category <i>(crawler, adapter, converter recommender, logger)</i>	Delta Manager
URLs	http://moth.notube.tv:9998/deltamanager/{tubelet}/{user}
Description	Get the delta of information related to a specific couple (service, user).
Functionality	GET request
Examples	<p>INPUT: /deltamanager/{tubelet}/{user}</p> <p>OUTPUT: <?xml version="1.0" encoding="UTF-8" standalone="yes"?> <deltaWrapper> <date>Wed Sep 09 15:21:04 EET 2009</date> <serialization>the first delta</serialization> </deltaWrapper></p>
Schemas <i>(http://purl.org/voc/po)</i>	NIC (Prestospace – TvAnytime - NewsML)
Contact person(s)	(Davide Palmisano) davide@asemantics.com
Status <i>(planned, under-development, finished, cancelled, replaced)</i>	Developed

Licence (e.g. MIT, BSD, not-decided, internal)	MIT
Documentation	
Interface (e.g. REST, HTML-form, RMI, XMPP, SPARQL-over-REST)	REST
Software dependencies (SMACK-XMPP, PHP-ARC, MySQL)	
Service dependencies (Wordnet-xml, IMDB-website)	
Intended users	Mockup

Table 22 - Get the delta of a specific user by a specific tubelet

5.1.4. Audiovisual Ingestion

Service name	ViewAllTVShowRecordings
Service category (crawler, adapter, converter recommender, logger)	ingestion management
URLs	http://demos.txt.it/Notube/HA_API/Ingestion_Service.aspx?op=ViewAllTVShowRecordings
Description	Returns the list of all scheduled recordings with their state
Functionality	external service
Examples	<p>INPUT:</p> <p>OUTPUT:</p> <pre><ScheduledRecordings> <Recording id="0001" epgid="xxxxx"> <Description>TG1</Description> <StartDateTime>20090714T120000</StartDateTime> <Duration>750</Duration> <Channel>RAI1</Channel> <Status>finished</Status> </Recording> <Recording id="0002" epgid="xxxxx"> <Description>TG2</Description> <StartDateTime>20091201T120000</StartDateTime> <Duration>250</Duration></pre>

	<pre> <Channel>RAI2</Channel> <Status>scheduled</Status> </Recording> <Recording id="0003" epgid="xxxxx"> <Description>TG3</Description> <StartDateTime>20091015T120000</StartDateTime> <Duration>900</Duration> <Channel>RAI3</Channel> <Status>started</Status> </Recording> </ScheduledRecordings> </pre>
Schemas (http://purl.org/voc/po)	http://demos.txt.it/Notube/HA_API/Ingestion_Service.aspx http://demos.txt.it/Notube/HA_API/XSD/ViewAllTVShowRecordings.xsd
Contact person(s)	davide.ponti@txt.it ; Francesco.volonterio@txt.it ;
Status (planned, under-development, finished, cancelled, replaced)	Developed
Licence (e.g. MIT, BSD, not-decided, internal)	MIT
Documentation	
Interface (e.g. REST, HTML-form, RMI, XMPP, SPARQL-over-REST)	SOAP
Software dependencies (SMACK-XMPP, PHP-ARC, MySQL)	MySql
Service dependencies (Wordnet-xml, IMDB-website)	
Intended users	Mockup

Table 23 – ViewAllTVShowRecordings

Service name	AddTVShowRecording
Service category (crawler, adapter, converter recommender, logger)	ingestion management
URLs	http://demos.txt.it/Notube/HA_API/Ingestion_Service.aspx?op=AddTVShowRecording

Description	Permits to schedule a new recording
Functionality	external service
Examples	<p>INPUT:</p> <pre><NewRecording epgid="xxxxxx"> <Description>TG1</Description> <StartDateTime>20090714T120000</StartDateTime> <Duration>750</Duration> <Channel>RAI1</Channel> </NewRecording></pre> <p>OUTPUT: RecordingID</p>
Schemas (http://purl.org/voc/po)	http://demos.txt.it/Notube/HA_API/Ingestion_Service.asmx http://demos.txt.it/Notube/HA_API/XSD/ViewAllTVShowRecordings.xsd
Contact person(s)	davide.ponti@txt.it ; Francesco.volonterio@txt.it ;
Status (planned, under-development, finished, cancelled, replaced)	Developed
Licence (e.g. MIT, BSD, not-decided, internal)	MIT
Documentation	
Interface (e.g. REST, HTML-form, RMI, XMPP, SPARQL-over-REST)	SOAP
Software dependencies (SMACK-XMPP, PHP-ARC, MySQL)	MySql
Service dependencies (Wordnet-xml, IMDB-website)	
Intended users	Mockup

Table 24 – AddTVShowRecording

Service name	ReadTVShowRecordingDetails
Service category (crawler, adapter, converter recommender, logger)	ingestion management

URLs	http://demos.txt.it/Notube/HA_API/Ingestion_Service.aspx?op=ReadTVShowRecordingDetails
Description	Returns the description of a single TVShow recorded or scheduled
Functionality	external service
Examples	<p>INPUT: RecordingID EPGID</p> <p>OUTPUT: <code><Recording id="0002" epgid="xxxxx"> <Description>TG2</Description> <StartDateTime>20091201T120000</StartDateTime> <Duration>250</Duration> <Channel>RAI2</Channel> <Status>scheduled</Status> </Recording></code></p>
Schemas (http://purl.org/voc/po)	http://demos.txt.it/Notube/HA_API/Ingestion_Service.aspx http://demos.txt.it/Notube/HA_API/XSD/ReadTVShowRecordingDetails.xsd
Contact person(s)	davide.ponti@txt.it ; Francesco.volonterio@txt.it ;
Status (planned, under-development, finished, cancelled, replaced)	Developed
Licence (e.g. MIT, BSD, not-decided, internal)	MIT
Documentation	
Interface (e.g. REST, HTML-form, RMI, XMPP, SPARQL-over-REST)	SOAP
Software dependencies (SMACK-XMPP, PHP-ARC, MySQL)	MySql
Service dependencies (Wordnet-xml, IMDB-website)	
Intended users	Mockup

Table 25 – ReadTVShowRecordingDetails

Service name	DeleteTVShowRecording
Service category <i>(crawler, adapter, converter recommender, logger)</i>	ingestion management
URLs	http://demos.txt.it/Notube/HA_API/Ingestion_Service.aspx?op=DeleteTVShowRecording
Description	Deletes an already scheduled Recording, if the TVShow is already recorded no data will be deleted
Functionality	external service
Examples	INPUT: RecordingID EPGID OUTPUT:
Schemas <i>(http://purl.org/voc/po)</i>	http://demos.txt.it/Notube/HA_API/Ingestion_Service.aspx
Contact person(s)	davide.ponti@txt.it ; Francesco.volonterio@txt.it ;
Status <i>(planned, under-development, finished, cancelled, replaced)</i>	Developed
Licence <i>(e.g. MIT, BSD, not-decided, internal)</i>	MIT
Documentation	
Interface <i>(e.g. REST, HTML-form, RMI, XMPP, SPARQL-over-REST)</i>	SOAP
Software dependencies <i>(SMACK-XMPP, PHP-ARC, MySQL)</i>	MySql
Service dependencies <i>(Wordnet-xml, IMDB-website)</i>	
Intended users	Mockup

Table 26 – DeleteTVShowRecording

Service name	UpdateTVShowRecording
Service category <i>(crawler, adapter, converter recommender, logger)</i>	ingestion management
URLs	http://demos.txt.it/Notube/HA_API/Ingestion_Service.aspx

	ce.asmx?op=UpdateTVShowRecording
Description	Updates the already stored data of a TVShow recording that is not already started or finished.
Functionality	external service
Examples	<p>INPUT: RecordingID EPGID, RecordingDetails.xml</p> <pre><RecordingDetails id="0001" epgid="xxxxx"> <Description>TG1</Description> <StartDateTime>20090714T120000</StartDateTime> <Duration>750</Duration> <Channel>RAI1</Channel> </RecordingDetails></pre> <p>OUTPUT:</p>
Schemas (http://purl.org/voc/po)	http://demos.txt.it/Notube/HA_API/Ingestion_Service.asmx http://demos.txt.it/Notube/HA_API/XSD/RecordingDetails.xsd
Contact person(s)	davide.ponti@txt.it ; Francesco.volonterio@txt.it ;
Status (planned, under-development, finished, cancelled, replaced)	Developed
Licence (e.g. MIT, BSD, not-decided, internal)	MIT
Documentation	
Interface (e.g. REST, HTML-form, RMI, XMPP, SPARQL-over-REST)	SOAP
Software dependencies (SMACK-XMPP, PHP-ARC, MySQL)	MySql
Service dependencies (Wordnet-xml, IMDB-website)	
Intended users	Mockup

Table 27 - UpdateTVShowRecording

5.1.5. Audiovisual Processing

5.1.5.1. Smart Cropping

Service name	Reframing
Service category (crawler, adapter, converter recommender, logger, ...)	Adapter
URLs	NA
Description	Reframes a input stream according to the region of interest
Functionality	MPEG2 TS → Reframed MPEG2 TS
Examples	NA
Schemas (http://purl.org/voc/po)	NA
Contact person(s)	Anne-Lore.Mevel@grassvalley.com
Status (required, planned, under-development, finished, cancelled, replaced)	Under-development: planned release jun10
Licence (e.g. MIT, BSD, not-decided, internal)	internal
Documentation	http://www.notube.tv/wiki/index.php/Services/Reframing
Interface (e.g. REST, HTML-form, RMI, XMPP, SPARQL-over-REST)	SOAP/XML
Software dependencies (SMACK-XMPP, PHP-ARC, MySQL)	None
Service dependencies (Wordnet-xml, IMDB-website)	TBC
Intended users	ANTS

Table 28 - Reframing

5.1.5.2. Smart Injection

Service name	Ad Insertion
Service category (crawler, adapter, converter recommender, logger)	Adapter
URLs	NA
Description	Insert an ad at the good place at the right time in a video

	stream
Functionality	MPEG2 TS File → MPEG2 TS File (with ad)
Examples	NA
Schemas (http://purl.org/voc/po)	NA
Contact person(s)	Anne-Lore.Mevel@grassvalley.com
Status (planned, under-development, finished, cancelled, replaced)	Under-development: planned release jun10
Licence (e.g. MIT, BSD, not-decided, internal)	internal
Documentation	http://www.notube.tv/wiki/index.php/Services/AdInsertion
Interface (e.g. REST, HTML-form, RMI, XMPP, SPARQL-over-REST)	SOAP/XML
Software dependencies (SMACK-XMPP, PHP-ARC, MySQL)	None
Service dependencies (Wordnet-xml, IMDB-website)	TBC
Intended users	iFanzzy

Table 29 - Ad Insertion

5.2. Metadata Oriented

This section presents planned services for metadata management with specific focus on the data models and formats adopted in NoTube. These services are divided in:

- Extraction, to transparently parse and retrieve individual pieces of information
- Injection, to transparently add information or enrich metadata containers
- Enrichment, to process metadata e produce the requested enrichment
- Conversion, to provide a set of tools capable of transforming a metadata format in another one
- Recommendation, to process metadata and produce the requested recommendations.

5.2.1. Extraction

Method name	GetPublicationDate(String objectid)
Service category (crawler, adapter, converter recommender, logger)	Data Extraction
URLs	
Description	This method, giving as input a NICid, returns the

	publication date of the video present into the correspondent NIC as main content. The service will parse the NIC xml file (TvAnytime file) and retrieve this information
Functionality	
Examples	INPUT: objectid OUTPUT: <publicationdate="2009-07-03T10:58:02.380"/>
Schemas (http://purl.org/voc/po)	NIC (TvAnytime)
Contact person(s)	R. Zimmermann / M. Riethmayer (IRT)
Status (planned, under-development, finished, cancelled, replaced)	Proposed
Licence (e.g. MIT, BSD, not-decided, internal)	NOT-DECIDED
Documentation	
Interface (e.g. REST, HTML-form, RMI, XMPP, SPARQL-over-REST)	SOAP
Software dependencies (SMACK-XMPP, PHP-ARC, MySQL)	
Service dependencies (Wordnet-xml, IMDB-website)	Independent
Intended users	Mockup

Table 30 – GetPublicationDate

Method name	GetPublicationInfo(String objectid)
Service category (crawler, adapter, converter recommender, logger)	Data Extraction
URLs	
Description	This method, giving as input a NICid, returns the publication info of the video present into the correspondent NIC as main content. The service will parse the NIC xml file (TvAnytime file) and retrieve this information
Functionality	

Examples	INPUT: objectid OUTPUT: <publicationinfo="TG2 - Edizione 13:00" />
Schemas (http://purl.org/voc/po)	NIC (TvAnytime)
Contact person(s)	R. Zimmermann / M. Riethmayer (IRT)
Status (planned, under-development, finished, cancelled, replaced)	Proposed
Licence (e.g. MIT, BSD, not-decided, internal)	NOT-DECIDED
Documentation	
Interface (e.g. REST, HTML-form, RMI, XMPP, SPARQL-over-REST)	SOAP
Software dependencies (SMACK-XMPP, PHP-ARC, MySQL)	
Service dependencies (Wordnet-xml, IMDB-website)	Independent
Intended users	Mockup

Table 31 – GetPublicationInfo

Method name	GetGenre(String objectid)
Service category (crawler, adapter, converter recommender, logger)	Data Extraction
URLs	
Description	This method, giving as input a NICid, returns a list of genre of the video present into the correspondent NIC as main content. The service will parse the NIC xml file (TvAnytime file) and retrieve this information
Functionality	
Examples	INPUT: objectid OUTPUT: < genre="News / Pure information" />

Schemas (http://purl.org/voc/po)	NIC (TvAnytime)
Contact person(s)	R. Zimmermann / M. Riethmayer (IRT)
Status (planned, under-development, finished, cancelled, replaced)	Proposed
Licence (e.g. MIT, BSD, not-decided, internal)	NOT-DECIDED
Documentation	
Interface (e.g. REST, HTML-form, RMI, XMPP, SPARQL-over-REST)	SOAP
Software dependencies (SMACK-XMPP, PHP-ARC, MySQL)	
Service dependencies (Wordnet-xml, IMDB-website)	Independent
Intended users	Mockup

Table 32 – GetGenre

Method name	GetContentRef(String objectid)
Service category (crawler, adapter, converter recommender, logger)	Data Extraction
URLs	
Description	This method, giving as input a NICid, returns the mms reference to the entire TvShow video which contains the video present into the correspondent NIC as main content. The service will parse the NIC xml file (TvAnytime file) and retrieve this information
Functionality	
Examples	INPUT: objectid OUTPUT: <code><contentref="mms://content/TvShow/20090703_TG21300_ANTTS_1246621509.66.asf" /></code>
Schemas (http://purl.org/voc/po)	NIC (TvAnytime)
Contact person(s)	R. Zimmermann / M. Riethmayer (IRT)

Status <i>(planned, under-development, finished, cancelled, replaced)</i>	Proposed
Licence <i>(e.g. MIT, BSD, not-decided, internal)</i>	NOT-DECIDED
Documentation	
Interface <i>(e.g. REST, HTML-form, RMI, XMPP, SPARQL-over-REST)</i>	SOAP
Software dependencies <i>(SMACK-XMPP, PHP-ARC, MySQL)</i>	
Service dependencies <i>(Wordnet-xml, IMDB-website)</i>	Independent
Intended users	Mockup

Table 33 – GetContentRef

Method name	GetTimecodeStart(String objectid)
Service category <i>(crawler, adapter, converter recommender, logger)</i>	Data Extraction
URLs	
Description	This method, giving as input a NICid, returns the start timecode of the video present into the correspondent NIC as main content. The service will parse the NIC xml file (TvAnytime file) and retrieve this information
Functionality	
Examples	INPUT: objectid OUTPUT: <code>< timecodestart="T00:01:25:0F25" /></code>
Schemas <i>(http://purl.org/voc/po)</i>	NIC (TvAnytime)
Contact person(s)	R. Zimmermann / M. Riethmayer (IRT)
Status <i>(planned, under-development, finished, cancelled, replaced)</i>	Proposed
Licence	NOT-DECIDED

<i>(e.g. MIT, BSD, not-decided, internal)</i>	
Documentation	
Interface <i>(e.g. REST, HTML-form, RMI, XMPP, SPARQL-over-REST)</i>	SOAP
Software dependencies <i>(SMACK-XMPP, PHP-ARC, MySQL)</i>	
Service dependencies <i>(Wordnet-xml, IMDB-website)</i>	Independent
Intended users	Mockup

Table 34 – GetTimecodeStart

Method name	GetDuration(String objectid)
Service category <i>(crawler, adapter, converter recommender, logger)</i>	Data Extraction
URLs	
Description	This method, giving as input a NICid, returns the duration in seconds of the video present into the correspondent NIC as main content. The service will parse the NIC xml file (TvAnytime file) and retrieve this information
Functionality	
Examples	INPUT: objectid OUTPUT: <code>< duration="75" /></code>
Schemas <i>(http://purl.org/voc/po)</i>	NIC (TvAnytime)
Contact person(s)	R. Zimmermann / M. Riethmayer (IRT)
Status <i>(planned, under-development, finished, cancelled, replaced)</i>	Proposed
Licence <i>(e.g. MIT, BSD, not-decided, internal)</i>	NOT-DECIDED
Documentation	
Interface <i>(e.g. REST, HTML-form, RMI, XMPP, SPARQL-over-REST)</i>	SOAP

Software dependencies (SMACK-XMPP, PHP-ARC, MySQL)	
Service dependencies (Wordnet-xml, IMDB-website)	Independent
Intended users	Mockup

Table 35 - GetDuration

Method name	GetLowQualityRef(String objectid)
Service category (crawler, adapter, converter recommender, logger)	Data Extraction
URLs	
Description	This method, giving as input a NICid, returns the mms reference to the low quality version of the video present into the correspondent NIC as main content. The service will parse the NIC xml file (TvAnytime file) and retrieve this information
Functionality	
Examples	INPUT: objectid OUTPUT: <lqref="mms://content/LQ/20090703_TG21300_ANTS_1246621509.66part1.asf" />
Schemas (http://purl.org/voc/po)	NIC (TvAnytime)
Contact person(s)	R. Zimmermann / M. Riethmayer (IRT)
Status (planned, under-development, finished, cancelled, replaced)	Proposed

Licence (e.g. MIT, BSD, not-decided, internal)	NOT-DECIDED
Documentation	
Interface (e.g. REST, HTML-form, RMI, XMPP, SPARQL-over-REST)	SOAP
Software dependencies (SMACK-XMPP, PHP-ARC, MySQL)	
Service dependencies (Wordnet-xml, IMDB-website)	Independent
Intended users	Mockup

Table 36 – **GetLowQualityRef**

Method name	GetHighQualityRef(String objectid)
Service category (crawler, adapter, converter recommender, logger)	Data Extraction
URLs	
Description	This method, giving as input a NICid, returns the mms reference to the high quality version of the video present into the correspondent NIC as main content. The service will parse the NIC xml file (TvAnytime file) and retrieve this information
Functionality	
Examples	INPUT: objectid OUTPUT: <code><href="mms://content/HQ/20090703_TG21300_ANTs_1246621509.66part1.asf" /></code>
Schemas (http://purl.org/voc/po)	NIC (TvAnytime)
Contact person(s)	R. Zimmermann / M. Riethmayer (IRT)
Status (planned, under-development, finished, cancelled, replaced)	Proposed

Licence (e.g. MIT, BSD, not-decided, internal)	NOT-DECIDED
Documentation	
Interface (e.g. REST, HTML-form, RMI, XMPP, SPARQL-over-REST)	SOAP
Software dependencies (SMACK-XMPP, PHP-ARC, MySQL)	
Service dependencies (Wordnet-xml, IMDB-website)	Independent
Intended users	Mockup

Table 37 – GetHighQualityRef

Method name	GetSpeechToText(String objectid)
Service category (crawler, adapter, converter recommender, logger)	Data Extraction
URLs	
Description	This method, giving as input a NICid, returns the speech transcription of the video present into the correspondent NIC as main content. The service will parse the NIC xml file (TvAnytime file) and retrieve this information
Functionality	
Examples	INPUT: objectid OUTPUT: <spechtotext>DOPO LA TRAGEDIA RIAPRE LA STAZIONE DI VIAREGGIO... ...PAVESE IL CIOCCOLATO PER LE STAR</spechtotext>
Schemas (http://purl.org/voc/po)	NIC (TvAnytime)
Contact person(s)	R. Zimmermann / M. Riethmayer (IRT)
Status (planned, under-development, finished, cancelled, replaced)	Proposed
Licence (e.g. MIT, BSD, not-decided, internal)	NOT-DECIDED

Documentation Interface (e.g. REST, HTML-form, RMI, XMPP, SPARQL-over-REST)	SOAP
Software dependencies (SMACK-XMPP, PHP-ARC, MySQL)	
Service dependencies (Wordnet-xml, IMDB-website)	Independent
Intended users	Mockup

Table 38 – GetSpeechToText

Method name	GetEnrichmentData(String objectid)
Service category (crawler, adapter, converter recommender, logger)	Data Extraction
URLs	
Description	This method, giving as input a NICid, returns all the enrichment data (URI i.e. dbpedia links) associated to the video present into the correspondent NIC as main content. The service will parse the NIC xml file (TvAnytime file) and retrieve this information
Functionality	
Examples	INPUT: objectid OUTPUT: <pre><externalLinks><externalLink id="0001" type="text" serviceName="dbpedia" property="http://xmlns.com/foaf/spec/topic subject="http://dbpedia.org/resource/The_Beatles" ></externalLink></externalLinks></pre>
Schemas (http://purl.org/voc/po)	NIC (TvAnytime)
Contact person(s)	R. Zimmermann / M. Riethmayer (IRT)
Status (planned, under-development, finished, cancelled, replaced)	Proposed
Licence (e.g. MIT, BSD, not-decided, internal)	NOT-DECIDED
Documentation Interface	SOAP

(e.g. REST, HTML-form, RMI, XMPP, SPARQL-over-REST)	
Software dependencies (SMACK-XMPP, PHP-ARC, MySQL)	
Service dependencies (Wordnet-xml, IMDB-website)	External data should be available via the links inside the NIC.
Intended users	Mockup

Table 39 - GetEnrichmentData

5.2.2. Injection

Method name	UploadNIC(String Nic.xml)
Service category (crawler, adapter, converter recommender, logger)	Data Injection
URLs	
Description	This method receives as input the NIC.xml of a news item and save the contained information locally in order to accomplish Data Extraction tasks. The example input could change according to the chosen schema (Prestospace – TvAnytime)
Functionality	
Examples	<pre> INPUT: <container objectid="ANTS_1246621509.66part0" publicationdate="2009-07-03T10:58:02.380" publicationinfo="TG2 - Edizione 13:00" genre="News / Pure information" contentref="20090703_TG21300_ANTs_1246621509.66.asf" timecodestart="T00:00:00:0F25" duration="75"> <spechtotext>DOPO LA TRAGEDIA RIAPRE LA STAZIONE DI VIAREGGIO... ...PAVESE IL CIOCCOLATO PER LE STAR</spechtotext> <EnrichmentData> <externalLink id="0001" type="text" serviceName="dbpedia" property="http://xmlns.com/foaf/spec/topic subject="http://dbpedia.org/resource/The_Beatles" > </externalLink> </EnrichmentData> </container> </pre>

	OUTPUT:
Schemas (http://purl.org/voc/po)	NIC (TvAnytime)
Contact person(s)	R. Zimmermann / M. Riethmayer (IRT)
Status (planned, under-development, finished, cancelled, replaced)	Proposed
Licence (e.g. MIT, BSD, not-decided, internal)	NOT-DECIDED
Documentation	
Interface (e.g. REST, HTML-form, RMI, XMPP, SPARQL-over-REST)	SOAP
Software dependencies (SMACK-XMPP, PHP-ARC, MySQL)	
Service dependencies (Wordnet-xml, IMDB-website)	Independent
Intended users	Mockup

Table 40 – UploadNIC

Method name	SetPublicationDate(String objectid, String PublicationDate)
Service category (crawler, adapter, converter recommender, logger)	Data Injection
URLs	
Description	This method sets the publication date of the video present as main content into the NIC identified by the NICid given as input. The service will parse the correspondent NIC xml file and adds or updates this information
Functionality	
Examples	INPUT: objectid, PublicationDate OUTPUT:
Schemas (http://purl.org/voc/po)	NIC (TvAnytime)
Contact person(s)	R. Zimmermann / M. Riethmayer (IRT)

Status <i>(planned, under-development, finished, cancelled, replaced)</i>	Proposed
Licence <i>(e.g. MIT, BSD, not-decided, internal)</i>	NOT-DECIDED
Documentation	
Interface <i>(e.g. REST, HTML-form, RMI, XMPP, SPARQL-over-REST)</i>	SOAP
Software dependencies <i>(SMACK-XMPP, PHP-ARC, MySQL)</i>	
Service dependencies <i>(Wordnet-xml, IMDB-website)</i>	Independent
Intended users	Mockup

Table 41 – SetPublicationDate

Method name	SetPublicationInfo(String objectid, String PublicationInfo)
Service category <i>(crawler, adapter, converter recommender, logger)</i>	Data Injection
URLs	
Description	This method sets the publication info of the video present as main content into the NIC identified by the NICid given as input. The service will parse the correspondent NIC xml file and adds or updates this information
Functionality	
Examples	INPUT: objectid, <publicationinfo="TG2 - Edizione 13:00" /> OUTPUT:
Schemas <i>(http://purl.org/voc/po)</i>	NIC (TvAnytime), Prestospace
Contact person(s)	R. Zimmermann / M. Riethmayer (IRT)
Status <i>(planned, under-development, finished, cancelled, replaced)</i>	Proposed

Licence (e.g. MIT, BSD, not-decided, internal)	NOT-DECIDED
Documentation	
Interface (e.g. REST, HTML-form, RMI, XMPP, SPARQL-over-REST)	SOAP
Software dependencies (SMACK-XMPP, PHP-ARC, MySQL)	
Service dependencies (Wordnet-xml, IMDB-website)	Independent
Intended users	Mockup

Table 42 – SetPublicationInfo

Method name	SetGenre(String objectid, String[] genreList)
Service category (crawler, adapter, converter recommender, logger)	Data Injection
URLs	
Description	This method sets the list of genres of the video present as main content into the NIC identified by the NICid given as input. The service will parse the correspondent NIC xml file and adds or updates this information
Functionality	
Examples	INPUT: objectid, <code><genreList></code> <code>< genre="News "/></code> <code>< genre=" Pure information"/></code> <code></genreList></code> OUTPUT:
Schemas (http://purl.org/voc/po)	NIC (TvAnytime)
Contact person(s)	R. Zimmermann / M. Riethmayer (IRT)
Status (planned, under-development, finished, cancelled, replaced)	Proposed
Licence (e.g. MIT, BSD, not-decided, internal)	NOT-DECIDED
Documentation	

Interface (e.g. REST, HTML-form, RMI, XMPP, SPARQL-over-REST)	SOAP
Software dependencies (SMACK-XMPP, PHP-ARC, MySQL)	
Service dependencies (Wordnet-xml, IMDB-website)	Independent
Intended users	Mockup

Table 43 – SetGenre

Method name	setContentRef(String objectid, String ContentRef)
Service category (crawler, adapter, converter recommender, logger)	Data Injection
URLs	
Description	This method sets the mms reference to the entire TvShow video which contains the video present as main content into the NIC identified by the NICid given as input. The service will parse the correspondent NIC xml file and adds or updates this information
Functionality	
Examples	INPUT: objectid, ContentRef OUTPUT:
Schemas (http://purl.org/voc/po)	NIC (TvAnytime)
Contact person(s)	R. Zimmermann / M. Riethmayer (IRT)
Status (planned, under-development, finished, cancelled, replaced)	Proposed
Licence (e.g. MIT, BSD, not-decided, internal)	NOT-DECIDED
Documentation	
Interface (e.g. REST, HTML-form, RMI, XMPP, SPARQL-over-REST)	SOAP
Software dependencies (SMACK-XMPP, PHP-ARC, MySQL)	

Service dependencies (Wordnet-xml, IMDB-website)	Independent
Intended users	Mockup

Table 44 – SetContentRef

Method name	SetTimecodeStart(String objectid, String timeCodeStart)
Service category (crawler, adapter, converter recommender, logger)	Data Injection
URLs	
Description	This method sets the start timecode value of the video present as main content into the NIC identified by the NICid given as input. The service will parse the correspondent NIC xml file and adds or updates this information
Functionality	
Examples	INPUT: objectid, TimeCodeStart OUTPUT:
Schemas (http://purl.org/voc/po)	NIC (TvAnytime)
Contact person(s)	R. Zimmermann / M. Riethmayer (IRT)
Status (planned, under-development, finished, cancelled, replaced)	Proposed
Licence (e.g. MIT, BSD, not-decided, internal)	NOT-DECIDED
Documentation	
Interface (e.g. REST, HTML-form, RMI, XMPP, SPARQL-over-REST)	SOAP
Software dependencies (SMACK-XMPP, PHP-ARC, MySQL)	
Service dependencies (Wordnet-xml, IMDB-website)	Independent

Intended users	Mockup
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Table 45 – SetTimecodeStart

Method name	SetDuration(String objectid, String duration)
Service category <i>(crawler, adapter, converter recommender, logger)</i>	Data Injection
URLs	
Description	This method sets the duration in seconds of the video present as main content into the NIC identified by the NICid given as input. The service will parse the correspondent NIC xml file and adds or updates this information
Functionality	
Examples	INPUT: objectid, Duration OUTPUT:
Schemas <i>(http://purl.org/voc/po)</i>	NIC (TvAnytime)
Contact person(s)	R. Zimmermann / M. Riethmayer (IRT)
Status <i>(planned, under-development, finished, cancelled, replaced)</i>	Proposed
Licence <i>(e.g. MIT, BSD, not-decided, internal)</i>	NOT-DECIDED
Documentation	
Interface <i>(e.g. REST, HTML-form, RMI, XMPP, SPARQL-over-REST)</i>	SOAP
Software dependencies <i>(SMACK-XMPP, PHP-ARC, MySQL)</i>	
Service dependencies <i>(Wordnet-xml, IMDB-website)</i>	Independent
Intended users	Mockup

Table 46 – SetDuration

Method name	SetLowQualityRef(String objectid, String LowQualityRef)
Service category (crawler, adapter, converter recommender, logger)	Data Injection
URLs	
Description	This method sets the mms reference to the low quality version of the video present as main content into the NIC identified by the NICid given as input. The service will parse the correspondent NIC xml file and adds or updates this information
Functionality	
Examples	INPUT: objectid, <lqref="mms://content/LQ/20090703_TG21300_ANTTS_1246621509.66part1.asf" /> OUTPUT:
Schemas (http://purl.org/voc/po)	NIC (TvAnytime)
Contact person(s)	R. Zimmermann / M. Riethmayer (IRT)
Status (planned, under-development, finished, cancelled, replaced)	Proposed
Licence (e.g. MIT, BSD, not-decided, internal)	NOT-DECIDED
Documentation	
Interface (e.g. REST, HTML-form, RMI, XMPP, SPARQL-over-REST)	SOAP
Software dependencies (SMACK-XMPP, PHP-ARC, MySQL)	
Service dependencies (Wordnet-xml, IMDB-website)	
Intended users	Mockup

Table 47- SetLowQualityRef

Method name	SetHighQualityRef(String objectid, String HighQualityRef)
Service category (crawler, adapter, converter)	Data Injection

<i>recommender, logger)</i>	
URLs	
Description	This method sets the mms reference to the high quality version of the video present as main content into the NIC identified by the NICid given as input. The service will parse the correspondent NIC xml file and adds or updates this information
Functionality	
Examples	INPUT: objectid, <code><lqref="mms://content/HQ/20090703_TG21300_ANTs_1246621509.66part1.asf" /></code> OUTPUT:
Schemas <i>(http://purl.org/voc/po)</i>	NIC (TvAnytime)
Contact person(s)	R. Zimmermann / M. Riethmayer (IRT)
Status <i>(planned, under-development, finished, cancelled, replaced)</i>	Proposed
Licence <i>(e.g. MIT, BSD, not-decided, internal)</i>	NOT-DECIDED
Documentation	
Interface <i>(e.g. REST, HTML-form, RMI, XMPP, SPARQL-over-REST)</i>	SOAP
Software dependencies <i>(SMACK-XMPP, PHP-ARC, MySQL)</i>	
Service dependencies <i>(Wordnet-xml, IMDB-website)</i>	Independent
Intended users	Mockup

Table 48 – SetHighQualityRef

Method name	SetSpeechToText(String objectid, String SpeechToText)
Service category <i>(crawler, adapter, converter recommender, logger)</i>	Data Injection
URLs	
Description	This method sets the transcription text correspondent to the video present as main content into the NIC identified by the NICid given

	as input. The service will parse the correspondent NIC xml file and adds or updates this information
Functionality	
Examples	INPUT: objectid, <spechtotext> DOPO LA TRAGEDIA RIAPRE LA STAZIONE DI VIAREGGIO... ..PAVESE IL CIOCCOLATO PER LE STAR </spechtotext> OUTPUT:
Schemas (http://purl.org/voc/po)	NIC (TvAnytime)
Contact person(s)	R. Zimmermann / M. Riethmayer (IRT)
Status (planned, under-development, finished, cancelled, replaced)	Proposed
Licence (e.g. MIT, BSD, not-decided, internal)	NOT-DECIDED
Documentation	
Interface (e.g. REST, HTML-form, RMI, XMPP, SPARQL-over-REST)	SOAP
Software dependencies (SMACK-XMPP, PHP-ARC, MySQL)	
Service dependencies (Wordnet-xml, IMDB-website)	Independent
Intended users	Mockup

Table 49 - SetSpeechToText

5.2.3. Enrichment

Method name	AddEnrichmentData(String objectid, EnrichmentData.xml)
Service category (crawler, adapter, converter recommender, logger)	Data Enrichment
URLs	
Description	This method receives as input a NICid and a new enrichment data for the NIC itself. The service will parse the correspondent NIC xml file and

	adds this external link into the dedicated tag
Functionality	
Examples	INPUT: objectid, EnrichmentData.xml EnrichmentData.xml: <EnrichmentData> <externalLink id="0001" type="text" serviceName="dbpedia" property="http://xmlns.com/foaf/spec/topic subject="http://dbpedia.org/resource/The_Beatles" > </externalLink> </EnrichmentData> OUTPUT:
Schemas (http://purl.org/voc/po)	NIC (Prestospace – TvAnytime - NewsML)
Contact person(s)	R. Zimmermann / M. Riethmayer (IRT)
Status (planned, under-development, finished, cancelled, replaced)	Proposed
Licence (e.g. MIT, BSD, not-decided, internal)	NOT-DECIDED
Documentation	
Interface (e.g. REST, HTML-form, RMI, XMPP, SPARQL-over-REST)	SOAP
Software dependencies (SMACK-XMPP, PHP-ARC, MySQL)	
Service dependencies (Wordnet-xml, IMDB-website)	External data should be available via the added links inside the NIC.
Intended users	Mockup

Table 50 – AddEnrichmentData

Method name	DeleteAllEnrichments(String objectid)
Service category (crawler, adapter, converter recommender, logger)	Data Enrichment
URLs	
Description	This method deletes all the enrichment data in the NIC identified by the NICid given as input. The service will parse the correspondent NIC xml

	file and deletes all the external link from the dedicated tag
Functionality	
Examples	INPUT: objectid OUTPUT:
Schemas (http://purl.org/voc/po)	NIC (TvAnytime)
Contact person(s)	R. Zimmermann / M. Riethmayer (IRT)
Status (planned, under-development, finished, cancelled, replaced)	Proposed
Licence (e.g. MIT, BSD, not-decided, internal)	NOT-DECIDED
Documentation	
Interface (e.g. REST, HTML-form, RMI, XMPP, SPARQL-over-REST)	SOAP
Software dependencies (SMACK-XMPP, PHP-ARC, MySQL)	
Service dependencies (Wordnet-xml, IMDB-website)	Independent
Intended users	Mockup

Table 51 – DeleteAllEnrichments

Service name	LUPEDIA2HTML
Service category (crawler, adapter, converter recommender, logger)	metadata-producer, text-enricher
URLs	http://lupedia.ontotext.com/lookup/text2html
Description	Takes a plain text input and returns HTML formatted version of the text, enriched with data about DBpedia entries found in it.
Functionality	<code>\$text\$filters:URL → \$enrichedtext:HTML</code>
Examples	INPUT: http://lupedia.ontotext.com/lookup/text2rdfa?lookupText=...&skip_sh3=true&skip_stp=true&keep_fnl=true OUTPUT: <html>

	<pre> <startOffset>36</startOffset> <endOffset>49</endOffset> <instanceUri>http:// ... /Elvis_Presley</instanceUri> <instanceClass>http:// ... /Person</instanceClass> </lookups> ... </lookupResult> </pre>
Schemas (<i>http://purl.org/voc/po</i>)	http://lupedia.ontotext.com/LookupResult.xsd
Contact person(s)	danail.kozhuharov@ontotext.com
Status (<i>planned, under-development, finished, cancelled, replaced</i>)	<i>under-development</i>
Licence (<i>e.g. MIT, BSD, not-decided, internal</i>)	Ontotext
Documentation	http://www.notube.tv/wiki/index.php/Services_catalogue#Enrichment_service
Interface (<i>e.g. REST, HTML-form, RMI, XMPP, SPARQL-over-REST</i>)	REST
Software dependencies (<i>SMACK-XMPP, PHP-ARC, MySQL</i>)	OWLIM
Service dependencies (<i>Wordnet-xml, IMDB-website</i>)	LDSR

Table 53 - LUPEDIA2XML

Service name	LUPEDIA2JSON
Service category (<i>crawler, adapter, converter recommender, logger</i>)	metadata-producer
URLs	http://lupedia.ontotext.com/lookup/text2json
Description	Takes a plain text input and returns JSON formatted data about DBpedia entries found in it.
Functionality	\$text\$filters:URL → \$jsondata:JSON
Examples	<p>INPUT:</p> <pre> http://lupedia.ontotext.com/lookup/text2json?lookupText=...&skip_sh3=true&skip_stp=true&keep_fnl=true </pre> <p>OUTPUT:</p> <pre> [[{"startOffset":36}, {"endOffset":49}, {"instanceUri":"http://dbpedia.org/resource/Elvis_Presley"}, {"instanceClass":"http://dbpedia.org/ontology/Person"}], </pre>

	...
]
Schemas (http://purl.org/voc/po)	
Contact person(s)	danail.kozhuharov@ontotext.com
Status (planned, under-development, finished, cancelled, replaced)	under-development
Licence (e.g. MIT, BSD, not-decided, internal)	Ontotext
Documentation	http://www.notube.tv/wiki/index.php/Services_catalogue#Enrichment_service
Interface (e.g. REST, HTML-form, RMI, XMPP, SPARQL-over-REST)	REST
Software dependencies (SMACK-XMPP, PHP-ARC, MySQL)	OWLIM
Service dependencies (Wordnet-xml, IMDB-website)	LDSR

Table 54 - LUPEDIA2JSON

Service name	LUPEDIA2RDFa
Service category (crawler, adapter, converter recommender, logger)	metadata-producer, text-enricher
URLs	http://lupedia.ontotext.com/lookup/text2rdfa
Description	Takes a plain text input and returns HTML+RDFa formatted version of the text, enriched with data about DBpedia entries found in it.
Functionality	\$text:URL → \$enrichedtext:HTML+RDFa
Examples	<p>INPUT: http://lupedia.ontotext.com/lookup/text2rdfa?lookupText=...</p> <p>OUTPUT: <pre><?xml version="1.0" encoding="UTF-8"?> <!DOCTYPE html PUBLIC "-//W3C//DTD XHTML+RDFa 1.0//EN" "http://www.w3.org/MarkUp/DTD/xhtml-rdfa-1.dtd"> <html xmlns="http://www.w3.org/1999/xhtml" xmlns:skos="http://www.w3.org/2004/02/skos/core#" version="XHTML+RDFa 1.0" xml:lang="en"> <head><title /></head> <body></pre></p>

Status <i>(planned, under-development, finished, cancelled, replaced)</i>	Proposed
Licence <i>(e.g. MIT, BSD, not-decided, internal)</i>	NOT-DECIDED
Documentation	
Interface <i>(e.g. REST, HTML-form, RMI, XMPP, SPARQL-over-REST)</i>	SOAP
Software dependencies <i>(SMACK-XMPP, PHP-ARC, MySQL)</i>	
Service dependencies <i>(Wordnet-xml, IMDB-website)</i>	Independent
Intended users	Mockup

Table 56 - ConvertPrestoSpaceToTvAnytime

5.2.5. Recommendation

Service name	Get Content Relevance
Service category <i>(crawler, adapter, converter recommender, logger)</i>	News Recommendation delivery service
URLs	http://moth.notube.tv:9998/newsrecommender/related?user={userid} content={NIC xml file as body parameter}
Description	The service returns the relevance of the given NIC (a float value between 0 and 1) for the given user
Functionality	POST request
Examples	INPUT: /newsrecommender/related?user={userid} OUTPUT: <relevance> <value>0.56674</value> </relevance>
Schemas <i>(http://purl.org/voc/po)</i>	NIC (Prestospace - TvAnytime - NewsML)
Contact person(s)	Davide Palmisano (davide@asemantics.com)
Status <i>(planned, under-development,</i>	under-development

<i>finished, cancelled, replaced)</i>	
Licence <i>(e.g. MIT, BSD, not-decided, internal)</i>	MIT
Documentation	
Interface <i>(e.g. REST, HTML-form, RMI, XMPP, SPARQL-over-REST)</i>	REST
Software dependencies <i>(SMACK-XMPP, PHP-ARC, MySQL)</i>	
Service dependencies <i>(Wordnet-xml, IMDB-website)</i>	The News Recommender Mockup
Intended users	NoTube application developers

Table 57 - Get Content Relevance

Service name	User Interests URIs
Service category <i>(crawler, adapter, converter recommender, logger)</i>	User profiles access
URLs	http://moth.notube.tv:9998/people/@me/@self?fields=interests or http://moth.notube.tv:9998/people/{guid}/@self?fields=interests
Description	Returns the list of user interests in terms of Linked Data URIs
Functionality	GET request
Examples	<p>INPUT: /people/{guid}/@self?fields=interests</p> <p>OUTPUT: <entry xmlns="http://www.w3.org/2005/Atom"> <id>dpalmisano:34KJDCKJN2HHF0DW20394</id><!-- person.id --> <title>dpalmisano</title><!-- person.displayName --> <updated>2008-03-15T10:00:00Z</updated><!-- last profile edit, or datetime.utcnow() --> <author><name>Davide</name></author><!-- person.displayName --> <content type="application/xml"> <person xmlns="http://ns.opensocial.org/2008/opensocial"> <id>dpalmisano:34KJDCKJN2HHF0DW20394</id> <displayName>Davide</displayName> <name></p>

	<pre> <formatted>Davide Palmisano</formatted> </name> <gender>male</gender> <interests>http://dbpedia.org/resource/Post- Rock<interests> <interests>http://dbpedia.org/resource/Category:Post- Rock<interests> <interests>http://dbpedia.org/resource/Mogwai<interests> <interests>http://dbpedia.org/resource/Explosions_in_the_s ky<interests> <interests>http://dbpedia.org/resource/Italy<interests> </person> </content> </entry> </pre>
Schemas (http://purl.org/voc/po)	http://ns.opensocial.org/2008/opensocial
Contact person(s)	Davide Palmisano (davide@asemantics.com) Dan Brickley (dan@danbri.org)
Status (planned, under-development, finished, cancelled, replaced)	under-development
Licence (e.g. MIT, BSD, not-decided, internal)	MIT
Documentation	http://www.opensocial.org/Technical-Resources/opensocial-spec-v09/REST-API.html
Interface (e.g. REST, HTML-form, RMI, XMPP, SPARQL-over-REST)	REST
Software dependencies (SMACK-XMPP, PHP-ARC, MySQL)	
Service dependencies (Wordnet-xml, IMDB-website)	The Beancounter
Intended users	NoTube application developers

Table 58 - User Interests URIs

Service name	NIC related URI
Service category (crawler, adapter, converter recommender, logger)	Metadata Services
URLs	

Description	The service returns URI recommendation for the given NIC
Functionality	GET request
Examples	INPUT: NIC.xml OUTPUT: sequence of related URI <?xml version="1.0" encoding="UTF-8"?> <relatedURI NIC_id = "{NIC_ID}"> <URI id="" type="" ...></URI> <URI id="" type="" ...></URI> </relatedURI>
Schemas (http://purl.org/voc/po)	NIC (Prestospace – TvAnytime - NewsML)
Contact person(s)	Davide Palmisano (davide@asemantics.com)
Status (planned, under-development, finished, cancelled, replaced)	Replaced
Licence (e.g. MIT, BSD, not-decided, internal)	MIT
Documentation	
Interface (e.g. REST, HTML-form, RMI, XMPP, SPARQL-over-REST)	REST
Software dependencies (SMACK-XMPP, PHP-ARC, MySQL)	
Service dependencies (Wordnet-xml, IMDB-website)	
Intended users	Mockup

Table 59 - NIC related URI

5.3. User Oriented

This section presents planned services for user profile with reference to the Beancounter implementation described in WP3. These services are divided in:

- Profile-related, to manage user identification (accounting)
- Activity-related, to manage dynamic attributes derived from the context and personal activities aggregation.

5.3.1. Profile Management

Service name	Register a user
Service category <i>(crawler, adapter, converter recommender, logger)</i>	User Manager
URLs	http://moth.notube.tv:9998/triplestorage/store
Description	Allows to register a user.
Functionality	POST request
Examples	INPUT: /usermanager/{name}/{surname} OUTPUT: id3
Schemas <i>(http://purl.org/voc/po)</i>	NIC (Prestospace – TvAnytime - NewsML)
Contact person(s)	Davide Palmisano (davide@asemantics.com)
Status <i>(planned, under-development, finished, cancelled, replaced)</i>	Developed
Licence <i>(e.g. MIT, BSD, not-decided, internal)</i>	MIT
Documentation	
Interface <i>(e.g. REST, HTML-form, RMI, XMPP, SPARQL-over-REST)</i>	REST
Software dependencies <i>(SMACK-XMPP, PHP-ARC, MySQL)</i>	
Service dependencies <i>(Wordnet-xml, IMDB-website)</i>	
Intended users	Mockup

Table 60 - Register a user

Service name	Get all users
Service category <i>(crawler, adapter, converter)</i>	User Manager

<i>recommender, logger)</i>	
URLs	http://moth.notube.tv:9998/usermanager/users
Description	Allows to retrieve all registered users.
Functionality	GET request
Examples	<p>INPUT:</p> <p>OUTPUT:</p> <pre><?xml version="1.0" encoding="UTF-8" standalone="yes"?> <userWrappers> <user> <ID>id1</ID> <name>test-name-1</name> <surname>test-surname-1</surname> </user> <user> <ID>id0</ID> <name>test-name-0</name> <surname>test-surname-0</surname> </user> </userWrappers></pre>
Schemas <i>(http://purl.org/voc/po)</i>	NIC (Prestospace – TvAnytime - NewsML)
Contact person(s)	Davide Palmisano (davide@asemantics.com)
Status <i>(planned, under-development, finished, cancelled, replaced)</i>	Developed
Licence <i>(e.g. MIT, BSD, not-decided, internal)</i>	MIT
Documentation	
Interface <i>(e.g. REST, HTML-form, RMI, XMPP, SPARQL-over-REST)</i>	REST
Software dependencies <i>(SMACK-XMPP, PHP-ARC, MySQL)</i>	
Service dependencies <i>(Wordnet-xml, IMDB-website)</i>	
Intended users	Mockup

Table 61 - Get all users

Service name	Get user by id
Service category <i>(crawler, adapter, converter recommender, logger)</i>	User Manager
URLs	http://moth.notube.tv:9998/usermanager/{id}
Description	Allows to retrieve the user with given id.
Functionality	GET request
Examples	INPUT: /usermanager/{id} OUTPUT: <?xml version="1.0" encoding="UTF-8" standalone="yes"?> <user> <ID>id0</ID> <name>test-name-0</name> <surname>test-surname-0</surname> </user>
Schemas <i>(http://purl.org/voc/po)</i>	NIC (Prestospace - TvAnytime - NewsML)
Contact person(s)	Davide Palmisano (davide@asemantics.com)
Status <i>(planned, under-development, finished, cancelled, replaced)</i>	Developed
Licence <i>(e.g. MIT, BSD, not-decided, internal)</i>	MIT
Documentation	
Interface <i>(e.g. REST, HTML-form, RMI, XMPP, SPARQL-over-REST)</i>	REST
Software dependencies <i>(SMACK-XMPP, PHP-ARC, MySQL)</i>	
Service dependencies <i>(Wordnet-xml, IMDB-website)</i>	
Intended users	Mockup

Table 62 - Get user by id

Service name	Get users by name and surname
---------------------	-------------------------------

Service category (crawler, adapter, converter recommender, logger)	User Manager
URLs	http://moth.notube.tv:9998/usermanager/{name}/{surname}
Description	Allows to retrieve the userIDs of the users with given name and surname.
Functionality	GET request
Examples	INPUT: /usermanager/{name}/{surname} OUTPUT: <users><user>id4</user></users>
Schemas (http://purl.org/voc/po)	NIC (Prestospace - TvAnytime - NewsML)
Contact person(s)	Davide Palmisano (davide@asemantics.com)
Status (planned, under-development, finished, cancelled, replaced)	Developed
Licence (e.g. MIT, BSD, not-decided, internal)	MIT
Documentation	
Interface (e.g. REST, HTML-form, RMI, XMPP, SPARQL-over-REST)	REST
Software dependencies (SMACK-XMPP, PHP-ARC, MySQL)	
Service dependencies (Wordnet-xml, IMDB-website)	
Intended users	Mockup

Table 63 - Get users by name and surname

Service name	Delete a user
Service category (crawler, adapter, converter recommender, logger)	User Manager

URLs	http://moth.notube.tv:9998/usermanager/{userid}
Description	Allows to deregister a user.
Functionality	DELETE request
Examples	INPUT: /usermanager/{userid} OUTPUT:
Schemas (http://purl.org/voc/po)	NIC (Prestospace – TvAnytime - NewsML)
Contact person(s)	Davide Palmisano (davide@asemantics.com)
Status (planned, under-development, finished, cancelled, replaced)	Developed
Licence (e.g. MIT, BSD, not-decided, internal)	MIT
Documentation	
Interface (e.g. REST, HTML-form, RMI, XMPP, SPARQL-over-REST)	REST
Software dependencies (SMACK-XMPP, PHP-ARC, MySQL)	
Service dependencies (Wordnet-xml, IMDB-website)	
Intended users	Mockup

Table 64 - Delete a user

Service name	Register a user credential with an HTTP Basic Authenticator
Service category (crawler, adapter, converter recommender, logger)	User Manager
URLs	http://moth.notube.tv:9998/usermanager/credentials/basicauth/{userid}/{service}/{username}/{password}
Description	Allows to register a user credential.
Functionality	POST request

Examples	INPUT: /usermanager/credentials/basicauth/{userid}/{service}/{username}/{password} OUTPUT:
Schemas (http://purl.org/voc/po)	NIC (Prestospace – TvAnytime - NewsML)
Contact person(s)	Davide Palmisano (davide@asemantics.com)
Status (planned, under-development, finished, cancelled, replaced)	Developed
Licence (e.g. MIT, BSD, not-decided, internal)	MIT
Documentation	
Interface (e.g. REST, HTML-form, RMI, XMPP, SPARQL-over-REST)	REST
Software dependencies (SMACK-XMPP, PHP-ARC, MySQL)	
Service dependencies (Wordnet-xml, IMDB-website)	
Intended users	Mockup

Table 65 - Register a user credential with an HTTP Basic Authenticator

Service name	Register a user credential with an anonymous authenticator
Service category (crawler, adapter, converter recommender, logger)	User Manager
URLs	http://moth.notube.tv:9998/usermanager/credentials/anonymous/{userid}/{service}/{username}
Description	Allows to register a user credential.
Functionality	POST request
Examples	INPUT: /usermanager/credentials/anonymous/{userid}/{service}/{username} OUTPUT:
Schemas	NIC (Prestospace – TvAnytime - NewsML)

<i>(http://purl.org/voc/po)</i>	
Contact person(s)	Davide Palmisano (davide@asemantics.com)
Status <i>(planned, under-development, finished, cancelled, replaced)</i>	Developed
Licence <i>(e.g. MIT, BSD, not-decided, internal)</i>	MIT
Documentation	
Interface <i>(e.g. REST, HTML-form, RMI, XMPP, SPARQL-over-REST)</i>	REST
Software dependencies <i>(SMACK-XMPP, PHP-ARC, MySQL)</i>	
Service dependencies <i>(Wordnet-xml, IMDB-website)</i>	
Intended users	Mockup

Table 66 - Register a user credential with an anonymous authenticator

Service name	Delete a user credential
Service category <i>(crawler, adapter, converter recommender, logger)</i>	User Manager
URLs	http://moth.notube.tv:9998/usermanager/credentials/{userid}/{service}
Description	Allows to deregister a user credential.
Functionality	DELETE request
Examples	INPUT: /usermanager/credentials/{userid}/{service} OUTPUT:
Schemas <i>(http://purl.org/voc/po)</i>	NIC (Prestospace – TvAnytime - NewsML)
Contact person(s)	Davide Palmisano (davide@asemantics.com)
Status <i>(planned, under-development, finished, cancelled, replaced)</i>	Developed

Licence (e.g. MIT, BSD, not-decided, internal)	MIT
Documentation	
Interface (e.g. REST, HTML-form, RMI, XMPP, SPARQL-over-REST)	REST
Software dependencies (SMACK-XMPP, PHP-ARC, MySQL)	
Service dependencies (Wordnet-xml, IMDB-website)	
Intended users	Mockup

Table 67 - Delete a user credential

Service name	Get all user credentials
Service category (crawler, adapter, converter recommender, logger)	User Manager
URLs	http://moth.notube.tv:9998/usermanager/credentials/{userid}
Description	Allows to retrieve all user credentials of registered services of a specific user.
Functionality	GET request
Examples	<p>INPUT: /usermanager/credentials/{userid}</p> <p>OUTPUT: <code><?xml version="1.0" encoding="UTF-8" standalone="yes"?> <userCredentialWrappers> <usercredential> <authenticator>com.aseantics.notube.api.container.BasicUserPassAuthenticator</authenticator> <service>test-service-0</service> <username>test-username-0</username> </usercredential> </userCredentialWrappers></code></p>
Schemas (http://purl.org/voc/po)	NIC (Prestospace – TvAnytime - NewsML)
Contact person(s)	Davide Palmisano (davide@aseantics.com)

Status <i>(planned, under-development, finished, cancelled, replaced)</i>	Developed
Licence <i>(e.g. MIT, BSD, not-decided, internal)</i>	MIT
Documentation	
Interface <i>(e.g. REST, HTML-form, RMI, XMPP, SPARQL-over-REST)</i>	REST
Software dependencies <i>(SMACK-XMPP, PHP-ARC, MySQL)</i>	
Service dependencies <i>(Wordnet-xml, IMDB-website)</i>	
Intended users	Mockup

Table 68 - Get all user credentials

Service name	Get all user services
Service category <i>(crawler, adapter, converter recommender, logger)</i>	User Manager
URLs	http://moth.notube.tv:9998/usermanager/credentials/services
Description	Allows to retrieve the list of services to which at least one user is registered.
Functionality	GET request
Examples	<p>INPUT: usermanager/credentials/services</p> <p>OUTPUT: <pre><?xml version="1.0" encoding="UTF-8" standalone="yes"?> <serviceEntryWrappers> <service> <name>new-service</name> <occurrences>1</occurrences> </service> <service> <name>test-service-1</name> <occurrences>1</occurrences> </service> </serviceEntryWrappers></pre></p>

Schemas (http://purl.org/voc/po)	NIC (Prestospace - TvAnytime - NewsML)
Contact person(s)	Davide Palmisano (davide@asemantics.com)
Status (planned, under-development, finished, cancelled, replaced)	Developed
Licence (e.g. MIT, BSD, not-decided, internal)	MIT
Documentation	
Interface (e.g. REST, HTML-form, RMI, XMPP, SPARQL-over-REST)	REST
Software dependencies (SMACK-XMPP, PHP-ARC, MySQL)	
Service dependencies (Wordnet-xml, IMDB-website)	
Intended users	Mockup

Table 69 - Get all user services

5.3.2. Activity Management

Service name	SELECT
Service category (crawler, adapter, converter recommender, logger)	Triple Storage
URLs	http://moth.notube.tv:9998/triplestorage/sparql
Description	Perform a SPARQL query
Functionality	POST request
Examples	<p>INPUT: example query: select * where{?a ?b ?c}</p> <p>OUTPUT: <?xml version="1.0"?> <sparql xmlns="http://www.w3.org/2005/sparql-results#"> <results> <result> <binding name="c"> <literal xml:lang="en"> ^{custom-verbatim-</p>

	<pre> 1)^_INVERSE (__id2in (^{tree}^))</literal> </binding> <binding name="a"> <uri>http://www.openlinksw.com/virtrdf- data-formats#sql-varchar-uri-fn</uri> </binding> <binding name="graph"> <uri>http://www.openlinksw.com/schemas/virtrdf#virtuoso- test</uri> </binding> <binding name="b"> <uri>http://www.openlinksw.com/schemas/virtrdf#qmfShort OfLongTpl</uri> </binding> </result> <result> </result> </results> <head> <variable name="c"/> <variable name="a"/> <variable name="graph"/> <variable name="b"/> </head> </sparql> </pre>
<p>Schemas <i>(http://purl.org/voc/po)</i></p>	<p>NIC (Prestospace – TvAnytime - NewsML)</p>
<p>Contact person(s)</p>	<p>Davide Palmisano (davide@asemantics.com)</p>
<p>Status <i>(planned, under-development, finished, cancelled, replaced)</i></p>	<p>Developed</p>
<p>Licence <i>(e.g. MIT, BSD, not-decided, internal)</i></p>	<p>MIT</p>
<p>Documentation</p>	
<p>Interface <i>(e.g. REST, HTML-form, RMI, XMPP, SPARQL-over-REST)</i></p>	<p>REST</p>
<p>Software dependencies <i>(SMACK-XMPP, PHP-ARC, MySQL)</i></p>	

Service dependencies <i>(Wordnet-xml, IMDB-website)</i>	
Intended users	Mockup

Table 70 – SELECT

Service name	CONSTRUCT
Service category <i>(crawler, adapter, converter recommender, logger)</i>	Triple Storage
URLs	http://moth.notube.tv:9998/triplestorage/sparql
Description	Perform a SPARQL query
Functionality	POST request
Examples	<p>INPUT:</p> <p>example query: construct { ?a <http://example.org/#Predicate> ?c } where{?a <http://www.openlinksw.com/schemas/virtrdf#qmfiIsBijection> ?c}</p> <p>OUTPUT:</p> <pre><rdf:RDF xmlns:j.0="http://example.org/#" xmlns:rdf="http://www.w3.org/1999/02/22-rdf-syntax-ns#" > <rdf:Description rdf:about="http://www.openlinksw.com/virtrdf-data-formats#sql-numeric-uri-fn"> <j.0:Predicate>1</j.0:Predicate> </rdf:Description> <rdf:Description rdf:about="http://www.openlinksw.com/virtrdf-data-formats#sql-varchar"> <j.0:Predicate>1</j.0:Predicate> </rdf:Description> <rdf:Description rdf:about="http://www.openlinksw.com/virtrdf-data-formats#sql-integer"> <j.0:Predicate>1</j.0:Predicate> </rdf:Description> <rdf:Description rdf:about="http://www.openlinksw.com/virtrdf-data-formats#zeropart-uri"></pre>

	<pre><j.0:Predicate>0</j.0:Predicate> </rdf:Description> ... </rdf:RDF></pre>
Schemas (http://purl.org/voc/po)	NIC (Prestospace – TvAnytime - NewsML)
Contact person(s)	Davide Palmisano (davide@asemantics.com)
Status (planned, under-development, finished, cancelled, replaced)	Developed
Licence (e.g. MIT, BSD, not-decided, internal)	MIT
Documentation	
Interface (e.g. REST, HTML-form, RMI, XMPP, SPARQL-over-REST)	REST
Software dependencies (SMACK-XMPP, PHP-ARC, MySQL)	
Service dependencies (Wordnet-xml, IMDB-website)	
Intended users	Mockup

Table 71 – CONSTRUCT

Service name	DESCRIBE
Service category (crawler, adapter, converter recommender, logger)	Triple Storage
URLs	http://moth.notube.tv:9998/triplestorage/sparql
Description	Perform a SPARQL query
Functionality	POST request
Examples	<p>INPUT:</p> <p>example query: describe ?a where{?a <http://www.openlinksw.com/schemas/virtrdf#qmflsBijection> ?c}</p> <p>OUTPUT:</p>

	<pre> rdf:resource="http://www.openlinksw.com/schemas/virtrdf#QuadMapFormat"/> <j.0:qmfName>sql-numeric-uri- fn</j.0:qmfName> </rdf:Description> <rdf:Description rdf:about="http://www.openlinksw.com/virtrdf- data-formats#sql-time-SuperFormats"> <rdf:_3 rdf:resource="http://www.openlinksw.com/virtrd f-data-formats#default"/> </rdf:Description> </rdf:RDF> </pre>
Schemas (http://purl.org/voc/po)	NIC (Prestospace – TvAnytime - NewsML)
Contact person(s)	Davide Palmisano (davide@asemantics.com)
Status (planned, under-development, finished, cancelled, replaced)	Developed
Licence (e.g. MIT, BSD, not-decided, internal)	MIT
Documentation	
Interface (e.g. REST, HTML-form, RMI, XMPP, SPARQL-over-REST)	REST
Software dependencies (SMACK-XMPP, PHP-ARC, MySQL)	
Service dependencies (Wordnet-xml, IMDB-website)	
Intended users	Mockup

Table 72 – DESCRIBE

Service name	ASK
Service category (crawler, adapter, converter recommender, logger)	Triple Storage
URLs	http://moth.notube.tv:9998/triplestorage/sparql
Description	Perform a SPARQL query
Functionality	POST request

Examples	INPUT: example query: ask {?a http://www.openlinksw.com/schemas/virtrdf#qmflsBijection ?c} OUTPUT: <value>true</value>
Schemas (http://purl.org/voc/po)	NIC (Prestospace – TvAnytime - NewsML)
Contact person(s)	Davide Palmisano (davide@asemantics.com)
Status (planned, under-development, finished, cancelled, replaced)	Developed
Licence (e.g. MIT, BSD, not-decided, internal)	MIT
Documentation	
Interface (e.g. REST, HTML-form, RMI, XMPP, SPARQL-over-REST)	REST
Software dependencies (SMACK-XMPP, PHP-ARC, MySQL)	
Service dependencies (Wordnet-xml, IMDB-website)	
Intended users	Mockup

Table 73 – ASK

Service name	Store RDF
Service category (crawler, adapter, converter recommender, logger)	Triple Storage
URLs	http://moth.notube.tv:9998/triplestorage/store
Description	
Functionality	POST request
Examples	INPUT:

	OUTPUT:
Schemas (http://purl.org/voc/po)	NIC (Prestospace – TvAnytime - NewsML)
Contact person(s)	Davide Palmisano (davide@asemantics.com)
Status (planned, under-development, finished, cancelled, replaced)	Developed
Licence (e.g. MIT, BSD, not-decided, internal)	MIT
Documentation	
Interface (e.g. REST, HTML-form, RMI, XMPP, SPARQL-over-REST)	REST
Software dependencies (SMACK-XMPP, PHP-ARC, MySQL)	
Service dependencies (Wordnet-xml, IMDB-website)	
Intended users	Mockup

Table 74 - Store RDF

5.4. Semantic Web Services-based Service Brokering

This section describes

- a) the interface offered by the Semantic Broker produced in WP5
- b) some of the services/goals which are exposed based on the NoTube services to provide some added value in the form of automated services discovery and orchestration.

As such, the WP5 broker will play a central role in the integration of the services described above. Please refer to D5.1b and D6.1b for a full description of the underlying concepts of Semantic Web Services (SWS) brokering and the role of the broker within the NoTube architecture.

5.4.1. General Broker Interface

Service name	IRS-III-SWS-Broker-API-achieve-goal
Service category (crawler, adapter, converter, recommender, logger)	Brokered service request
URLs	http://notube.open.ac.uk:3000/achieve-goal?... http://notube.open.ac.uk:8080/cs-invocation/achieve-cs-goal-

	<p>metrics?...</p> <p>http://notube.open.ac.uk:8080/cs-invocation/achieve-cs-goal?...</p>
Description	<p>Achieve goal requests to the SWS broker: are resolved by the broker by reasoning on available SWS descriptions and automatically identifying and orchestrating services suitable to achieve the requested goal.</p>
Functionality	<p>Achieve goal requests to the SWS broker: are resolved by the broker by reasoning on available SWS descriptions and automatically identifying and orchestrating services suitable to achieve the requested goal. Goals as well as SWS are predefined within the IRS by the OU/WP5. Different achieve-goal methods can have distinct parameters while the goal-ID and the ontology-ID are being required for all of them. Additional parameters are for instance contextual parameters (user device, language...) which can be used for the matchmaking of appropriate services or input parameters used for the service execution. Further info available at http://www.notube.tv/wiki/index.php/Semantic TV Broker API</p>
Examples	<p>example query: http://notube.open.ac.uk:3000/achieve-goal?ontology=mmpo-goals&goal=get-bbc-entertainment-metadata-goal&has-method=%22getvideosbykeywords%22&has-keywords=%22space;;andy%22</p> <p>The above request invokes a goal leading directly to the execution of the BBC Programmes service below. No selection/orchestration involved in this case.</p> <p>http://notube.open.ac.uk:8080/cs-invocation/achieve-cs-goal?ontology=mmpo-goals&goal=get-video-metadata-Goal&has-method=getvideosbykeywords&has-keywords=physics&assumption=(%22education-entertainment-purpose%22)</p> <p>The request above achieves a goal which is associated with 5 metadata query services (as described below) and selects the most suitable one depending on the assumption paramters. The latter are in this case strings which refer to instance-IDs in an ontology within the broker.</p> <p>http://notube.open.ac.uk:8080/cs-invocation/achieve-cs-goal-metrics?ontology=mmpo-goals&goal=get-video-metadata-Goal&has-method=getvideosbykeywords&has-keywords=the&assumption=purpose-type;80;0;0;;environment-type;80;100</p> <p>The request above achieves a goal which is associated with 5 metadata query services (as described below) and selects the most suitable one depending on the numbers which are part of</p>

	the assumption parameter. Here, the numbers represent measurements (for instance of a location) which are matched to predefined instances (and their measurements) as part of SWS descriptions within the broker.
Schemas (http://purl.org/voc/po)	
Contact person(s)	s.dietze@open.ac.uk
Status (planned, under-development, finished, cancelled, replaced)	Some finished, some under-development.
Licence (e.g. MIT, BSD, not-decided, internal)	
Documentation	http://www.notube.tv/wiki/index.php/Semantic_TV_Broker_API
Interface (e.g. REST, HTML-form, RMI, XMPP, SPARQL-over-REST)	REST
Software dependencies (SMACK-XMPP, PHP-ARC, MySQL)	
Service dependencies (Wordnet-xml, IMDB-website)	

Table 75 - IRS-III-SWS-Broker-API-achieve-goal

Service name	BBC-Programmes RDF keyword query
Service category (crawler, adapter, converter, recommender, logger)	Metadata retrieval
URLs	http://luisa.open.ac.uk:8080/axis/bbcProgrammesServices.jws?method=getvideosbykeywords
Description	Queries BBC programmes RDF store at TALIS (just entertainment category) via SPARQL for given set of keywords (separator: ";;");
Functionality	Queries BBC programmes RDF store at TALIS via SPARQL (just entertainment category) for given set of keywords (separator: ";;"). Returns a minimal set of XML metadata for each matching programme.
Examples	example query: http://luisa.open.ac.uk:8080/axis/bbcProgrammesServices.jws?method=getvideosbykeywords&keywords=%22space;;andy%22

Schemas (http://purl.org/voc/po)	
Contact person(s)	s.dietze@open.ac.uk
Status (planned, under-development, finished, cancelled, replaced)	Finished
Licence (e.g. MIT, BSD, not-decided, internal)	
Documentation	
Interface (e.g. REST, HTML-form, RMI, XMPP, SPARQL-over-REST)	HTTP GET (SOAP enveloped message; switch to REST intended)
Software dependencies (SMACK-XMPP, PHP-ARC, MySQL)	
Service dependencies (Wordnet-xml, IMDB-website)	BBC RDF programmes store / SPARQL endpoint (http://api.talis.com/stores/bbc-backstage)

Table 76 - BBC-Programmes RDF keyword query

Service name	BBC-Backstage world news keyword query
Service category (crawler, adapter, converter, recommender, logger)	Metadata retrieval
URLs	http://luisa.open.ac.uk:8080/axis/bbcServices.jws?method=get_videosbykeywords
Description	Queries BBC backstage World news feed for given set of keywords (separator: ";");
Functionality	Queries BBC backstage World news feed for given set of keywords (separator: ";"); Returns a minimal set of XML metadata for each matching programme.
Examples	example query: http://luisa.open.ac.uk:8080/axis/bbcServices.jws?method=get_videosbykeywords&keywords=%22world;;news%22
Schemas (http://purl.org/voc/po)	
Contact person(s)	s.dietze@open.ac.uk
Status (planned, under-development,	Finished

<i>finished, cancelled, replaced)</i>	
Licence (e.g. MIT, BSD, not-decided, internal)	
Documentation	
Interface (e.g. REST, HTML-form, RMI, XMPP, SPARQL-over-REST)	HTTP GET (SOAP enveloped message; switch to REST intended)
Software dependencies (SMACK-XMPP, PHP-ARC, MySQL)	
Service dependencies (Wordnet-xml, IMDB-website)	BBC backstage world news feed: http://newsrss.bbc.co.uk/rss/newsonline_uk_edition/world/rss.xml

Table 77 - BBC-Backstage world news keyword query

Service name	Youtube-OU-content-metadata-query
Service category (crawler, adapter, converter, recommender, logger)	Metadata retrieval
URLs	http://luisa.open.ac.uk:8080/axis/ouServices.jws?method=getvideobykeywords
Description	Queries youtube metadata of OU eLearning content for given set of keywords (separator: ";"); used within WP5 demo.
Functionality	Queries youtube metadata of OU eLearning content for given set of keywords (separator: ";"). Returns a minimal set of XML metadata for each matching programme. Used within WP5 demos.
Examples	example query: http://luisa.open.ac.uk:8080/axis/ouServices.jws?method=getvideobykeywords&keywords=%22physics;;astronomy%22
Schemas (http://purl.org/voc/po)	
Contact person(s)	s.dietze@open.ac.uk
Status (planned, under-development, finished, cancelled, replaced)	Finished
Licence (e.g. MIT, BSD, not-decided, internal)	

Documentation	
Interface (e.g. REST, HTML-form, RMI, XMPP, SPARQL-over-REST)	HTTP GET (SOAP enveloped message; switch to REST intended)
Software dependencies (SMACK-XMPP, PHP-ARC, MySQL)	
Service dependencies (Wordnet-xml, IMDB-website)	Youtube APIs

Table 78 - Youtube-OU-content-metadata-query

Service name	Youtube-mobile-content-metadata-query
Service category (crawler, adapter, converter, recommender, logger)	Metadata retrieval
URLs	http://luisa.open.ac.uk:8080/axis/mobileServices.jws?method=getvideosbykeywords
Description	Queries youtube metadata of mobile suitable content for given set of keywords (separator: ";""); used within WP5 demo.
Functionality	Queries youtube metadata of mobile suitable content for given set of keywords (separator: ";""). Returns a minimal set of XML metadata for each matching programme. Used within WP5 demos.
Examples	example query: http://luisa.open.ac.uk:8080/axis/mobileServices.jws?method=getvideosbykeywords&keywords=%22the%22
Schemas (http://purl.org/voc/...)	
Contact person(s)	s.dietze@open.ac.uk
Status (planned, under-development, finished, cancelled, replaced)	Finished
Licence (e.g. MIT, BSD, not-decided, internal)	
Documentation	
Interface (e.g. REST, HTML-form, RMI, XMPP,	HTTP GET (SOAP enveloped message; switch to REST intended)

<i>SPARQL-over-REST</i>	
Software dependencies (SMACK-XMPP, PHP-ARC, MySQL)	
Service dependencies (Wordnet-xml, IMDB-website)	Youtube APIs

Table 79 - Youtube-mobile-content-metadata-query

Service name	Openvideo-metadata-query
Service category (crawler, adapter, converter, recommender, logger)	Metadata retrieval
URLs	http://luisa.open.ac.uk:8080/axis/openvideoServices.jws?method=getvideosbykeywords
Description	Queries openvideo.org video metadata for given set of keywords (separator: ";"); used within WP5 demo.
Functionality	Queries openvideo.org video metadata for given set of keywords (separator: ";"). Returns a minimal set of XML metadata for each matching programme. Used within WP5 demos.
Examples	example query: http://luisa.open.ac.uk:8080/axis/openvideoServices.jws?method=getvideosbykeywords&keywords=%22space;;nasa%22
Schemas (http://purl.org/voc/po)	
Contact person(s)	s.dietze@open.ac.uk
Status (planned, under-development, finished, cancelled, replaced)	Finished
Licence (e.g. MIT, BSD, not-decided, internal)	
Documentation	
Interface (e.g. REST, HTML-form, RMI, XMPP, SPARQL-over-REST)	HTTP GET (SOAP enveloped message; switch to REST intended)
Software dependencies (SMACK-XMPP, PHP-ARC, MySQL)	Open-video.org, OAI-PMH protocol
Service	Open-video.org, OAI-PMH protocol

dependencies (Wordnet-xml, IMDB-website)	
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Table 80 - Openvideo-metadata-query

Service name	Engin-EPG-metadata-query
Service category (crawler, adapter, converter recommender, logger)	Metadata retrieval
URLs	<p>http://luisa.open.ac.uk:8080/axis/enginService*CHANNEL-ID*.jws?method=getvideosbykeywords</p> <p>(different services for each channel available via EnginMedia. For instance http://luisa.open.ac.uk:8080/axis/enginService171.jws?method=getvideosbykeywords queries only metadata for channel id 171 which is Deutsche Welle. More infos on channel IDs and the Engin feeds at http://www.notube.tv/wiki/index.php/Link_for_EPG_I_fanzy</p>
Description	Queries Engin Media's EPG feeds metadata for given set of keywords (separator: ";;"); used within WP5 demo and to be integrated in 7b demo. Will be exposed as goal via the broker.
Functionality	Queries Engin Media's EPG feeds metadata for given set of keywords (separator: ";;"); used within WP5 demo and to be integrated in 7b demo. Will be exposed as goal via the broker.
Examples	<p>example query:</p> <p>http://luisa.open.ac.uk:8080/axis/enginService171.jws?method=getvideosbykeywords&keywords=%22sports%22&date=%2217-09-2009%22</p>
Schemas (http://purl.org/voc/po)	
Contact person(s)	s.dietze@open.ac.uk
Status (planned, under-development, finished, cancelled, replaced)	Finished but changes likely.
Licence (e.g. MIT, BSD, not-decided, internal)	
Documentation	
Interface (e.g. REST, HTML-form, RMI, XMPP,	HTTP GET (SOAP enveloped message; switch to REST intended)

<i>SPARQL-over-REST</i>	
Software dependencies (SMACK-XMLPP, PHP-ARC, MySQL)	
Service dependencies (Wordnet-xml, IMDB-website)	Engin media feeds at http://tumdata.triplinq.com/phpscripts/xmlfeed4allifanzy.php?..

Table 81 - Engin-EPG-metadata-query

Service name	Term expansion using DBPedia
Service category (crawler, adapter, converter, recommender, logger)	enrichment
URLs	(Will post once completed)
Description	If there is resource in DBPedia that matches the concept that is provided in the URL, then the service returns other concepts that are related via the 'owl:sameAs' or 'redirect' relations
Functionality	If there is resource in DBPedia that matches the concept that is provided in the URL, then the service returns other concepts that are related via the 'owl:sameAs' or 'redirect' relations
Examples	<p>(Note this is strictly pro-forma and doesn't execute a working example)</p> <p>http://notube.open.ac.uk:3000/achieve-goal?ontology=mmpo-goals&goal=dbpedia-expansion-GOAL&has-query-term=%22Spaceflight%22</p> <p>This intends to expand the term "Spaceflight" by finding other related concepts in DBPedia. Output would be a list of concepts such as:</p> <pre>{ http://sw.opencyc.org/concept/Mx4rvt6oU5wpEbGdrcN5Y29ycA , http://rdf.freebase.com/ns/guid.9202a8c04000641f800000000464e587 }</pre>
Schemas (http://purl.org/voc/po)	
Contact person(s)	n.j.l.benn@open.ac.uk
Status (planned, under-development, finished, cancelled, replaced)	Under-development

Licence (e.g. MIT, BSD, not-decided, internal)	
Documentation	
Interface (e.g. REST, HTML-form, RMI, XMPP, SPARQL-over-REST)	HTTP GET
Software dependencies (SMACK-XMPP, PHP-ARC, MySQL)	
Service dependencies (Wordnet-xml, IMDB-website)	DBPedia-RDF store / SPARQL endpoint

Table 82 - Term expansion using DBPedia

5.4.2. Specific IRS-III Goals for NoTube

Service name	Get-video-metadata-goal
Service category (crawler, adapter, converter, recommender, logger)	Brokered service request for video metadata retrieval
URLs	http://notube.open.ac.uk:8080/cs-invocation/achieve-cs-goal?ontology=mmpo-goals&goal=get-video-metadata-Goal&....
Description	Achieve goal request to the SWS broker for video metadata retrieval. Resolved by the broker by reasoning on available SWS descriptions and automatically identifying and orchestrating services suitable to achieve the requested goal. Brokers between video metadata retrieval services as described above. See also: http://www.notube.tv/wiki/index.php/Wp5-goals-documentation#get-video-metadata-goal: Selection.2Finvocation of video metadata query service s
Functionality	Achieve goal request to the SWS broker for video metadata retrieval. Resolved by the broker by reasoning on available SWS descriptions and automatically identifying and orchestrating services suitable to achieve the requested goal. Brokers between video metadata retrieval services as described above. See also: http://www.notube.tv/wiki/index.php/Wp5-goals-documentation#get-video-metadata-goal: Selection.2Finvocation of video metadata query service s
Examples	example query: http://notube.open.ac.uk:8080/cs-invocation/achieve-cs-goal?ontology=mmpo-goals&goal=get-video-metadata-Goal&has-method=getvideosbykeywords&has-

	<p>keywords=physics&assumption=(%22education-entertainment-purpose%22)</p> <p>The request above achieves a goal which is associated with 5 metadata query services (as described below) and selects the most suitable one depending on the assumption parameters. The latter are in this case strings which refer to instance-IDs in an ontology within the broker.</p> <p>http://notube.open.ac.uk:8080/cs-invocation/achieve-cs-goal-metrics?ontology=mmpo-goals&goal=get-video-metadata-Goal&has-method=getvideosbykeywords&has-keywords=the&assumption=purpose-type;80;0;0;;environment-type;80;100</p> <p>The request above achieves a goal which is associated with 5 metadata query services (as described below) and selects the most suitable one depending on the numbers which are part of the assumption parameter. Here, the numbers represent measurements (for instance of a location) which are matched to predefined instances (and their measurements) as part of SWS descriptions within the broker.</p>
<p>Schemas <i>(http://purl.org/voc/po)</i></p>	
<p>Contact person(s)</p>	<p>s.dietze@open.ac.uk</p>
<p>Status <i>(planned, under-development, finished, cancelled, replaced)</i></p>	<p>Working prototype but ongoing development.</p>
<p>Licence <i>(e.g. MIT, BSD, not-decided, internal)</i></p>	
<p>Documentation</p>	<p>http://www.notube.tv/wiki/index.php/Wp5-goals-documentation#get-video-metadata-goal: Selection.2FInvocation of video metadata query service</p>
<p>Interface <i>(e.g. REST, HTML-form, RMI, XMPP, SPARQL-over-REST)</i></p>	<p>REST</p>
<p>Software dependencies <i>(SMACK-XMPP, PHP-ARC, MySQL)</i></p>	
<p>Service dependencies <i>(Wordnet-xml, IMDB-website)</i></p>	<p>Video metadata retrieval services as described above. BBC Programmes SPARQL endpoint. OAIPMH interface from Open-Video.org. Youtube data feeds.</p>

Table 83 - Get-video-metadata-goal
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Service name	Get-EPG-metadata-goal
Service category (crawler, adapter, converter recommender, logger)	Brokered service request for EPG metadata retrieval.
URLs	http://notube.open.ac.uk:8080/cs-invocation/achieve-cs-goal?ontology=mmpo-goals&goal=get-EPG-BY-KEYWORD-AND-DATE-GOAL...
Description	<p>Achieve goal request to the SWS broker for EPG metadata retrieval. Resolved by the broker by reasoning on available SWS descriptions and automatically identifying and orchestrating services suitable to achieve the requested goal.</p> <p>Brokers between EPG metadata retrieval services provided based on Engin metadata feeds and ZapperWarehouse services. See also: http://www.notube.tv/wiki/index.php/Wp5-goals-documentation#get-EPG-metadata-goal: Selection.2Forchestration.2FInvocation of EPG query services for a full documentation of the goal, its parameters and the underlying Web services.</p>
Functionality	<p>Achieve goal request to the SWS broker for EPG metadata retrieval. Resolved by the broker by reasoning on available SWS descriptions and automatically identifying and orchestrating services suitable to achieve the requested goal.</p> <p>Brokers between EPG metadata retrieval services provided based on Engin metadata feeds and ZapperWarehouse services. See also: http://www.notube.tv/wiki/index.php/Wp5-goals-documentation#get-EPG-metadata-goal: Selection.2Forchestration.2FInvocation of EPG query services for a full documentation of the goal, its parameters and the underlying Web services.</p>
Examples	<p>example query:</p> <p>http://notube.open.ac.uk:8080/cs-invocation/achieve-cs-goal?ontology=mmpo-goals&goal=get-EPG-BY-KEYWORD-AND-DATE-GOAL&has-method=getvideosbykeywords&has-keywords=%22week%22&has-start-date=%2219-11-2009%2000:00%22&has-end-date=%2225-11-2009%2023:59%22&assumption=(%22english-language%22)</p> <p>For instance, the request above sends a request to the broker for EPG metadata within the specified period ("has-start-date", "has-end-date") and which match the keyword "week" (specified via the "has-keywords" parameter). While these parameters are used as inputs for the actually selected services, the "assumption" parameter refers to instances within the irs which are used for the service matchmaking. Within the query</p>

	<p>above, the user asks for "english-language" leading to the IRS selecting only services which query English language channels for execution. Other assumption parameters would be, for instance, "german-language", "dutch-language", "turkish-language" which would all lead to the orchestration of different service queries.</p> <p>Another example request of the same goal (but here querying only German language channels/services would be: http://notube.open.ac.uk:8080/cs-invocation/achieve-cs-goal?ontology=mmpo-goals&goal=get-EPG-BY-KEYWORD-AND-DATE-GOAL&has-method=getvideosbykeywords&has-keywords=%22wetter%22&has-start-date=%2219-11-20092000:00%22&has-end-date=%2225-11-20092023:59%22&assumption=(%22german-language%22)</p>
Schemas (http://purl.org/voc/po)	
Contact person(s)	s.dietze@open.ac.uk
Status (planned, under-development, finished, cancelled, replaced)	Working prototype but ongoing development.
Licence (e.g. MIT, BSD, not-decided, internal)	
Documentation	http://www.notube.tv/wiki/index.php/Wp5-goals-documentation#get-EPG-metadata-goal: Selection.2Forchestration.2FInvocation_of_EPG_query_services
Interface (e.g. REST, HTML-form, RMI, XMPP, SPARQL-over-REST)	REST
Software dependencies (SMACK-XMPP, PHP-ARC, MySQL)	
Service dependencies (Wordnet-xml, IMDB-website)	EPG metadata retrieval services as described above. Engin metadata feeds (http://www.notube.tv/wiki/index.php/LInk_for_EPG_I_fanzy) and ZapperWarehouse services (http://www.notube.tv/wiki/index.php/Services/iZapperdatawarehouse)

Table 84 - Get-EPG-metadata-goal

Service name	BBC-2-IMDB
Service category (crawler, adapter, converter, recommender, logger, ...)	Crawler+converter+enricher
URLs	http://filetrace.net/notube/bbc2imdbrdf
Description	Returns for a bbc-program id an RDF graph containing a matching IMDB description
Functionality	\$bbcid:URL → \$imdbdata:RDF
Examples	INPUT: http://filetrace.net/notube/bbc2imdbrdf?bbdid=24 OUTPUT: <rdf:.... </rdf>
Schemas (http://purl.org/voc/po)	http://purl.org/voc/po http://rdf...
Contact person(s)	Rm.siebes@few.vu.nl
Status (required, planned, under-development, finished, cancelled, replaced)	Under-development: planned release oct10
Licence (e.g. MIT, BSD, not-decided, internal)	MIT
Documentation	http://wiki.notube.tv/services/bbc2imdb
Interface (e.g. REST, HTML-form, RMI, XMPP, SPARQL-over-REST)	REST, SPARQL-over-REST
Software dependencies (SMACK-XMPP, PHP-ARC, MySQL)	PHP-ARC, MySQL
Service dependencies (Wordnet-xml, IMDB-website)	IMDB-Website, BBC-website
Intended users	Individual Prototyping

Table 85 – BBC-2-IMDB

