GRAPPLE

D3.1c Version: 1.0

Final implementation of the DM definition tool

Document Type	Deliverable
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Work Package:	WP3
Due Date:	2010-07-30
Version:	1.0
Version Date:	2010-08-25
Total number of pages:	22

Abstract: This report describes the final development of the Domain Model Tool (DM) Tool. Updates of the Domain Model definition and a technical specification are given in this deliverable. The document refers to the list of improvements of the evaluation phases.

Keyword list: authoring tool, domain model, DM tool, domain model, conceptual adaptation model, CAM

Summary

This deliverable describes the last version of the Domain Model Tool (DM).

It is organised following the tasks-list defined in WP3 and used as a basis for the implementation.

This document refers to the various issues pointed out during the evaluation activity.

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List of Acronyms and Abbreviations

ADL	Advanced Distributed Learning
AH	Adaptive Hypermedia
AHA! (or AHA)	Adaptive Hypermedia Architecture (also used as prefix for other terms)
AHAM	Adaptive Hypermedia Application Model
AICC	Aviation Industry CBT (Computer-Based Training) Committee
ALE	Adaptive Learning Environment
AM	Adaptation model
API	Application Programming Interface
AS	Authentication Service
AXIS	Apache eXtensible Interaction System
CAM	Conceptual Adaptation Model
CAS	Central Authentication System
CMS	Content Management System
CRT	Concept Relationship Type
CSV	Comma Separated Values
DM	Domain Model
DS	Discovery Service
EB	Event Bus
ES	Event Service
GALE	GRAPPLE Adaptive Learning Engine

GAT	GRAPPLE Authoring Tool
GCC	GRAPPLE Conversion Component
GDA	GRAPPLE Device Adaptation
GDOM	GALE Document Object Model
GEB	GRAPPLE Event Bus
GID	GRAPPLE IDentifier
GRAPPLE	Generic Responsive Adaptive Personalized Learning Environment
GUMF	GRAPPLE User Modeling Framework
GVIS	GRAPPLE VISualisation
IMS	Instructional Management System
IMS CP	IMS Content Packaging
IMS LD	IMS Learning Design
IMS QTI	IMS Question and Test Interoperability
IMS SS	IMS Simple Sequencing
JMS	Java Message Service
LAOS	Layered WWW AH Authoring Model and their corresponding Algebraic Operators
LCMS	Learning Content Management System
LDAP	Lightweight Directory Access Protocol
LMS	Learning Management System
PHP	PHP Hypertext Preprocessor
OWL	Web Ontology Language
RDFS	Resource Description Framework Schema
RP	Relying Party
SAML	Security Assertion Markup Language
SCORM	Shareable Content Object Reference Model
SOAP	Simple Object Access Protocol
SP	Service Provider
SPIP	Système de Publication pour l'Internet Participatif
SSO	Single Sign On
UM	User Model
UMF	User Model Framework
WAYF	Where Are You From
WP	Work Package
WSDD	Web Service Deployment Descriptor
WSDL	Web Services Description Language
VLE	Virtual Learning Environment
VRE	Virtual Research Environment
XML	eXtensible Markup Language

1   Introduction

This is a written deliverable accompanying actual work performed on the GRAPPLE components. The extensive work described is related to input users and is aimed at promoting usability.

The GRAPPLE authoring tools include three main components: Domain Model Tool (DM), Concept Relationship Types (CRT) and GRAPPLE Authoring Tool (GAT).

Each of the above components has been developed independently with various efforts from the GRAPPLE partners.

This deliverable describes the last version of the Domain Model implementation. This version is an improvement of the previous version and resolves the various issues highlighted during the evaluation phase.

This document is organised with the same structure of the "issues list", described in GRAPPLE workspace and reported in the ANNEX.

2   GUI Implementation, feedback impact.

2.1   Introduction

This section includes the description of minor issues related to the DM GUI implementation.

2.2   Issues and related solutions

6.1.1	**Changing headings of the editing sidebar in the Domain Modeling editor**	With no concept selected, the sidebar displays "Edit Concept" and should be "Edit Concept: [none]" and when the concept is selected: "Edit Concept: {concept name}" The menu on the right needs changing: to a simple menu add concept/ add link / add link type (not grayed out) as an initial selection. When clicking on a concept, the current menu can change but with the relations for that concept only . When clicking anywhere on the screen but on a concept, the simple menu returns.

This comment was partially addressed. The label issue is fixed as in the note. Having a new button on the menu on the right is not useful here, since these buttons are already present in a bar at the top of graph panel. Having more buttons with the same functionality in the same view is not a good approach from the usability point of view.
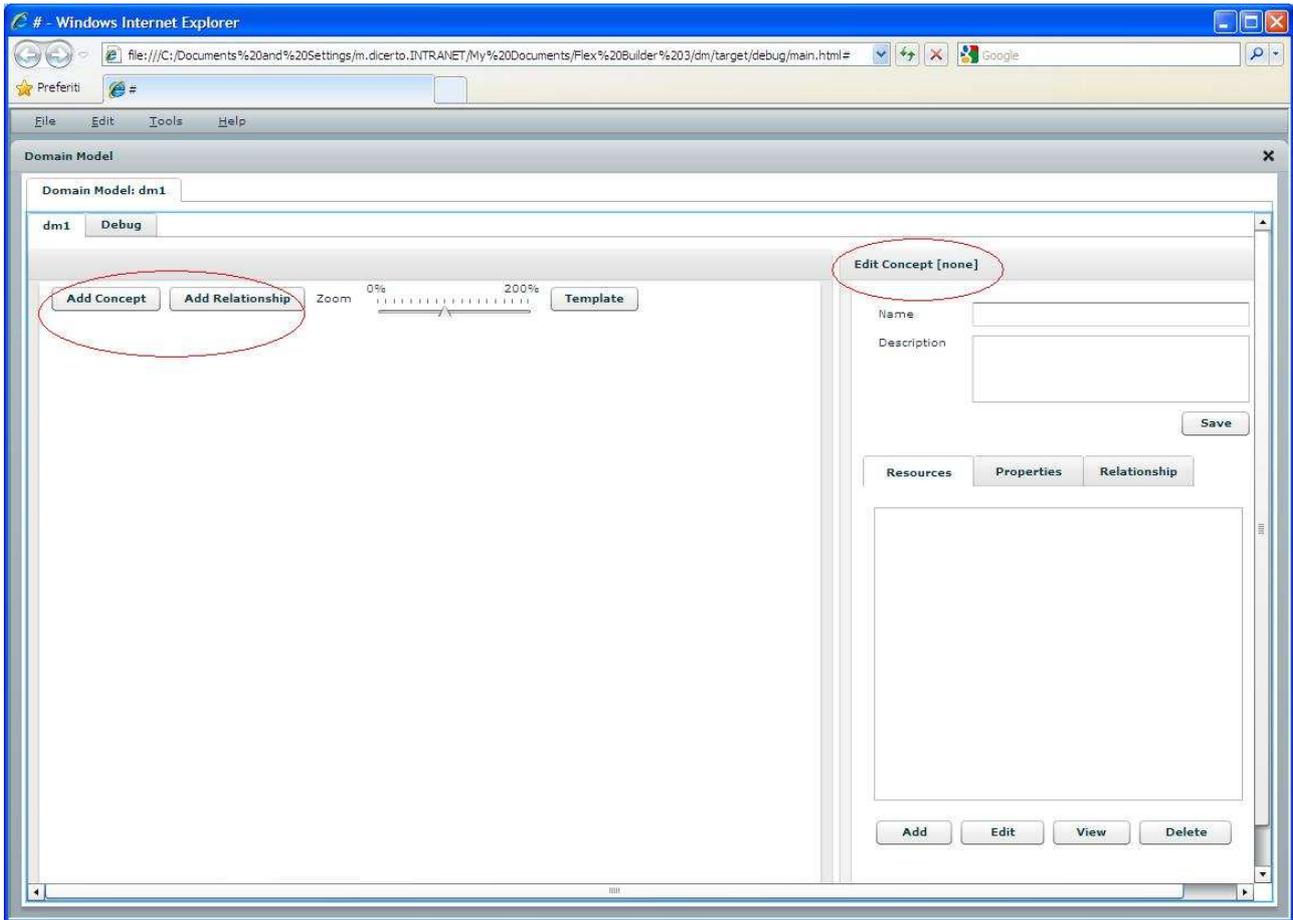
Figure 1: New headings of the editing sidebar in the Domain Modeling editor.

6.1.2	**Different button layout and labeling in the Domain Modeling editor**	Layout for editing properties, resources and relationships buttons are different, even though they all have the same functionality. (Add, Edit, Delete). Rearrange layout to add consistency. Are they all needed?

The layout is now consistent in all three views. All the buttons are considered necessary, so they are all still present in the new GUI.
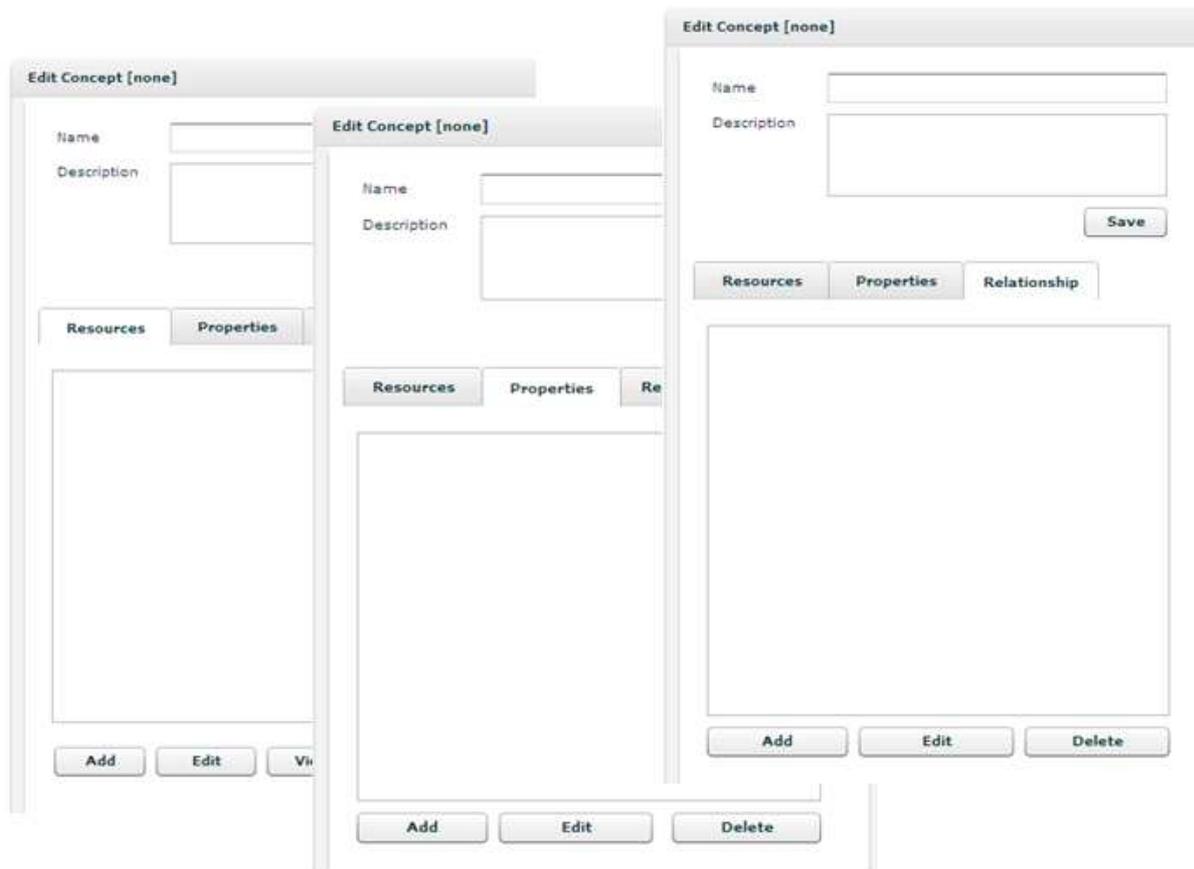
Figure 2: New button layout and labeling.

6.1.3	**Selecting a relationship with mouse is not possible**	If the author clicks on a relationship it should be automatically selected in Concept Editor. If none of the involved concepts has been selected, automatically select the source concept.

It is now possible to select the relationship with the mouse. By selecting a relationship the two concepts involved in the selection are coloured blue (source) and the other in red (the target) . The corresponding relationship is selected in the relationships menu on the right. The source is automatically selected as current concept.
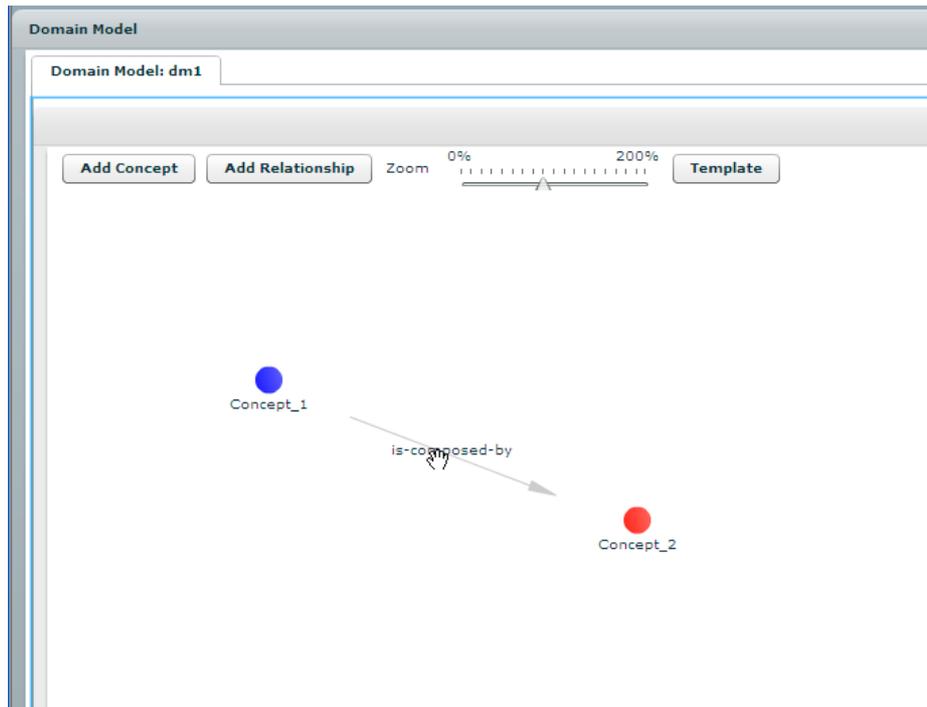
Figure 3: Selecting a relationship with the mouse.

6.2.1	**Missing visual cues for possible authoring activities**	The main authoring activities of the DM editor and the CAM editor are only accessible through context menus. This makes the authoring process difficult. Add clickable buttons or visual cues to the authoring canvas (such as "Right click here to get started")

As already shown for issue 6.1.1, most important actions are accessible through a button bar.

6.2.3	**Relationship types between concepts are shown in the edit sidebar of the domain modeling editor**	It is difficult to find a specific relationship between two concepts in the "Relationships" section of the editing DM. For instance in the Solar System DM, when selecting the concept "Solar System", there are several "is_composed_of" relationships. It is therefore difficult to choose the relationship between "Solar System" and "Earth". Ideally, it should be possible to graphically select the relationship arrow. Solution: Have the target concept name written in the relationships drop down box.

Issue 6.1.3 automatically also solves the issues of this issue.

6.2.4	**No visible sign of which concept is selected**	One should be able to click a concept and have a frame drawn round it (or change colour?) to show it is currently selected

The selected concept is now coloured blue.

6.2.5	**No visible sign of which relationship is selected**	One should be able to click on a relationship (or select it from edit toolbar) and have a thicker line or change colour to show it is currently selected

If a relationship is selected the two concepts involved are now coloured blue (the source) and red (the target) as shown for issue 6.1.3

6.2.6	**Duplicate Name Concepts**	DM should inform author if s/he creates a concept with a duplicate name - if this is ignored, add a suffix to the new concept's name

The user is now asked to insert a name that is not already present. It is not considered useful adding a suffix to the concept because it is better for the user to explicitly insert a new name.

6.3.3	**Authors can move concepts outside of the reachable viewport in the DM editor**	It is possible for an author to place a concept almost entirely outside of the viewport of the DM editor. Once the concept is placed outside of the viewport it is impossible for the author to gain access to the concept from the same authoring instance. This problem is critical if a domain model has been developed on a large screen (e.g. of a desktop system) and is then edited on a small screen (e.g. on a laptop). In this case it is difficult for the author to identify the extent of a CAM.

Zoom functionality is now present in the buttons bar to allow a full view of the graph. It is also possible to move the entire graph by clicking on it and moving the mouse while the right button is pressed.

Sidebars are also present on the right and at the bottom of the graph panel.
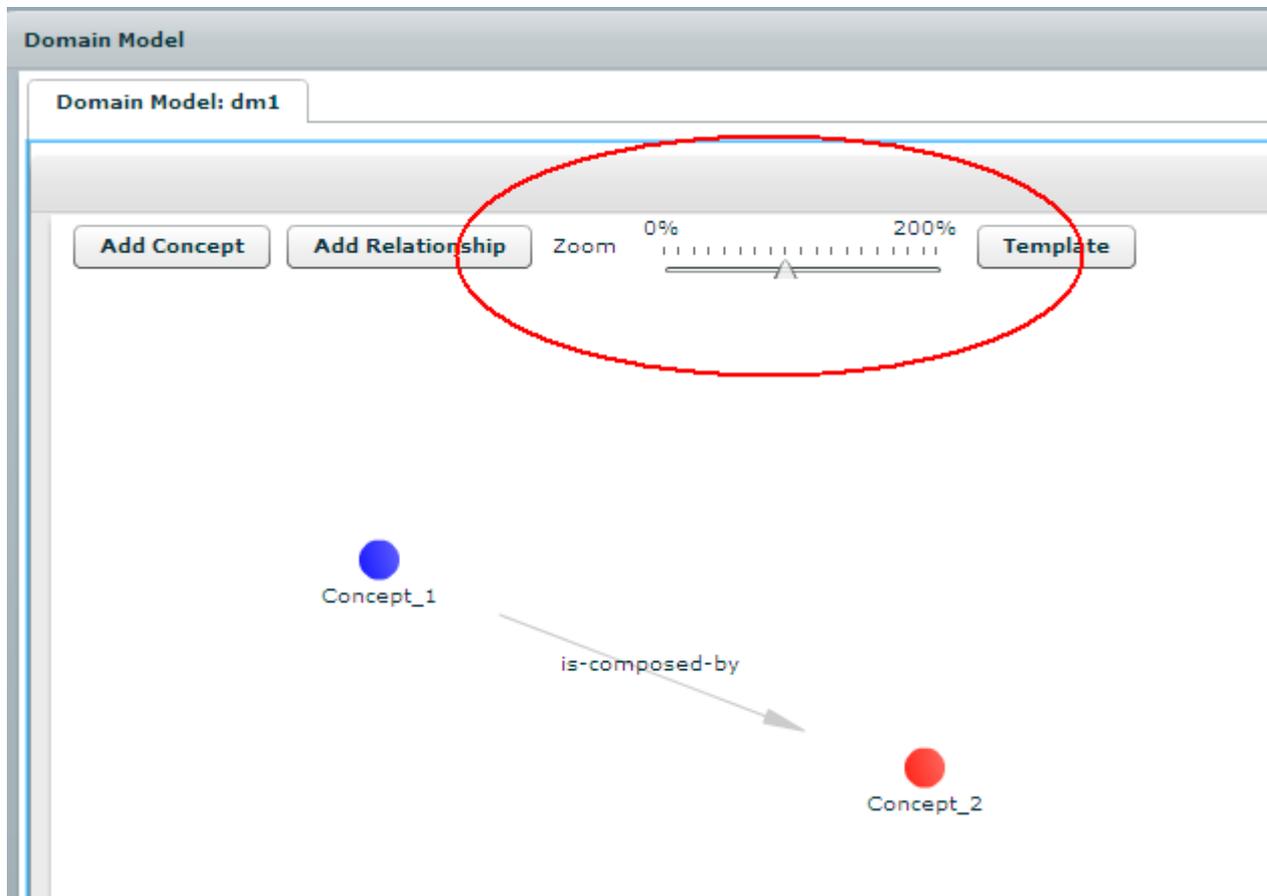

Figure 4: Zoom functionality.

The DM tool, although easy to use, requires way too much clicking.	It should be possible to create concept "templates" that are easy to fill. One possible way would be to create a concept the usual way and then be able to "save as template". When creating a concept there should then be an option to create completely new one or "create using template". Once a template is selected it would be nice to have a dialog box to complete all the fields for a concept using that template. Important here: the author should be able to specify duplicating concept or copying a template with similar content (which can later be changed).

This is one of the major changes to the previous Domain model version.

A template button on the button bar gives the user access to the templates list, where the template can be saved.

In the context menu it is possible to clone existing concepts. When selected, the clone concepts create a new concept equal to the one selected except for the name that will have a prefix.
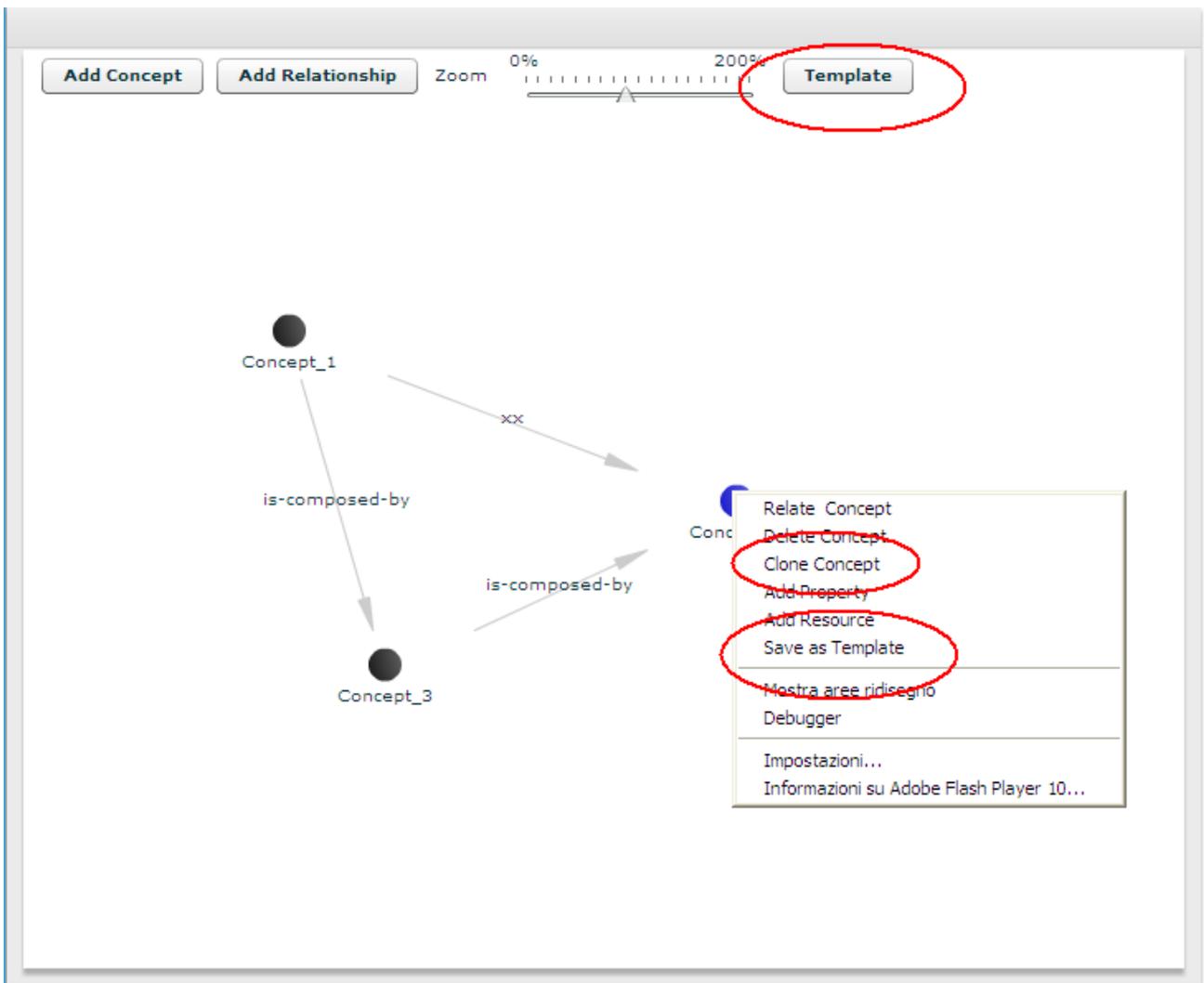

Figure 5: Template support.

The "Save as Template" item places a copy of the current concept in the repository as a template. The user can later retrieve it from the repository and create new concept with the same behaviour.

To access the saved templates the user has to click on the "Template" button; the dialog below is shown to the user.
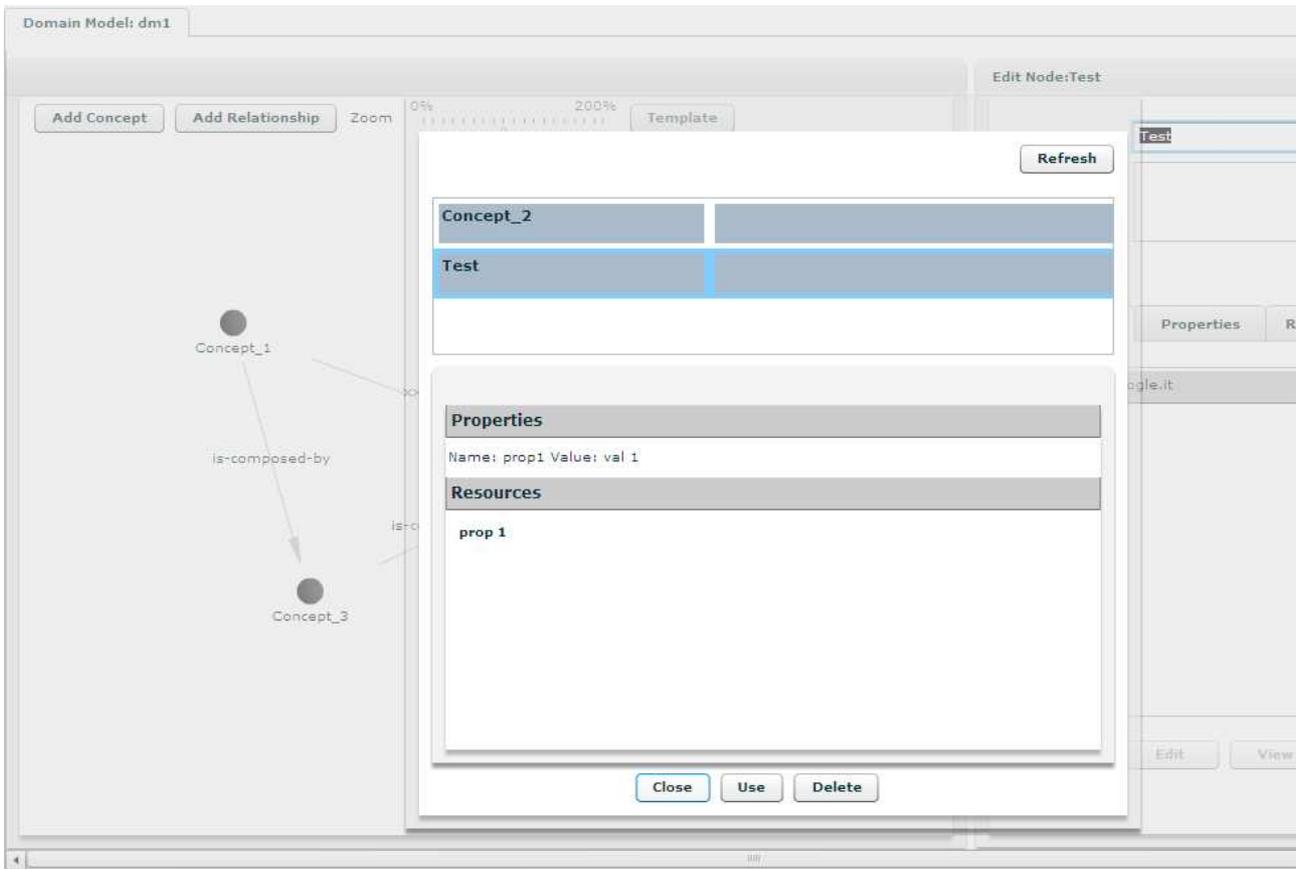

Figure 6: Template retrieval.

On this screen the user can view all the templates that have been saved. By clicking on the concept in the list an overview of the concept itself can be viewed in the lower section.

Clicking on "use" button; the template is instantiated as a concept in the current Domain Model.

Clicking on "delete" button; the selected template is removed from the library.

ability to "draw" relationships.	When creating a relationship enter the relationship type and click on the source and target concept in the graphical display, or just "draw" an arrow by dragging from source to target.

This feature is not supported because it is too difficult to be implemented with the actual graphic library.

buttons/toolbar for currently available tasks should be available	This is a general remark, and needs to be check if it needs extending. In principle, it referred to: DM: insertion (of concept) CAM: the most common CRTs (start, stop, prerequisite, goal); right click on sockets should also have 'insert concept'

A toolbar with common tasks has been added.

extend right mouse button menu with other concept functions	Concept functions such as: Add Property, Description, etc.

The context menu now supports most of the possible functionalities over a Concept or a relationship as shown in the picture:
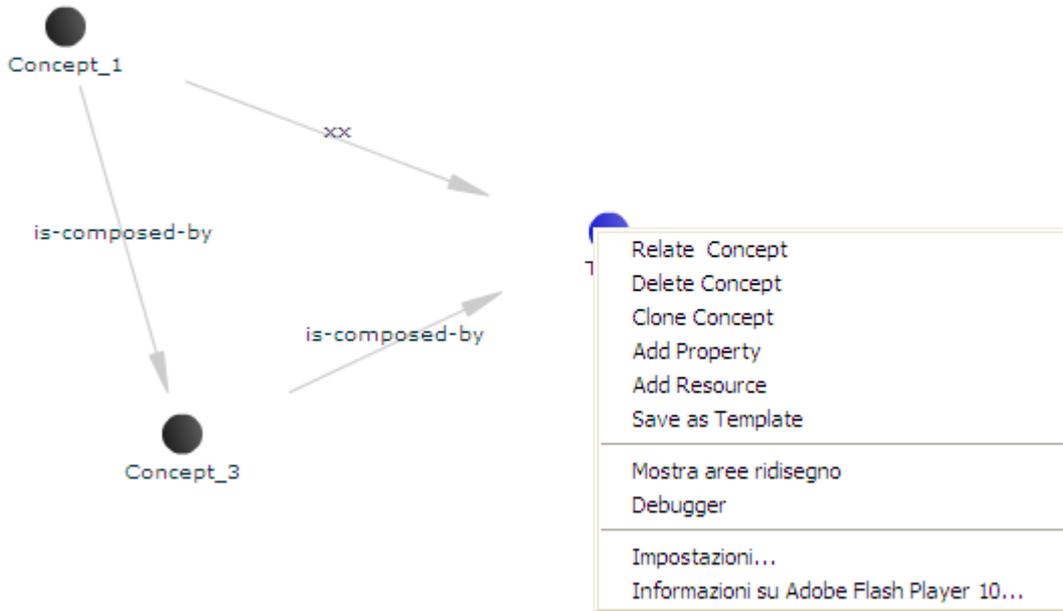
Figure 7: Right mouse button menu with concept functions.

Heuristic evaluation (Paul)	Description in add Property	in "Add Property" it isn't clear what Description is for

Description is a parameter used to describe the use of the property.

Change property box to list?	When the first property is saved it appears under "Properties". When a second property is saved it does not appear there (but can be retrieved by using the drop-down list). When looking at the drop-down list you only see which properties exist but not their values. You need to edit a property just to see its value.

The properties section was redesigned to also fit this requirement. Instead of a combo box a list is used. The user can have view all properties.
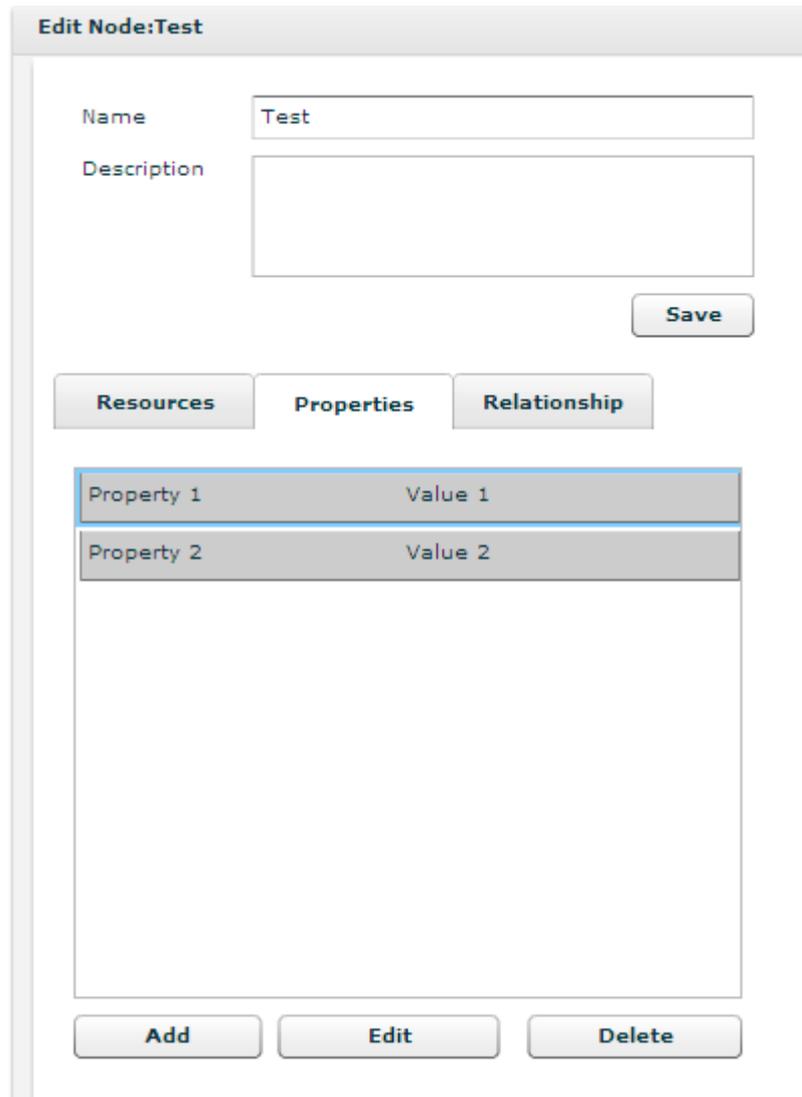
Figure 8: List of node properties.

Copying concepts	Once a concept has been created, there's no way of duplicating a concept with the same properties, but with a different UUID

Clone functionalities are now present in the context menu.

Right click to delete a relationship	Need to check click events for relationships

The feature was implemented as requested.

3   Debug section

From this version a "debug" section is also available where the expert user can directly edit and inspect the XML representation of the Domain Model. He/she can directly modify the code and see the impact from the graphical point of view after saving the document with the save button at the bottom of the debug section.
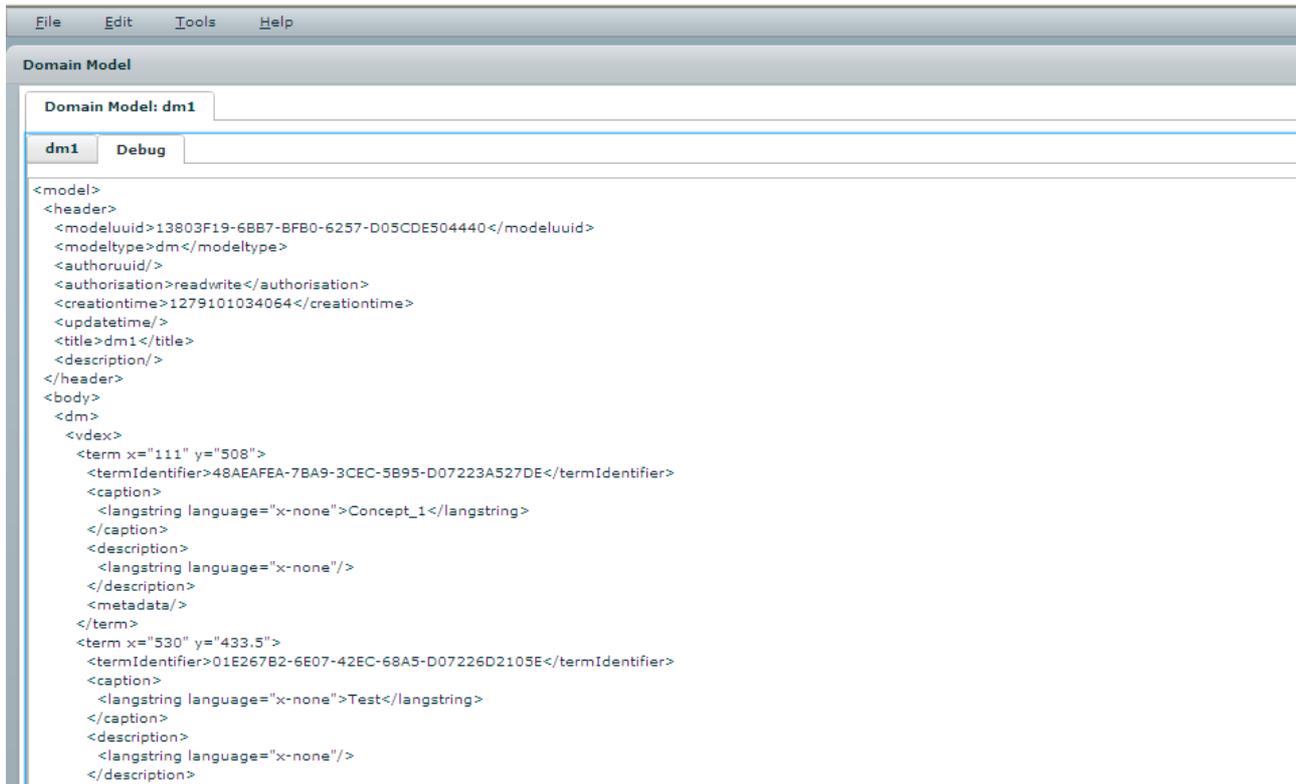
```
File     Edit     Tools     Help

Domain Model

  Domain Model: dm1

  dm1    Debug

<model>
  <header>
    <modeluuid>13803F19-6BB7-BFB0-6257-D05CDE504440</modeluuid>
    <modeltype>dm</modeltype>
    <authoruuid/>
    <authorisation>readwrite</authorisation>
    <creationtime>1279101034064</creationtime>
    <updatetime/>
    <title>dm1</title>
    <description/>
  </header>
  <body>
    <dm>
      <vdex>
        <term x="111" y="508">
          <termIdentifier>48AEAFEA-7BA9-3CEC-5B95-D07223A527DE</termIdentifier>
          <caption>
            <langstring language="x-none">Concept_1</langstring>
          </caption>
          <description>
            <langstring language="x-none"/>
          </description>
          <metadata/>
        </term>
        <term x="530" y="433.5">
          <termIdentifier>01E267B2-6E07-42EC-68A5-D07226D2105E</termIdentifier>
          <caption>
            <langstring language="x-none">Test</langstring>
          </caption>
          <description>
            <langstring language="x-none"/>
          </description>
```

Figure 9: The Debug panel.

4   Conclusion and Outlook

The work done on the Domain Model Tool allowed the implementation of a final version of the software. This version accomplishes the requirements and resolves most issues pointed out during the evaluation phase, carried out both at academic [4] and industrial [5] sites.

From the usability point of view this version of the software has improved significantly.

5   References

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2. IMS VDEX Specifications, http://www.imsglobal.org/vdex/..

3. Hendrix, M., Nussbaumer, A., Dicerto, M., Oneto, L., Cristea, A.: GAT: The FP7 GRAPPLE Authoring Tool Set. Demonstration at the Fourth European Conference on Technology Enhanced Learning (EC-TEL 2009), 29 September - 2 October 2009, Nice, France.

4. D9.3 Version: 1.8 - First Empirical Evaluation in Higher Education Settings - http://grapple-project.org/workspace/work-packages-workspace/wp9-deployment-and-evaluation-in-higher-education/deliverables/GL-D9-3-first-evauation-results-final.docx/view

5. D10.3 Version: 1.6 - First empirical evaluation report in corporate settings - http://grapple-project.org/workspace/work-packages-workspace/wp10-deployment-and-evaluation-in-industry/deliverables/deliverables-final-version/GRAPPLE-D10-3-v1.6-15-02-2010.doc/view

6 ANNEX

GAT issue list published at:

http://www.grapple-project.org/workspace/work-packages-workspace/authoring-conceptual-adaptation-structures/gat-tasks

Usability issues with GAT

Source	Issue	Description	Priority	Time Estimate	Module	BugFix Ticket #? or date to fix
9.3b						
6.1.1	**Changing headings of the editing sidebar in the Domain Modelling editor**	With no concept selected, sidebar says "Edit Concept" should just say "Edit Concept: [none]" then when concept selected: "Edit Concept: {concept name}" The right menu needs changed: to a simple menu add concept/ add link / add link type (not grayed out) as an initial selection. If you click on a concept, it can change to the current menu but with the relations only for that concept. If you click anywhere on the screen not on a concept, you return to the simple menu.	Medium	10 mins?	DM	Fixed
6.1.2	**Different button layout and labelling in the Domain Modelling editor**	Layout for editing properties, resources and relationships buttons is different, even though they all have the same functionality. (Add, Edit, Delete). Rearrange layout to add consistency. Are they all needed?	Medium	1 hour?	DM	Fixed
6.1.3	**Selecting a relationship with mouse is not possible**	If author clicks on a relationship it should be automatically selected in Concept Editor. If none of the involved concepts are selected, automatically select the source concept.	Low	1 hour?	DM	Fixed
6.2.1	**Missing Visual Cues for possible authoring activities**	The main authoring activities of the DM editor and the CAM editor are only accessible through context menus. This makes the authoring process difficult. Add clickable buttons or visual cues to authoring canvas (such as "Right click here to get started")	Medium	30 mins?	DM	Fixed*DM
6.2.3	**Relationship types between concepts are shown in the edit sidebar of the domain modelling editor**	Difficult to find a specific relationship between two concepts in the "Relationships" section of the editing DM. For instance, in Solar System DM, when selecting the concept "Solar System", there are several "is_composed_of" relationships - it is therefore difficult to choose the relationship between "Solar System" and "Earth". Ideally, should be able to graphically select the relationship arrow. Solution: Have the target concept name written in the relationships drop down.	Low	30 mins?	DM	Fixed
6.2.4	**No visible sign of which concept is**	Should be able to click a concept, and have a frame drawn round it (or change colour?) to show it is currently selected	Medium	30 mins?	DM	Fixed

Source	Issue	Description	Priority	Time Estimate	Module	BugFix Ticket #? or date to fix
	selected					
6.2.5	**No visible sign of which relationship is selected**	Should be able to click a relationship (or select it from edit toolbar), and have a thicker line or change colour to show it is currently selected	Medium	30 mins?	DM	Fixed
6.2.6	**Duplicate Name Concepts**	DM should inform author if s/he creates a concept with a duplicate name - if this is ignored, add a suffix to the new concept's name	Medium	1 hour?	DM	Fixed
6.2.7	**Authors have to open the related domain model for every concept that has to be added to a CAM in the CAM editor**	"for every concept that is added to a CAM, an author has to open the related domain model before the concept can be added to a relation. With an increasing amount of domain models focusing on similar topics or having identical names, it becomes difficult for authors to identify the correct domain model. For complex courses and domain models this becomes a highly time consuming task. Furthermore, if the name of the domain model is not sufficiently discriminating a model from similar models, an author might select the wrong domain model by accident that can lead to complex and unintended dependencies between domain models. Intuitive solution: by default the CAM should shows only the concepts that are available in the domain model that is currently opened in the DM editor. If an author wishes to use concepts from another domain model, this model has to be opened first in the DM editor." A better solution: a CAM should allow an author to open all related Domain Models (if public) or create a private copy of them (if private). Additionally, if the author has rights of editing CRTs, a similar option to open all of them (or a particular one) should be available.	Low	2 hours? Need to define filters first	CAM/shared	
6.2.8	**Authors have to open CRT for every relationship between concepts that are defined in a CAM**	"For every relationship between concepts that is added to a CAM, an author has to open the related concept relationship type (CRT) before the relationship can be added to a CAM. With an increasing amount of CRT focusing on similar topics or having identical names, it becomes difficult for authors to identify the correct CRT. For complex courses and domain models this becomes a highly time consuming task. Furthermore, if the name of the domain model is not sufficiently discriminating a model from similar models, an author might select the wrong domain model by accident that can lead to complex and unintended adaptive definitions. Intuitive solution: by default GAT should provide a set of common CRTs that are always present. If custom CRT definitions should be used these definitions should be loaded deliberately to GAT. The CAM editor should only display those CRT that were loaded. If an author opens a CAM, GAT should automatically	Low	see 6.2.7	CAM	

Source	Issue	Description	Priority	Time Estimate	Module	BugFix Ticket #? or date to fix
		load all related CRT for the user if they are not part of the default set. "				
6.3.1	**The "open file" dialog of CAM is not resistant to server errors**	"On slow or unstable connections loading CRTs for a CAM cannot be canceled. If an author decides to cancel the loading process anyways, GAT will stop working and has to be reloaded."	Low	? More info needed	CAM	
6.3.2	**Scrollbars in CAM**	CAM can be moved (dragged) without visible cues - need to add scrollbars, and prevent user from accidentally dragging the viewport around.	Fixed	Fixed in SVN 1174	CAM	Fixed in SVN 1174
6.3.3	**Authors can move concepts outside of the reachable viewport in the DM editor**	It is possible for an author to place a concept almost entirely outside of the viewport of the DM editor. Once the concept is placed outside of the viewport it is impossible for the author to gain access to the concept from the same authoring instance. This problem is critical if a domain model has been developed on a large screen (e.g. of a desktop system) and should be then edited on a small screen (e.g. on a laptop). In this case it is difficult for the author to identify the extent of a CAM.	High	? Needs investigating	DM	Fixed. Zoom Implemented and the graph is draggable simply mouse click down on it and move.
Kees						
Kees/ Paul	**Hiding the CRT tool in a 'novice' mode of the tool**		Medium	30 mins?	shared	work in progress: a welcome page was created, for simplified access; (Welcome page added in SVN 1189)
	Official GAT CRTs	Offering 'novice' users a set of 'official' GAT CRT's, meaning making a set of basic CRTs that together can be used to make basic adaptive applications.	High	? GAT CRTs need defining, and interface needs devloping	CRT/CA M/Share d	
	Grouping DMs, CRTs and CAMs in the save screen in a folder structure (e.g. based on the username)		Medium	2 hours	Shared	work in progress: 'only my files' check box was added.
Kees/ Paul	**Implementing drag and drop**	e.g. Between DMs and CAM	High	? Needs investigating	Shared/ DM/CA M	Work in progress - partially in SVN 1221
	Further examples and e.g. screencasts for helping users on their way in using the tools		High		All	
Paul						
	The DM tool,	We need something to create concept	Medium		DM	

Source	Issue	Description	Priority	Time Estimate	Module	BugFix Ticket #? or date to fix
	although easy to use, requires way too much clicking.	"templates" that are easy to fill. One possible way would be to create a concept the usual way and then be able to say "save as template". When creating a concept there should then be an option to create completely new or "create using template". Once a template is selected it would be nice to have a dialog box to complete all the fields for a concept using that template. Important here: the author should be able to specify if to duplicate concept of to copy a template with similar content (which can later be changed). <!--[if !supportLineBreakNewLine]--> <!--[endif]-->				
	ability to "draw" relationships.	So when creating a relationship you enter the relationship type and then click on source and target concept in the graphical display, or just "draw" an arrow by dragging from source to target.	Medium	2 hours?	DM	Not Possible
	CAM issue with large sockets	In the CAM tool sockets with a large number of concepts in them should be drawn differently, for instance by using multiple lines of concept names.	Fixed	Fixed	CAM	Fixed in SVN 1175 Additionally, highlights have been added over sockets. This helps with many concepts, as a large socket extends to full list only when hovering (otherwise it truncates list of concepts).
	Associate a single LMS concept with a single application concept.	This needs to be done outside of the CRT tool (which deals with "types" and not "instances" of concepts). We need some tool where we can simply say something like "LMS test xyz result => GALE concept abc knowledge". (and then this for different LMSs). We have GALE<->GUMF functionality working but we are lacking the name+type conversion from LMS to GALE for an individual concept.	High			
Alexandra						
	Merge CRT relationships in CAM view	If for instance: A -> B and B -> C Automatically structure CAM with: A -> B -> C	Low		CAM	
	login issue	login doesn't accept 'Enter' from the keyboard (a user has to press the button instead)	Low	20min	Shell	Fixed in SVN 1190
	saving without authors	some tools : DM, CRT, CAM ? allow saving without author. This is	High		DM, CRT,	Probably due to default sample

Source	Issue	Description	Priority	Time Estimate	Module	BugFix Ticket #? or date to fix
		undesirable, in view of separating files in folders and showing own files only, versus common ones, etc.			CAM Shell ?	files having no author.
	deleting issue	DM, CRT, CAM cannot be deleted. This is not a scalable issue. In view of the unique identifier, initially it was considered best not to be able to delete these files, due to interdependencies. However, CAM files save all the necessary information on the original DMs and CRTs they are composed of, so deleting them doesn't interfere, and they can be re-created if needed.	Medium		Shell	
	speed of CAM issue	CAM was considered too slow, especially when dealing with a large number of sockets, CRTs and concepts	High		CAM	Fixed in SVN 1153: redraw event removed for every time when a CRT was moved (highlighted placeholder for sockets moved instead; CRT links updated only on release mouse event) In SVN 1253, only redraw edges of changed nodes
	CRT moving unnatural	CRTs should be able to be moved (together with their sockets) by clicking and dragging the CRT arrow/shape	Medium		CAM	
	Select operator unnatural	When releasing the mouse upon select, the selected contents (concepts/relations/etc.) should be movable. If ESCAPE is pressed (or mouse click in empty screen area) then the selection should be able to start anew, and the previous selection dropped. Moreover, the right mouse button should allow for a list of processing options for the selected content (e.g., copy/delete/cut - as in the CAM tool).	Low		DM, CAM, Shell	
	importing/exporting external DM/CRT/CAM	The tools should allow for reading in / and exporting DM, CRT and CAM structures from XML files (ideally, a large number of zipped? files together)	high (medium)		DM, CRT, CAM, Shell?	Fixed in SVN 1221 (no zip support yet)
	CRT descriptions in CAM	CRT descriptions should be easily available in the CAM (especially in the context of removing the CRT visualisation from the regular users). A solution would be on click on a CRT in the CAM, the description should be displayed.	medium		CAM	Fixed in SVN 1221 (tooltip on list)
	Nulls appearing in description of DM,CRT, CAM	should be not generated in the first place; (quick solution, remove where existent.)	high		DM, CRT, CAM	Fixed - Probably caused by sample data in default installations
	Sorting by date in GAT has errors	(possibly because the date is saved differently in the different models) the sorting function in the GAT tool does not work properly.	medium		Shell, possibly all other tools	Fixed in SVN 1249
	'Select' in CAM and DM should	Currently, a concept in the DM and a Socket in the CRT can be selected, but when the	medium		CAM, DM	

Source	Issue	Description	Priority	Time Estimate	Module	BugFix Ticket #? or date to fix
	remain selected.	cursor moves, they are unselected. The selection should remain till the user clicks on a different part of the screen. The concept/ Socket in question should be highlighted.				
	buttons/toolbar for currently available tasks should be available	This is a general remark, and we need to check if it needs extended. In principle, it refered concretely to: DM: insertion (of concept) CAM: the most common CRTs (start, stop, prereqiusite, goal); right click on sockets should have also 'insert concept'	high		DM, CAM	Fixed
	extend right mouse button menu with other concept functions	Concept functions such as: Add Property, Description, etc.	medium		DM	Fixed
	no title for GAT window	GAT tool should open in a window called "GRAPPLE Authoring Tool"	high		Shell	fixed SVN 1178
	GAT logout functions when grayed out	it should only function when not grayed out	high		Shell	fixed SVN 1179
	GAT closing of a single tab looks like not possible	All tabs (DM, CRT, GAT) should have their own closing x marks.	low		DM, CRT, CAM, Shell	
	'Save as' doesn't suggest first the current name	Usually programs suggest the name of the current window when pressing 'save as'. In the current GAT, the suggestion is empty.	low		Shell	fixed SVN 1225
	Help disabled sometimes in GAT	Help should be always available, add button in all dialog boxes?	high		Shell	
	Menu versus Buttons in GAT	User Model, VR and Simulation should be accessible via a 'Tools' menu.	high		Shell	fixed SVN 1179
Jonny	Bug: When deleting concepts in a socket, the edges between nodes are not removed		high		cam	fixed in SVN 1256
Luca						
	Create the goal CRT	We need a goal CRT with the following characteristics: 1) Every goal is represented by a single instance of the CRT and they should have a name, that will be the identifier for the users 2) The CRT is unary and the socket will accept as many concepts as the author needs to connect 3) The meaning is: the goal is reached by a learner if and only if every concept connected	High		CAM/G ALE/GVI S	

Source	Issue	Description	Priority	Time Estimate	Module	BugFix Ticket #? or date to fix
		has reached at least the expected value for that particular learner 4) this CRT will be supported by GAL/E code, in order to allow the computation in the GALE engine 5) GALE will store the boolean value (reached/not reached) in the GUMF facility We expect to found all the data about the instantiated CRT in the WebService answer of the CAM and to read the actual value from GUMF				
Heuristic evaluation (Paul)	Description in add Property	in "Add Property" it isn't clear what Description is for	low		DM	It was asked if I remember from paul. If not needed I can remove.
	Change property box to list?	When the first property is saved it appears under "Properties". When a second property is saved it does not appear there (but can be retrieved by using the drop-down list). When looking at the drop-down list you only see which properties exist but not their values. You need to edit a property just to see its value.	Medium		DM	
	Copying concepts	Once a concept has been created, there's no way of duplicating a concept with the same properties, but a different UUID	High		DM	Fixed
	Insert here the URL should be changed to Insert the URL here		Low		DM	Fixed
	Change names of modules	DM -> Domain, CRT -> Pedagogical Relation, CAM-> Course	High		DM,CRT,CAM,Shared	
	Position of Save text field	Should be bigger, and at the bottom of the dialog. Filter should be renamed 'search', and at the top right	Medium		Shared	
	GUMF error message	when GEB/GUMF isn't working you get an incomprehensible error message (The requested URL /GAT/registering eventListener forgetGDRGUIResponse failed was not found on this server	Medium		Shared, CAM,CRT	
	Tab order	The use of TAB should be checked throughout all forms in GAT.	Low		Shared, CAM,DM,CRT	
	In the DM tool Edit->Select or Ctrl+L can sometimes be used to select and sometimes not. This is inconsistent.		Medium		DM,Shared	

Source	Issue	Description	Priority	Time Estimate	Module	BugFix Ticket #? or date to fix
	Right click to delete a relationship	Need to check click events for relationships	Medium		DM,Shared	Fixed}DM
	In the CAM tool the Edit->Delete selection is often (always?) grayed out even though with right-click you can do the deletion	Need to correlate with Selected items	Medium		CAM	
	In the CAM tool the Edit CRT dialog box offers a selection for "Shape" but there is only one choice. This is useless.	We need a simple selection of color and shape only for users who are not allowed to edit crt-s – this is higher priority. We need to send back to CRT editor and make sure it only saves in the CAMs. (lower priority) Optionally, a new CRT could be saved, if the user chooses (lowest priority).	Medium		CAM,CRT	