REGNET

Cultural Heritage in REGional NETworks

Deliverable D7

Validation of the REGNET System operation & Preparation of the REGNET-Demonstration Phase

Project acronym	REGNET	**Contract nr.**	IST-2000-26336
Type and Number	D7 Validation of the REGNET System operation & Preparation of the REGNET Demonstration Phase		
Work package	WP3: Implementation of the System and Preparation of the Demonstration		
Task	T3.1: Validation of the REGNET-Demonstrator T3.2: Preparation of the Demonstration Phase		
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Objective	Report		
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Authors (Partner)	All partners involved in the validation phase		
Abstract	This deliverable contains the results of task 3.1 and 3.2 which both refer to the validation of the REGNET System and the preparation of the demonstration phase. The validation concept will be described together with the first results of all kind of testing carried out by content and technical partners. The second part of the report describes all activities for the preparation of demonstration mainly centered around the establishment of Cultural Service Centres.		
Keywords List	Validation concept, test types, functional tests, usability tests, heuristic tests, card sorting experiments, Cultural Service Centre.		
Version Log	2002-11-27: First Version		

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Executive summary

This document contains artefacts from the tasks 3.1 “Validation of the REGNET Demonstrator” and 3.2 “Preparation of the Demonstration Phase”. In general the REGNET Demonstrator as well as the data developed and prepared in course of WP 2 should be validated. In parallel the Service Supplier should set up the necessary infrastructure for running the demonstration phase.

The main purpose of WP 3.1 was to test the REGNET demonstrator developed according to the requirements formulated in WP 1 and using the digital content prepared by the content providers in course of WP 2. Test users should come from different domains (library, museum, ...), represent different levels of expertise (experts, end users, ...) and different point of views, e. g. technical experts (system administrators), cataloguing and marketing staff. Although also selected users outside the consortium should be integrated in the validation process, the first validation phase were restricted mainly to internal test user groups.

The whole validation process followed a methodology which

- defines the single tasks to be carried out,
- structures the validation phase by distinguishing different test types and
- provides feedback formulars (checklists, test cases, questionnaires).

A reporting procedure was proposed in order to enable the proper handling of all incidents and change requests occurring during the validation phase. This reporting environment can also be used for incident reporting and change request management in further phases of the REGNET project. All tests should help to detect and remove eventually misbehaviours of the REGNET-System before inviting a broad public to participate in the REGNET demonstration phase (WP 4). Moreover the tests should assure that the REGNET-System fulfils at least the minimum criteria of usable systems. All test results were collected, prepared in test reports and sent to the technical partner also as a basis for further system development.

During WP 3.2 all necessary actions to be able to start the demonstration phase have be undertaken (data base loading, simulation of a real time operation, etc). The Content and Service Providers will do the necessary training of staff for establishing 'business access points' within their organisations. Information brochures for potential users and questionnaires have to be developed. The legal framework has to be checked. The infrastructure for - at least three - Service Centres has to be set up and the "business functions" on which the CSC-Services will be based, have to be defined; training, market realted issues, etc are also included in this task. At the end a business plan for the CSC-Network and the single CSCs themselves have to be developed.

The methodology worked out for the validation of the REGNET-System within WP 3 should also be adapted for the collection of feedback during the demonstration phase (WP 4). Accordingly remaining tests foreseen in the validation concept -– especially usability tests by external user groups – will be carried out within this next work package. The establishment of Cultural Service Centres will be done during WP 4. All tasks related to WP 3 were mainly focussed on the definition of requirements and appropriate steps.

The summarization of results of first tests reveals necessary steps for the improvement of the REGNET system and should be considered also in WP 4 for the final evaluation of the REGNET System.

Situation

	Validation of the REGNET-Demonstrator and Preparation of the Demonstration Phase (WP3)				*Demonstration, Assessment and Evaluation (WP 5)*			
	Task	**Leader**	**Document**	**MM**	**Task**	**Leader**	**Document**	**MM**
Validation of the REGNET-Demonstrator	3.1	IMAC	IR 3.1 → **D7**	18				
Preparation of the Demonstration Phase	3.2	VALT	IR 3.2 → **D7**	33	4.1	TARX	IR 4.1 → **D9**	55
Implementation of the version 2 of the REGNET system	3.3	MOT	IR 3.3 → **D8**		4.2	VALT	IR 4.2 → **D10**	20
					4.3	IAT	IR 4.3 → **D11**	6

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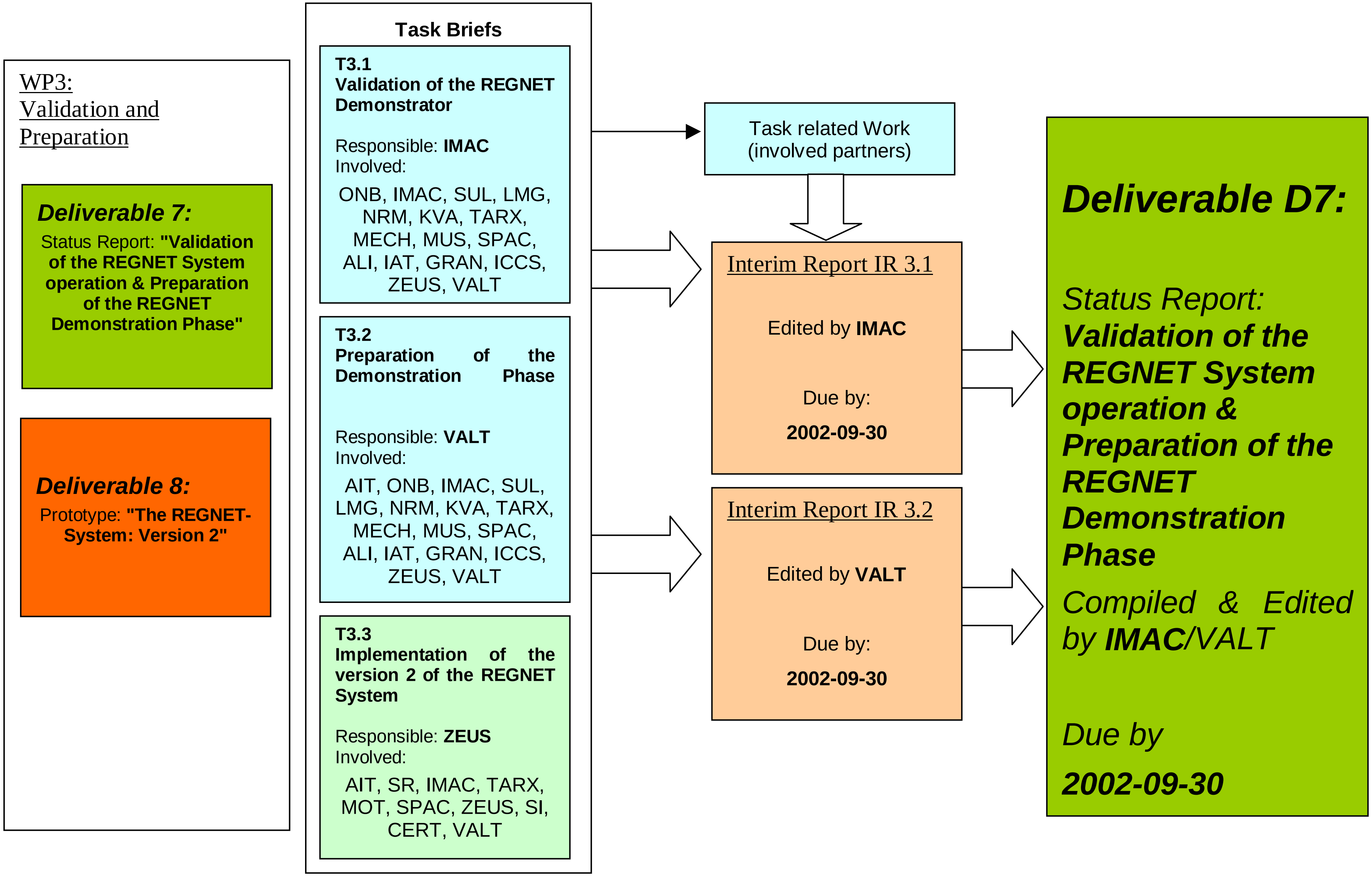
WP3: Validation and Preparation
Deliverable 7: Status Report: "Validation of the REGNET System operation & Preparation of the REGNET Demonstration Phase"
Deliverable 8: Prototype: "The REGNET-System: Version 2"
Task Briefs
T3.1 Validation of the REGNET Demonstrator
Responsible: IMAC
Involved:
ONB, IMAC, SUL, LMG, NRM, KVA, TARX, MECH, MUS, SPAC, ALI, IAT, GRAN, ICCS, ZEUS, VALT
T3.2 Preparation of the Demonstration Phase
Responsible: VALT
Involved:
AIT, ONB, IMAC, SUL, LMG, NRM, KVA, TARX, MECH, MUS, SPAC, ALI, IAT, GRAN, ICCS, ZEUS, VALT
T3.3 Implementation of the version 2 of the REGNET System
Responsible: ZEUS
Involved:
AIT, SR, IMAC, TARX, MOT, SPAC, ZEUS, SI, CERT, VALT
Task related Work (involved partners)
Interim Report IR 3.1
Edited by IMAC
Due by:
2002-09-30
Interim Report IR 3.2
Edited by VALT
Due by:
2002-09-30
Deliverable D7:
Status Report: Validation of the REGNET System operation & Preparation of the REGNET Demonstration Phase
Compiled & Edited by IMAC/VALT
Due by
2002-09-30

1 Introduction

1.1 Purpose

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1.2 Overview and document structure

This report focuses on the description of the validation concept/methodology and the most important results of the tests carried out within the first phase (by content partners and technical partners). Starting from the responsibility matrix (Chapter 2) which were developed also in order to improve communication between content partners and technical partners, the document is structured accordingly. Chapter 3 describes the validation concept picking up the following elements:

- description of the validation process / methodology (test strategy),
- in-depth-description of the different test types,

After a short description of the user groups for testing (Chapter 4) the most important results of the tests according to the test types will be summarised. This concludes in some main findings for the further development of the REGNET system. In detail:

- test results per test type and system component,
- further feedback given by the content partners with regard to usability aspects,

The document in general specifies the methods and criteria proposed by IMAC to measure the different levels of quality and to define the tasks, the members of the REGNET consortium have to carry out during the validation phase, to enable the successful completion of this phase and the proceeding to the demonstration phase of the REGNET project.

Chapter 6 describes the present data structure within the REGNET System. It should be taken as a guideline for further data generation. It was developed on the basis of test results and experiences during the test processes.

The last chapter of this document is dedicated to the description of WP 3.2-related tasks.

2 Validation tasks and task assignment

2.1 Roles and activities

The following table gives an overview about the different roles and activities.

Role	*Task description*
Test designer	To estimate the test effort To define test cases and to provide testing guidelines To interpret test results
Tester	To carry out tests according to test cases and report issues
Tool specialist	To implement testing tools
Test reviewer	To re-check resolved issues
Technical support staff	To load databases
Test person	To perform user tests under supervision by testers
Usability specialist	To define usability criteria, to design usability tests
Implementation group	To implement the REGNET system
REGNET content group	To collect the content, to carry out test, to ensure content quality
REGNET consortium	To agree on test criteria and on the closure of the validation phase
Validation PM	To define requirements and workflows To extract reports To collect and distribute documentation and test results To propose decisions

Table 1: Roles and activities within the validation concept

2.2 Project plan

The following high-level Gantt-chart shows the different project phases of the sub-project "validation" with their interdependencies. The red line marks the delivery of the REGNET prototype to be tested as the key input from a previous project phase. The dotted arrows indicate the iterative nature of the tests: The review of test results might lead to the start of a complete new test cycle for a certain functionality. The chart does not contain any schedule information, it should only show the course of activities as part of the validation methodology.

Chapter 9 specifies the tasks listed in Table 2 by deriving more detailed activities. In order to documentate the actual status of the validation process information about the completion of tasks were added here. It could thereby serve as a to do list for the next work package WP 4 which should tie up to the proposed procedure.

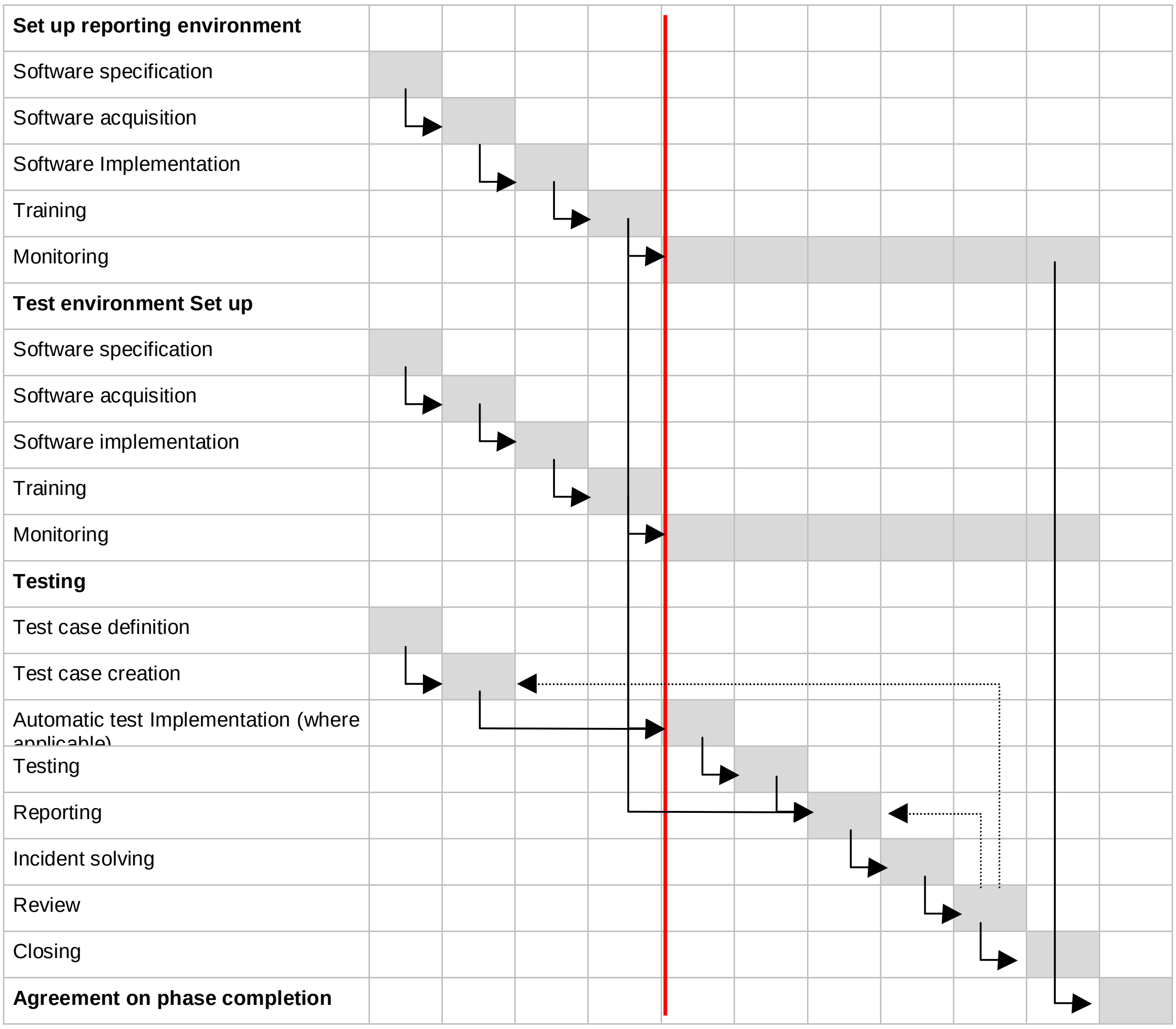


Table 2: Project plan (Gantt-chart)

2.3 Task assignment

The following table lists the responsible partners at the side of the content provider for the different components of the REGNET-System (functional tests), different languages and "special" tests (language checks and heuristics) to be carried out. In order to improve and to support the timeliness of communication, the associated technical partner is also listed here. The matrix should be used for direct communication and co-ordination (following the reporting workflows) during the validation phase. It was foreseen that the validation project management should get at least one copy of all test reports.

The list could be complemented with the responsibilities assigned for the usability tests. Due to the fact that this assignment was made especially for usability scenarios it will be listed in chapter when introducing usability tests.

		Content partner	***Technical partner***
Components	Tasks	Functional testing & Scenario Modelling (Validation)	Support & Implementation
	B2B/B2C		
	E-Shop (+ Product Catalogue Man.)	MUS, NRM, LMG, GRAN	ZEUS
	E-Procurement		VALT
	Auctions		ZEUS
	Ontology		
	Topic Map Generator	MECH, CC, ALI	CERT
	Topic Map Viewer		CI
	E-Publishing	GRAN, IAT, ONB, NRM	SR
	Data Generation	SUL, ONB, KVA, LMG	AIT
	Search & Retrieval	ICCS, MECH, CC, SUL	AIT
	Portal	ICCS, KVA, ALI	MOT
	Multilinguality	TARX, MUS, IAT	MOT
Languages		Tasks: Translation of interface	Task: Translation of interface
	Dutch	MECH, MUS, TARX	
	German	IMAC, ONB	SR, AIT
	Swedish	NRM, KVA, LMG, SUL	
	Bulgarian	ICCS	ICCS
	Russian	SUSU	ICCS
	Spanish	GRAN, IAT	
	French		VALT
	Italian	CC, ALI	MOT, SPACE
	Greek		ZEUS, (SI, CERT)
Special	**Heuristic Tests**	ALI, CC, KVA	MOT
	Language Checks	IAT, ONB, TARX, MUS	MOT/Component experts
		Validation Project Management IMAC	

Table 3: Task assignment for the validation process

3 Test strategy

This chapter gives a detailed description of the different components of the validation concept as developed within WP 3.1. Each component addresses a specific aspect of validation of an information system: functionality, usability, content quality and integrity and system performance. Accordingly four test types were distinguished:

- tests based on use cases,
- usability tests (scenarios, heuristics, card sorting),
- content quality and integrity checks,
- technical tests.

Figure 1 points up the concept, goals and interaction of the individual components together with the responsible test user groups to be discussed in chapter .

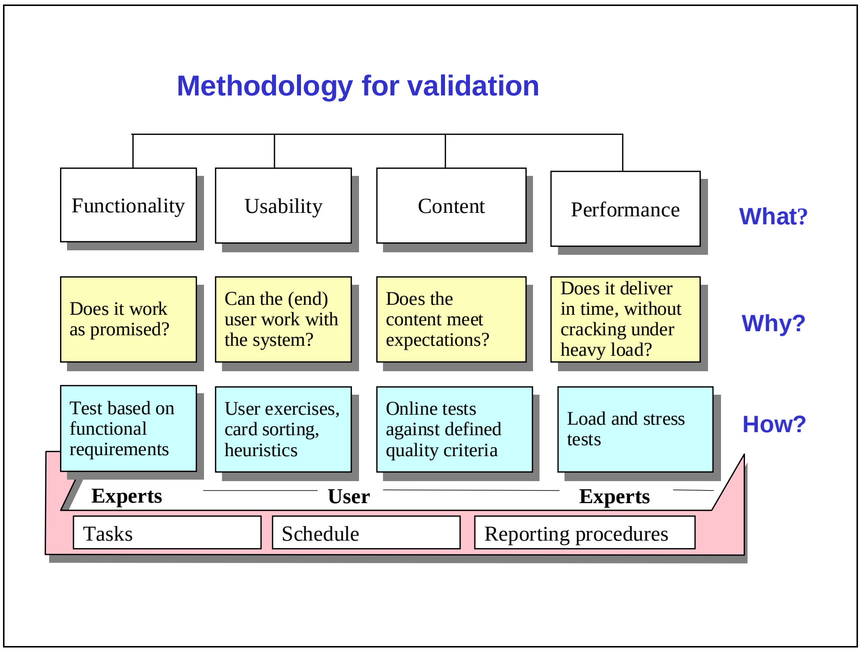


Figure 1: Validation concept WP 3.1

For a complete list of all resulting tasks which could be derived from the outlined validation concept see Chapter 9 (To do list).

3.1 Tests based on use cases

3.1.1 Functional tests

3.1.1.1 Test characteristics and guidelines

Functional testing explores the application's key features and functions to specific requirements. It is generally a higher level test to demonstrate overall compliance to key requirements. It is concerned with what works, not how or why it works. The goals of these tests are to verify proper data acceptance, processing, and retrieval, and the appropriate implementation of the business rules. Table 4 lists the main characteristics of the type of test in terms of objectives, technique, requirements and necessary work.

Fact Sheet Functional Tests	
Test Objective:	To ensure proper target-of-test functionality, including navigation, data entry, processing, and retrieval.
Technique:	Each use case is executed (main flows and alternative flows) till the completion criteria are reached using valid and invalid data, to verify the following: - the expected results occur when valid data is used. - the appropriate error or warning messages are displayed when invalid data is used. - each business rule is properly applied.
Completion Criteria:	All planned tests have been executed within the beta test phase. All identified defects have been addressed.
Special Considerations:	These tests will be carried out in the form of beta tests by REGNET consortium members
Requirements for tests	The REGNET prototype is in a testable (stable) state, agreed functionalities are implemented, Incident reporting environment is set-up
Work to be done:	- Estimate number of test cases - Develop test cases - Develop test manual - Distribute test cases - Carry out tests - Report incidents - Monitor incident reporting - Monitor incident solving - Re-test reported issues - Closure of resolved issues - Agreement upon completion of functional tests

Table 4: Fact sheet "Functional tests"

The tests are based upon black box techniques; that is verifying the application and its internal processes by interacting with the application via the Graphical User Interface (GUI) and analysing the output or results. Function testing of the REGNET system focuses on the requirements for tests that can be traced directly to use cases. The whole set of use cases which make up the functional requirements the REGNET system has to fulfil was developed during WP 2.

This set was taken to derive test cases for functional testing. For almost all components of the REGNET-System a test case sheet were provided in order to the support the test process (see Figure 2 for an example of a test case and the test guidelines). All test cases could be found on the project web site (membership area).

Due to the fact that not for all components detailed use cases were available and also because of the ongoing development activities during the test case generation most of the test-case were very high-level and gave only a rough guideline on how to work with the different functionalities. Especially the actual naming of fields could differ from what was stated in test cases so that the whole test process demanded a high "flexibility". Were no test cases could be provided the tester was asked to write down the functionality tested together with data input, expected and actual output and comments on necessary improvements.

Besides the check of functionality as described in the use cases (which could only reflect the desired user behaviour) testing should cover also the exceptional user behaviour. Each test case should therefore be carried out several times. At first, just the test cases as provided which describes the expected standard user behaviour should followed. After a second cycle should be started which could be called a “monkey test”: Just do *something* with the browser and the mouse while accessing a certain functionality in order to force the system.

Test Cases–Data Entry

Action	Data Input	Expected Output Expected Results	OK or reported as Bug No.	Rechecked
1. Data Entry				
UC 1.1.1 Digitise Objects				
Digitise objects	Click on „Digitise objects“ button	Request to determine (to name) objects (scanned images or folder with scanned images)		
Determine considered objects (scanned images) in provided fields	Dataset 1, Click on „Upload“	Objects are listed, request to confirm or to modify list		
Confirm chosen objects	Click on „Confirm“	System digitises objects and confirms finished procedure		
Modify chosen objects	Click on „Modify“	Request to redetermine and so on (see step 1)		
Determine newly considered objects in provided fields / fill in form	Dataset 2, …	…		

Figure 2: Example of a test case sheet

To perform the monkey tests the following guidelines were given to the test users:

- Leave forms (or parts of forms) intentionally blank. When submitting the form – are the appropriate error messages shown ? Is data acceptance denied?
- Fill out forms wrong (e.g. put characters in a date field). When submitting the form – are the appropriate error messages shown ?
- Use the back and forth buttons on your browser while submitting data. Does the data submission process still works after going two pages back and then forth to the entry form.
- Submit data twice – e.g. register twice with exactly the same user ID and password. Are the appropriate error messages shown ?
- If you have stored data on the system – e.g. by upload: check whether this data really has been stored by trying to retrieve it from the system.
- If you have deleted data on the system – e.g. a previously uploaded data set: check whether this data really has been deleted by trying to retrieve it from the system: It should not appear in a result list of a search!
- If the system allows to select multiple values (e.g. a search in x out of y collections): try this with a combination of values, all values and no values at all.
- If the system gives you various options on how to perform a task (e.g. in the E-Publishing workflow). Select the first option and perform the task till the end. Afterwards start again from the beginning but select the second option and so on ...
- Try to access a restricted area or certain administrative functionalities without the correct user credentials: The system should deny you access.

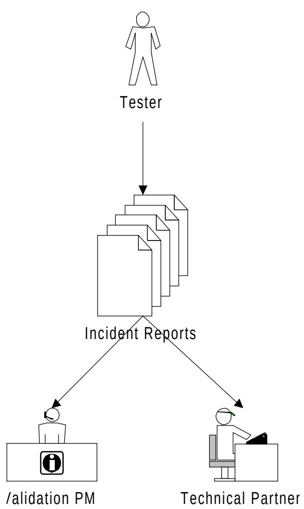
- When you upload data from your system: Upload intentionally wrong data.
  - E.g. a .gif-file where .xsl-file is requested: The system should show an appropriate error message.
  - Alternatively use a wrong .xsl file. The system should show an appropriate error message.
  - Or try to upload incomplete data sets. The system should show an appropriate error message and should deny data acceptance.
  - Check whether data acceptance really has been denied. Try to retrieve the data which has been rejected by the system by trying to retrieve it from the system: It should not appear in a result list of a search!
- Interrupt a system process simply by closing the browser window while the system is carrying out a task. Afterwards re-access the system. The operations you initially tried to carry out (e.g. bulk upload of data, user registration etc.) should not have been carried out. Interrupting the process should not affect system behaviour.
- When carrying out an action like registering for a newsletter. Check whether confirmation emails etc. are actually been sent out to the registered email address.
- If you test registration: Try to change your registration data and then log-in with the old data. The system should deny you access.
- Please test also whether the help messages and system messages which shall guide an inexperienced user through the system are in place and meaningful.

3.1.1.2 Reporting workflow and templates

In order to keep track of all the incident reported during the validation phase a reporting workflow were defined and a reporting form were developed which should be used for all reporting issues and be send to the validation project manager and the responsible technical partner.

3.1.1.3 Reporting workflow

To keep track of all the incidents and their status during the resolution cycle a certain workflow has to followed by all the partners. The workflow could be described in different steps from incident reporting to the re-opening of incidents.



1. Incident Reporting

Tester

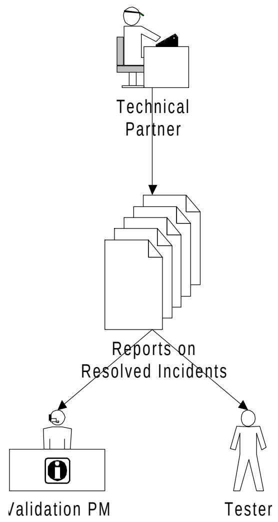
- Tests with test cases
- Submit one report per incident to tech-partner

Validation PM

- Adds incident to open incidents list
- Keeps track of reported incidents
- Keeps track of timelines

Tech Partner

- Receives incidents



2. Incident Solving

Tech Partner

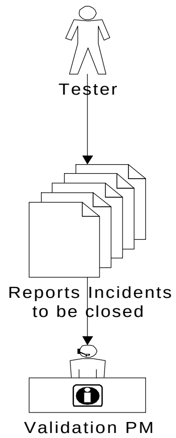
- Resolves incidents
- Reports resolved incidents to tester and Validation PM

Validation PM

- Sets status of incidents in open incidents list to “resolved”

Tester

- Receives reports on resolved incidents



3. Closing Incidents

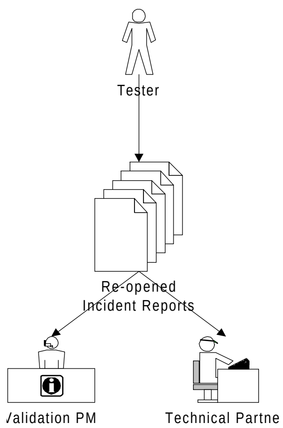
Tester

- Tests resolved incidents with test cases
- Submits reports on resolved incidents to Validation PM

Validation PM

- Sets status of incidents to “closed”

4. Re-opening Incidents



Tester

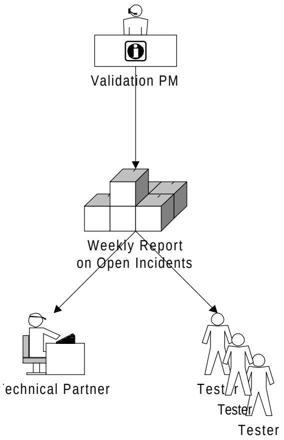
- Tests with test cases
- Re-opens incidents (if necessary)

Validation PM

- Sets status of incident to “re-opened”
- Keeps track of reported incidents
- Keeps track of timelines

Tech Partner

- Receives re-opened incident reports for resolving



5. Weekly Reporting

Validation PM

- Sends weekly status reports on incidents to Technical Partners and all Testers
- Reminds Technical Partners on all important pending issues
- Reminds Testers on all outstanding tests to be carried out

3.1.1.4 Reporting forms

Whenever a not-respected behaviour of the system were detected an incident report should be written and send to the validation project management for reporting and to the technical partner for solving. All forms needed for reporting issues could be found in Appendix I. Useful incident reports are ones that get incidents fixed. A useful incident report normally has two qualities:

Reproducible. If an engineer can't see it or conclusively prove that it exists, the engineer will probably stamp it "INVALID", and move on to the next incident . Every detail helps.

Specific. The quicker the engineer can isolate the issue to a specific problem, the more likely it'll be expediently fixed. (If a programmer or tester has to decipher a incident , they spend more time cursing the submitter than fixing or testing the problem.)

Best-Case and worst-case example: Let's say the application you're testing is a web browser. You crash at **www.regnet.org**, and want to write up a incident report:

Bad: "My browser crashed. I think I was on a REGNET site. My computer uses Windows. I think that this is a really bad problem and you should fix it now. By the way, your icons really suck. Nobody will use your software if you keep those ugly icons. Oh, and my grandmother's home page doesn't look right, either, it's all messed up. Good luck."

Good: "My browser crashed each time when I went to **www.regnet.org/demo/epublishing/demo.html**, using Win NT 4.0 (Service Pack 5) system.

In order to mark the importance of an incident a 4-value system were proposed: from 1 (blocker) to 4 (enhancement) (Table 5). The test user should classify the incident accordingly taking the examples given as an orientation. Moreover he was asked to give additional information in order to support the specification of the incident, e. g. the URL, a summary and short description of the incident. The *URL* should refer to the page where the incident were discovered. If it was isolated to a specific HTML snippet, the URL for that should be listed accordingly.

The *Summary* should describe the incident in approximately 60 or fewer characters. A good summary should quickly and uniquely identify an incident report. Otherwise, developers might fail to pay attention to the incident report when reviewing a 10 page incident list.

Example: A summary of "PCMCIA install fails on Tosh Tecra 780DVD w/ 3c589C" is a useful title. "Software fails" or "install problem" would be examples of a bad title.

In the *description* a problem diagnosis should be formulated. Where applicable, using the incident report template will help ensure that all relevant information comes through; the best thing is to describe the steps necessary to a reproduction of the incident: The minimal set of steps necessary to trigger the incident.

Example:

1) View any web page. (I used the default sample page, resource:/res/samples/test0.html)

2) Drag-select the page. (Specifically, while holding down the mouse button, drag the mouse pointer downwards from any point in the browser's content region to the bottom of the browser's content region.)Actual Results: What the application did after performing the above steps.

The application crashed.

Expected Results: What the application should have done, were the incident not present.

The window should scroll downwards. Scrolled content should be selected. (Or, at least, the application should not crash.)

A picture often tells more than a thousand word. If necessary, a screenshot of the result produced by the incident (by pressing the “Print”-button on the keyboard) could be added, pasting it into the incident-report.

Level	***Type of comment***	***Action***	***Examples***
1 Blocker	Unacceptable / Severe (Show stopper)	Immediate correction, alternatively high prioritisation in incident -fix cycle.	System interruption / hang-ups (system freezes or browser crashes) Functionality not working or working completely wrong Page load errors / incorrect links on a page (blank page, wrong / unexpected page)
2 Normal	Functional deficiency / inconvenience	User can get around it	Numerical field allows entry of letters Wrong text associated to a picture Major design issues (wrong image size)
3 Minor	Design / Layout / Spelling	Less prioritisation	Minor design issues (for example colour combinations), spelling errors, font sizes etc.
4 Enhanceme nt	Improvements	Less prioritisation	Change requests, general viewpoints and proposals for improvements Please note: A proposal for an enhancement will be treated somewhat differently than an incident report. The major focus during the validation phase lies on implementing the required functionality as specified in the use cases. Although certain additional functionalities might be absolutely necessary for the system, the effort for implementing them has to be estimated and agreed upon in advance by the project management.

Table 5: Levels of importance of incidents

The whole incident reporting form is listed below together with the instructions given for each field of it.

REGNET Incident reporting form

Reporting Date (Please insert date here)
1

Resolution Date (Please insert resolution date here)
11

Re-opened Date (Only if necessary - Please insert date here)
12

Organisations Name (Please insert your organisations shortcut here)
2

Number (Please insert a consecutive incident number if the incident is new)
3

Reporters Name (Please insert your name here)
4

Reporters Email address (Please insert your email address here)
5

Platform on which the incident occurred (Please tick):

6	PC		MAC		UNIX

Browser Type + Version on which the incident occurred (Please tick / fill in Value)

7	IE		Netscape		Opera		Other

Priority (Please tick priority with which this incident has to be resolved)

8	1 (Top)		2 (Normal)		3 (Low)

Severity (Please tick severity of the incident)

9	Blocker		Normal		Minor		Enhancement

URL (Please copy the URL of the page on which the bug occurred)
10

1. The date you have detected the incident
2. The name of your organisation
3. A consecutive number of the incident (we use the name and the number to keep track of the reported incidents)
4. Please insert your name ...
5. ... and your email address (in case the developers have questions regarding the incident).
6. We need to know on which platform the incident occurred ...
7. ... and the browser version which you have used while detecting the incident.
8. Please propose a priority level with which this incident has to be tackled.
9. Please propose the severity of the incident (you find a more detailed description of severity levels in Chapter 7)
10. The URL of the page on which the incident occurred might be very helpful for the developers
11. This field will be filled out by the developers as soon as they have fixed the incident
12. In case you are not satisfied with the result of the developers work you can re-open the incident (see description of the workflow of incident reporting in Chapter 6). In this case you have to add the date, when the incident has been re-opened by you).

The next page of the reporting form has a field for the developers comments. Please leave this field blank. (Although it might make sense to have a look at the field, when you receive the report back). This field will contain information on how and why the incident has been resolved in a certain way.

3.1.2 Database testing

The databases and the database processes will be tested as a subsystem within the REGNET project. These subsystems are tested using the GUI-interface of the system. The prerequisites for these tests are the functional tests carried out by the REGNET members. Each database operation invoked by a successful functional test (e.g. registering of a user, creating a list of items to be displayed etc.) will be checked for proper function. Database testing in this context is meant to be a testing of the functionality of the databases in order to assure that they function properly. For details on this test type see fact sheet given in Table 6.

It is highly associated with functional testing in general (Chapter 3.1.1), data validation and integrity checks for the testing of database structures and correct representation of the original data (Chapter) and load testing which is dedicated to consider also performance efficiency with regard to increased loads.

These tests will normally performed after testing databases for functionality and data integrity. For a description see Chapter 3.2.1).

Fact Sheet Database Testing	
Test Objective:	To ensure that database access methods and processes function properly and without data corruption.
Technique:	Each database access method and process is invoked to seed the database with valid and invalid data and requests for data. The database is inspected to ensure the data has been populated as intended and that all database events occurred properly. The returned data is reviewed to ensure that the correct data was retrieved for the correct reasons.
Completion Criteria:	All database access methods and processes function as designed and without any data corruption
Special Considerations:	None
Requirements for tests	- REGNET prototype is in a testable (stable) state - Agreed functionalities are implemented - Incident reporting environment is set-up
Work to be done:	- Estimate no. of test cases - Develop test cases - Develop test manual - Distribute test cases - Carry out tests - Report incidents - Monitor incident reporting - Monitor incident solving - Re-test reported issues - Closure of resolved issues - Agreement upon completion of database tests

Table 6: Fact sheet "Database testing"

3.1.3 Access control testing

Access control refers to mechanisms and policies that restrict access to “computer resources” and is one important element of an effective security management for information systems. Control mechanism could refer to different principles and security levels. As part of the validation concept worked out for the REGNET Demonstrator an access control testing should be performed on an application level, including access to the data or business functions. It is thereby assigned to the group of functional tests. Application-level security ensures that, based upon the desired security, actors are restricted to specific functions or use cases, or are limited in the data that is available to them. This could be done by the identification and definition of actor groups (roles) which represent their jobs or current tasks and results in presenting only those services that are appropriate to this group.

Fact Sheet Access Control Testing	
Test Objective:	To verify that an actor can access only those functions or data for which their user type is provided permissions.
Technique:	To identify and list each user type and the functions or data each type has permissions for. To create tests for each user type and verify each permission by creating transactions specific to each user type. To modify user type and re-run tests for same users. In each case, verify those additional functions or data are correctly available or denied.
Completion Criteria:	For each known actor type the appropriate function or data are available, and all transactions function as expected and run in prior application function tests.
Special Considerations:	None
Requirements for tests	- REGNET prototype is in a testable (stable) state - Agreed functionality's are implemented - Incident reporting environment is set-up
Work to be done:	- Estimate no. of test cases - Develop test cases - Develop test manual - Distribute test cases - Carry out test - Report incidents - Monitor incident reporting - Monitor incident solving - Re-test reported issues - Closure of resolved issues - Agreement upon completion of functional tests

Table 7: Fact sheet “Access control testing”

3.2 Technical tests

Technical tests in general refer to the fact that complex systems make increasing demands on web servers – demands which require an appropriate technical infrastructure. Technical tests within the validation concept for the REGNET project should mainly be carried out by the technical partners within the REGNET consortium and should cover load and stress tests as well as volume tests. The requirements for the performance of technical tests are:

- Datasets are loaded onto the system respectively are available for loading to perform different activities,
- Different users exist in the system and have appropriate permissions,
- Test scripts are implemented,
- Exclusive access to the system could be assured,
- as well as access to server logs (processor usage, memory usage, disk I/O rates, network traffic) and jmeter logs.

In the following chapter this type is described on a very high-level, to be specified during the validation phase and mainly performed a later phase of validation. Results of first technical tests together with a redefined test strategy will be described as part of the final report D7.

3.2.1 Load testing

Load testing is a performance test which subjects the target-of-test to varying workloads to measure and evaluate the performance behaviours and ability of the target-of-test to continue to function properly under these different workloads. The goal of load testing is to determine and ensure that the system functions properly beyond the expected maximum workload. Additionally, load testing evaluates the performance characteristics, such as response times, transaction rates, and other time sensitive issues. Existing bottlenecks must be found, the current system capacity and scalability of the system should be verified.

Transactions below refer to "logical business transactions". These transactions are defined as specific functions that an end user of the system is expected to perform using the application, such as add or modify a given catalogue item. Some more characteristics of this method are listed in the fact sheet in Table 8.

Fact Sheet Load Testing	
Test Objective:	Verify performance behaviour time for designated transactions or business cases under varying workload conditions.
Technique:	Tests developed for function testing will be used in the test definition: Data files are modified to increase the number of transactions or the number of times each transaction occurs.
Completion Criteria:	- Single Transaction or single user: Successful completion of the test scripts without any failures and within the expected or required time allocation per transaction: Response time per page request < ... seconds - Multiple users: Successful completion of the test scripts without any failures and within acceptable time allocation per transaction: Response time per page request < ... seconds with a maximum of ... concurrent users - Multiple transactions: Successful completion of the test scripts without any failures and within acceptable time allocation per transaction: Response time < ... seconds with a maximum of ... concurrent users carrying out different transactions - A load test is successfully performed to validate performance to a minimum of ... catalogue item requests / day and ... catalogue item requests / hour
Special	A load testing software will be used to carry out the load tests

Considerations:	
Requirements for tests	- REGNET prototype is in a testable (stable) state - Agreed functionality's are implemented as specified (functional tests are completed and all issues are addressed)
Work to be done:	- Define requirements for load testing software - Select load testing software - Estimate no. of test cases - Develop test cases - Implement test cases in software - Carry out test - Evaluate outcome of tests - Recommend system adaptation or sign-off system - Agreement upon successful completion of load tests

Table 8: Fact sheet "Load testing"

Tests are performed via LAN, bandwidth is not tested at this project stage. Bandwidth monitoring can be used to determine necessary bandwidth for the production system.

A first proposal for pass and fail criteria was made by the validation project management:

- Single transactions/user: Response time per page request < 1 seconds
- Multiple users/multiple transactions: Response time per page request < 5 seconds with up to 50 concurrent users
- A load test is successfully performed by a performance to a minimum of 3600 different catalogue item requests hour
- A stress test is successfully performed to validate that the system and its single components do not reach their bottlenecks whilst serving pages to up to 100 concurrent users in different roles

Additionally pass and fail criteria could orientate on established usability principles and experiences which reflects the user's point of view, here the result page appearing time:

< 0.1 s: User feels that the system is reacting instantaneously

< 1.0 s: User experiences a slight delay but is still focused on the current web site

< 10 s: This is the maximum time a user keeps focused on a web site, but the attention might already be distracted

> 10 s:User is most likely distracted from the current web site and looses interest

3.2.2 Volume testing

Volume Testing subjects the target-of-test to large amounts of data to determine if limits are reached that cause the software to fail. Volume testing also identifies the continuous maximum load or volume the target-of-test can handle for a given period. For example, if the target-of-test is processing a set of database records to generate a report, a volume Test would use a large test database and check that the software behaved normally and produced the correct report.

Fact Sheet Volume Testing	
Test Objective:	To verify that the target-of-test successfully functions under the following high volume scenarios: Maximum database size has been reached (actual or scaled) and multiple queries or report transactions are executed simultaneously.

Technique:	Multiple clients should be used, either running the same tests or complementary tests to produce the worst case transaction volume or mix for an extended period. Maximum database size is created (actual, scaled, or filled with representative data) and multiple clients used to run queries and report transactions simultaneously for extended periods. All the tests described as load tests will be carried out on this configuration with the same response times to be achieved.
Completion Criteria:	All planned tests have been executed and specified system limits are reached or exceeded without the software failing.
Special Considerations:	None
Requirements for tests	- REGNET prototype is in a testable (stable) state - Agreed functionalities are implemented as specified (functional tests are completed and all issues are addressed) - Datasets with representative data are available in a machine readable format and loaded into the database
Work to be done:	- Estimate no. of test cases, develop test cases - Define necessary test data and acquire necessary test data - Load test data into the database, carry out test - Evaluate outcome of tests and recommend system adaptation - Agreement upon successful completion of load tests

Table 9: Fact sheet “Volume testing”

3.3 Usability tests

The purpose of the usability tests is to ensure, that the Graphical User Interface (GUI) of the REGNET-System and the implementation of the functionalities meet the requirements of the potential end user of the system. Usability testing analyses user and usage needs and checks whether a “product” is usable. Usability is defined as the user-friendliness of an interface, it is the measure of the effectiveness, efficiency and satisfaction with which specified users can achieve specified goals in a particular environment with that interface. Usable systems:

- are consistent,
- support the user’s workflow,
- avoid errors,
- provide good feedback and
- give users the control.

Consequently usability testing should lead to an increase of subjective user satisfaction by gathering information about the actual usability of the system and the derivation of recommendations for improvements. In order to provide a broad basis for doing this and also to consider different “views” three types of usability testing within the validation process of the REGNET-Demonstrator were selected – each with a specific focus, methodology and expressiveness, all important elements of a user-centred design process.

Figure 3 shows these usability test methods within the set of techniques of usability engineering and represents also the recommended course of these tests which is:

1. Testing by experts (Heuristic evaluation),
2. Testing the information structure (Card sorting),

3. Testing the interface with users (Scenario-based evaluation).

Heuristic evaluation involves the study of a user interface by a small set of evaluators who look for violations of common usability principles. Problems identified could be tackled right away, leading to a (first) redesign.

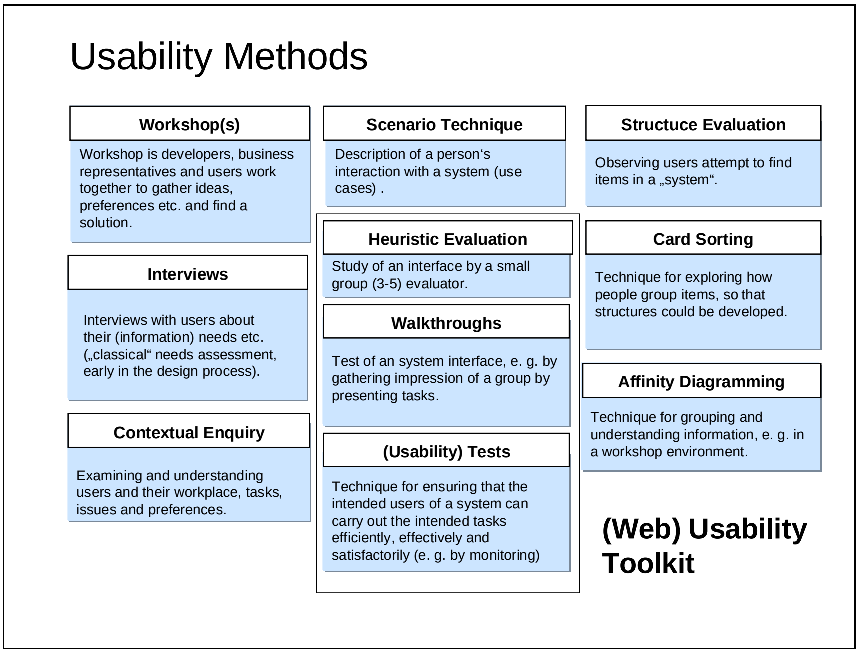


Figure 3: Overview about usability methods

The most important way to make an information system easier to use is the test with users, these tests should be performed after the heuristic evaluation and cover the gathering of opinions as well as the monitoring of users when performing real tasks (scenario-based tests). Card sorting is an experimental approach for the validation of the information architecture of a system also including user but focussing on a very specific aspect. These tests could be performed independently from the other kinds of tests but should be placed in an early stage within the validation process. All three types will be described in the following chapters more in detail. Especially the usability tests are highly bound to the next work package: usability testing including external user groups would be performed later on, material used for demonstration purposes could orientate on the material work out for usability testing.

3.3.1 Heuristic evaluation

Heuristic evaluation is a method involving no test persons but only a small group of evaluators – often usability specialists which give an objective analysis as well as their subjective opinion about the usability of the system. The specific advantage of this test is that no "working system" is needed – a prototype is enough to perform a heuristic evaluation - and that experts normally will find about 95% of the usability problem of a system/site. If detected problems will be solved immediately an optimal basis for further testing including "end users" will be given.

The process of heuristic evaluation covers:

- Identifying the heuristic,
- Gathering results and opinions,
- Merging and rating of the identified problems.

For the REGNET project at first a criteria list was developed and discussed within the expert group for heuristic evaluation (see responsibility matrix as shown in Chapter 2.3). The result of this discussion was the revised REGNET Usability Index – a catalogue of usability principles applied to the REGNET portal. This catalogue should be filled out by the evaluators: partly with simple yes/ho-answers, partly by giving additional information and suggestions for improvement. The whole list could be found in Appendix 2, the main areas are: navigation and orientation (which navigational help is provided, how to find information etc.), interaction and exchange of information (in which way the user is involved, which means for interaction are realised), up-to-dateness and quality of the information (is the containing information actual, how would a high-quality of the content basis be assured, design of information and text (content usability and layout/design aspects) and location and access to the system. The results of the heuristic evaluation will be summarised in Chapter.

3.3.2 Card sorting

3.3.2.1 General description of the methodology

Card Sorting is a technique for exploring how people group items, so that structures could be developed which maximise the probability of users being able to find items. Within the REGNET validation concept they were selected for the validation of the REGNET information architecture respectively the development of user-centred one. The advantages of card sorting experiments are:

- easy and cheap to conduct,
- enabling to understand how 'real people' are likely to group items,
- identify terminology that is likely to be misunderstood,
- to identify items that are likely to be difficult to categorise and find.

Card Sorting can be conducted in a variety of circumstances using various means - one-on-one, during workshops, by mail, or electronically. Normally the name of items to be categorised are provided to the participants (on individual cards, electronically etc.). Participants are asked to group items in a way that makes sense to them and then to name the resulting groups. After the completion of all experiments data must be examined: a general agreement about many items could be expected. For analysis and presentation of the results cluster analysis could be used for a pictorial representation of the resultant groupings. Participants should normally be persons which are representative of the eventual users, for REGNET it was suggested to select three test persons per partner. With regard to the portal card sorting should be carried out for the end user view *and* the professional view which appears after login as a professional member allowed to access the REGNET components. Due to the fact that the first validation phase was restricted to internal test user the information structure presented in the administrative section of the portal should be tested firstly. Card sorting experiments for the end user view of the portal could be foreseen for a later stage, e. g. also as part of the demonstration phase.

For the conduction of the card sorting a (free) software package was identified, tested and recommended: the IBM USort and EZSort package, USort for the grouping of items, EZSort for the cluster analysis (see: http://www-3.ibm.com/ibm/easy/eou_ext.nsf/Publish/410). Both programs and the related test processes will be described below – this description was given to the partners involved as a set of guidelines.

3.3.2.2 Software tools for card sorting

Before starting the tests the participating partners (mainly content partners) should install at first the software USort which was send to them as an exe-file. This file should saved on the file from which the card sorting tests are carried out. After installation the files regnet_professional_nav.cld and regnet_user_nav.cld must be copied to the USort program directory (e.g.: c:\programme\usort\). These files contains the items to be grouped in an accidental order, e. g. for the end user view:

Newsboard	Newsletter	Event Calendar
Virtual Exhibitions	Tours	Tickets
Topic Explorer	Collections	Virtual Tours
Simple Search	Advanced Search	Search Guide
Search Profile	Copyright Information	Topic Guide
Gift Ideas	Bestsellers	...

All items to be grouped could be found in Appendix 3.

For starting the test the program must be started and the participant should registrate himself as “study participant". In order to get the possibility for a clear allocation to partner and test person a meaningful name for the test person (organisation shortcut, test type and consecutive number of test person) should typed in the appearing screen. After this step the file with the original “cards” (items) (regnet_professional_nav.cld for the cards for professional users and regnet_user_nav.cld for the cards for end users) must be selected and uploaded. In order to carry out the test the following steps must be performed:

Step 1: The objective of step 1 is to create logical groups from the items in the source field.

To create each new group, an item from the source field under the bottommost line must be dragged in the target field. The single line above and below items in the target field shows that a group has been formed (Figure 4).

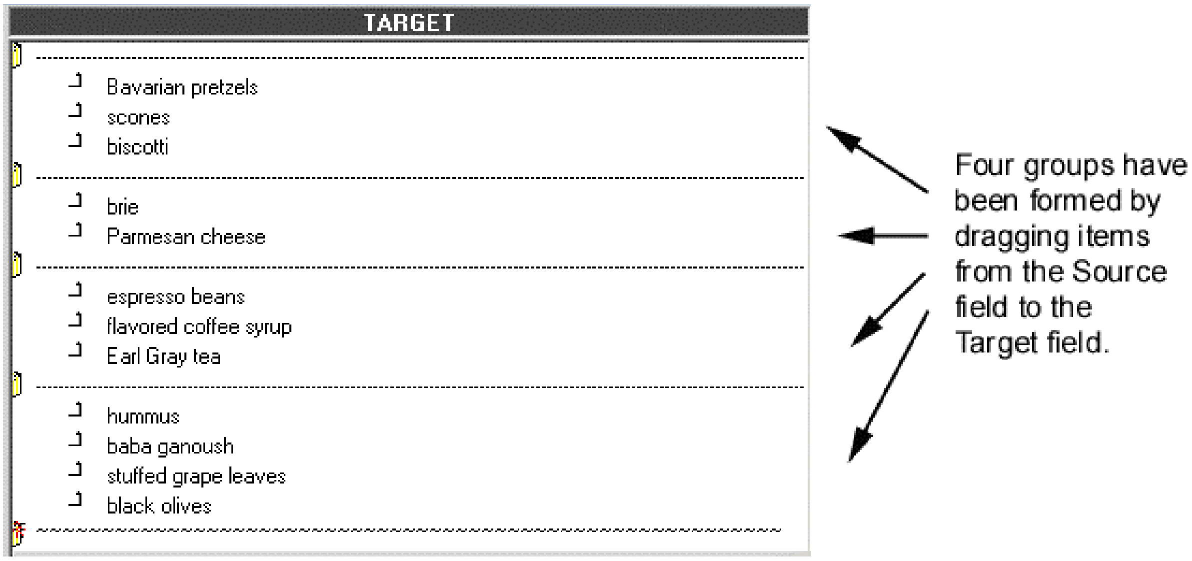


Figure 4: Grouping of items using USort

To add an item to an existing group, it must be dragged from the source field onto the line above the desired target group. It will join the group when releasing the mouse button. To move multiple items to a group, first the checkbox to the left of each item must be clicked, then the items dragged simultaneously to the target field. If changing the decision, each item could be dragged to another group or back to the source field. After performing this step the right arrow could be clicked to go to Step 2. But: Once went to the next step, a return is not possible!

Step 2: The objective of Step 2 is to combine the groups already created into higher-level groups.

In order to create the higher-level groups the following instructions were given:

1. Move the similar groups next to each other by dragging the folder icon of one group atop the folder icon of the other.

2. Double-click the separator lines above and below the groups you have put together.

The single lines will change to double-lines, which indicate a higher-level group. For all higher-level groups the steps 1 and 2 should be repeated. After creating all higher-level groups, any groups that have not been merged into higher-level groups should be checked and all single lines between these original groups changed to double lines (by double-click on the line).

Figure 5: Building of High-Level-Groups in USort

After finishing the high-level grouping, the right arrow leads to step 3.

Step 3: The objective of step 3 is to give a descriptive name to each higher-level group of items.

In order to assign a name a click on the double-line at the top of a group must be done and then a name typed in the dialog box.

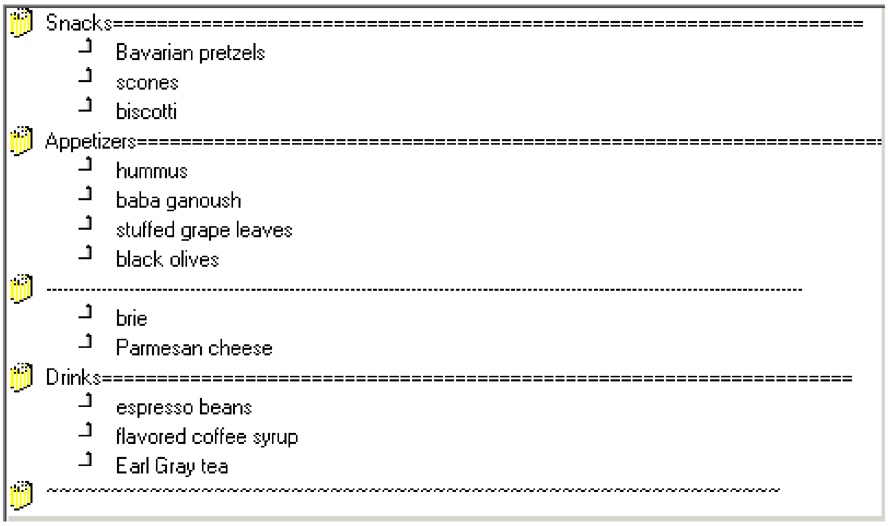


Figure 6: Result of card sorting using USort

This must be repeated for each group (double line). When having finished naming the groups, a click on the right arrow finishes the section. The system will prompt the user to save the input file as your_user_ID.esd. Figure 6 shows the final result of the card sorting experiment. After finishing the results must be saved. The name of the results file should be a meaningful one for the test person (organisations shortcut, test type and consecutive number of test person).

All results of card sorting experiments will be evaluated by the validation project management using the EZSort package of IBM additionally – a package which supports the managing of card sorting data from multiple participants and perform cluster analyses. The user manual for this program as distributed within the consortium is attached to this report (Appendix 4).

3.3.3 Scenario-based tests

Scenario-based tests are the last element of usability testing within the project. They should be performed by different test user groups (see Chapter 4) – internal and external ones – and could be performed at various stages of the validation process. With regard to demonstration (WP 4) at first usability tests should be restricted to internal user groups, the testing with external users should be assigned to WP 4. Testing material must be adapted accordingly.

3.3.3.1 General description of scenario-based tests

The goal of these tests is – as said before - the improvement of the "usability" of the REGNET-System and the underlying tools. In contrast to the other usability test method now "real" test persons will be asked to work with the system, monitored during this process and asked for their impressions. The tasks will be defined as scenarios (see Chapter). The monitoring of test users should be done by partners in the consortium which are already familiar with the system and thereby could instruct test users.

Fact Sheet Scenario-based Tests	
Test Objective:	To ensure the usability of the system
Technique:	Users will be asked to carry out "real life tasks" based on the functional tests of the system. User behaviour will be monitored during these tests by REGNET staff. Users will be debriefed by REGNET staff using a standard questionnaire. The questionnaires will be evaluated and proposals for the enhancement of usability extracted. The REGNET consortium has to agree upon the changes to be implemented.
Completion Criteria:	All Changes which have been agreed upon by the REGNET consortium are addressed by the implementation partners of the project. All functional changes have been re-tested using the test cases modified according to the specifications of the change requests
Special Considerations:	The user tests will be carried out by the evaluation partners of the REGNET project.
Requirements for tests	- REGNET prototype is in a testable (stable) state - Agreed functionalities are implemented - Availability of test users
Work to be done:	- Develop test cases - Develop questionnaires and test manuals - Set-up test environment - Select test persons - Carry out tests - Collect tests results, Evaluate test results - Estimate changes needed - Agreement upon implementation of changes

Table 10: Fact Sheet "Scenario-based tests"

For the monitoring questionnaires were worked out, these questionnaires should be used for the documentation of general test and test user information, observations made during the task performance and the impressions of the test person. The first version of this questionnaire could be find in Appendix 5. It consists of 2 parts: The first is dedicated to general questions regarding the test performance and questions for the post-interview in order to get an structured feedback to some important usability aspect as layout/design, user support and general impression. The second part should be used for the guidance of task performance. An overall view about scenario-based tests is given in Table 10.

3.3.3.2 Responsibilities for carrying out usability tests

A scenario is a description of a person's interaction with a system. Scenarios may be related to 'use cases', which describe interactions at a technical level. Unlike use cases, however, scenarios can be understood by people who do not have any technical background. For the usability testing as described in the former chapter scenarios should be worked out for each REGNET tool by the accordingly expert group. The responsibilities for carrying out usability tests are listed in Table 11. For an explanation of the mentioned test user groups see Chapter 4.

	Sys Admin / Developer	Catalogue Admin.	Catalogue Staff	Curators / Education	Marketing
Auction		x ICCS		x CC	x MUS
Procurement		x MUS	x LMG		
Shop			x NRM, GRAN		x CC
PCM		x NRM	x LMG		
Data Entry		x ONB	x SUL, GRAN		
	Sys Admin / Developer	Catalogue Admin.	Catalogue Staff	Curators / Education	Marketing
Search & Retrieval		x KVA	x SUL, MECH	x KVA	
Portal	x ICCS		x ALI		x ALI
Topic Map			x MUS, ONB	x MECH	

Table 11: Responsibilities for scenario-based tests (content partners)

A first draft of scenarios were worked out during WP 3. These first scenarios are listed in Chapter 3.3.3.3. They should be seen as a proposal – although the test strategy in general is as much formalised as possible some freedom for the definition of “own” scenarios should be given here to the involved partners.

3.3.3.3 First scenarios for usability testing

For the preparation of scenario-based tests 3-4 typical tasks should be defined for each tool. In the following some examples will be given per tool.

E-Biz
I. E-Shop Scenarios (End user View)
1. Search for a ring and buy it. The price should not exceed 500 EURO.
2. Now edit your profile (= registration data) and buy something else.
3. Search for a ring. The price should not exceed 500 EURO. Buy 5 rings. But delete 2 rings after putting it in your basket. Then buy the three others.

4. Search for 6 shop items in at least three categories costing between 200 and 600 EUROS and buy them.
5. Check your order history and choose two shop-items to be added to your wish list. Sent the wish list and add two more items. Returns to "search" look around the shop and now view again your wish list
In addition the following questions could be answered (more referring to general impressions): - Try to get an impression about the quantity and diversity of items in the E-Shop. Do this within …. minutes - Check the categories. Are the items in the right categories? - Check the categories. Are there enough categories? - Which categories should be added? Think in this respect especially about your visitors and their museum-shop-items buying spectrum!
II. Auction Scenarios (End user View)
1. Choose an auction item to buy. Bid firstly just slightly higher than the last bid (or the starting price) then bid extremely high as to out-range your competitors.
2. Now edit your profile (= registration data) and bid on something else.
3. Search for a painting and make an bid on it
4. Add three auction-items. One of them should only be entering the current auction next month. Now find your biding history and your items in the auction toll.
5. Try to find out when you can expect to get the item you have been biding on.
In addition the following questions could be answered (more referring to general impressions): - Try to get an impression about the quantity and diversity of items in the Auction. Do this within …. minutes - Check the categories. Are the items in the right categories? - Check the categories. Are there enough categories? - Which categories should be added?
Data Generation – Editing and Search & Retrieval
I. Data Entry
1. You are looking for a measurement tool that is called "Elle" (in German). You know there are catalogue records in the database, you even know the specific item you are looking for and it's actual length which is exactly 1 m.
2. Find a record by using the AAT Thesaurus: there is one Thesaurus test record to the thesaurus term "Museums / Library domain", it's object name is ....
3. Edit this record by deleting the empty Dublincore section 4. Deleting the entry in the field "Remarks" in the object section 5. Filling in the field context in section "object" choosing the term "Bildungswesen" from the lookup 6. Filling in the field "Remarks" with cursory data
7. Delete a test record (Object name: "test record")
8. Search for records with the term "eros" in them. You should find at least three: now do a batch modify by replacing the word "Eros" (or other writings) by the word "Karl VI". Check by a second search if all the names have been correctly replaced.
9. (Re-)create the test record you have deleted (see above 4.),
10. (Re-)create the empty Dublincore section you have deleted (see above 3)

11.	Create a second thesaurus term of your own choice as a child term to the AAT thesaurus term “Museums / Library domain”.
II. Search & Retrieval	
1.	We have to prepare an exhibition on the most important contemporary artists from East-Europe. Please make a list of them!
2.	We need illustrations for a book of art about baroque sculpture. Can it be provided by REGNET?
3.	We are studying some 17th century sculptures from Antwerp. Can we find information to compare the work of Faydherbe with the sculptures of Artus Quellinus the Elder?
4.	In order to prepare a visit to Stockholm we want some information about Linnaeus. We certainly want to know how many books he wrote about botanists or geologists and also where we can find those books.
5.	I am a teacher and in order to prepare my lessons I need a lot of pictures and information on 16th century Italian Renaissance.
6.	I want to find information about the plague and I want to know how people from different religions handled it

Table 12: Scenarios for usability testing

3.4 Content quality and integrity checks

Content checks in general should assure that the content stored in the REGNET System meets the expectations of the users and that it was presented correctly. Accordingly tests should be performed online.

3.4.1 Content integrity checks

The purpose of content integrity checks is to ensure, that the migration of the content from the various sources is done correctly. Table 13 lists all characteristics of the test type.

Fact Sheet Content Integrity Check	
Test Objective:	To ensure that the content has been entered into the database correctly and that the content is displayed in the right content containers.
Technique:	To develop test cases out of existing material of the participating organisations. Beta testing personnel is asked to review content items as displayed by the system and to confirm that all information delivered by the system is correct.
Completion Criteria:	All planned tests have been executed within the beta test phase. All identified defects have been addressed.
Requirements for tests	- REGNET prototype is in a testable (stable) state - Agreed functionalities are implemented as specified (functional tests are completed and all issues are addressed) - Datasets with representative data are available in a machine readable format and loaded into the database
Work to be done:	- Estimate number of test cases - Develop test cases - Define necessary test data

	- Acquire necessary test data - Load test data into the database - Carry out test - Report incidents - Monitor incident reporting - Monitor incident solving - Re-test reported issues - Closure of resolved issues - Agreement upon completion of content integrity tests

Table 13: Fact Sheet "Content integrity check"

Each content partner should perform this check for his own data taking the following checklist as an orientation:

1. Mapping of individual data structure into AMICO:

- Are all relevant data fields available?
- Are the data fields correctly mapped?(meaning, multiple data fields)
- Do you agree with the data field names?

2. Technical side effects:

- Various spelling in original contributions (case sensitive transformation), typos
- Various data field names in original contributions
- Varying structure in a batch of documents not recognised
- File names with accents, umlauts and blanks

Hyperlinks:

- Are all conceptual hyperlinks in the database displayed as hyperlinks (is everything a hyperlink that should be one)?
- Are the hyperlinks working correctly? (links to images, links to Word files) Can images, Word files be found? Please check if image names in the record are spelled exactly in the same way as the image file names.

3.4.2 Content quality checks

Users will visit a site mainly because of the content, he will have certain expectations which must be fulfilled in order to attract him for a future use. In order to consider the importance of content (quality) the reviewing of content for grammar, style and consistency was defined as a separate test type within the validation concept. Each content partner should review all content, both textual and visual stored in the REGNET databases as well as in the portal. A content quality assurance check is also performed. The purpose of content quality checks is to ensure, that the content provided by the system meets the users and content providers quality expectations. In order to support the reviewing process at first a list of common quality criteria was defined on which all partners agreed. The quality criteria to be checked could grouped as following:

Text

- Appropriateness of content in the respective data field
- Clarity of grammar & use of language
- Presentation of complex concepts

- Spelling, punctuation etc.
- Absence of duplication & repetition
- Appropriateness of dates to time (no past events in schedule for upcoming events)
- Content understandable (used terminology)?
- Summary present for long paragraphs?

Pictures (where appropriate)

- Size (on screen, file size)
- Appearance of picture on screen does not interfere with lay-out of page
- Picture can be downloaded in acceptable time
- Less than 5 seconds for previews
- Appropriateness of data formats (only .gif, .jpg are used)
- Recognisability of displayed content /quality of images
- Appropriateness to related text
- Could pictures be enlarged?

Links (where appropriate)

- Does the target of the link exist
- Are link and target of link related thematically

For reporting issues again sheets were developed in order to report the status and to ease re-checks. The content quality assurance sheets for content stored in the databases as well as for the content and navigational check of the portal could be found in Appendix 6. Table 14 summarises the characteristics of content quality checks within the validation process.

Fact Sheet Content Quality Check	
Test Objective:	To ensure that the content provided by the system meets quality expectations.
Technique:	A checklist of content quality will be applied to each content item in the REGNET system
Completion Criteria:	All planned tests have been executed within the beta test phase. All identified defects have been addressed.
Requirements for tests	- REGNET prototype is in a testable (stable) state - Agreed functionalities are implemented as specified (functional tests are completed and all issues are addressed) - Datasets with final data are available in a machine readable format and loaded into the database
Work to be done:	- Definition of quality checklist - Estimate no. of test cases - Application of checklist to content items - Report incidents - Monitor incident reporting - Monitor incident solving - Re-test reported issues

	- Closure of resolved issues - Agreement upon completion of content quality tests

Table 14: Fact Sheet "Content quality check"

3.4.3 An Outlook: Further content collection

Besides the object-related data stored in individual databases per content partner, content especially for the portal must be produced – following a given structure and a content product plan. In order to do this first of all a list of needed content types were worked out. These content types are News/Newsletter, Collection, Profile, Address, Events, Links and Vocabulary. For each document type necessary meta data fields were defined and an application was set up for editing, deleting and adding records (see: www.digipark.at/rndatainput/).

In order to plan the content production process a content status tracking sheet (Appendix 6) was worked out. Using this sheet the goals per partner will be defined: 1. How many objects to be generated or to acquired to augment existing or create new data? 2. Where can additional data be acquired (sources)? Doing this an overview about which types of information are available in the partner institutions together with the formats and the amount should be given. For tracking the status of content product the sheet should also be used to report how much content is loaded onto the system, how much content is quality-checked and/or translated.

4 Description of test user groups

The tests which were defined in the test strategy should be carried out in two phases integration different test user groups. The first phase – to be carried out during WP 3 will focus on selected internal test user groups, whereas the second trial will address external user groups, e. g. formed from the customer base of content providers involved in the project. Figure 7 shows the test user groups for the first phase together with the material to be used for testing purposes.

For the grouping ("Professionals", "Developers", "Experts") shown here all involved partners were asked at first to identify and describe possible test user groups (and users) within their organisation. User groups may differ from their *experience with the task(s)* the system is intended to support, e. g.:

- none at all,
- minimal,
- part of job specification/occupation of users,
- users are exceptionally experienced in the domain the application supports

The experience of users with computers (e. g. none at all or minimal, users employ software products regularly, users are software experts) is another possibility for group and specification.

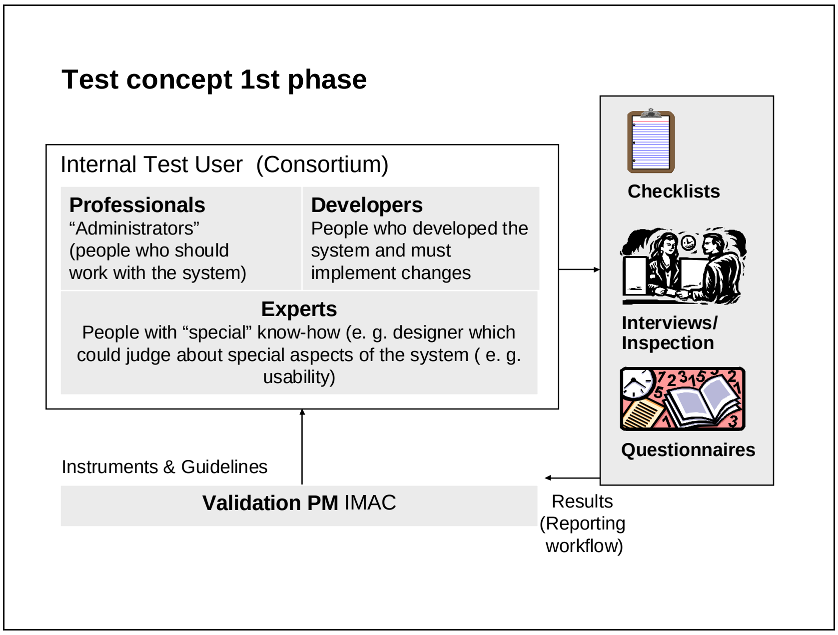


Figure 7: Test User Groups for the 1st validation phase

All partners were asked to describe potential test user groups taking these considerations into account. According to the results very concrete test user groups could be pointed out (see Table 15). On the side of the internal users (Professional user, system developers, experts) all have high experiences with the tasks the system should support; computer experiences could vary from "low" to high". Potential end users vary again with regard to computer experiences. Visitors – as one potential end user – normally have no experience with the "domain" respectively the tasks to be supported, cultural workers (e. g. artists, researcher, art dealers) could be different.

Potential external test user groups are also "Professionals" (e. g. other cultural organisations to use the REGNET tools for data generation etc.) and the "End users" as visitors, researchers etc. mainly to test the portal which should offer the Single-Point-of-Entry.

Name of user group	***Function / Experience with the tasks the system is intended to support***	***Experience with computers***	***Other Characteristics***
Professional Test User Groups			
Sys Admins / Developers	High	High	
Catalogue admin	High	High	
Catalogue staff	High	Medium	
Curators / Educators	High	Medium	
Marketing	High	Medium	
Administrative staff	High	Medium	
End user			
Visitors	Low	Low	
Visitors	Low	High	
Visitors	High	Low	
Visitors	High	High	
"Cultural Workers" *	High	Low	
"Cultural Workers" *	High	High	

*Artists, Art Dealers, specialised Journalists. etc.

Table 15: List of potential test user groups

5 Results of the validation process

This part of the report should an overview about the tests carried out, the strengths and the weakness of the REGNET System as well as necessary improvements. The results are grouped according to the test type, mainly functional tests and heuristic tests carried out by the content providers and technical test as carried out by technical partners according to an adapted test strategy.

5.1 Functional tests

For each functional test a test report was created. In the following only the most important results will be listed – status of testing, features tested, bugs reported and a summarisation of the most important finding and comments given by content partners. All bug reports and additional material was documented by the validation project management.

5.1.1 E-Publishing

5.1.1.1 Status

The E-Publishing component is available using the following URL: http://212.183.10.162:8080 (user documentation and short description). For the editing component (editing the search results): http://www.labfuture.net/regnet/edit/example_response.xml should be used. Due to the fact that this component is not really integrated a functional test was not performed by the content partners. In general the test reveals that a lot of (important) functionalities are missing, e. g. an integrated component for search result storage and editing, the editing of selected items (e. g. add background material, rearrange object information, storyboard writing for advanced electronic publication and output features for multimedia productions. At least the integrating of all available features is necessary. The tool was tested by GRAN, IAT, ONB and NRM. There have been received 15 bug reports. The bugs have been reported to the technical partner SR.

5.1.1.2 Functionalities tested (test cases)

Where additional comments where made, they could be found in the accordingly cell (see also III). Detected bugs are mentioned as well.

Action	***Result***	***Ok, or reported as bug no.***
1. Enter publishing process		
Enter publication process	Click on link to “electronic publishing”: User can start E-Publishing process by loading an a. already existing publication b. performing a new search in order to select items for the publication	OK Comment: It is not clear enough where and why existing publications are stored => file names)
2. Search (for items to be published)		
2.1 Simple search		
Click on the button “Perform query”	Click on the button. Query form appears. Requirements: At least two collections must be available	OK

Search criteria	Enter search criteria. Form is filled out with search criteria.	OK Comment: Improve Usability: Could be useful to give a short hint how to search (e. g. what is the default operator for more than one word, truncation etc.)
Submit query	Click on button “Search”. System shows the desired query results	Bugs reported
2.2 Advanced Search		
Click on the Perform query	Click on the button “Advanced Search”. Query form appears	OK Comment: Search fields and options must be checked: appropriate?
Select databases to be queried	Tick appropriate databases. Appropriate databases are ticked	Bug reported. Comment: Could be improved: select / unselect all databases
Select document types to query	Tick appropriate document type. Appropriate document type are ticked.	OK Comment: Search fields and options must be checked.
Enter query details	Subject the collection will be searched for. Form is filled out with query subject	Bug reported. See also above: search operations must be tested / defined? Selection of field to be searched in by pull-down-menu.
Submit query	Click on button “Search”. System shows the desired query results	Bugs reported. Comment: Is the search result (always) correct?
3. View and edit result set		
3.1 View result set		
View search results	Default display options	Must be checked: okay? Usable? No possibilities to see details for the items, no images.
Navigate through search results		See also Bug 5 (IAT)
3.2 Edit search results	Not available through this application: actually a separate tool. Therefore not tested.	

Mark item from the result list	Click on the item to be edited. Item is marked. Requirement: A successful search has to be carried out previously	
Delete selected item	Click "delete". New list with is shown, item is removed from list	
3.3 Modify search result	Not available through this application: actually separate tool. Therefore not tested.	
Enter ontology subsystem	Click on the link to the ontology subsystem. Ontology subsystem is entered. Requirement: A successful search has to be carried out previously	
Use the ontology subsystem	Enter query to the system. New result list appears with the query taken into account	
3.4 Save Result set	Not available through this application: actually separate tool. Therefore not tested.	
Save result	Click on link "save result". A screen appears, which ask for the name of the result set to be saved.	
Enter name	Enter the name of the result set. Form is filled out	
Submit name	Click on "submit". Result set is saved under the given name	
3.5 Edit Saved Result set	Not available through this application: actually separate tool. Therefore not tested.	
Views saved results	Click on "my saved result sets". The saved result sets appear.	
3.6 Edit result set	User enters modification. Result set is modified	
User saves modified result set	Click on "save". System queries user either to apply a new name or to overwrite the old name of the result set	
User applies name	Select whether to overwrite the previous result set or type in the new name. Results set is saved under the desired name	
3.7 Delete single records from the result set	Not available through this application: actually separate tool. Therefore not tested.	
View saved results	Click on "my saved result sets". The result sets appear. Requirement: User must be logged in and must have created at least one saved result set	
Select result set to be modified	Mark the result set to be modified. Result set is marked	
Open result set for modification	Click on "open set". Result set is opened on the users screen	
Mark record from the result list to be deleted	Click on the record to be deleted. Item is marked	

Delete selected record	Click “delete“. New result set is shown, record is removed from list	
3.8 Edit single records from the result set	Not available through this application: actually separate tool. Therefore not tested.	
View saved results	Click on “my saved result sets”. The result sets appear. Requirement: User must be logged in and must have created at least one saved result set	
Select result set to be modified	Mark the result set to be modified. Result set is marked	
Open result set for modification	Click on "open set". Result set is opened on the users screen	
Mark record from the result list to be edited	Click on the record to be edited. Item is marked	
Edit selected record	Edit modification details of single record. Modified single record is shown	
Save modified record	Click on “save record”. Modified record is saved in result set	
4. Add storyboard		
View results	Click on “continue publishing”. Screen choose storyboard appears	OK
Select story board	Click on the story board to be selected. Story board is marked for selection	OK
Apply story board	Click on “Submit”. Story board is applied to the result set	Bugs reported
5. Create Output		
Create output	Click on “create output”. Screen with output creation options appears (layout of desired output). Requirement: User must be logged in and must have created at least one saved result set	OK
Select layout of desired output	Select either "Catalogue", "Table" or "Virtual Gallery" layout. Either "Catalogue", "Table" or "Virtual Gallery" layout is marked.	OK
Apply layout	Click on "submit". Layout is applied to the upcoming publication.	OK
Select create .pdf output	Select “PDF”. “PDF” is marked	OK
Create .pdf-output	Click on “Submit”. Output is created and can be saved by the user	Bug reported
Create output	Click on “Start the publication”. Screen with output creation options appears	OK
Select create printer friendly output	Select “create printer friendly output”. “create printer friendly output” is marked	
Create printer friendly -output	Click on “Create output”. Output is created in printer friendly format and can be printed by the user	

Create output	Click on “create output”. Screen with output creation options appears	
Select create .smil output	Select “SMIL”. “SMIL” is marked	OK
Create .smil-output	Click on “Submit”. Output is created in .smil format and can be saved by the user	Bug reported
Create output	Click on “Start the publication”. Screen with output creation options appears	OK
Select create .xhtml output	Select “HTML”. “HTML” is marked	OK
Create .xhtml -output	Click on “Create output”. Output is created in xhtml format and can be saved by the user	Bug reported
6. Generate product		
Generate publication prototype	Click on “Start the publication”. Generate publication prototype is created	
Edit publication prototype	Enter modifications to publication prototype. Publication prototype is modified	
7. Load Publication		
Load a publication	Click on “Load a publication”. Theme is published	OK
Load a publication using a storyboard		
Load a publication	Click on “Load a publication”. Theme is published with a navigational aid through the collection and the storyboard applied.	OK

5.1.1.3 Short list of the bugs

The following list shows all errors/missing functionalities. For a detailed description all bug reports could be consulted.

Date	***Description***
09.07. 2002	Perform (simple) search/navigate through result list; use „present“ and „next“ button causes error message.
12.07.2002	Search of blank string: If user left empty the search textbox, the results page shows 55224 records (all the records?), because of the search engine looks for the empty string or the white space. (This problem also appears in Advanced Search page).
12.07. 2002	Uncontrolled error in Advanced Search: If user doesn’t select any database to perform the query, the system shows error page.
12.07. 2002	What is the purpose of the second text box? In the Advanced Search page appears a text box (initially contains the string “full text”), which functionality isn’t very clear. It would be recommendable to explain what is its utility, and what values are admitted.
09.07. 2002	When you do an Advanced Search, the results page always shows all the search results (max. 1000), independently of the number indicated in the „match per page“ selector.

09.07. 2002	In the “Choose storyboard” window, if you select “TimeLineStoryBoard” and push submit, “TimelineGroupingApplet” allows you to define several periods using the same name. Then when you see the SMIL-presentation all the periods that have the same name show the content of the last defined period.
09.07. 2002	In the “Choose storyboard” window, if you select “SimpleLocationGrouping” and push submit, “SimpleLocationGroupingApplet” allows you to define several anchors using the same name. Then when you see the SMIL-presentation, all the anchors that have the same name show the content of the last defined anchor.
15.07. 2002	Publish two documents with same name. A document is identified by the sequence IP_Year_Month_Day_Hour_Min, but if the user publish two different documents in the same minute (e.g., by using several windows) these documents are identified by the same sequence. A solution could be to use the sequence IP_Year_Month_Day_Hour_Min_Sec to identify a document.
29.07. 2002	Some minors wrong texts. It appears: “Search” instead of “Submit query”, “Submit” instead “Apply Story board”, “Create Output”. Doesn’t appear. Comment IMAC: no bugs in the system, but bugs in the test cases => could be used to improve the interface (errors not listed in the test case document)
29.07. 2002	When the user wants to perform the advanced search, and select which data base or type of documents wants to display and afterwards perform the query, no documents are found.
29.08. 2002	Submit Query: Whatever information is given or is filled in the search field or whatever kick-box ticked, there is no search result (example: search for “hund” in all databases and all document types). The reason is obviously because the search is “full text” (default) – only when this is eliminated, search results can be achieved.
29.08. 2002	Advanced search: no ONB documents are found if only the onb database box is ticked and the query field is empty, although this works for all other databases. On the other hand, if all databases are ticked, the search result will list all (966) ONB documents
29.08. 2002	Display: Any choice of the number of matches does not affect the way the search result is actually displayed
29.08. 2002	Search: If there is no database selected, there is a server error instead of a message: “you have not selected any database”
29.08. 2002	If there is no document type ticked, all ticked database documents will be displayed as search result

5.1.1.4 List of (further) requirements and comments

As said before the most important disadvantage of the E-Publishing component is the lack of basic functionalities, especially:

- Search results could not be edited/modified before publication
- Search results could be saved/named (for later usage)
- No modifications for (saved) search result sets)
- No detail information for the items (images etc.)

Regarding the search functionality further testing is necessary (search operations, etc.) as well as an improvement from a usability-point-of-view (help/explanations, pull-down-menus). Further steps are to be taken in order to generate more suggestions for improvement (could focus on the search masks e. g.); before the usability testing is carried out the edit component must be integrated and / or functionality's to edit search results and save them. In order to plan the further development steps it was agreed upon that the E-Publishing deliverable should consist of two parts: the description and user manual of the tool. The remaining budget should used to study and develop a connection of Macromedia Director, through the scripting language "LINGO" and to add on module "XTRA", with XML in general and more specifically the databases TEXTML, XINDICE and also MySQL. The aim should be an "on the fly" insertion of specific data into the "cast" of a Director movie (e.g. depending on the desired level and language).

5.1.2 Auction

5.1.2.1 Status

For the testing the URL: http://www.regnet.gr/auction, login: 1, pwd: 1234 was provided, for the admin part: http://www.regnet.gr/auction/admin, login: admin, pwd: 123. Only some high-level test cases were given, more test cases were added by partners. This tool has been tested by MUS, NRM/LMG, GRAN and IMAC. The test case report includes high-level-test-cases, monkey tests and 20 bugs. The bugs have been reported to ZEUS. The test report is available, but there are no tests of the administrative section yet.

5.1.2.2 Functionalities tested (test cases)

The tests focused on the following test case groups: Registration, Login, View current lots, Enter auction/bid, Search, Profile Management, Register a new item.

Action	***Result***	***Ok, or reported as bug no.***
1. Registration	Click on corresponding link. Creating user name and password	OK No registration as administrator is possible.
1.1 Submit registration		
Fill in provided form	Click on submit. System confirms registration, request to go back to main page for login.	OK
1.2 Reset registration		
Fill in provided form or leave blank	Click on reset. The whole field got blank again	OK
2. Login		
Fill in login infos	Click on Login. Extra options occur	OK No confirmation of login. Direct login as different user not possible.
2.1 Later Login		
Do not login. Login in at a later stage, after making a bid	Do not login. Click on current auction. You can view the current lots	OK
Select a lot to make a bid on (current lots)	Select a lot by clicking on „Go“. The lot appears with further information and the possibility to make a bid	OK Additional bugs reported

Make a bid	Enter your bid in the blank field and click on „Go“. You are not allowed to bid before registering. An announcement makes this clear and gives you the opportunity to register.	OK But: no possibility to login in when already registrated (only possibility is to registrate)
Enter for registration yourself	Click on the underlined word „register“. A new screen with data fields for registration appears	OK
Enter your data	Fill in the mandatory fields	OK
Print your login data	Use the print option of your computer to print out the form. The system let you print all your entered login data	OK
Submit your login data	Click on the „submit“ button. Your data is submitted, a reply is given submission successful.	OK
Return to the main page	Click on the marked word „main“. You are back on the main page	OK, but no possibility to make a bid!! Not get back to the main page
Now you are registrated you make your bid	Enter your bid and click on submit. Your bid is acknowledged and you return to the previous page. Your bid is displayed together with your in log name	Bug reported
3. View current lots		
View current lots	Click on corresponding link. List with items to auction appears	OK
Choose another page with current lots	Look how many pages the auction has (down left hand corner) click on another page. The chosen page appears	OK I can not see on which page I am (usability problem). Additional bug reported.
4. Enter auction/bid		
Select item	Click on “go” in column “bargain”. Chosen item appears with extra information	OK No currency of the price displayed (see bugs). Could be better to show (also) the current price. Bugs reported.
Scroll list of previous bids	Click on the right-hand scrollbar to scroll through the previous bids The bids appear, highest bid first	OK
Make a bid	Fill in your bid in the blank field; click the “Go” button Your bid is acknowledged and you return to the previous page. Your bid is displayed together with your login name	OK

Add a new item	Make a bid on one of the lots on page two of the current auction	Bugs reported
5. Future Auctions		
View future auctions	Click on corresponding link. List with items to auction appears	OK
6. Search		
Search for items	Click on corresponding link. Search form appears	OK Bug reported
Fill in provided form (several fields!)	Click on search. Search results appears.	OK See also comments regarding the display fields. No possibility to search for all items.
Fill in provided form or leave blank to reset search	Click on reset. The whole field got blank again	OK
7. Your profile		
Check your profile after registering	After you have successfully submitted your inlog data you return to the main page and click on “your profile”. You get your profile listed	OK Bugs reported
Check your bids	Check your bidding history. First click on your profile. Next screen shows two options: “profile data” and “your Bids”. Click on your bits. Your bidding history is displayed arranged by lot number	OK
View one of your previous bids in detail	Click on the underlined lot description. Details will appear	OK But there is no image and no description (display could be improved)
View your items	Check your items. Details will appear. Items could be edited	OK Bug reported
8. Register a new item		
“New item registration” area	Click on corresponding link. Fill in form appears	OK Appears only when using the given login, not after creating an login. Bug reported

Fill in all the fields and add an image	Fill in all the fields (auction date starting immediately!) and add an image and Print your data. A printed version is produced	OK Image is optional, but message is confusing (no file to upload), no confirmation of successful adding. For image size see bugs.
Submit new item	Click on “add item”. Your data is submitted; a reply is given submission successful.	
Look up your newly added auction lot	Click on current auction. You aspect to see your submitted lot with all the entered data	OK
Look up your newly added auction lot	Click on future auction. You aspect to see your submitted lot with all the entered data	OK
Edit your auction items		OK Comment: It is possible but not directly from this position, it is necessary to go to the profile area. Items could not be deleted. Bugs reported

Administrative section was not tested!

5.1.2.3 Short list of the bugs

The following list shows all errors/missing functionalities.

Date	**Description**
17.07.02	The pictures of Auction are with fixed sizes.
17.07.02	“Current lots” always shows Page 1 . Is it possible to show the current page? (see also comment regarding the usability)
24.07.02	Inserting new item (Press “New Item”): After inserting item , an error is made - How to proceed? It is necessary to edit inserted items.
24.07.02	Inserting new item (Press “New Item”/”Current lots”): When the shape of the inserted item is not the same as this for default the results are terrible, see for example page 5 – Shell, and page 6- both items. These 3 items are not as the original
24.07.02	Searching („Enter name of object“): Appears: Name, Description, Start Price, Start time. It would be better to be seen the Current price.
24.07.02	View (Press „Current Lots“): Somewhere has to be written the currency of the price , “Euro”, $, …
24.07.02	Displaying negative result of searching: Neglecting grammar error: “your”
14.07.02	Registering via a bid on a lot (later login does not function.
14.07.02	After clicking “your profile” you do not get your profile. An intermediate page is shown (confusing).

14.07.02	Same errors in logging the profile data as seen in the E-Shop module!!
14.07.02	Add new items function should be behind command – error only on the second page
14.07.02	It is not possible to edit any submitted auction items from the end user pages
15.09.02	Login under existing username and then clicking "re-enter" your login all data you previously filled in are lost.
15.09.02	Start data of auction is wrongly interpreted by the system
14.08.02	Confusing error message when deleting item (auction).
27.08.02	I would suggest to add the function of "Remember the password in this computer" for the users already registered. This should be apply to the others modules.
27.08.02	In some entries there are some pictures that aren't displayed. So it doesn't let you to see the item. It's necessary to find out the reason why those pictures can't be displayed.
27.08.02	The number that appears in the description form of each Lot next to the "list of bids" entry isn't comprehensible. You can figure out that is the date that the bid had done but not the rest. Is it the reference of the bid?! If it's I think it would be appropriate to remark it, and to let the user know about it.
27.08.02	I've tried to register a new item. And when I've checked it, I have seen that it's not displayed. Afterwards I did the same with other pictures and I've succeeded. My suggestion is again, to find out how come that these problems occur. Another thing is to add to the "register a new item" form, the type of format that's necessary in the pictures submitted (e.g. jpg, gif, tiff) to be displayed properly
27.08.02	Participant's registration form doesn't save the data in a first phase
27.08.02	I suggest adding a little bit of information of how to fill the search form in order to give to the user the necessary tools to achieve a good search.

5.1.2.4 List of (further) requirements and comments

In general the test partners gave a positive feedback to the design and the basic functionalities. The auction tool is prepared professionally, the design is nice. Lacks of functionality/Improvement were detected with regard to:

- Inserting new items: included the opportunity for editing new items, not to restrict the shape of the inserted items, because in this case it is impossible for the authors to see distorted items.
- Usability: items could be inserted directly, but not edited without changing to the profile area
- No possibility to search for all items
- Remember password functionality

An improvement of display options and fields was specified as follows:

- Nevertheless the project is European, the visitors are all over the world and the price of the objects has to be mentioned (in Euro).
- It would be better to display the "current price" and "sold price".
- Your profile (your bids) → lots description is to short

It is not possible to see on which page the user is (current lots), no information about the actual login (name) is given, the frame is not shown after the submission of registration. When working with current lots the link of a bargain should open a new window with a bid option. Visited links of page numbers should be marked (e.g. chancing of colour). For a better user support a help functionality should be added.

"Real bugs" refer to the login possibilities (later login when no registration is necessary, user is already registrated and just want to log in, missing a confirmation of login), the profile management (after clicking "your profile" the user does not get his profile; an intermediate page is shown) and administration (e. g. when registrated as a new user the default must be to be able to add new items). When registrating as new user there is not the default option to enter new items: not only but also for testing it is needed to offer the possibility to registrate as a "auction holder".

To sum it up it could be stated that the main functionalities are available, but that usability must be improved! Usability testing could start after solving the bugs; scenarios must be worked out. The main findings are summarised in Table 16 as given by the partner MUS.

Strengths	The site is sufficiently fast The bidding procedure is easily understood
Weakness	The registration is not working properly, some data get lost. The tool which deals the information how to pay how to get into contact with the organisation or person selling the object is not present jet.
Necessary improvements	The most needed and important improvement is solving the lose of registration data which are needed to be able to sent the objects bought to the right address are crucial. Even if we are going to use (as stated in various meetings) a off the shelf product, we need to see soon all potential candidates as to make a choice and still have the time to test it. In general all not jet repaired bugs must be solved.

Table 16: Strengths and weaknesses auction tools

5.1.3 E-Shop

5.1.3.1 Status

The testing partners are MUS, NRM/LMG, GRAN and IMAC. There were made high level test cases and monkey tests with the results of 15 bugs and 2 bugs refer to portal. Additional comments were made by IMAC. The bugs have been reported to ZEUS. The URL for testing was: URL: http://www.regnet.gr/auctionhttp://www.regnet.gr/e-shop, login: 1, pwd: 1234 or login: 2, pwd: 1234.

5.1.3.2 Functionalities tested (test cases)

Action	***Result***	***Ok, or reported as bug no.***
1. Search Actions		
1.1 Search item in all categories		
Leave fill-in field blank	Select „all" in pull-down menu „category", click on „Search" All saleable items are shown. But requirement: At least one item has to be available (best practise: one item in each category)	OK
Fill in term in provided field	Data, Select „all" in pull-down menu „category", click on „Search". All saleable items are shown. Requirement: as above	OK

Select category "all" (left side)	Click on provided link. All saleable items are shown. Requirement: as above.	OK
1.2 Search item in category, e. g. „picture"= "JEWELLERY" (tested for all categories; always with the same remarks concerning the requirements)		
Leave fill-in field blank	Select „picture" in pull-down menu „category", click on „Search". All saleable items in category „picture" are shown. Requirements: At least one item has to be available.	OK
Fill in term in provided field	Data, Select „picture" in pull-down menu „category", click on „Search". All saleable items in category "picture" are shown Requirement: as above	OK
Search category „picture" (left side)	Click on provided link. All saleable items in category „picture" are shown. Requirement: as above	OK
1.3 Search for item per price		
Fill in maximum price	Data, Select „lower" in pull-down-menu, Click on „Search. All saleable items are shown with determined maximum price limit. Requirements: Available items must have prizes and at least one item must be available	OK, but: confusing results when no objects within the given limit are in the database:
Fill in minimum price	Data, Select „higher" in pull-down-menu, click on „Search". All saleable items are shown with determined minimum price limit. Requirements: Available items must have prizes and at least one item must be available	Bugs reported. (no plausibility control in central for fields/data).
2. Actions around the basket (possible and potential)		
2.1 View items in detail		
Select item from search list	Click title = link. Information is shown in extra window	Bugs reported. Momentarily it is not possible to view detailed information on product directly form basket mask!
View items availability (check whether item is available on the store, quantity)		
Look out for item, start search	Click on "Search". List with directly available items appears; furthermore information, e.g. for items which are normally available, but not at the moment, are not given	Bug reported. Momentarily there's no information given about availability
2.2 Add item to the basket		
Select item from search list	Press plus-button in „Action" field. Quantity of item is indicated. Requirement: At least one item must be selectable	OK

Add to basket	Click on „Add to basket". System lists selected item(s) in basket, possibility to buy item, add it to want list, delete item or clear whole action	OK
2.3 Remove items in basket		
Mark check buttons of items to be deleted	Click on „Delete. New content of basket appears. Requirements: At least one item must be selectable	OK
Clear basket (remove all items out once)	Click on corresponding link. Basket is emptied totally all at once. Requirement: There must be items in the basket to be cleared	OK
2.4 View basket (could be done from different / all positions in the shop)		
Enter basket	Click on "basket". Content of basket is shown	OK
2.5 Change item quantity in the basket		
Momentarily this has to be a combination of deleting items in basket and adding the same item/s in a different quantity, which can only be done in search result mask.	Notice: It's not possible yet (at least not in an easy way!)	OK, The problem stated here has been fixed. It is possible to change the quantity of items and click on update. This results in the new number of shop-items!
2.6 Update the content of the basket (e.g. Delete item in basket		
Enter/ open basket	Click on "basket". Content of basket appears, possibility to buy item, add it to want list, delete item or clear whole action. Requirement: There must be items in the basket available	OK
2.7 Request similar items	There must be similar items indicated; Notice: At the moment there is no such feature	As stated this functionality is lacking.
2.8 Show similar items	See above: There should be a link or an alike feature to refer to similar products, starting from basket / search list	As stated this functionality is lacking.
2.9 Calculate total amount of basket content		
Enter basket	List with items in basket appears and the total amount of those items	OK But: Display price format not correct? E. g. price is 10.000, the total amount shows 10
2.10 Check data of shopping list / basket		
Enter Basket	Data of basket content appears	OK
2.11 Save data of shopping list / basket		
It's like adding items to the basket	Notice: Momentarily there's no special saving-feature available	As stated this functionality is lacking
3. Actions around the wish list (possible and potential)		
3.1 Save items in wish list (=move to wish list)		

Enter basket	Click on "save in wish list". Systems confirms action	Bug reported. Notice: It's not possible if you have several items in the basket to choose a single item from it!
3.2 View wish list		
Enter wish list	Click on „wish list". Content of wish list is shown	Bugs reported
3.3 View items details		
Select item from search list	Click title = link. Information is shown in extra window	NOT POSSIBLE: Bug reported. Notice: Momentarily it is not possible to view detailed information on product directly form wish list! There must be information provided
3.4 Show similar items		
Enter wish list	Click on "wish". Content of wish list is shown, there should be a link or an alike feature to refer to similar products. Requirements: There must be similar items indicated; And notice: At the moment there is no such feature!	NOT POSSIBLE: Bug reported
3.5 Update wish list		
Enter wish list	Click on „wish list". Content of wish list is shown, possibility to clear whole list, to delete one, several, all items or to buy one, several, all items. Requirements: There must be a least one item in want list	NOT POSSIBLE: Bug reported
e.g. delete an item in want list (=UC 1.3.38)	Mark corresponding check button and click on delete. Updated wish list is shown	NOT POSSIBLE: Bug reported
3.6 Move to basket (from want list)		
Go to basket	Click on "basket". Basket opens	NOT POSSIBLE: Bug reported
4. Actions around ordering (registration / login necessary)		
4.1 View order history	Click on „order history". The history of order(s) is shown. Requirements: At least one product has to be bought	OK
4.2 Review order history (same as above, function is available form each position of action)	Click on „order history". History of order(s) is shown	OK
4.3 Cancel order		

Enter order history	Click on "order history". History of order(s) is shown	OK
Select order	Click on corresponding link or alike and click on "Cancel". Order has been deleted. At least one product has to be bought, Notice: At the moment it is not possible an order	Bug reported
5. Actions around buying and payment (registration/login necessary)		
5.1 Buy item (Place order)	Click on „buy item". Registration mask appears, request to fill in name and password (for registered users) or to register (for new users). Requirements: There must be items available	OK
... as registered user		
Fill in name and password	Data, Click on „submit". Welcome mask appears, request or fill in delivery address (if it differs from home address)	OK
Submit that home and delivery address are identical	Click radio button „yes", then click on button „submit". Mask with request to select way of payment appears	OK
Fill in different delivery address	Dataset, Click on radio button „no", then click on „submit". Mask with request to select way of payment appears	OK
... as new user (registration)		Comment: necessary registration data must be re-checked! E. g. it is possible to order without any address !
Fill in provided fill-in form	Data, Click on „submit". Welcome mask appears with new ID, request or fill in delivery address (if it differs from home address)	Bugs reported
Submit that home and delivery address are identical	Click radio button „yes", then click on button „submit". Mask with request to select way of payment appears	OK
Fill in different delivery address	Dataset, Click on radio button „no", then click on „submit". Mask with request to select way of payment appears	OK
Reset action Fill in provided form or leave blank	..., Click on „Reset"	Bug reported
5.2 Make Payment (different possibilities (see below)		
Make e-payment		
Select payment by credit card	Click on corresponding radio button. (Mask not yet developed). Notice: only selection possible but no further functionalities	OK Missing mask!
Provide credit card data		
Save credit card data (by first use)	Systems generates feature for and with credit card data	Notice: not available yet

Check credit card data		
Check credit card data	Click on „View Credit card data. Credit card data is shown	Notice: not available yet
Request credit card validation info		
Check credit card data	Click on „View Credit card data. Credit card data is shown	Notice: not available yet
Make check payment		
Select payment by check	Click on corresponding radio button	Notice: only selection possible but no further functionalities
Provide check data		
Save check card data (by first use)	Systems generates feature for and with credit card data	Notice: not available yet
Make cash on delivery payment		
Select cash payment	Click on corresponding radio button. Note appears that payment will be processed by delivery	Notice: only selection possible but no further functionalities
5.3 Produce Certificate, to prove the transaction of the order		
Confirm payment action (e.g. order)	Click on "Confirm". System confirm action (order) and generate form for print out???	Note: It is not available right now!
5.4 Request Provider Payment Info		
Enter payment info area	Click on „payment info". Provider payment info	Note: Not possible yet!
6. Actions around ordering (registration/login necessary)		
6.1 Register		
Fill in provided fill-in form	Click on submit. New ID is shown	Bugs reported
6.2 Start new search (possible from each position of e-shop)		
Start new search	Click on „New search". Search mask appears	OK
6.3 Request user info (from user profile)		
Enter Profile information area	Click on "Your Profile". User Profile is shown. Requirement: Registration has to be done beforehand	Bugs reported
6.4 Update profile		
Update profile	Click on „your profile". Registration fill in form appears ???	OK Bug reported
Modification can be made	Click on „submit". Updating is confirmed	OK

6.5 Exit		
Exit (what? – current mask?)		OK

5.1.3.3 Short list of the bugs

The following list shows all errors/missing functionalities.

Date	Description
12.7. 2002	Failing to open more than one window of the detailed shop-item description at the same time. (In any selection of shop-items).
12.7. 2002	The functionality to view how many specimens of one shop-item are still available is missing.
13.7. 2002	User ID is show too short a time to remember (for some people). 2. Inconsequent use of terminology (!!! I know, I am now not reporting a real functionality problem!!!)
13.7. 2002	The wish list was not saved
13.7. 2002	The categories on the left-hand are missing after submitting your wish list and choosing for a new search
13.7. 2002	When checking my profile, My "ID" is not the same as my name, and also not the same as "ID" (only from wish list).
13.7. 2002	The letters in „City" are not saved (not all), changes are not saved.
13.7. 2002	The letters occurring in "Postal Code" are not saved.
13.7. 2002	First letter of "Country " is not saved as a capital letter.
13.7. 2002	ID and password are not accepted by the system (ATTENTION This only happens if you register via the WISHLIST!!!! And if you go to your profile then you see that the ID data are not saved!!)
13.7. 2002	One extra field to fill in "ZIP" when using deliver to other address.
13.7. 2002	Cancel order is not possible, functionality is lacking.
13.7. 2002	Pulldown menu provide not all categories e.g. "picture", "poster", "cds". "souvenir"
12.8. 2002	Shows only the results over the limit
12.8. 2002	Empty query displayed
14.8. 2002	Error message when login without login name/password could be improved (not clear)
14.8. 2002	Error message when login with false name/without password could be improved (not clear) (see above)
14.8. 2002	Error message when login with false name/false password could be improved (not clear) (see above)
14.8. 2002	Missing plausibility control: when entering characters in the price fields standard error message occurs, not „plausibility error" messages
14.8. 2002	Error message when view wish list
14.8. 2002	Updating profile, all fields blank (? See report)

14.8. 2002	I wanted to update my profile. I left all fields blank, except for the password and the Re-password. I expected the other fields to be void, but I was shown data of some other customer.
14.8. 2002	Registration possible by using only (!)password and re-password!?
26.8. 2002	[was already reported, but is an important feature] store items in basket and wish list.
26.8. 2002	It lets do the purchase without having any mail address
26.8. 2002	No masks to identify in which entry you are log in.

Search Actions: “Search item in all categories” works. There are problems as searching items per price: It is possible to fill in maximum price and all saleable items are shown with determined maximum price limit but there are confusing results when no objects within the given limit are in the database, it shows only the results over the limit. The search for item per in minimum price doesn’t works. After selecting „higher“ in the pull-down-menu and click on „Search“ empty query displayed. Missing plausibility control: when entering characters in the price fields standard error message occurs, not „plausibility error“ messages.

Actions around the basket (possible and potential) Momentarily it is not possible to view detailed information on product directly form basket mask and about available items. “Add item to the basket”, “ Remove items in basket” works. In order to change the item quantity in the basket momentarily this has to be a combination of deleting items in basket and adding the same item/s in a different quantity, which can only be done in search result mask. The problem stated here has been fixed. It is possible to change the quantity of items and click on update. This results in the new number of shop-items!

It is possible to display the total amount of items but maybe the price format is not correct e.g. price is 10.000, the total amount shows 10.

Actions around the wish list (possible and potential) It is not practicable to save items in wish list if you have several items in the basket to choose a single item from it! Error message when view wish list and the want list could not be saved.

Actions around ordering (registration/login necessary) View, review and enter of order history works but cancel order is not possible, functionality is lacking.

Actions around buying and payment (registration/login necessary) The “buy item” button works the registration mask appears, request to fill in name and password (for registered users) or to register (for new users) but the error message when login without login name/password could be improved (not clear). The same when login as a registered user with false name/without password and false name/false password. As new user the necessary registration data must be re-checked, otherwise it is possible to order without any address !

There are problems to save some fields of the provided fill-in form for new users e.g. the letters in „City“, the letters occurring in “Postal Code” and the first letter of “Country “ is not saved as a capital letter. Lack of one extra field to fill in “ZIP” when using deliver to other address. Credit card data not available yet. Provide check data only selection for cash payment possible, but no further functionalities.

Actions around ordering (registration/login necessary) Register: User ID is show too short a time to remember (for some people). Inconsequent use of terminology. When checking the personal profile, the “ID” is not the same as the personal name of the user(only from want list). Another problem with the want list is that ID and password are not accepted by the system. If you go to your profile then you see that the ID data are not saved!

5.1.3.4 List of (further) requirements and comments

The E-Shop is potentially successful, but much needs to be done for a further improvement. The response time when searching is too slow: the maximum before things starting should not exceed 5-10 seconds. Graphics must not be heavy, they should not slow up the system. Uncertainty exists regarding the security of payment routines and transfers of money. And last but not least the page of the E-Shop was detected to be boring, inspiration should be sought from other E-Shop business.

Maybe some adaptations of data are necessary in order to fulfil the minimum requirements (data) (and to support a "useful" testing):

- At least one item has to be available (best practise: one item in each category)
- Available items must have prizes and at least one item must be available
- Similar items must be indicated !!!
- See in general: necessary requirements
- Definition of mandatory/optional fields, e.g. registration (see also below and monkey reports): is not proved/controlled as well as general plausibility controls for fields (e. g. price) e.g. purchase possible without email address (GRAN bug report 2)

Value-added functionalities could/should be added (see best practises examples as worked out in WP 1):

- e.g. availability status, request of similar items (functionality missing) => potential value added-service (pre-defined selections, recommendations, relations between items), save data in the shopping list (as in a want list),
- Want list (bugs and missing functionalities) => please store items within the want list !

Improvement of usability (login information, navigational aids etc.) can refer to:

- There must be a different layout between „basket" and „want list"
- Error messages could be improved, also navigational aids
- e. g. error messages do not detect the context of the error (see monkey reports)
- Show the user where he is (see also Bug report GRAN 3)

The next steps must include the focussing of missing tests on the administrative view (PCM), a design of missing masks and the specification of mandatory fields. In general usability tests are possible at least for shop holders and end user. In order to reach the state-of-the-art value-added functionalities must be added. All detected strengths and weaknesses are summarised in Table 17 (given by MUS and NRM).

Strengths	The site is sufficiently fast
Weakness	Too many of the functionalities are not working jet, e.g. wish list The registration is not working properly, some data get lost. At the moment the site is not working at all when trying to add an item to the basket a new bug appeared: "Error in query 1Unknown column 'manufacter' in 'field list'" The size of the web page must fit resolution 800*600 and upwards. One should not have to scroll sideways to see the whole screen. Many users have older screens where the text will be far too small. without having to scroll.
Necessary improvements	The most needed and important improvement is solving the lose of registration data which are needed to be able to sent the objects bought to the right address are crucial. Wish list should be implemented In general all not jet repaired bugs must be solved. The starting page should be done differently so that it is easy for the user to identify himself. "Exit" should link to starting page (which is starting page and which is the "end" page?) The page for payment is not ready. All information on payment should be filled in on the same

	page /pay.phtml. The page pay1.phtml must only "confirm" and say "thank you". Column "price" Valuta must be shown clearly. Are costs incl./exc. VAT (Note EURO has 3 decimals while SEK have only 2) A link to "euro-converter" as Denmark/England/Sweden are not members of EMU. Information on where one should turn for complaints/retour/information etc must be given. Column "photo" one should get a larger picture by clicking Column "name" There should be an additional "note" here Where one can explain which object one refers to when there are more than one object in the picture. It should be possible to sort "name" "price" "producer" Why "show SOAP" on page? Irrelevant info. Rebuild the page with "frames" so that the user can see that things are happening when searching. If the user is not attentive to the scrollbar he think s nothing is happening. Some users also unwittingly close the status bar. Category ceramics" "wrought iron goods" "glass" etc make up too many lines so that the search result appear outside of the screen when using 800*600. Alternatively write categories after each other. It should be made clear that Entries marked with * are mandatory.

Table 17: Strengths and weaknesses shop tool

For the improvement of E-Shop categories MUS gave a suggestion of (additional) categories. This proposal could be found in Appendix 8.

5.1.4 PCM (Product Catalogue Management)

5.1.4.1 Status

The tool is available on the admin level at the following URL: http://www.regnet.gr/pcm, login: 1, pwd: 1234 (lmg) or login: 2, pwd: 1234 (nrm), login:3 password: 1234 (zeus), URL 2: (E-Procurement): http://garonne.toulouse.valtech.fr:8082/jetspeed/index.jsp. The following content partners are responsible for the testing of the PCM-system: MUS, NRM, LMG, GRAN, technical partner was ZEUS. 5 bugs and monkey tests were reported.

5.1.4.2 Functionalities tested (test cases)

For the PCM component no real test cases were provided; in general the test process is not finished, intensive tests are missing and were not possible due the lack of integration into the portal. Below only some test cases are listed – a result of trying to access the sub component using the portal.

Action	***Result***	***Ok, or reported as bug no.***
1. Registration		
	Click on corresponding link. Creating user name and password. Fill in form appears.	OK
1.1 Submit registration	Click on corresponding link. Fill in form appears.	Bug reported

Fill in provided form (several fields!, as determination of login name and password)	Click on "submit". System confirms registration with the ID created. Form in order to login appears.	OK But: no control of data plausibility (e. g. format of telephone number)
1.2 Reset registration		
Fill in provided form or leave blank	Click on "reset". All the fields got blank again	OK
Try to leave some blank fields	Let some blank fields and click on "submit". An order to fill the blank field appears	OK
1.3 Login (is required – no later login possible/necessary)		
Fill in name (ID) and password	Click on Login.	OK
Try to enter with wrong password and ID	Fill in the blanks A message "Error in query" appears	OK

5.1.4.3 Short list of the bugs

The following list shows all errors/missing functionalities. This time mainly monkey tests were carried out.

Date	Description
19.8. 2002	Login: Login with a non-existing username and non-existing password. Expectation: A message that user wasn't able to login due to wrong username/password. The screen that was displayed doesn't give any information whether your login was successful or not.
19.8. 2002	Create new account: Do not fill in the required fields. Example: Dutch version, the message that it is necessary to fill in another field is in English.
19.8. 2002	Add to cart: User wants to add to his cart two items. I filled in the number of items I wanted and clicked on add to cart. Only one of the items was added to my cart.
19.8. 2002	Calculating shipping costs: I added a large number of one item to my cart and wanted to calculate the shipping costs. Calculating was not possible. An error message occurred.
19.8. 2002	Update product: Clicking on updating the product leads to the removal of the product in the cart.
27.9. 2002	A message of "This query 2" appears performed the registration. It's impossible to go on with the PCM tool. Isn't integrated the PCM tool?

5.1.5 Procurement

5.1.5.1 Status

The tool is available using the portal. The following content partners are responsible for the testing of the PCM-system: MUS, NRM, LMG, GRAN, technical partner was VALT. Only few functionalities were tested and 1 bug reported.

5.1.5.2 Functionalities tested (test cases)

Action	***Result***	***Ok, or reported as bug no.***
Search "All"	Select the corresponding options: "All showcases", "All departments", "All categories". The items of every option appears	OK
Buy two items	Click on the "Quantity" button, and write "2"	OK
Check the purchase in "My basket"	Click on the "My basket" button. The purchase appear and the right quantity of items purchased	OK
Change the quantity of items in "My basket"	Click on "quantity" and change the number of items that you want to purchase, and click on the "update" button. The number of items has correctly changed	OK
Remove one item of "My basket"	Click on the button "remove". The item is properly removed	OK
To calculate the shipping costs	With a previous selection of different items, click on the "Calculate the shipping cost" button". The cost must to appear	R
To validate your basket	Click on the button "Validate your basket". A message of confirmation of your purchase appears: "Your command has been successfully sent !"	OK
Search of a specific department, for example: "painting stuff"	Buy two articles	OK
Check the purchase in "My basket"	Click on the "My basket" button. The purchase appear and the right quantity of items purchased	OK
Try to buy "0" articles	Click on the quantity and write "0". The purchase is equally ordered	OK

5.1.5.3 Short list of the bugs

The following list shows all errors/missing functionalities. Further testing is necessary.

Date	***Description***
27.9. 2002	A message of "This query 2" appears performed the registration. It's impossible to go on with the PCM tool. Isn't integrated the PCM tool?

5.1.6 Topic Maps

5.1.6.1 Status

The REGNET topic map (TM) tool consists mainly of a TM generation module. It can also be used as primary but moderate TM visualisation tool. The concept of the tool was based on the WebAuthor tool of Empolis (general functionalities, look and feel) and the Omnigator tool of Ontopia (methodologies for expressing TM concepts) enhanced by specific REGNET requirements.

The tool is available on the admin level at the following URL: http://160.40.50.22:8800/servlet/org.regnet.ontology.XTMLoader.

Tests were in charge of MECH, CC, ALI and CERT. No test cases were provided, a freestyle-testing was necessary, using also the user manual. Bugs have been reported to the responsible technical partner who gave intensive feedback.

5.1.6.2 Functionalities tested (test cases)

Due to the fact that the tool was not tested by using test cases, the report differs a little bit: only the comments were listed, together with the feedback by the technical partner (when given); bugs are referred to (if any). The following functions are actually available:

1. XTM files related functions

- Create new XTM (creates an empty XML Topic Map)
- Save XTM in Knowledge Base (remote REGNET database)
- Export XTM to file (local system)
- View XTM on screen (XML notation of a TM)
- Open XTM from Knowledge Base
- Import XTM to Knowledge Base (from local file)

2. TM elements related functions

- Create topic with instanceOf
  BaseNames with scope
  Occurrences with scope
- Edit topic with all constituting elements
- Delete topic
- Create association with instanceOf
  scope
  members with players
  roles
- Edit association
- Delete association

The direction of an association is expressed by scoped baseNames of the topic representing a type of association. Saving TMs into a database or a filing system follows the standard behaviours (warning if a file name already exists, etc.).

	Comment/Feedback	***Status***
1. Functionality		
All required basic functions are present as far as expressed by the TmtoolSaints xtm-file in the knowledge base at this moment [MECH/TARX]		
	Answer: I am glad that the tool works fine without serious technical.	
All functionalities could be accessed		
1.2 Topics		
It should be beneficial to have the possibility to make clear distinctions between topics during generation and in the xtm presentation. By this we think about domain specific topics (saint, disease, occupational group), role specifying topics (patronising and patronised subject), association type topics (patronises, is brother of), etc. Perhaps this can be achieved by the scope element for every topic. Other suggestions are welcome. [MECH/TARX]		

<table>
<tr><td></td><td colspan="2">Answer: We share your thoughts also, however we can not clearly see how do they refer to the Topic Map Generator Tool. Could you please be more specific?
Re-Answer to CERT:
My first idea is to do this via the scope element of every topic by specifying this way the “nature” of the topic (domain, role, association type, etc.). This should be transparent to you developers but this could have an influence on the presentation modules of the topic map. They should be capable to display different groups of topics. But this “nature” scoping topic will reside within the other scoping topics of a topic, so an easy detection of this specific issue is not so easy. Have a look at the latest Ontopia Omnigator (they are able to classify topics based on ontology, themes, etc.). I do not know how they manage to do this.</td></tr>
<tr><td colspan="3">1.2.1 Create new topic</td></tr>
<tr><td></td><td></td><td>Bug reported</td></tr>
<tr><td colspan="3">1.2.2 Edit topic</td></tr>
<tr><td colspan="2">In a TM with associations and topics at the left frame, the function Edit topic does not function. It must be an association for editing. You have to click on “New topic” in order to fall again in “topic mode” allowing to edit some topics [MECH/TARX]</td><td>OK</td></tr>
<tr><td></td><td>Answer: Yes, the user has to click on the Topic button in order to edit topics and in Association button in order to edit associations. It is designed that way on purpose and in no way may be considered as bug.
Answer to CERT:
To be more specific the problem is the following: if you have a list of associations and topics in the left frame and you click on a topic to indicate it and then on Edit to edit it this is refused. You have to click on Create new topic (which is not the intention) and then you can indicate the topic to edit and really start editing it.</td><td></td></tr>
<tr><td colspan="3">1.3 Associations</td></tr>
<tr><td colspan="2">The direction of an association can be expressed by the base Name and scope of the topic representing the association type of the concerned association. This is very convenient [MECH/TARX</td><td>OK</td></tr>
<tr><td></td><td>Answer: Where exactly in the interface, the representation of direction, should appear? Could you please be more specific?</td><td></td></tr>
<tr><td>1.3.1</td><td>Delete associations</td><td>Not possible</td></tr>
<tr><td colspan="3">1.4 File Management (XML files)</td></tr>
<tr><td colspan="3">1.4.1 Generate File</td></tr>
<tr><td colspan="3">The applied rules for generating the xtm-file should be documented in order to use this for search and retrieval functionalities and to compare them with other systems such a s Ontopia and Empolis. [MECH/TARX]</td></tr>
<tr><td></td><td>Answer: At first, we are going to provide a link to the XTM specifications and the TM4J method in order for the user to be aware of the limitations. Will this be sufficient?</td><td>Yes, but if you apply something outside these specs you should set up a separate document for mentioning this.</td></tr>
<tr><td colspan="3">1.4.2 Delete files</td></tr>
<tr><td colspan="3">It should be beneficial to be able to delete xtm-files on the server although this can be an infringement to the security level. We await some proposals to handle this in an appropriate way [MECH/TARX]</td></tr>
</table>

	Answer: An interface for administration purposes has been developed in order to manage the knowledge base. This feature is already available and has been presented in the Barcelona and the Graz REGNET meetings. At that moment administration of the Knowledge Base is done by us but it will be done by the administrators of REGNET CSC's in the final version of REGNET.	OK If possible, can we have these administration tools because we intend to set up a CSC? [TARX]
1.4.3 Save File		
When saving to the knowledge base there should be a message "Replace "existing name"?" when trying to save a file with the same as an existing one [MECH/TARX]		
	Answer: We are going to implement this feature in the next 2-3 days. We are also going to support the possibility for the user to define a different name than the original when importing a local XTM file.	
1.4.3 Import local XTM file/Upload File		Bugs reported
When saving to the knowledge base there should be a message "Replace "existing name"?" when trying to save a file with the same as an existing one [MECH/TARX]		

5.1.6.3 Short list of the bugs

The following list shows all errors/missing functionalities.

Date	***Description***
23.07.2002	Problems in Importing a local XTM file. Once saved a XTM file on my Hard Disk it is impossible to open it even if the Tool function says that the file has been imported properly. Bug already solved 26.8. 2002
23.07.2002	When I import XTM files from the REGNET DB, it only appears on my desktop the Topics list and not the Association ones, even if the Tool identifies, during the importing procedure, some Association items. Comment CERT: Association presence when importing files: We have made a lot of tests and everything seems to be working properly. When a file is being imported to the 'desktop', the associations that contains, should be extracted to the association list (you have to click on the 'ASSOC' button to see them). Also point out that associations starting with '#' plus a randomly number, are not consider to be associations and are being rejected (these ones, are being created for technical reasons). Finally, if an association already exist, it is marked as a duplicate and is being rejected also.
23.07.2002	It is not possible to work at all with a MAC. Everywhere I could add an info through + & - id blocked. This functionality doesn't work at all!!! See comment CERT regarding this problem!
23.07.2002	An error when there's a file that already exists, but it doesn't display the already existing file.
23.07. 2002	Create new topic: When you get the entries disappear. Only the title remain.
23.07.2002	Edit Topic: The entries turned out to be doubled as soon as I submitted.
23.07. 2002	Delete associations: No way to delete the associations
23.07.2002	Import: Not an understandable form. You don't understand if you made a mistake or not. It doesn't display the actual name of the topic.

5.1.6.4 List of (further) requirements and comments

As a general comment, the tool works fine in all its functionalities. Nevertheless some issues have to be pointed out in order to clarify the weaknesses and the strength, suggesting even some possible improvements of the tool:

- Friendly interface and capability to access to all the functions

  The tool works fine and all its functions are well developed. It is also true that it is not easy to understand the meaning of all the functions available in the tool. “Occurrences”, “Scope for” and “Base names” are items not clearly defined. Different content experts can interpreted these records in different ways, producing a final non homogeneous ontology definition. At least an on-line help should be added that support the user to clearly fulfil all the items.

- Typology of Topic map users

  This point is strictly related to the previous one. Who should be the users of the tool? Our suggestion is that only domain experts on Cultural Heritage should be allowed to modify the otology. On the other side we should control the accessibility to the system from the domain expert. They should have the same approach on the tool and have a unique idea on how to fulfil the records. Even considering the same approach of the users, differences in uploading contents can appear. A possible suggestion is to allow domain expert to prepare a table of content and association using the same template and then allowing only one or two domain expert to upload all this contents to the system, reaching homogeneity in the content definition.

  Answer CERT: As it is stated in remark (1) the tool is meant to be used by anyone who knows the XTM rules or/and by users that have already used the most known commercially available tools for XTM authoring (like the Empolis-K42). The possibility of different authoring approaches as already mentioned, does exist indeed. Your suggestion, about the use of templates, is already adopted by some of the domain experts.

- Knowledge system versus Ontology management system

  This remark is more general consideration of the tool. It seems to us more a knowledge management system then a proper ontology management system. An Ontology management system should deal with definition of concepts at their lower level and should allow a recombination of the basic concept uploaded in a more aggregate level (meta concept). This bottom-up approach should prevent us from crashes due to different ideas of the same concept and different definition of complex concepts (the one built as a combination of concepts). The crashes could be lossy or lossless. Just to give an example: the Data 03/24/02 and March 2002 can by harmonised moving from the first to the second structure, but losing the day info, while it is not possible to harmonise them moving from the second to the first... we do not know the day. We have to harmonise, first, the different expression of concepts, defining precise and unique definition for each basic concept. (e.g. on data: March 2001 or 03/02 ... same concept but defined in different way) Then the following step is to aggregate basic “agreed” concepts in order to reach definition of unique meat concepts. Another missing functionalities is the similarities between concepts. How much two or more concepts are similar? This information is useful in order to cluster concepts.

- Level of granularity and hierarchy

  Producing examples for the tool I have seen that in order to completely define a topic concept it is needed to define several other topics that are useful only as a component definition of a main concept. As example, if I have to define the concept Marco Aurelio I need to define the concept statue. But this concept is not fully structured as Marco Aurelio is. At the end, in the Topic list it is not possible to divide the real fully completed topics (Marco Aurelio) from the ones needed for their construction (statue). A function could be created that allow to mark the full defined concept, defining a hierarchy in the topic list.

- MAC Compatibility

  The MAC problem is really a critical issue for all the REGNET tools we used since now. Basically, the tools are not compliant with MAC. The tools do not works with MAC, not allowing several functionalities. With MAC the system doesn't crash, as it happens with Search & Retrieval Tool, but simply doesn't work.

Answer CERT: The MAC problem is really a critical issue for all REGNET tools, including the Topic Maps Generator. I cannot refer to other REGNET tools that cause crashes, but I will refer only to our tool. As you have pointed out, the tool 'simply' does not work, but fortunately does not crash. The tool it is web-based and uses (in the client side) cascading style sheets (CSS) and Javascript. The problem that occurs (even in windows when old versions of browsers are used) has to do with the buttons '+' and '-' and the way that the interface appears on screen. Every browser, that supports CSS and scripts works fine. Here is a list of browsers that has been checked for the proper function of the tool.

-IE 5.0 and above

-Netscape 6.0 and above

-Conqueror (linux)

-Mozilla (PC & linux)

-Opera (few problems)

- Usability comments

  In terms of usability some display options should be improved:

  - A set of numbers appears as well in the topic (left and right frame) and association (only right frame) lists (x60-.....) probably after the creation of an "instanceOf" without any reference to what they represent
  - The icons "create topic" etc should be accessible without scrolling the topic list when this exceeds the visible frame area. Perhaps a separate frame could be the solution [MECH/TARX].
  - The association comes after the topic and it's not recommendable if we think that association comes first in terms of hierarchy.
  - The topic section doesn't work effectively because sometimes it doesn't save the different entries that have been previously entered.
  - Under the communicative point of view the meaning of the title input are difficult to explain. It's difficult for instance to know what a "scope" is, what an "instance" stands for, or how a "basename" could be considered. It has not an easy impact for the user.
  - Very good the presence of the manual to explain how to use the program. It would be best some help tool (i.e. tips).
  - Problems occur with the deleting: it's a long process that it's also not clear.

All detected "bugs" are minor, the tool is usable. More important – and this should be discussed – is the question how to integrate the topic map viewer in the CSC concept, how to define user groups and creation processes. At the moment it is no end user product, it could only be of use for professional users. Further development should focus an the integration of a topic viewer and the provision of guidelines for semantic modelling following the Topic Map approach. For a summary of all detected strengths and weaknesses see Table 18.

Strengths	The REGNET TM generation tool combines in a very convenient way the good points of k42 and Omnigator with specific REGNET requirements. The latter pertaining mainly to the storage possibilities in a Knowledge Base and the editing possibilities of individual topics and associations presented in one view on the screen. All functions enumerated in the section "Available functions" do work well referred to the TMtoolSaints Topic Map. Entering other topic maps and/or combinations of TM elements can reveal not-compliant results with the TM standard but until now no discordance could be detected.

	The overall stability of the tool is excellent.
Weakness	No major weaknesses were detected vis-á-vis the current requirements of REGNET which represent only a subset of the full Topic Map paradigm. We can mention here the absence of sub- and super class and the Public Subject Indicator elements. The tool does not work properly with Netscape Navigator (e.g. the pop up captions when pointing at the buttons do not appear). Although there are some limited search possibilities within the TM generation tool, a full-blown Topic Map viewer with the same approach and level as the TM generator is still missing.
Necessary improvements	The most important improvement at the moment should be the integration of the possibility to differentiate several “types” of topics. The idea of this can be found in the “Mapalizer” approach (see the Internet), taken over, adapted and further worked out by the REGNET spreadsheet approach. The latter is used as starting point for the definition of topic map, offering a global view of the full topic map. This model was distributed to the content providers. When opening a topic map some internally used numbering system appears on the right frame. This is not hurting but provokes some esthetical problems. On the left frame these funny numbers are not appearing. Displaying the name of the opened topic map(s) could be beneficial for clarity reasons. Different members of an association should be attributed a different name such as member 1, member2, etc.

Table 18: Strengths and weaknesses TM generator

5.1.7 Search and Retrieval

5.1.7.1 Status information

The tool was tested by the following partners: ICCS, MECH, CC, SUL and technical partner AIT : Multi-Site Search is "available", but not stable. Therefore first test effort was stopped and the decision was made to test at first the simple search using also the test application for data generation (.../test). There are 13 bug reports, test case documents; usability tests for the search & retrieval interface.

5.1.7.2 Functionalities tested (test cases)

Action	***Result***	***Ok, or reported as bug no.***
1. Search		
1.1 Selection of search criteria		
Select by document type (was tested using different application, e. g. ICCS used KVA application; comments listed here refer to the simple test application)		
Select document type (e.g. poster)	Select in pull-down menu. Search mask (fill-in form) appears (with specific search fields). “Material/technique” appears only in OBJEECT type definition. “Title” and “Publisher ” as category doesn’t appear in all Document types. “Creation place”, Photo and “Format” doesn’t exist. No photo item identified in any document type	OK (tested for all document types in the application)

Fill in form (search criteria)	Fill in search criteria. Search form is filled out	OK
Clear form	Click on "clear". Search form is empty	OK
Comment: Test case document lists several possibilities to search for (e. g. date, creator etc.) which are not valid for the actual test application (therefore skipped here). Further testing of search facilities should focus on the general functionality's (look up field, combine different search criteria) and state bugs in different fields and improvements of usability etc.!		
1.2 Selection using the look-up tables		
Fill in data, choose from provided list	Click on „look up". Lists with existing dates (years) appears.	OK For usability comments see also data-entry: improvement of look-up functionality
Choose data/value	Click on link. Link appears in extra window, possibility to choose several dates from list as also possibility to confirm („ok"), cancel („cancel") or modify („clear") action (=chosen date/s)	OK How to change the operator to combine search criteria? (And/or?)
Cancel action	Click on cancel. List mask disappears, actual search mask appears	OK
Modify action	Click on clear. Chosen link disappears, you can do a new selection	OK
Confirm action	Click on „ok". Chosen period is integrated in search mask	OK
1.3 Selection without determining the document type (default mask)		
Several search operations e. g. truncations, combinations by using operators, ... and Wildcards		
Search Operators: AND, OR, WITHOUT, PROXIMORY, FREQUENCY, RIORITY		OK
Search operators: Advanced and Search – UNIT=""		Bug reported Comment: It gives back no items even if there are for sure… it is not clear the "paragraph" and "sentence" meaning
Search operators: ADJACENCY - ADJ		It always gives me back 0 documents found, even when there are few

Wildcards: Replaces one character, Defines a choice		OK
Wildcard: Replaces a group of characters	ICCS tested: H* and h* . ICCS tested (full text search using the /kva application, document type Dublin Core): Hurter and hurter	Result set is the same The result sets are different. We suggest the results not to be case sensitive
2. Sorting		
Sort by criteria (up to two possible)	Click on /choose sorting criteria	OK Only one criteria is available: HIT COUNTS
3. Search Results / Search for document		
Search document	Click on "Search". System shows result set (left frame). Afterwards possibility to select document for detailed view (different formats), sort result by criteria given (2), view list, export results, view sort, view query (test results see below).	OK Query must be displayed. Bugs reported
4. View Search Results (several possibilities are possible after performing the search)		
4.1 View all search results	Default, left frame. Systems lists results sorted by chosen criteria (if any)	OK
4.2 View abstract and information about document	Click on link (linked document). Information is given about Document Type, Identifier, Title, Relation, Creator, Publisher, Date, Format, Rights.	OK
4.3 View result set		
View result	Click on /choose sorting criteria. Systems lists results sorted by chosen criteria, possibility given to sort result set by those criteria at each time	OK
Sort by criteria (up to two possible =Hit count, DOCTYPE, Identifier, Creator, Date, Material, Format) e.g. date and creator	Select „date" in first menu and select „creator" in second menu, click on view result (example) Results are listed in order of determined criteria (=date + creator). Requirement: more than one criteria must be available.	OK
4.4 View result list		
View result list	Click on "View list" => Table with document information appears (including: number, title, creator, date, owner, rights, image). The result set is defined in different manner for different databases.	OK Could be improved (layout) Maybe this list would be the better default option. It is hard to understand the difference between result list and default display options.

4.5 View sort criteria		
View sort criteria	Click on sort. Sort criteria appears in XML-Mode	The sort criteria doesn't appear in XML format Bug reported
5. Export results		
Export all documents and abstracts		OK
5.1 Export all documents into single file without transforming		
Transforming with default Style Sheet	Description and explanations "e.g. Display result" or „Link the style sheet to .XML" file is welcome	OK
Transforming with default Style Sheet		Explanations about this function is needed. We can't estimate any difference
5.2 Selecting a predefined Style sheet		Not available through this application
Entering own Style Sheets	Links to appropriate examples are needed	Not available through this application
6. Edit document (abstract)		
6.1 Modify document (abstract)		OK
6.2 Remove document (abstract)		OK

5.1.7.3 Short list of the bugs

The following list shows all errors/missing functionalities. For a detailed description all bug reports could be consulted.

Date	Description
12.07.2002	1. http://www.digipark.at:8080/regnet/SearchResult is a link from the portal. 2. AIT (Henriette) , e-mail from 8/7/2002, gives another address for Search & Retrieval Subsystem : www.digipark/at/test. Which address must be present in the portal ? Comment: no „real" bug, just a problem of access!?
15.07.2002	When the result of searching is negative the result is: "Error 500" and a list of Internal Servlet Errors appears Instead of it, could be seen - Sorry, no results were found matching : xxxxx Comment: Already solved? (Could not be reconstructed by IMAC, 26-8-2002)
19.07.2002	Application Editor is not operable with User: regent, password: user001 Comment: no bug (false login name)
19.07.2002	No data is available in the right frame
19.07.2002	Button Hits down doesn't work
19.07.2002	User: regent Password: user001Do not allow appropriate security level. The functions are not performed

19.07.2002	Choosing Search of All Types in One or All Database, there are no Search Results
13.08.2002	Some fields are in the data entry but there are not searchable in the search area
14.08.2002	Missing number, owner, title (name is provided), rights, image
14.08.2002	There is no further request before starting the exportation at every transforming option
14.08.2002	Error 800a03ea and 800a01a8 re-execute query button is not working
14.08.2002	Advanced AND-Operator:“ syntax error 80041000
13.08.2002	Error: query to list index ors failed” by opening the lookup function
14.08.2002	No photo field provided in any form

Most important lacks and bugs, validated and estimated from the test

- When selecting document by Document type, the type of query and the type of sorting must be displayed. Now both queries are not evident.
- Searching Document type by full text gives different results for word with upper and lower cases. We suggest the results not to be case sensitive.
- Searches by category “Right” are not implemented in the current version of Search & Retrieval Subsystem.
- Searches, performed by Title, are Case sensitive. We suggest the results not to be Case sensitive.
- Search by category “Relation” must be operable at least in Object Document Type.
- Category “Publisher” is not implemented for Search & Retrieval. We propose this category to be active at least in Object type definition
- Category “Creation Place” is not implemented for Searches
- Category “Format” is not implemented for Searches
- Category “Photo” is not implemented for Searches
- The Sort Criteria didn’t appear in XML format
- For several functionalities explanations and examples are needed to help the user in the set of Search & Retrieval parameters, transforming the Style sheet, selecting the Style sheet, entering Style sheet, implementation of Search operators, application of priorities, application of wildcards.

5.1.7.4 List of (further) requirements and comments

From the functional point of view, this system works fine and the procedures to manage it are quite easily to understand and easy to process. Nevertheless there are still some problems to solve in order to reach a full friendly system.

From the functional point of view there is no logical links between different layers of the dB. Example, if I’m interested in Marble, I start searching in THEME (but I have to know that theme actually represent that level of information….. we HAVE to specify levels of information). In THEME I search for Marble. The system works and give me back several items: Marble, and Roman Emperor & Empress. If I’m not an expert of data collection I believe that Marble and Roman Emperor & Empress are the only element with the word marble, and this is not true. There are other information related to Marble,, even if in other document types: if I’m a system user I have to have a global picture of my interest, the document type approach is not a good solution on how to start a search. Selecting it you will never have a wide picture of your interest (e.g. Marble). The only solution we see is to include a new record in the first document type mask in which I can have relation with all the other Document type that specify how many other items with marble exist in the dB and in which document type I can find them.

MAC Compatibility: Even this tool has not been developed taking care the multi platform usage. Some problems occur testing the tool with a MAC Computer. Among others, some example can clarify the low compatibility with a MAC system:

- Using intensively the look up functionality the system crash , closing the connection to the tool site
- Selecting from the tool home page the item “Document Type IMAGE” the system crash
- Using the same Browser, the system is slower with a MAC then with a PC

Homogeneity: Some items defined in the template to be used by the Content Providers to upload textual information are quite ambiguous and have been interpreted by different content providers in a different way. The result of this ambiguity is a non coherent list of information uploaded in the same items by different museum personnel. It follows a short list of these ambiguities: In the “Author” item appears Leonardo da Vinci as well as the name of the content expert of CC (Silvia Boria). We have to decide if the item “Author” is the name of the artist or the name of the person who has selected the work. The same problem appear in the item “ Creator”. We suggest to redistribute the records appearing in the items “Author” and “Creator” appearing in Dublincore document. We should even standardise the items belonging to different Document Types, that up to now are composed by different lists of items. It means that all the different Document types should have the same items, performing in this way a coherent and homogeneous search in all the document typologies.

As an addition to the functional tests the following issues were pointed out:

- Interface

  The interface should be spruced up. It could be more attractive. Results of a search are cramped together on the left hand side with an empty screen facing the user. =>the result should be shown over the whole screen, lists with : Author, A bit of the title, Publication year, Small image (empty space when there is none). If you get only 1 hit it should be shown straight away.

- Search operations

  Problems with case sensitivity – properly defined, missing some search fields that are provided in the data entry: e.g. Relation fields. Searching on Subject example Roses. It would be better getting pictures of all roses available (no text). It would be nicer to see image and text side by side – the image will be highlighted in that way. Searching is at the moment instable.

  Search and Collections => "Search". This tools only searches the collection data(base). Not e.g., the data of the "PROFILE" etc. Suggestion:

  a) connect the search facility to all data (should be possible, in the data entry tool you can search all databases!) or

  b) Change the naming into "Search the Collections" and add a new search possibility for the remaining data.

- Usability/Error Messages/documentation

  Search and Retrieval functionality are closely related to the functions and the tasked performed by the REGNET system. For the cases when the customer is not acquainted with the system , training is needed.

  - Descriptions and explanations about the functionality’s and the specific document types, databases, short names is not clear
  - Database short names not clear for the user => description
  - Help files, consisting examples of utilisation of search options are recommended.
  - Explanations about the export peculiarities must be available.
  - Provided Help Button should described better: Question mark gives a wrong impression about the functionality => text description “Search Operators and Wildcards“

- new information need to be indicated as such

- Layout
    - look of the starting screen could be more attractive and pleasant to users MECH
    - it isn't immediately clear what all databases, doctypes, short names mean
    - Is it reasonable to display the document type in every short description on the left hand? It would be adequate to show it once at the top of the frame together with the used search term.
    - composition of scroll list is not consequent.

In general the system is unstable. There are still problems at the multiple search as well as using MAC. The systems crashed in the past very often. The usability of the Search and Retrieval Tool needs improvement. The meaning of different documents types, databases and short names is not clear. There is a less usability, training for effective use is needed. The system is case sensitive. Additional explanations and descriptions of functionality's (Help) and document types must added.

There should be an easily remember Web-Address for search and retrieval component.

5.1.8 Data Generation (Entry)

5.1.8.1 Status

The partners who tested the tool are SUL, KVA, NRM, ONB. Detailed test cases were provided, the problem was that they were designed using the old application. At the end only the entry mask was tested (not the admin area). The tool is available on the admin level at the following URL: http://csc000.cscaustria.at/test login: regnet, pwd: user 001. Themes:http://csc000.cscaustria.at/themes

5.1.8.2 Functionalities tested (test cases)

5.1.8.2.1 General data

Action	***Result***	***Ok, or reported as bug no.***
Add new document Comment: only action tested until 2002-08-24		
1. Add new document	Click on symbol. Request to login appears. Requirement: User must have a login. New registration not possible here (not necessary!?)	OK But: naming of symbol/button; better: object?
2. Login (only for registrated users)	Fill in name and password. Click on „submit". Request to determine document type appears. Different document types are available (depends on the current application). Requirement: Correct Login available.	OK But: no welcome message or confirmation of successful login
3. Select document type	Use pull down menu. Mask with fill in form appears (depends on the selected document type => different fields)	OK (tested for all document types)
4. Fill in data		
Comment: The tester only tested data listed in the test cases – not all document types and maybe also not all data fields. In order to shorten this report only the "main" actions (fill in – on your own/by selecting, deleting and second input per field are listed here) are listed here. All future testers should test all fields in all masks following this routine using their individual applications (integrity check) and than give just a short list of bugs!		
... on your own		

4.1 Fill in data	Dataset. Data is filled in. Document could be stored directly (button: add).	OK No plausibility/format control.
... by selecting		
4.2 Retrieve look-up list	Click on Look up. List with already existing values appears, possibility to select one (new window)	(OK): not functional for all fields listed!
Search for pattern in the look-up list	Enter pattern and click “Lookup”. Search result appears	OK But: not user-friendly: confusing error message in case of no results. No help how to enter pattern.
4.3 Browse in look-up list		
... show whole list (Default	Select any, click “show”. List of all values appears	OK
... select “area”	Select letter in pull-down menu. Selected terms/values appear (area)	OK When only numbers are available, the option do not change: not possible to select a number range!
4.4 Select value from the list	Click on the link (term). Window closes, term is added in the field as input	OK No possibility to add more than one term at once! In order to do this, user must at first require a second field
Fill in a second value (per field)	Click on plus button. New fill in space (field) for further date appears	OK
Fill in second value (see above)	Dataset. Data is filled in	OK
Delete second value/data	Click on minus button. Fill in space (field) is deleted	OK
5. Add section		

Complete document addition process	Click on “Add” Systems confirm that abstract has been added to document base, possibility given to add another document or go back to search. Document is added to the database.	OK 1. But: it is possible to add a new document just with one data set (field) => no distinction of optional and mandatory fields, no minimum data set required. 2. Would be better if the added document will be shown again for direct editing (without new search).

5.1.8.3 Data entry for other content types

URL: http://www.digipark.at/rndatainput

Action	*Result*	*Ok, or reported as bug no.*
1. Enter new data	Click on New Document You have to login again, but the system thinks you want to edit the previous documenttype and gives states on the login screen “you have not enough authority to edit Address	Bug reported
URL: http://www.digipark.at/rndatainput/?nologin=true		
2. Edit own data	Click on edit	Bug reported No possibility to edit your own data
URL http://www.digipark.at/rndatainput/?userId=CSC1-1604050228800-170&user.locale=nl		
3. Multiplying field and saving data by entering address field		Bug reported Multiplying the language field, using only one language, gave an error, saving address not possible
URL: http://www.digipark.at/rndatainput/?userId=CSC1-1604050228800-170&user.locale=nl		
4. Copying Word-text into the mask for description	Press Add-button and make a new search.	Bug reported Layout totally lost
URL: http://www.digipark.at/rndatainput/?userId=CSC1-1604050228800-170&user.locale=nl		
5. Multiplying the field:” Event title”	Press the “+” button for the field: ” Event title” two description field available.	Bug reported
URL: http://www.digipark.at/rndatainput/?userId=CSC1-1604050228800-170&user.locale=nl URL: small http://www.museon.nl/actueel/tentoonstellingen/afbeeldingen/mijlpaal.jpg URL: large http://www.museon.nl/afbeeldingen/diamant.jpg		

Adding image	Adding an image to a record e.g. to "profile". the size of the images when viewing the record mostly remain very small .	Bug reported

Add new document: "Adding", "selecting" and "login" working well but the content partners give some proposals e.g. naming of symbol/button; better: object? No welcome message or confirmation of successful login.

Fill-in data: The tester only tested data listed in the test cases – not all document types and maybe also not all data fields. In order to shorten this report only the "main" actions (fill in – on your own/by selecting, deleting and second input per field are listed here) are listed here. All future testers should test all fields in all masks following this routine using their individual applications (integrity check) and than give just a short list of bugs!

Fill in data on your own, ... by selecting and " Search for pattern in the look-up list" could be improved.

5.1.8.4 Short list of the bugs

The following list shows all errors/missing functionalities. For a detailed description all bug reports could be consulted.

Date	*Description*
13.8. 2002	Look up button is not working when creating a new document. 1. First New Document: Lookup button is not working: Error: 800a03ea, Error: 800a000d, e.g. rights, material/technique, date. 2. Second Document: Lookup button is working. It works in the search area but not in the data entry of a new document.
13.8. 2002	No Buttons (plus, minus). There are no plus and minus buttons for the creator name (Object) and rights (Dublin Core) fields.
13.8. 2002	In all forms there are no identifying numbers, except the accession number in object form.
13.8. 2002	Problems with changing the document type in the new document function. Missing a help button to explain the data entry e.g. there should be a help function to explain creating new sections (DC, NAME, ...) in the new document..
04.9.2002	Entering Address Data: You have logged in and want to enter more data in another document type. You have to login again, but the system thinks you want to edit the previous document type and gives states on the login screen "you have not enough authority to edit Address". But you did not select to edit the ADDRESS, but wanted to create a new profile. Entering again "regnet" and "member" is not accepted by the system. This problem occurs for any change to another document type!
04.9.2002	Login as a guest, and created a profile for the Museon. Then in a new session search for "Profile", using fieldname "organisation" and filling in "Museon". Trying to edit the data of Museon by using the same Login name and same Password as used when creating the Profile document. But now the system does not allow to change own data
04.9.2002	Entering Address Data: multiplying the language field gave an error. Conclusion: it is not possible to indicate more than one languages. Choosing to use only one languages and then save address. This was not possible.
04.9.2002	Layout of texts is completely lost and field content shifts in reference to the fieldnames
17.9.2002	Multiplying the field:" Event title" leads to also another "description field.

17.9.2002	adding an image to a record may cause unexpectedly the size to explode.

5.1.8.5 List of (further) requirements and comments

According to the tester the most serious problem with data entry is the problem with deletion and editing. When editing a record you have to renew search to see that the changes have gone through - should be shown straight away. When you do the new search the record has moved and is at the end of the hitlist, which is somewhat confusing to the user.

For a better user support automatic truncation should be enabled: the average user cannot keep all the truncation methods in mind.

Usability improvements:

- Change the naming of the button "New Document" into "Add a new record or data". ARGUMENTS: Records is the preferred naming in cases of collections and data is more appropriate in cases of addresses etc. "Documents" give the suggestion that you have to add complete sets of information already saved in e.g. a WORD-file.
- Data Entry “Document type”

  Data Entry tool presents several Document types. The term "Document type" is not very clear. Suggestion: replace it by "Choose Type of Entry Form". Document types “Vocabulary” and “Link” is unclear what should be added in, what is the use of it.
- No help, no field information is available,
- Naming / terms of some fields are not accurate,
- Button naming must be improved

(Technical) functionality:

- Problem with “Lookup” button e.g. in the new document area: date, creator, material / technique
- No plausibility controls?

In general the tool is “okay”, but some improvements could be made in order to reach the state-of-the-art. The testing progress so far is not sufficient to formulate recommendations. Intensive tests must be carried out, a procedure must be defined in order to distinguish between partner-individual tests and pure functionality.

5.1.9 Multilinguality

5.1.9.1 Status

Tests of the multilinguality should be carried out for the portal: http://garonne.toulouse.valtech.fr:8082/jetspeed/index.jsp. Login: regnet, password: regnet. The following partners were responsible: MUS, TARX, IAT and MOT, VALT (technical partner). There were made short reports, bug report and a consistency report (provided in Excel) in order to describe test results.

5.1.9.2 Functionalities tested (test cases)

	Suggestion	***Bug***
1. Indication of languages		
The language indication by flags representing countries or regions is very nice but completely inconvenient for the exact addressing of the language choice: Is the English flag covering UK English only? Is the flag of the Netherlands covering Flemish, the major language of Belgium? In Belgium there are 3 official languages: Dutch, French and German. The same applies to Switzerland with German, French and Roman and Luxembourg with German and French.	In order to avoid all these problems and to become flexible for adding new languages, I propose to replace the flags by the natively written expression of the languages: English, Nederlands, Français, Deutsch, etc. Eventually the English equivalent could be added: Nederlands, Dutch; Français, French; etc.	
2. Display issues		
Characters are not displayed properly on the Portal		Bug reported
When use unicode encoding some problems appears:- in Spanish and Catalan version (with characters ', ñ, á, à, é, è...),- the spanish flag shows html tags in its yellow tip. It also occurs in "Crear una nueva cuenta"-es/"Crear compte nou"-ca pages)- the NL flags appears above Spanish flag and points to Spanish version		
Language (consistency and language errors) [all comments given by MUS could be found in one file: Multilinguality_consistency_report_MUS.xls		
3. Translation		
"Buscador Colecciones" and "Cercador Coleccions" both mean more or less "Collection searcher". The essence of topic maps is not the collection, but the contextual relations between objects and more metaphoric/encompassing texts.	Replace "Buscador Colecciones" and "Cercador Coleccions" with "Buscador Themas" and "Cercador Themas".	Bugs reported
The following field names have not been translated in any of the portal languages: Password (confirm); City; Street; Postcode; mobile phone; Company Type; Company Name; Company ID. Edit account http://garonne.toulouse.valtech.fr:8082 /jetspeed/portal/action/EditAccount	Translation of the filed names concerned	Bugs reported

The yellow tip that appear when you put the mouse over a flag should appear in native language	Translate into their respective language.	IAT-multilinguality-1
The 'Shop and Business' portlet (for registered user) is only available in English.	Translate into their respective language.	Bugs reported
The translation of some terms are improper.	Use the translation terms proposed by us.	Bugs reported
“Edit your account details”: In this section several items are not expressed in the chosen language. For the Dutch version this pertains to: Password, City, Street, Phone number, Mobile phone, Company type, name, ID		
“Anpassen WML (Change WML in Dutch)”. This section only contains the English version		
4. Overall language consistency		
When changing from English to another language, we often get a mixing of languages on the same screen: the body in the chosen language and the left and upper parts still remaining in English.. The same applies for the displayed error messages (e.g. “this page is under construction”) which are often expressed in a third language: “introuvabble” (which must be rather, if I'm right, “introuvable”).		
In the German, Swedish and (very inconsequentially) in the Dutch version the word "and" is not used, but "&".	Replace "and", "y", "e" etc. by the character "&". The character "&" makes a more clearer, one-glance distinction between the two subjects mentioned in the heading.	Bugs reported
Two terms are used for one and the same feature: The categories of the navigation bar/tree on the left-hand use in the different languages the term "Shop and Business" or "E-Shop and Business".	Only use the term "shop". Every body knows it is an "E-Shop" since they see it via the internet. For the indication of electronic-x things we should apply the e-Xxx rule: E-Shop, E-Business, etc. This pertains a.o. to the left part of the home page.	Bugs reported
The sub-categories of "Shop & Business": Online-Shop and Procurement do not seem consistent. There is no need to use the term "Online-Shop" once you enter a lower category	Replace the terms: Online-Shop, Tienda Online, E-Shop, Online-Shop, Botiga online by the term (corresponding to the language concerned) "Shop"	Bugs reported

5.1.9.3 Short list of the bugs

The following list shows all errors/missing functionalities. For a detailed description all bug reports could be consulted.

Date	*Description*
17.07.02	Several of the swedish characters and all of the Bulgarian and Russian Characters are not displayed properly on the Portal. Comment by MOT: need to change character set in browser. In that case it is necessary to change the character set. Go to view menu on the browser (IE), choose Encoding and the choose UTF-8 (it could be under "More") Other findings in the excel attachment are reasonable, therefore if approved will be implemented.
19.07. 02	Problems use Unicode encoding (e. g. in Spanish and Catalan version. Comment: MOT will try to find a solution.

5.1.9.4 List of (further) requirements and comments

The most important issues of testing could be summarised in the following way:

Indication of languages: One proposal is to replace the flags by the natively written expression of the languages: English, Nederlands, Français, Deutsch, etc. Eventually the English equivalent could be added: Nederlands, Dutch; Français, French; etc. Maintenance request in process.

Display issues: Several of the swedish characters and all of the Bulgarian and Russian Characters are not displayed properly on the Portal. Momentary it is necessary to change the character set and choosing UTF-8(view menu on the browser (IE), choose Encoding). Other findings in the excel attachment are reasonable, therefore if approved will be implemented.

Language (consistency and language errors): Missing translation of the filed names e.g. Password (confirm); City; Street; Postcode; mobile phone; Company Type; Company Name; Company ID.

There must be replace some topics e.g. "Buscador Colecciones" and "Cercador Coleccions" with "Buscador Themas" and "Cercador Themas". The 'Shop and Business' portlet (for registered user) is only available in English. The translation of some terms are improper there must be used the translation terms proposed by the partners. These pages are native of Jetspeed and the technical partners are completing the translation.

Overall language consistency: When changing from English to another language, there often get a mixing of languages on the same screen: The body in the chosen language and the left and upper parts still remaining in English. The same applies for the displayed error messages (e.g. “this page is under construction”) which are often expressed in a third language: “introuvable” which must be rather “introuvable”. It is necessary to find a agreement of some terms and notation e.g. "and", "y", "e" etc. by the character "&"; for the indication of electronic-x things there should apply the e-Xxx rule: E-Shop, E-Business, etc.

In future translations must be done taking into account the context, word-by-word translations is not comfortable. All partners responsible for the languages must check (again) there translations online and add missing word respectively correct false ones. Table 19 summarises the strengths and weaknesses.

Strengths	Changing the language on the portal works quickly
Weakness	No multilinguality is applied in Data Entry and e.g. search
Necessary improvements	Extent the possibility to choose between the languages for the tools as well

Table 19: Strengths and weaknesses Multilinguality

5.1.10 Portal

5.1.10.1 Status

In order to be in a position to give a detailed analysis of the portal there were made also functional tests (for other results regarding the portal see Chapter 5.2. The portal is available on the admin level at the following URL:http://garonne.toulouse.valtech.fr:8082/jetspeed/index.jsp. Login: regnet, Password: regnet. Responsible partners for the functional tests were ICCS, KVA and ALI.

5.1.10.2 Functionalities tested (test cases)

Action	***Result***	***Ok, or reported as bug no.***
1. Download page		Bugs reported
2. Enter Portal		Bugs reported
... from Bulgaria		Bug reported
2.2 Use language-specific versions		
... in Russia	Press “Russian” flag	Bug reported
... in Dutch	Press “Dutch” flag	Bug reported
... in English	Pressing English flag	OK
... in German	Pressing German flag	OK
... Spanish	Pressing Spanish flag	OK
... Swedish	Pressing Swedish flag	OK
... Italian	Pressing Italian flag	OK
... Catalonian	Pressing Catalonian flag	OK
2.3 View of the Portal in different languages	[all versions were tested] press language flag to select. Language specific entry point appears	Bugs reported
3. Enter subsystems (after Login)		
Enter E-Shop	Select Link. Start page appears	Bug reported
Enter Procurement	Select Link. Start page appears	
Enter “Virtual Tour”	Select Link. Start page appears	Bug reported
Enter “Forum”	Choosing: News / Info / Forum Start page appears	Bug reported
Enter “Data Entry”	Choosing: News / Info / Forum Start page appears	Bug reported
Enter “Search”	Select Link. Start page appears	Bug report (nr. 14, ICCS) listed in test case document, but no file: The actual link to Search subsystem must be present in the Portal
Enter “Education and Research”	Pressing left button “Education and Research”. Start page appears	The page is under construction
Enter “Auction”	Select Link. Start page appears	Good functionality, design and speed
4. Enter other links/ functionalities		

Fact Sheet link	Pressing Fact sheet	There is no link towards the Fact Sheets and the description of REGNET. To be included a file - description of REGNET like www.regnet.org/factsheets.html (in test case report documented as bug, but without file Nr.) see also: issues_reporting_regnet_ALI1.doc
All entries in left	Pressing Links	The page is under construction
5. Manage own account		
5.1 Create new account		
	Inserting user name and password in English	OK
	Inserting user name and password in Bulgarian	OK
5.2 Edit account	Pressing "Update Account" Edit account mask appears to fill in details	Bug reported
5.3 Logout		Bug reported
6. Customise Portal (later Login)		
6.1 Customise WML		Bug reported

5.1.10.3 Short list of the bugs

The following list shows all errors/missing functionalities. For a detailed description all bug reports could be consulted.

Date	Description
19.07. 2002	As the Encoding view usually is Cyrillic(Windows) in Bulgaria when enter the portal the writing is not readable. To be used it should be noticed: "To read in Bulgarian use: View/Encoding/Unicode (UTF-8)" The same is valid for Russian entry
19.07. 2002	When enter the portal in Russian before login the upper right links are too long and the last "Create New account"(in Russian) is not readable to the end. To avoid this our preposition is to write these links in two rows.
19.07. 2002	Missing translations: The field: E-Shop & Business: Java shop Procurement Auction PCM pH Shop is only in English . There is no translation in any language

19.07. 2002	Choosing E-Shop & Business: The connection from the both entries is to the same page. 2. Lead only to French page.
19.07. 2002	When choose Dutch language appears Spain translation.
19.07. 2002	False Link: From choosing: “Virtual Tour” the entrance is “Electronic Publishing Prototype”. The link must be explained that “Virtual Tour” addresses the E-services “Electronic Publishing”. In general the term “Virtual Tour” means link to existing Demo.
19.07. 2002	No possibility to login / Choosing: News / Info / Forum; It is not possible to login using user: turbine password: turbine ; user: regnet password: user001 ; user: regnet password: 2002_rn ; user: regnet password: member ; user: registered password: registered , using created account. Real Bug?
19.07. 2002	After editing the Account and pressing “Update Account” Mazola messages appear.
19.07. 2002	No correct function Choosing Data Generation from Portal / When choose Data Generation it is not possible to insert data.
19.07. 2002	There is no link towards the Fact Sheets and the description of REGNET. To be included a file - description of REGNET like www.regnet.org/factsheets.html (in test case report documented as bug, but without file)
19.07. 2002	The actual link to Search subsystem must be present in the Portal. The link for Search directs to www.digipark.at. The actual Search functionalities, which AIT distributed are on addresses: csc000.cscaustria.at .
29.07. 2002	Modify WML: When the user wants to delete any of the boxes that he/she doesn’t want to keep in his/her personal homepage, it’s very difficult to find the way to rectify the action.
29.07. 2002	In the “Customise WML” entry, the buttons “Layout” and “Add Portlet” don’t work.
23.07. 2002	Fact Sheet link (homepage, without login) Error page / Error (404) when one looks for the page
23.07. 2002	Requested URL could not be retrieved / When one tries to download the site a URL error occurs: zero sized reply.
23.07. 2002	Error page when clicking link „logout“!?
23.07. 2002	No going back pages / No chance to go back from the linked pages that are in the homepage.
When one tries to download the Bulgarian and Russian sites, there’s no evidence of the two sites language. One could be confused. In short, there’s no textual evidence in the common site bar.	
No mark left on link / Link text is not marked with a different colour when it is visited	
In introductory page, both with 800x600 and 1024x768 the viewer has to scroll laterally to see all the screen	
Very slow index page display. Sometimes it doesn’t even download the site.	

5.1.10.4 List of (further) requirements and comments

The REGNET Portal consists the general characteristics of an information system. It has the capabilities to connect different services offered by the REGNET Network of Service Centres could be customised and is multilingual. The β version of REGNET has several important features, which are under construction: There are active but not operational links. Effort in future should focus on the addition of content (e. g. explanations about REGNET, description of centres, their functional capacities, services in operation will prove the REGNET distributed structure etc.). The functions of the portal must be updated on time according to the available/performed modifications, demos for different functions/utilisation's are well appreciated.

Actually lacks could be grouped as follows:

- Multilinguality (e. g. encoding, missing translations)
- Accessibility of tools

  The entries to the E-Shop and E-Procurement pointed to the same page, despite that they are two different functionalities and have to point to different addresses.

  Some links are not implemented. It is not described how to enter and to register in the Forum functionality. The account used to register the user in the Portal differs from the account, needed for the Forum.

- The functional links "Home", "About", "Site Map", "Help", because of the translation to the different languages increase the size of the screen and horizontal screen stroller must be used to read the first page of REGNET portal. This is not useful, especially for the Main page.

Strengths and weaknesses could be summarised as follows (Table 20).

Strengths	Multilinguality Possibilities to customise Design (see Mock-up) see also Multilinguality
Weakness	Not all tools integrated Missing content Navigational ease

Table 20: Strengths and weaknesses Portal

5.2 Usability testing

Most of the usability tests (scenario-based) would be carried out during WP 4. As part of this report only the results of heuristic evaluation and card sorting should be summarised.

5.2.1 Heuristic evaluation

The REGNET system will only be successful if it's usability is high. That's why it is necessary to assure that the system will be consistent, support users workflow, moreover avoid errors, give user control and provide a good feedback. The heuristic evaluation is one of three methods that tests the usability of REGNET system. It's a good method to increase the speed of task completion and help to minimise the error rate and accordingly to increase the user satisfaction. This test was made by three experts which are experienced in computer and internet, partial with similar web site projects. They are the Content Provider CC, ALI and ICCS (an additional questionnaire was filled out by ARG). The heuristic test is based on the "Regnet Usability Index" (see Appendix 2), a form which follows generally accepted usability criteria and analyse five components:

- Navigation and Orientation
- Interaction and Exchange of Information
- Up-To-Dateless and Quality of Information
- Design of Information and Text

- Location and Access.

5.2.1.1 Test report

The Portal is visible at the following URL: http://garonne.toulouse.valtech.fr:8082/jetspeed/portal. The end-user-view shows already in a pleasing layout all the main topics that are important for the portal. A Navigation is available and clearly distinguished from the main content. The main page can be viewed in all work languages (English, German, Spanish, Russian, Bulgarian, Dutch, Swedish, Italian, Catalan) by activating the corresponding flag. A Registration and a Login for the own account is accessible. Furthermore are the REGNET Logo and IST image created.

An evaluation of the REGNET Usability Index displays outstanding tasks and requirements of the user. In general it is visible that the Navigation is still not fixed. The Navigation is not always located at the same place and the home button, as well as other Hyperlinks are not permanently available reps. working. Latter are not always recognisable as such and not all do following the international standard of sites. The site map, help index and about function are not created yet. For the interaction and exchange of information will be the Frequently Asked Questions function of great importance. This as well as a glossary should be provided. Up-to Dateness and Quality information has been indicated as great value for the user. Offered information have to be up to date and should indicated specially and all the more provided with a date. Marking authors of contribution, including sources and references are of great importance. Technical functions like multimedia features, a high-tech and low tech version (flash and skip intro) should be added and special access for disabled persons is desirable.

Appendix 9 gives an complete list of detected bugs (also for functional tests).

5.2.1.2 Requirements and comments given by the experts

Requirements	***Place***	***Partner***
The dimension of the left menu is not uniform.	Navigation	ALI
The navigation area is not always located at the same place.	Navigation	ICCS
Home Button and links to the next higher step of hierarchy exist not in all pages and not permanently.	Navigation	ALI/CC/ ICCS
The REGNET logo do not link to it's web site.	Location and Access	ALI
The is logo do not link to cordis web site.	Location and Access	ALI
Link to the help function is not always present.	Orientation	CC
Search tool of the web site does not always exist.	Search	ICCS
Provide an Index (e.g. alphabetically).	Search	ICCS
Links to Site map, About and Help are not working yet.	Orientation	ALI/CC/ ICCS
Not all links follow the international standard.	Links	ALI/CC
Not all visited links are marked.	Links	CC(IMAC)
Before downloading, there should be advance information about the format and size of a file.	Links	ALI/CC
There is no animation yet.	Interaction	ALI/CC/ ICCS
There is no skip intro function yet.	Interaction	ALI/CC/ ICCS
There is no glossary yet.	Glossary	ALI/CC/

		ICCS
There is no FAQ yet.	User Question	ALI/CC/ ICCS
Providing conventional and special contact possibilities (post phone, webmaster, special contact persons).	User Questions	ALI/CC/ ICCS
Offered information should provided with a date.	Up-to-Dateness of Information	ALI/CC/ ICCS
New information has to be indicated specially.	Up-to-Dateness of Information	ALI/CC
The WebPages should correlate with the requirements for the Web Accessibility Initiative (e.g. www.cast.org./bobby)	Access for disabled persons	ALI/ICCS
High-tech and low-tech version of the web site.	Technical Access	ALI/CC/ ICCS
Image and pictures, also should be explained with text.	Layout of Icon/Image Information	ALI/ICCS
Print version for longer texts(pdf-file) is not provided yet.	Layout of Textual Information	ALI/CC/ ICCS
Information about the site operator (flag).	Credibility of Information	ALI/ICCS
Every author of a contribution should be marked, the sources and references should be included.	Credibility of Information	ALI
There should be provided multimedia features with information for necessary play-back software and size of applications or files.	Technical Access	ALI/ICCS
1. Navigation and Orientation		
The dimension of the left menu is not uniform	Navigation	ALI
There should be an „secondary“ resp. „alternative“ homepage	Orientation	ICCS
Index: Add: Cultural Institutions to list Museum, libraries,...	Search/Index	CC
There are no pop up messages on all links: i.e. news,.	Links	ALI
cross references to other/external pages should be marked specially	Links	ICCS
Links are not enough recognisable	Links	ALI
Links of Lists are not enough recognisable	List	ALI
2. Interaction and Exchange of Information		
FAQ are needed	User Questions	ALI
Do formular for contact not exceed the length of one page?	User Questions	ICCS
The diction and format of the message should be consistent and correct	Message	ICCS
3. Up-to-Dateness and Quality of Information		

Up to date information is needed	Up-to-Dateness of Information	ALI
Very important for exhibitions, events, etc. are provided dates for new information	Up-to-Dateness of Information	CC
Automatic update notification mechanism are needed	Up-to-Dateness of Information	ALI
4. Design of Information and Text		
In my point of view, education is much more important and should have much more emphasis	Structure of Information	CC
Every title is used exclusively and the text refers to the graphic.	Graphics and Images	ICCS
5. Location and access		
Alternative web addresses for the offer (e.g. popular abbreviations of the name)	Web Address	ICCS
Video and audio files of different sizes should be offered in zipped (?) and unzipped formats	Technical Access	ICCS
Is it possible to view the web site with different browser without substantial interferences?	Technical Access	ICCS
Is it possible to view the web site with a two version before the actual one old browser without substantial interferences?	Technical Access	ICCS
Is help provided for indexing non-indexable information like image or sound files?	Technical Access	ICCS
Does individual titles exist as html-title-tags for every web site (e.g. bookmarks, favourites, search machines)?	Technical Access	ICCS
Is it able to locate the web site with search machines (e.g. Web catalogues, web circles, search machines, link lists)?	Technical Access	ICCS
Defining width and height attributes not only for graphics/images, also for tables	Rate of Loading Time of Web Sites	ICCS

For a complete REGNET Usability Index (filled-out) see Appendix 10.

5.2.2 Card sorting tests

The goal of the card sorting tests was to validate the administrative view and end user view on the basis of the implemented portal structure to define the final structure of the web site. The tool used to support these tests was the IBM's USort / EZCalc software package. All partners should carry tests – at first for the administrative view (3 tests per partner). All result sheets could be found in Appendix 11. All tests were carried out for the administrative view (navigational structure presented to registrated users after login). First experiments for the end user view (portal site) were also performed and will be reported in Chapter 5.2.2.2.

5.2.2.1 Administrative view

This chapter describes the results of all card sorting experiments for the administrative view (compare also Appendix 2). All results were merged an analysed with regard to the average and single view. The average algorithm gives a review on similarities and differences of the data. According to this analysis many participants are in accordance with the first-version-topics and their contents. The average view generates an average peak of the received topic and item proposals of all content providers. After the evaluation with the EZCalc-Program, the ascertained hierarchy structure of items came to the following conclusion (Figure 8): At least four categories could and should be build: one for the management of E-Business catalogues and products, one for "collection" management (CH databases and their administration), one for the working with topics, thematic contributions and topic maps and one for the provision of other content for the portal.

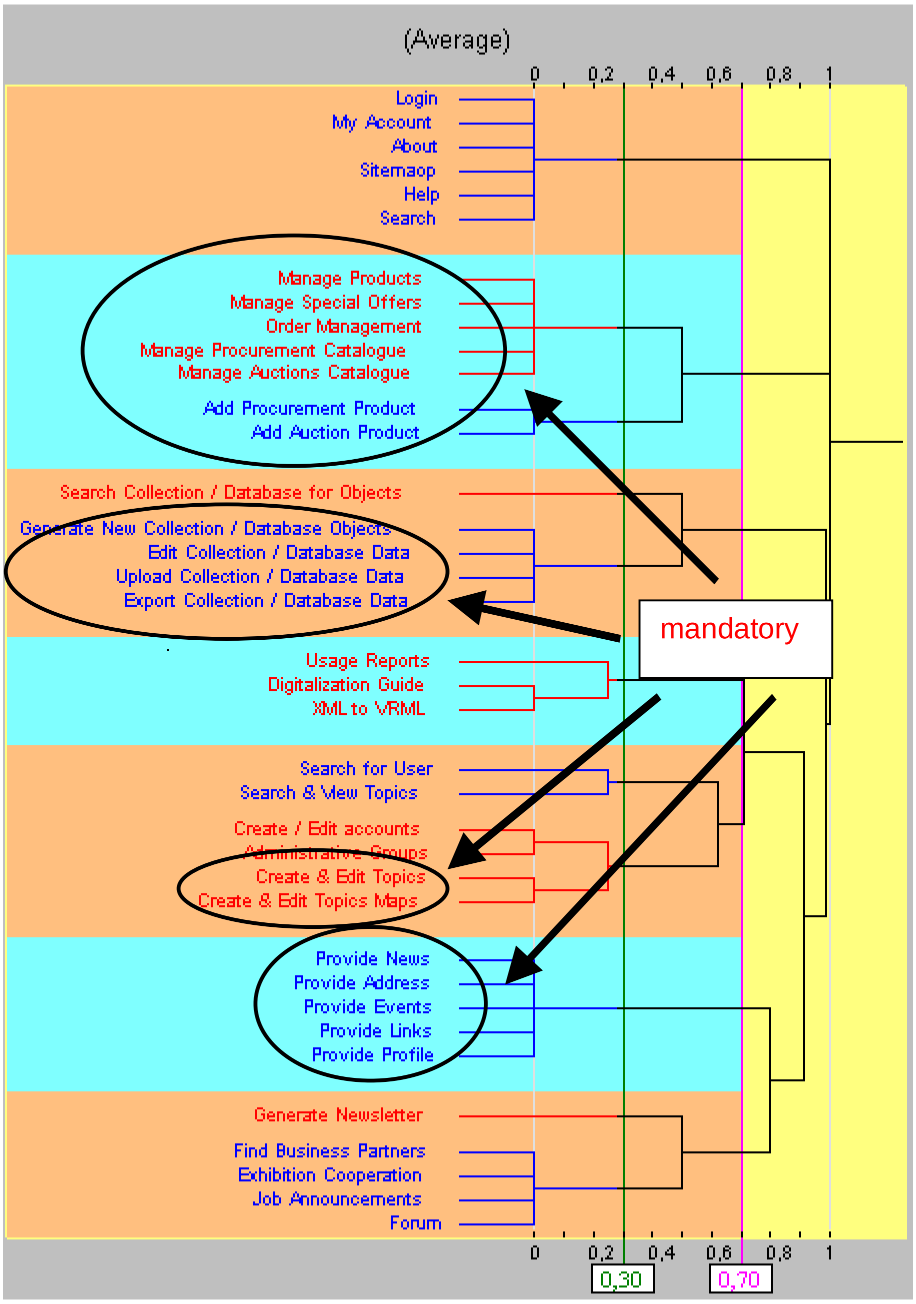


Figure 8: Card sorting experiments – administrative view (average)

The biggest disagreement exists in classifying the item "Generate Newsletter". Some participants did not know the following items

- Order Management (14/15)*
- Digitalisation Guide (14/15)
- XML to VRML (14/15)

- Search for User (14/15)
- Administrative Groups (13/15)
- Usage Reports (14/15)

*(14/15) means that one of the 15 participants did not know the item.

According to this results a revised navigational structure should be proposed (Table 21). For the renaming of existing categories again suggestions given by test persons could be considered.

	Description					
	Business Products	**Admin Collection**	**Techniques & Methods**	**Admin Accounts & Content**	**Search Types**	**Communication & Cooperation**
Customise Login My Account About Sitemap Help Search	Add Products Procurement Auction	Generate New Collection	Usage Report	Create & Edit Accounts Topics Topic Maps	Search Collection	Generate Newsletter
	Manage Catalogue Procurement Auction	Edit Collection	Digitalisation Guide	Administrative Groups	Search for User	Find Business Partners
	Manage Products	Upload Collection	XML to VRML	Provide Content Address Events Links News Profile	Search & View Topics	Exhibition Cooperation
	Manage Special Offers	Export Collection				Job Announcements
	Order Management					Forum

Table 21: Proposal for new navigation structure administrative view

According to these suggestions the following alternative topics were given (the first terms represents the old navigational entry point):

- for “manage accounts”

  user files, groups and forum, administration, system administration, account and portal site, search for user, system administrator ...
- or “manage catalogue”

CH services, search / content management, collection / topics data management, domain functions, management of the catalogue and databases, any modification of content ...

- for “manage shop”

  business centre, partnership management / shop management, product data entry & upload area, products business, E-Ccommerce, biz, E-Business for “provide information”, management products and technical guides ...

- for “provide information”

  general information services, data management, infos, other management functions, web-site-menu, account and portal site, provide contents, any modification of contents, create/edit data ...

- for “cooperation”

  partnership management, partners and cooperators, exploitation

5.2.2.2 End user view

As said before the end user view was not the main focus of carding sorting experiments in WP 3. Nevertheless some first files for improvement were provided and should be analysed. The graphical presentation of the average is given in Figure 9.

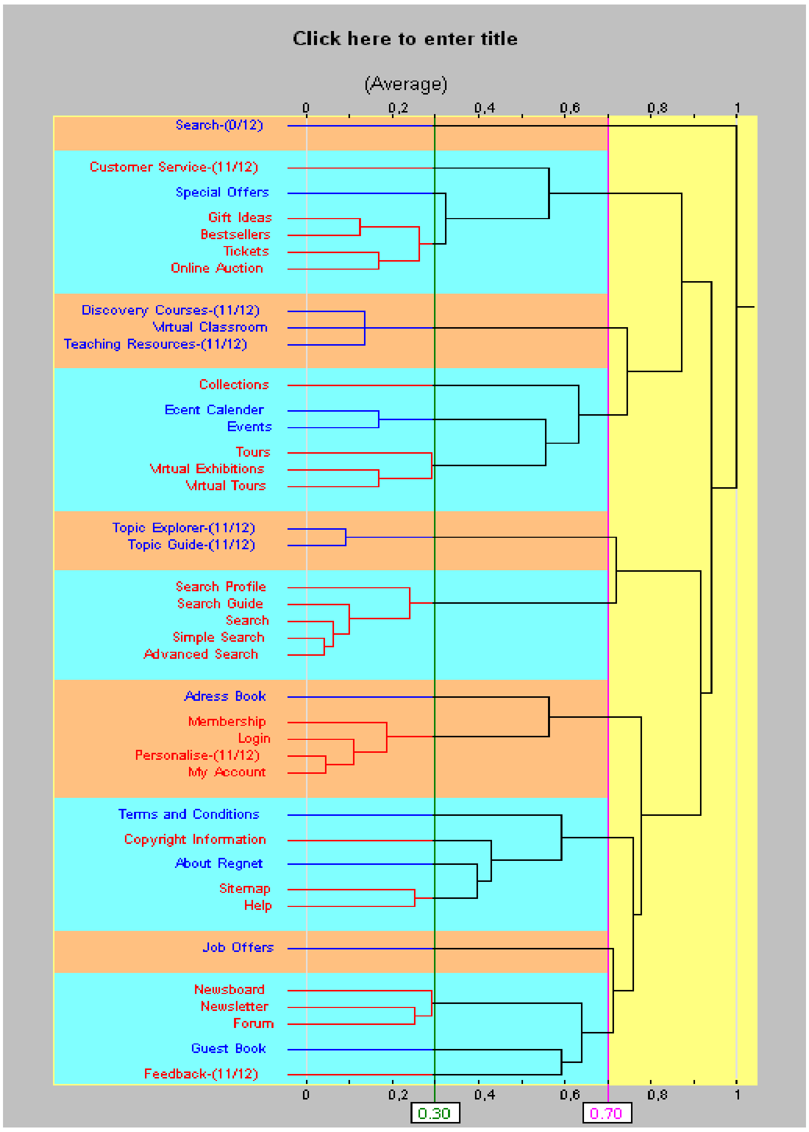


Figure 9: Card sorting experiments – end user view (average)

Many participants are in accordance with the first-topics-version and their contents, but the classification here is more sophisticated as the classification of the administrative view. Further experiments and analysis must be carried out. Interpreting Figure 9 it becomes obvious that all search services should be offered in one category (search, search & contents, search & topic explorer). The collections themselves together with events, tours and exhibitions reflect another search paradigm which must be considered accordingly (e. g. individual entry points). All interactive and communicative services could be grouped (e. g. general services as newsboard, forum, guest book, feedback) as well as all issues and transactions related to E-Business.

5.3 Technical tests

The aim of this chapter is to describe technical tests managed by technical partners during WP 3. These tests are not redundant with functional ones as far as they address technical aspects of the software. The results will be described per module as far as available.

5.3.1 Introduction: Process and responsibilities

The chosen process was a cross organisation approach: this mean that technical test of one module is done by another organisation than the one, which developed it. As far as REGNET architecture is modular and based on a component approach, tests are relevant to the interface of each module. Testing responsibilities are summaries in the following table:

Module	*Responsible for Development*	*Tester*
Portal	MOTOROLA	AIT
Data Entry	AIT	MOTOROLA
Search & Retrieval	AIT	SR
Publisher	SR	AIT
E-Shop	ZEUS	Valetta
PCM	ZEUS	Valetta
AUCTION	ZEUS	CERT
E-Procurement	Valetta	ZEUS
Delivery	Valetta	ZEUS
Ontology	CERT	MOTOROLA
TopicMap Authoring	CERT	TARX
TopicMap viewer	SI	CERT
WAP Access	MOTOROLA	SI
Reference System	AIT	SPACE

Table 22: Responsibilities for technical tests

5.3.2 Data entry

This test report is related to the tests performed on the Data Entry module.

Module	*Responsible Partner*	*Contac*
Data Entry	AIT	Henriette Kurschel [henriette.kurschel@cscaustria.at]

5.3.2.1 Testing strategy

The Data Entry module provides an interface to add document meta data in a database and it's has been developed by AIT. Tests had been conducted following the next steps:

1. Connection to test database (put to disposal for tests) at the following URL: http://csc000.cscaustria.at/test
2. press “New Document” button;
3. test document insertion.

5.3.2.1.1 Coverage criteria

Tests will be related to Data Entry functionalities and it will be verified if these functionalities are available and work fine.
Tests will be performed following direct verification criteria.

5.3.2.1.2 Pass/fail criteria

Functional tests will be performed with a direct use of the Data Entry services, so there will be only three possible fail criteria:

Critical: invocation doesn’t produce any response and results.

High: invocation produces a mistaken response and/or results.

Low: invocation produces a correct response and/or results, but with graphical imperfections.

Test pass criteria are the following: Passed: invocation produces correct response and/or results correctly displayed.

5.3.2.1.3 Regression test

No regression test is needed.

5.3.2.2 Suspension and resumption of testing

N/A

5.3.2.2.1 Schedule

Activity	*Start*	*Due*	*Duration*
Test Data Entry module	11/09/02		2h

5.3.2.3 Test cases

5.3.2.3.1 Document “Object” test

Goal: Test “Object” type for data entry functionality.

Test Case ID: DataEntry_Service01.

Initial Conditions: DataEntry module is available to the test URL.

End Conditions: new type “Object” document is created.

Procedure	**Results**
1. Select “New Document” option, choose “Object” type and insert data into the fields and press “Add”.	New “Object” document is added to the database.
2. Execute a search for the previous “Object” document inserted.	Previous “Object” document is found.

5.3.2.3.2 Document “Bibliographic” test

Goal: Test “Bibliographic” type for data entry functionality

Test Case ID: DataEntry_Service02

Initial Conditions: DataEntry module is available to the test URL.

End Conditions: new type “Bibliographic” document is

Procedure	**Results**

Procedure	Results
1. Select “New Document” option, choose “Bibliographic” type and insert data into the fields and press “Add”.	New “Bibliographic” document is added to the database.
2. Execute a search for the previous “Bibliographic” document inserted.	Previous “Bibliographic” document is found.

5.3.2.3.3 Document “DublinCore” test

Goal: Test “DublinCore” type for data entry functionality.

Test Case ID: DataEntry_Service03

Initial Conditions: DataEntry module is available to the test URL.

End Conditions: new type “DublinCore” document is

Procedure	Results
1. Select “New Document” option, choose “DublinCore” type and insert data into the fields and press “Add”.	New “DublinCore” document is added to the database.
2. Execute a search for the previous “DublinCore” document inserted.	Previous “DublinCore” document is found.

5.3.2.3.4 Document “Name” test

Goal: Test “Name” type for data entry functionality.

Test Case ID: DataEntry_Service04

Initial Conditions: DataEntry module is available to the test URL.

End Conditions: new type “Name” document is

Procedure	Results
1. Select “New Document” option, choose “Name” type and insert data into the fields and press “Add”.	New “Name” document is added to the database.
2. Execute a search for the previous “Name” document inserted.	Previous “Name” document is found.

5.3.2.3.5 Document “Place” test

Goal: Test “Place” type for data entry functionality.

Test Case ID: DataEntry_Service05

Initial Conditions: DataEntry module is available to the test URL.

End Conditions: new type “Place” document is created.

Procedure	Results
1. Select “New Document” option, choose “Place” type and insert data into the fields and press “Add”.	New “Place” document is added to the database.
2. Execute a search for the previous “Place” document inserted.	Previous “Place” document is found.

5.3.2.3.6 Document “Thesaurus” test

Goal: Test “Thesaurus” type for data entry functionality.

Test Case ID:DataEntry_Service06

Initial Conditions: DataEntry module is available to the test URL.

End Conditions: new type "Thesaurus" document is created.

Procedure	Results
1. Select "New Document" option, choose "Thesaurus" type.	"Thesaurus" interface must appear.
2. Press thesaurus buttons to insert data into the fields.	N/A.
3. Execute a search for the previous "Thesaurus" document inserted.	Previous "Thesaurus" document is found.

5.3.2.3.7 Document "All types" test

Goal: Test "All types" type for data entry functionality.

Test Case ID: DataEntry_Service07

Initial Conditions: DataEntry module is available to the test URL.

End Conditions: new type "All types" document is

Procedure	Results
1. Select "New Document" option, choose "All types" type and insert data into the fields and press "Add".	New "All types" document is added to the database.
2. Execute a search for the previous "All types" document inserted.	Previous "All types" document is found.

5.3.2.4 Test report

For each test run and for each FR os Service list in the following the result of the related test.

Service ID	Description	Test case	Pass/Fail
DataEntry_Service01			Passed
DataEntry_Service02			Passed
DataEntry_Service03			Passed
DataEntry_Service04			Passed
DataEntry_Service05			Passed
DataEntry_Service06			Passed
DataEntry_Service07			Passed

NOTES: Graphical user interface for "Thesaurus" buttons are imperfect on the top of the window, for example some words are partially covered by frame below.

COMMENTS:

1)Tests have been executed on the following URL:

http://csc000.cscaustria.at/test/. It's based on a "test" database. When the "final" database will be integrated, new technical test would be required.

2)To perform the tests it has been used a specific login to access database. This login/password and its security level are independent from user profile chosen during account creation phase in Regnet portal. Data Entry user profile should be integrated with Regnet profile management.

5.3.3 E-Shop

Purpose of this document is to specify Test conducted by module responsible to test all services provided by the module itself.

Module	***Responsible Partner***	***Contac***
E-Shop	Patrice Rabault	patrice.rabault@toulouse.valtech.fr

5.3.3.1 Testing strategy

The E-Shop has been tested using the web interface of E-Shop module at http://www.regnet.gr/eshop

5.3.3.1.1 Functional requirements vs. module services to be tested

A specific ID has to be specified according to the following naming convention:

SV- nn – xx –yy – zz

where the first part of the name (nn – xx – yy) is taken from the Requirement ID, while the last two figures are unique identifiers of the service.

Reference	***Requirement***	***ID/Services***
	Free Search	1- Name of the product / description etc.
		2- Category of the product (The user is able to select from the predefined different categories)
		3- Specify the supplier.
		4- The user is able to provide a price range for the search.
		5- Search through the different categories.
	Shopping Cart (Basket)	1- Add an item to the shopping cart
		2- Check out mechanism – Payment
		3- Calculate the total amount of the order
		4- Change the quantity of a product
		5- Move item to wish list
		6- View item Details (all information regarding the product)
		7- Remove item from the shopping cart
	Wish List	1- Move to basket. A product may be transferred from the wish list to the basket
		2- Update the wish list
		3- View wish list, the client may access and-manage his wish list
		4- Delete from wish list
		5- Request item details
	Order	1- View order history
		2- Review order before the final transaction
		3- Cancel order
		4- Request user’s info from the user’s profile
		5- Register user
		6- E-Payment
	User Profile	1- Register user to the system
		2- Update relevant fields
		3- E-Payment
		4- WorldPay

5.3.3.1.2 Pass/fail criteria

- Critical: Fatal error
- High: Needs immediate attention
- Medium: Needs to be resolved as soon as possible, but not a showstopper
- Low : cosmetic error

5.3.3.1.3 Regression test

Scope of Regression Testing is based on the judgement of the system test engineer and project manager. The judgement is limited to the following:

- Full Regression Testing, which entails the complete software system to be tested against all the requirement specifications;
- Partial Regression Testing which entails the software system to be tested partially but against a pre-defined subset of requirement specifications.

5.3.3.1.4 Suspension and resumption of testing

TBD

5.3.3.2 Test cases

The test cases described in the following have to be designed to exercise the product's features. Following the description of the test will be the test case(s) that are necessary to exercise the functionality, the procedure that must be executed, and the expected results. The verification of the expected results will be used to score the test (pass/fail).

The name of each Test Case will refer to the name of the corresponding Functional Requirement or Module Service and its identifier shall be chosen as to provide a compact but evocative description of the Test Case purpose.

5.3.3.2.1 Free Search

Goal: launching a search

Test Case ID: Free_Search

Procedure	Results
1. Name of the product / description etc.	OK
2. Category of the product (The user is able to select from the predefined different categories)	OK
3. Specify the supplier.	Not implemented
4. The user is able to provide a price range for the search.	OK
5. Search through the different categories	OK

5.3.3.2.2 Shopping Cart (Basket)

Goal: Shopping Cart (Basket)

Test Case ID: Shopping_Cart

Procedure	Results
1. Add an item to the shopping cart	OK
2. Check out mechanism - Payment	OK but credit card payment not implemented
3. Calculate the total amount of the order	OK
4. Change the quantity of a product	OK

Procedure	Results
5. Move item to wish list	OK
6. View item Details (all information regarding the product)	Not implemented
7. Remove item from the shopping cart	OK

5.3.3.2.3 Wish List

Goal: testing wish list functionalities

Test Case ID: Wish_List

Procedure	Results
1. Move to basket. A product may be transferred from the wish list to the basket	Not implemented
2.Update the wish list	OK (delete operation)
3. View wish list, the client may access and-manage his wish list	OK
4. Delete from wish list	OK
5. Request item details	Not implemented

5.3.3.2.4 Order

Goal: testing order functionalities

Test Case ID: Order

Procedure	Results
1. View order history	OK
2. Review order before the final transaction	OK
3. Cancel order	Not implemented
4. Request user's info from the user's profile	OK
5. Register user	OK
6. E-Payment	Not implemented

5.3.3.2.5 User profile

Goal: testing user profile functionalities

Test Case ID: User_Profile

Procedure	Results
1.Register user to the system	Low. Script error page 'document.logpass.login.value is not an object.'
2. Update relevant fields	Low. Script error page 'document.profile.login.value is not an object.'
3. E-Payment	Not implemented
4. WorldPay	Not implemented

5.3.3.3 Test report

For each test run and for each FR os Service list in the following the result of the related test.

Service ID	Description	Test case	Pass/Fail

Service ID	Description	Test case	Pass/Fail
Free-Search_1	Name of the product / description etc.	Free_Search	OK
Free-Search_2	Category of the product (The user is able to select from the predefined different categories)	Free_Search	OK
Free-Search_3	Specify the supplier.	Free_Search	Not implemented
Free-Search_4	The user is able to provide a price range for the search.	Free_Search	OK
Free-Search_5	Search through the different categories.	Free_Search	OK
Shopping_Cart_1	Add an item to the shopping cart	Shopping_Cart	OK
Shopping_Cart_2	- Check out mechanism - Payment	Shopping_Cart	Credit card payment not implemented
Shopping_Cart_3	- Calculate the total amount of the order	Shopping_Cart	OK
Shopping_Cart_4	- Change the quantity of a product	Shopping_Cart	OK
Shopping_Cart_5	- Move item to wish list	Shopping_Cart	OK
Shopping_Cart_6	- View item Details (all information regarding the product)	Shopping_Cart	Not implemented
Shopping_Cart_7	- Remove item from the shopping cart	Shopping_Cart	OK
Wish_List_1	- Move to basket. A product may be transferred from the wish list to the basket	Wish_List	Not implemented
Wish_List_2	- Update the wish list	Wish_List	OK (delete operation)
Wish_List_3	- View wish list, the client may access and-manage his wish list	Wish_List	OK
Wish_List_4	- Delete from wish list	Wish_List	OK
Wish_List_5	- Request item details	Wish_List	Not implemented
Order_1	- View order history	Order	OK
Order_2	- Review order before the final transaction	Order	OK
Order_3	- Cancel order	Order	Not implemented
Order_4	- Request user's info from the user's profile	Order	OK
Order_5	- Register user	Order	OK
Order_6	- E-Payment	Order	Not implemented

Service ID	Description	Test case	Pass/Fail
User_Profile_1	- Register user to the system	User_Profile	Low
User_Profile_2	- Update relevant fields	User_Profile	Low
User_Profile_3	- E-Payment	User_Profile	Not implemented
User_Profile_4	- WorldPay	User_Profile	Not implemented

5.3.4 PCM

The purpose of this chapter is to specify the tests conducted for the PCM component.

Module	*Responsible Partner*	*Contac*
PCM	Patrice Rabault	patrice.rabault@toulouse.valtech.fr

5.3.4.1 Testing strategy

A soap client has been built in order to invoke the methods of the server soap interface.

5.3.4.1.1 Functional requirements vs. module services to be tested

A specific ID has to be specified according to the following naming convention:

SV- nn – xx –yy – zz

where the first part of the name (nn – xx – yy) is taken from the Requirement ID, while the last two figures are unique identifiers of the service.

Reference	*Requirement*	*ID/Services*
FR-PC-01-03	Provide access to the distributed catalogues	view_goods view_good view_services view_service view_warehouse
FR-PC-01-07	Update the catalogues of the suppliers	update_good update_service delete_service delete_good
FR-PC-01-08	Insert new data in the distributed catalogues	insert_good insert_warehouse insert_service

5.3.4.1.2 Pass/fail criteria

- Critical: Fatal error
- High: Needs immediate attention
- Medium: Needs to be resolved as soon as possible, but not a showstopper
- Low: Cosmetic error

5.3.4.1.3 Regression test

Scope of Regression Testing is based on the judgement of the system test engineer and project manager. The judgement is limited to the following:

- Full Regression Testing, which entails the complete software system to be tested against all the requirement specifications;
- Partial Regression Testing which entails the software system to be tested partially but against a pre-defined subset of requirement specifications.

5.3.4.1.4 Suspension and resumption of testing

TBD

5.3.4.2 Test cases

The test cases described in the following have to be designed to exercise the product's features. Following the description of the test will be the test case(s) that are necessary to exercise the functionality, the procedure that must be executed, and the expected results. The verification of the expected results will be used to score the test (pass/fail).

The name of each Test Case will refer to the name of the corresponding Functional Requirement or Module Service and its identifier shall be chosen as to provide a compact but evocative description of the Test Case purpose.

5.3.4.2.1 Catalogue access

Goal: Accessing Catalogue

Test Case ID: Access_Catalogue

Procedure	Results
1. Call view_warehouse method	OK
2. Call view_goods method	OK
3. Call view_good method	OK
4. Call view_services method	OK
5. Call view_service method	OK

5.3.4.2.2 Catalogue updating

Goal: Updating catalogue

Test Case ID: Update_Catalogue

Procedure	Results
1. Call update_good method	OK
2. Call delete_good method	OK
3. Call update_service method	OK
4. Call delete_service method	OK

5.3.4.2.3 Insert elements

Goal: Add new elements to catalogue

Test Case ID: Insert_Elements

Procedure	Results
1. Call insert_service method	OK
2. Call insert_good method	OK
3. Call insert_warehouse method	OK

5.3.4.3 Test report

For each Test run and for each FR os Service list in the following the result of the related test.

Service ID	Description	Test case	Pass/Fail
view_goods		Access_Catalogue	OK
view_good		Access_Catalogue	OK
view_services		Access_Catalogue	OK
view_service		Access_Catalogue	OK
view_warehouse		Access_Catalogue	OK
update_good		Update_Catalogue	OK
update_service		Update_Catalogue	OK
delete_service		Update_Catalogue	OK
delete_good		Update_Catalogue	OK
insert_good		Insert_Elements	OK
insert_warehouse		Insert_Elements	OK
insert_service		Insert_Elements	OK

5.3.5 Auction

The purpose of this chapter is to specify the tests conducted for the Auction system.

Module	*Responsible Partner*	*Contac*
Auction System	ZEUS	kvotis@zeusnet.gr

5.3.5.1 Testing strategy

The auction system has been tested using the web interface of auction module at www.regnet.gr/auction for user side features and www.regnet.gr/auction/admin for administrator side features.

5.3.5.1.1 Functional requirements vs. module services to be tested

Reference	*Requirement*	*ID/Services*
FR-PT-01-01	User registration	SV-PT-01-01–01 Submit form
		SV-PT-01-01-02 Type fault password in the “Re-Password” textbox
		SV-PT-01-01-03 Leave blank required fields
FR-PT-02-01	Lots	SV-PT-02-01–01 Showing the current lots
		SV-PT-02-01–02 Browse through pages
		SV-PT-02-01–03 Bargain specific lot
		SV-PT-02-01–04 Showing bargained lot details
		SV-PT-02-01–05 Define new price
		SV-PT-02-01–06 Type lower price than latest offer
FR-PT-03-01	Products search	SV-PT-03-01–01 Filter by category
		SV-PT-03-01–02 Filter by open time
		SV-PT-03-01–03 Filter by close time
		SV-PT-03-01–04 Type fault criteria
FR-PT-04-01	User profile	SV-PT-04-01–01 View profile
		SV-PT-04-01–02 Edit/Change profile
FR-PT-05-01	Add items	SV-PT-05-01–01 Leave blank required fields
		SV-PT-05-01–02 Unspecific upload file field
		SV-PT-05-01–03 Submit form

Reference	Requirement	ID/Services
FR-PT-06-01	Future auction	SV-PT-06-01–01 Showing the future auction
		SV-PT-06-01–02 Browse through pages
FR-PT-07-01	Exit user	SV-PT-07-01–01 Log out current user
FR-PT-08-01	Auction system administration	SV-PT-08-01–01 Type fault password
FR-PT-08-02	Manage items	SV-PT-08-02–01 Showing items list
		SV-PT-08-02–02 Edit items
FR-PT-08-03	Delete items	SV-PT-08-03–01 Showing items list
		SV-PT-08-03–02 Delete multiple items
FR-PT-08-04	Manage users	SV-PT-08-04–01 Showing users list
		SV-PT-08-04–02 Edit users
FR-PT-08-05	Delete users	SV-PT-08-05–01 Showing users list
		SV-PT-08-05–02 Delete user
FR-PT-08-06	Add new category	SV-PT-08-06–01 Leave blank required field
		SV-PT-08-06–02 Insert new category
FR-PT-08-07	Exit administrator	SV-PT-08-07–01 Log out
FR-PT-09-01	User log in	SV-PT-09-01-01 Log in end-user
		SV-PT-09-01-02 Log in administrator

5.3.5.1.2 Coverage criteria

No special coverage criteria have been used.

5.3.5.1.3 Pass/fail criteria

- Critical: Fatal error
- High: Needs immediate attention
- Medium: Needs to be resolved as soon as possible, but not a showstopper
- Low: Cosmetic error

5.3.5.1.4 Regression test

Scope of Regression Testing is based on Full regression testing, which entails the complete software system to be tested against all the requirement specifications.

5.3.5.1.5 Suspension and resumption of testing

TBD

5.3.5.1.6 Schedule

Activity	Start	Due	Duration
Spot the functional requirements	15/08	22/08	6 working days
Do the actual testing	23/08	30/08	6 working days

5.3.5.2 Test cases

The test cases described in the following have to be designed to exercise the product's features. Following the description of the test will be the test case(s) that are necessary to exercise the functionality, the procedure that must be executed, and the expected results. The verification of the expected results will be used to score the test (pass/fail).

The name of each Test Case will refer to the name of the corresponding Functional Requirement or Module Service and its identifier shall be chosen as to provide a compact but evocative description of the Test Case purpose.

5.3.5.2.1 Test Case "User Registration"

Goal: Register a new user

Test Case ID: FR-PT-01-01
Initial Conditions: No special initial conditions needed

Procedure	Results
1. Submit "new user" form	If every field filled out properly, the form submission works fine. OK
2. Type fault password	An appropriate message appears. OK
3. Leave blank required fields	Appropriate messages appear. OK

5.3.5.2.2 Test Case "Lots"

Goal: Handle the lots

Test Case ID: FR-PT-02-01
Initial Conditions: No special initial conditions needed

Procedure	Results
1. Showing the current lots	In addition to the starting price, the current price should be visible too. The dates should be masked properly.
2. Browse through pages	The paging works fine. OK.
3. Bargain specific lots	OK.
4. Showing bargained lot details	In the list of bids when showing the details of bargained lot, the showing dates should be masked properly.
5. Define new price	OK.
6. Type lower price than latest offer	An appropriate message appears. OK.

5.3.5.2.3 Test Case "Products search"

Goal: Search the available products

Test Case ID: FR-PT-03-01
Initial Conditions: No special initial conditions needed

Procedure	Results
1. Filter by category	OK.
2. Filter by open time	OK.
3. Filter by close time	OK.
4. Type fault criteria	Sometimes an SQL statement message appears if the query is fault. Non-crucial.

5.3.5.2.4 Test Case "User profile"

Goal: Handle the user profile

Test Case ID: FR-PT-04-01
Initial Conditions: A user profile should be already defined

Procedure	Results
1. View profile	OK.
2. Edit/Change profile	OK.

5.3.5.2.5 Test Case "Add items"

Goal: Add new items to the auction system

Test Case ID: FR-PT-05-01

Procedure	Results
1. Leave blank required field	An appropriate message appears –OK. The required fields should be noted with asterisk.
2. Unspecify "upload file" field	Lot is imported anyway even if a message appears, informing that no file has been uploaded. A broken image link appears instead of a "No image available" message, after the importing.
3. Submit "add item" form	In the category selection, the selection "All" should not be displayed because a new item must belong to a specific category. When errors occur, all details that have been previously typed are lost.

5.3.5.2.6 Test Case "Future auction"

Goal: Handle the future auction

Test Case ID: FR-PT-06-01

Procedure	Results
1. Showing the future auction	OK.
2. Browse through pages	OK.

5.3.5.3 Test Case "Exit user"

Goal: Exit of current logged in user

Test Case ID: FR-PT-07-01

Procedure	Results
1. Log out current user	OK. Sessions are also handled fine. Concurrent requests work fine

5.3.5.3.1 Test Case "Auction System Administration"

Goal: Administration of auction system

Test Case ID: FR-PT-08-01

Initial Conditions: an administrator password required

Procedure	Results
1. Type fault password	An appropriate message appears. OK (see also the "Log in" test case)

5.3.5.3.2 Test Case "Manage items"

Goal: Manage available items

Test Case ID: FR-PT-08-02

Procedure	Results

Procedure	Results
1. Showing items list	OK
2. Edit items	OK

5.3.5.3.3 Test Case “Delete items”

Goal: Delete specific item(s)
Test Case ID: FR-PT-08-03

Procedure	Results
1. Showing items list	OK
2. Delete multiple items	The last column named “Delete?” has some checkboxes checked, even if the items are not deleted

5.3.5.3.4 Test Case “Manage users”

Goal: Manage the registered users
Test Case ID: FR-PT-08-04

Procedure	Results
1. Showing users list	OK
2. Edit users	OK

5.3.5.3.5 Test Case “Delete users”

Goal: Delete specific registered user(s)
Test Case ID: FR-PT-08-05

Procedure	Results
1. Showing users list	OK
2. Delete users	OK (The last column name should be change from “Sales?” to “Delete?”)

5.3.5.3.6 Test Case “Add new category”

Goal: Add new category
Test Case ID: FR-PT-08-06

Procedure	Results
1. Leave blank required field	An appropriate message appears. OK.
2. Insert new category	OK (a button to delete an existing category, should be added to the interface)

5.3.5.4 Test Case “Exit administrator”

Goal: Exit of current logged in administrator
Test Case ID: FR-PT-08-07

Procedure	Results
1. Log out administrator	OK. Sessions are also handled fine. Concurrent requests work fine

5.3.5.4.1 Test Case “User log in”

Goal: Log in to the auction system
Test Case ID: FR-PT-09-01

Procedure	Results
1. Log in user	After logging in, no message or title appears that indicating which user (e.g. username) is successfully logged in the system. Non-crucial
2. Log in administrator	When the administrator provides a wrong password, the system does now allow him/her to retype a new password. Instead the user should close the internet browser (refresh do nothing) and type again the URL in order to retype the right password.

5.3.5.5 Test chains

5.3.5.5.1 "Making a bid from scratch"

This test chain shows all necessary steps to make a bid for a specified item.

- STEP1: In the main screen, the user should click on the "registration" link.
- STEP 2: The user types all required fields with personal info, and submits the form (the system checks for possible mistakes and informs the user with corresponding messages).
- STEP 3: If everything is OK, a link to the main page displayed.
- STEP 4: The registered user could type his/her login name and password on the textboxes. (Maybe a title informing the user that these textboxes correspond to login and password is necessary)
- STEP 5: By clicking on "current lots" link, the user is able to browse through all available lots.
- STEP 6: When a lot is spotted by the user, a bargain for this lot is available by clicking on the corresponding "GO>>" link.
- STEP 7: A detailed description of the lot is appeared, along with information about the current price and a list of bids. The user is able to type his/her new offer in the "Your price" textbox. The system checks for possible mistakes (for example prices that are lower than the latest price) and inform the user accordingly.

Point out, that the user should be registered just once. After that, steps 1 to 3 are not required.

5.3.5.5.2 "Adding a new item from scratch"

This test chain shows all necessary steps to add a new item in the auction system. In order to achieve the addition of a new item, the user has to be authorised by the auction system administrator.

- STEP1: In the main screen, the user should click on the "registration" link.
- STEP 2: The user types all required fields with personal info, and submits the form (the system checks for possible mistakes and informs the user with corresponding messages).
- STEP 3: If everything is OK, a link to the main page displayed.
- STEP 4: After the administrator changes the new user property "sales" to "yes", the user will be able to add a new item. After that a new link appears to the main menu, named "Register new item".
- STEP 5: By clicking the "Register new item" link, a form with empty fields (name, category, producer etc) appears. The user should fill these boxes in order to add his/her new item.

5.3.5.6 Test report

For each Test run and for each FR os Service list in the following the result of the related test.

Service ID	Description	Test case	Pass/Fail
SV-PT-01-01-01	Submit registration form	User Registration	Pass

Service ID	Description	Test case	Pass/Fail
SV-PT-01-01-02	Type fault password	User Registration	Pass
SV-PT-01-01-03	Leave blank required fields	User Registration	Pass
SV-PT-02-01-01	Showing the current lots	Lots	Pass
SV-PT-02-01-02	Browse through pages	Lots	Pass
SV-PT-02-01-03	Bargain specific lot	Lots	Pass
SV-PT-02-01-04	Showing bargained lot details	Lots	Pass
SV-PT-02-01-05	Define new price	Lots	Pass
SV-PT-02-01-06	Type lower price	Lots	Pass
SV-PT-03-01-01	Filter by category	Products Search	Pass
SV-PT-03-01-02	Filter by open time	Products Search	Pass
SV-PT-03-01-03	Filter by close time	Products Search	Pass
SV-PT-03-01-04	Type fault criteria	Products Search	Pass
SV-PT-04-01-01	View profile	User Profile	Pass
SV-PT-04-01-02	Edit/Change profile	User Profile	Pass
SV-PT-05-01-01	Leave blank required fields	Add Items	Pass
SV-PT-05-01-02	Unspecify upload file field	Add Items	Pass
SV-PT-05-01-03	Submit form	Add Items	Pass
SV-PT-06-01-01	Showing the future auction	Future Auction	Pass
SV-PT-06-01-02	Browse through pages	Future Auction	Pass
SV-PT-07-01-01	Log out current user	Exit User	Pass
SV-PT-08-01-01	Type fault password	Auction System Administration	Pass
SV-PT-08-02-01	Showing items list	Manage Items	Pass
SV-PT-08-02-02	Edit items	Manage Items	Pass
SV-PT-08-03-01	Showing items list	Delete Items	Pass
SV-PT-08-03-02	Delete multiple items	Delete Items	Pass
SV-PT-08-04-01	Showing users list	Manage Users	Pass
SV-PT-08-04-02	Edit users	Manage Users	Pass
SV-PT-08-05-01	Showing users list	Delete Users	Pass
SV-PT-08-05-02	Delete user	Delete Users	Pass
SV-PT-08-06-01	Leave blank required field	Add New Category	Pass
SV-PT-08-06-02	Insert new category	Add New Category	Pass
SV-PT-08-07-01	Log out	Exit Administrator	Pass
SV-PT-08-09-01	Log in end-user	User Log In	Pass

Service ID	Description	Test case	Pass/Fail
SV-PT-08-09-02	Log in administrator	User Log In	Pass

5.3.6 Procurement

The purpose of this chapter is to specify the tests conducted for the procurement system.

Module	*Responsible Partner*	*Contac*
Procurement	Kostas Votis	kvotis@zeusnet.gr

5.3.6.1 Testing strategy

The procurement component has been tested using the web interface of procurement module at http://garonne.toulouse.valtech.fr:8082/regnet.

5.3.6.1.1 Functional requirements vs. module services to be tested

Reference	*Requirement*	*ID/Services*
Supplier	Managing showcase	1- Create a showcase
		2- Update a showcase
		3. Delete a showcase.
	Managing products	1- Create a product
		1.1- Select a department
		1.2. Select a category
		1.3. Fill characteristics of product
		1.4. Select a picture
		1.5 Delete a picture
		2. Update a product
		3. Delete a product
		4. Add Price offers filling name quantity and price fields
		5. Update an offer
		6. Delete an offer
	Searching products for updating	1- Search for a product
		Select a department
		Select a category
		2. Update a product
Buyer	Searching products	1- Select a showcase
		2. Select a department
		3. Select a category
		4. Add a product to shopping cart
	Shopping cart	1. Update quantity of a product
		2. Delete a product from the shopping cart
		3. Validate buyers shopping cart

5.3.6.1.2 Pass/fail criteria

- Critical: Fatal error
- High: Needs immediate attention

- Medium: Needs to be resolved as soon as possible, but not a showstopper
- Low : cosmetic error

5.3.6.1.3 Regression test

Scope of Regression Testing is based on the judgement of the system test engineer and project manager. The judgement is limited to the following:

- Full Regression Testing, which entails the complete software system to be tested against all the requirement specifications;
- Partial Regression Testing, which entails the software system to be tested partially but against a pre-defined subset of requirement specifications.

5.3.6.2 Test cases

The test cases described in the following have to be designed to exercise the product's features. Following the description of the test will be the test case(s) that are necessary to exercise the functionality, the procedure that must be executed, and the expected results. The verification of the expected results will be used to score the test (pass/fail).

The name of each Test Case will refer to the name of the corresponding Functional Requirement or Module Service and its identifier shall be chosen as to provide a compact but evocative description of the Test Case purpose.

5.3.6.2.1 Managing showcase (supplier)

Goal: trying to manage a showcase

Test Case ID: manage showcase

Procedure	**Results**
1- Create a showcase	There wasn't a specific button in order to permits the supplier to create a new showcase
2- Update a showcase	OK
3. Delete a showcase	OK

5.3.6.3 Managing products (supplier)

Goal: Trying to manage products

Test Case ID: manage products

Procedure	**Results**
1- Create a product	OK
1.1- Select a department	OK
1.2. Select a category	OK
1.3. Fill characteristics of product	OK
1.4. Select a picture	OK
1.5 Delete a picture	OK
2. Update a product	OK
3. Delete a product	OK
4. Add Price offers filling name quantity and price fields	OK
5. Update an offer	OK
6. Delete an offer	OK

5.3.6.3.1 Searching products for updating (supplier)

Goal: testing the searching functionality in order to update products
Test Case ID: Searching products

Procedure	Results
1- Search for product	OK
1.1 Select a department	OK
1.2 Select a category	OK
2. Update a product	OK

5.3.6.3.2 Searching products (buyer)

Goal: testing the searching functionality for buyers
Test Case ID: Searching products

Procedure	Results
1- Select a showcase	OK
2. Select a department	OK
3. Select a category	OK
4. Add a product to shopping cart	OK

5.3.6.3.3 Shopping cart

Goal: Testing the functionalities of the shopping cart
Test Case ID: Shopping cart .

Procedure	Results
1. Update quantity of a product	OK
2. Delete a product from the shopping cart	OK
3. Validate buyers shopping cart	OK

5.3.6.4 Test report

Service ID	Description	Test case	Pass/Fail
Manage showcase_1	Create a showcase	Manage showcase	Ok
Manage showcase_2	Update a showcase	Manage showcase	Ok
Manage showcase_3	Delete a showcase	Manage showcase	Ok
Manage products_1	Create a product	Manage products	Ok
Manage products_2	Select a department	Manage products	Ok
Manage products_3	Select a category	Manage products	Ok
Manage products_4	Fill characteristics of product	Manage products	Ok
Manage products_5	Select a picture	Manage products	Ok
Manage products_6	Delete a picture	Manage products	Ok
Manage products_7	Update a product	Manage products	Ok
Manage products_8	Delete a product	Manage products	Ok
Manage products_9	Add Price offers filling name quantity and price fields	Manage products	Ok
Manage products_10	Update an offer	Manage products	Ok
Manage products_11	Delete an offer	Manage products	Ok
Searching products_1	Search for a product	Searching products for updating (supplier)	Ok

Service ID	Description	Test case	Pass/Fail
Searching products_2	Select a department	Searching products for updating (supplier)	Ok
Searching products_3	Select a category	Searching products for updating (supplier)	Ok
Searching products_4	Update a product	Searching products for updating (supplier)	Ok
Searching products_1	Select a showcase	Searching products for buyers	Ok
Searching products_2	Select a department	Searching products for buyers	Ok
Searching products_3	Select a category	Searching products for buyers	Ok
Searching products_4	Add a product to shopping cart	Searching products for buyers	Ok
Shopping cart_1	Update quantity of a product	Shopping cart	Ok
Shopping cart_2	Delete a product from the shopping cart	Shopping cart	Ok
Shopping cart_3	Validate buyers shopping cart	Shopping cart	Ok

5.3.7 Ontology

The purpose of this chapter is to specify the tests conducted for the ontology system.

Module	*Responsible Partner*	*Contac*
Ontology	CERT	Ioannis Tsampoulatidis [itsam@iti.gr]

5.3.7.1 Testing strategy

The Ontology module provides a SOAP interface developed by CERT. Tests had been conducted following the next steps:

- identification of all the interfaces and functionalities provided by the module;
- development of a SOAP client responsible to invoke one after the other all the functionalities offered by the Ontology module (see step 1));
- run the program defined at step 2);
- report in this template the results obtained.

5.3.7.1.1 Functional requirements vs. module services to be tested

A specific ID has to be specified according to the following naming convention:

SV- nn – xx –yy – zz

where the first part of the name (nn – xx – yy) is taken from the Requirement ID, while the last two figures are unique identifiers of the service.

Reference	*Requirement*	*ID/Services*
FR-PT-01-01	Provides an access point to Knowledge Base Access	SV-PT-01-01–01 …..

5.3.7.1.2 Functional Requirements vs. Module Services Not To Be Tested

Reference	Requirement	ID/Services
FR-PT-01-01	Provides an access point to Knowledge Base Access	SV-PT-01-01–01 …..

5.3.7.1.3 Coverage criteria

Test will be related to Ontology functionalities and will verify if these functionalities are available and work fine.

Tests will be performed following direct verification criteria. Ontology functionalities are, in substance, services, so they will be tested with a direct invocation and analysing responses and results.

5.3.7.1.4 Pass/fail criteria

Functional test will be performed with a direct invocation of the Ontology services, so there will be only two possible fail criteria:

- Critical: invocation doesn't produce any response and results.
- High: invocation produce a negative response and/or results.

Test pass criteria are the following:

- Passed: invocation produce correct response and/or result.

5.3.7.1.5 Regression test

No regression test is needed.

5.3.7.1.6 Suspension and resumption of testing

TBA

5.3.7.1.7 Schedule

Activity	Start	Due	Duration
Identified SOAP interfaces to be tested	08/07/2002	10/07/2002	1 hour
Development of an Ontology SOAP client	10/07/2002	12/07/2002	2 hours
Test all the SOAP interfaces	15/07/2002	17/07/2002	1 hour
Produce the Test Report	17/07/2002	19/07/2002	1 hour

5.3.7.2 Test cases

The test cases described in the following have to be designed to exercise the product's features. Following the description of the test will be the test case(s) that are necessary to exercise the functionality, the procedure that must be executed, and the expected results. The verification of the expected results will be used to score the test (pass/fail).

The name of each Test Case will refer to the name of the corresponding Functional Requirement or Module Service and its identifier shall be chosen as to provide a compact but evocative description of the Test Case purpose.

5.3.7.2.1 "Add_Collection" test

Goal: Test "Add collection" Ontology functionality

Test Case ID:Ontology_Service01

Initial Conditions: Ontology is available at the correct URL
End Conditions: A new collection is created in Ontology.

Procedure	Results
1. Invoke services “add_collection” by means a SOAP call and passing it new collection’s name and context collection where build new collection.	Ontology returns a response.
2. Execute “List_Collection” test.	New collection name must appear in the list of available collections.

5.3.7.2.2 “List_Collection” test

Goal: Test “list collection” Ontology functionality

Test Case ID: Ontology_Service02

Initial Conditions: Ontology is available at the correct URL. Some collections are stored in the Ontology
End Conditions: Obtain the list of collections contained into the

Procedure	Results
1. Invoke services “list_collection” by means a SOAP call and passing it context collection.	Ontology returns a response containing the list of the collections that are contained into context collection.

5.3.7.2.3 “Add_File” test

Goal: Test “Add file” Ontology functionality

Test Case ID: Ontology_Service03

Initial Conditions: Ontology is available at the correct URL. An xml file is available
End Conditions: new file is added in Ontology

Procedure	Results
1. Invoke services “add_file” by means a SOAP call and passing it file to be added to Ontology and collection where save it.	Ontology returns a response containing a Boolean value (true=passed; false=failed).
2. Execute “List_Files” test.	The file added must appear in the list of files.

5.3.7.2.4 “List_Files” test

Goal: Test “List files” Ontology functionality

Test Case ID: Ontology_Service04

Initial Conditions: Ontology is available at the correct URL.
End Conditions: Xml file to be

Procedure	Results
1. Invoke services “list_files” by means of a SOAP call, passing it the file key to be retrieved from the Ontology.	Ontology returns a response containing an xml file required structure.

5.3.7.2.5 “Delete_File” test

Goal: Test “Delete file” Ontology functionality

Test Case ID: Ontology_Service05

Initial Conditions: Ontology is available at the correct URL
End Conditions: Specific file must be deleted by the

Procedure	Results
1. Invoke services “delete_file” by means a SOAP call and passing it the file to be deleted in the Ontology and the collection context where it is stored.	Ontology returns a response containing a Boolean (true=passed; false=failed).
2. Execute “List_Files” test.	The file selected must not appear in the list of files.

5.3.7.2.6 “Retrieve_File” test

Goal: Test “Retrieve file” Ontology functionality

Test Case ID: Ontology_Service06

Initial Conditions: Ontology is available at the correct URL, xml file is available in Ontology

End Conditions: URL of the file indicated is

Procedure	Results
1. Invoke services “Retrieve_file” by means a SOAP call and passing it file key to Ontology and collection where save it.	Ontology returns a response containingURL of the requested file.

5.3.7.2.7 “Retrieve_File_Content” test

Goal: Test “Retrieve file content” Ontology functionality

Test Case ID: Ontology_Service07

Initial Conditions: Ontology is available at the correct URL. An xml file is available in Ontology

End Conditions: URL of the required file is

Procedure	Results
1. Invoke services “Retrieve_File_Content” by means a SOAP call and passing it file key to Ontology and collection where save it.	Ontology returns a response containing the xml structure of the file requested.

5.3.7.2.8 “Delete_Collection” test

Goal: Test “Delete collection” Ontology functionality

Test Case ID: Ontology_Service08

Initial Conditions: Ontology is available at the correct URL

End Conditions: A collection is deleted in Ontology

Procedure	Results
1. Invoke services “delete_collection” by means a SOAP call passing it a collection’s name and the context collection where to build the new collection.	Ontology returns a response containing a Boolean value (true=passed; false=failed).
2. Execute “List_Collection” test.	Collection name must not appear in the list of collections.

5.3.7.2.9 UniqueKey” test

Goal: Test “UniqueKey” Ontology functionality

Test Case ID: Ontology_Service09

Initial Conditions: Ontology is available at the correct URL

End Conditions: Unique key is

Procedure	Results
1. Invoke services “UniqueKey” by means of a	Ontology returns an unique key.

Procedure	**Results**
SOAP call.	

5.3.7.3 Test report

For each Test run and for each FR or Service list in the following the result of the related test.

Service ID	**Description**	**Test case**	**Pass/Fail**
Ontology_Service01			Passed
Ontology_Service02			Passed
Ontology_Service03			Passed
Ontology_Service04			Passed
Ontology_Service05			Passed
Ontology_Service06			Passed
Ontology_Service07			Passed
Ontology_Service08			Passed
Ontology_Service09			Passed

5.3.8 Topic Map Viewer

The purpose of this chapter is to specify the tests conducted for the topic map viewer.

Module	***Responsible Partner***	***Contac***
TM Viewer	SI	Nikos Karatzoulis

5.3.8.1 Testing strategy

The TM Viewer has been tested using the web interface of the module at http://www.labfuture.net/regnet/.

5.3.8.1.1 Functional requirements vs. module services to be tested

Reference	***Requirement***	***ID/Services***
FR-PT-01-01	Topic Map selection	SV-PT-01-01–01 Select from available topic maps SV-PT-01-01-02 Change topic map
FR-PT-02-01	Browse XTM file	SV-PT-02-01–01 Showing the XTM file
FR-PT-03-01	Topic selection	SV-PT-03-01–01 Showing details SV-PT-03-01–02 Links
FR-PT-04-01	Statistics	SV-PT-04-01–01 Count topics

5.3.8.1.2 Coverage criteria

No special coverage criteria have been used.

5.3.8.1.3 Pass/fail criteria

- Critical: Fatal error
- High: Needs immediate attention
- Medium: Needs to be resolved as soon as possible, but not a showstopper
- Low: Cosmetic error

5.3.8.1.4 Regression test

Scope of Regression Testing is based on Full regression testing, which entails the complete software system to be tested against all the requirement specifications.

5.3.8.1.5 Suspension and resumption of testing

TBD

5.3.8.1.6 Schedule

Activity	*Start*	*Due*	*Duration*
Spot the functional requirements	27/08	28/08	2 working days
Do the actual testing	29/08	30/08	2 working days

5.3.8.2 Test cases

The test cases described in the following have to be designed to exercise the product's features. Following the description of the test will be the test case(s) that are necessary to exercise the functionality, the procedure that must be executed, and the expected results. The verification of the expected results will be used to score the test (pass/fail).

The name of each Test Case will refer to the name of the corresponding Functional Requirement or Module Service and its identifier shall be chosen as to provide a compact but evocative description of the Test Case purpose.

5.3.8.2.1 Test Case "Topic Map Selection"

Goal: Select an available topic map

Test Case ID: FR-PT-01-01

Initial Conditions: No special initial conditions needed

Procedure	**Results**
1. Select from available topic maps	A drop down menu is used in order to allow the user to select a topic map. OK (There should be a way to import new files)
2. Change topic map	If the user selects another topic map, the old one is being replaced by the new. OK

5.3.8.2.2 Test Case "Browse XTM file"

Goal: XTM file browsing

Test Case ID: FR-PT-02-01

Initial Conditions: IE

Procedure	**Results**
1. Showing the XTM file	A new browser opens, showing the XTM file. OK

5.3.8.2.3 Test Case "Topic Selection"

Goal: Select a topic and see its details

Test Case ID: FR-PT-03-01

Procedure	**Results**
1. Showing topic details	Every detail of the topic appears on the right frame. The interface is similar to the Omnigator. The following are supported: occurrences, associations, basenames, topic ref, subject indicators
2. Links from details	Wherever necessary, links are provided in the details frame.

5.3.8.2.4 Test Case "Statistics"

Goal: statistics
Test Case ID: FR-PT-04-01

Procedure	Results
1. Count topics	OK

5.3.8.3 Test report

For each Test run and for each FR os Service list in the following the result of the related test.

Service ID	Description	Test case	Pass/Fail
SV-PT-01-01-01	Select topic map	Topic Map Selection	Pass
SV-PT-01-01-02	Change topic map	Topic Map Selection	Pass
SV-PT-02-01-01	Showing XTM file	Browse XTM file	Pass
SV-PT-03-01-01	Showing details	Topic Selection	Pass
SV-PT-03-01-02	Links from details	Topic Selection	Pass
SV-PT-04-01-02	Browse through pages	Statistics	Pass

5.3.9 WAP Access

The purpose of this chapter is to specify the tests conducted for the WAP access.

Module	*Responsible Partner*	*Contac*
WAP Access	MOT	Roberto Cicci roberto.cicci@motorola.com

5.3.9.1 Testing strategy

The WAP Access module has been tested using the web interface of the module and various WAP emulator programs (e.g. OpenWave emulator: http://www.openwave.com). The WAP access module was accesses via the following URL: http://garonne.toulouse.valtech.fr:8080/jetspeed/index.jsp.

The test cases are divided in two categories. For each option of the WAP interface we tested a) content display and b) if the displayed content is accessible (i.e. operational). Furthermore, the search facility was tested in more detail in order to identify its operation and limitations.

5.3.9.2 Test cases

5.3.9.2.1 Test Case "Entry Screen"

Goal: to test if the entry screen is operating
Initial Conditions: No special initial conditions needed

Procedure	Results
1. Login screen appears	OK
2. Enter login name and password	OK

5.3.9.2.2 Test Case "Login Menu"- Content Display

Goal: to test if the content of Login Menu screen is being displayed
Initial Conditions: No special initial conditions needed

Procedure	Results
1. News and Info option appears	OK

2. Education and Research option appears	OK
3. Events and Exhibitions option appears	OK
4. Search and Collections option appears	OK
5. Shop and Business option appears	OK
6. Logout option appears	OK

5.3.9.2.3 Test Case "Login Menu"- Accessibility

Goal: to test if the options of the Login Menu are accessible\operating
Initial Conditions: No special initial conditions needed

PROCEDURE	RESULTS
1. Access News and Info option	OK
2. Access Education and Research option	OK
3. Access Events and Exhibitions option	OK
4. Access Search and Collections option	OK
5. Access Shop and Business option	OK
6. Access Logout option	OK

5.3.9.2.4 Test Case "News and Info Menu"- Content Display

Goal: to test if the content of the News and Info Menu screen is being displayed
Initial Conditions: No special initial conditions needed

PROCEDURE	RESULTS
1. News_Board option appears	OK
2. Guest_Book option appears	OK
3. Top_About option appears	OK
4. Address_Book option appears	OK
5. Forum option appears	OK
6. Job_Offers option appears	OK
7. Personalization option appears	OK
8. Feedback option appears	OK

5.3.9.2.5 Test Case "News and Info Menu"- Accessibility

Goal: to test if the options of the News and Info Menu are accessible\operating
Initial Conditions: No special initial conditions needed

PROCEDURE	RESULTS
1. Access News_Board option	Not available
2. Access Guest_Book option	Not available
3. Access Top_About option	Works and displays two options : - ist - regnet that are not operating
4. Access Address_Book option	Not available
5. Access Forum option	Not available

6. Access Job_Offers option	Not available
7. Access Personalization option	Not available
8. Access Feedback option	Not available

5.3.9.2.6 Test Case "Education and Research Menu"- Content Display

Goal: to test if the content of the Education and Research Menu screen is being displayed
Initial Conditions: No special initial conditions needed

PROCEDURE	RESULTS
1. Event_Calendar option appears	OK
2. Forum option appears	OK
3. Teaching_Resources option appears	OK

5.3.9.2.7 Test Case "Education and Research Menu"- Accessibility

Goal: to test if the options of the Education and Research Menu are accessible\operating
Initial Conditions: No special initial conditions needed

PROCEDURE	RESULTS
1. Access Event_Calendar option	Not available
2. Access Forum option	Not available
3. Access Teaching_Resources option	Not available

5.3.9.2.8 Test Case "Events and Exhibitions Menu"- Content Display

Goal: to test if the content of the Events and Exhibitions Menu screen is being displayed
Initial Conditions: No special initial conditions needed

PROCEDURE	RESULTS
1. Calendar option appears	OK
2. Suggest_Event option appears	OK
3. Virt_Exhib_Tour option appears	OK
4. Tickets option appears	OK

5.3.9.2.9 Test Case "Events and Exhibitions Menu"- Accessibility

Goal: to test if the options of the Events and Exhibitions Menu are accessible\operating
Initial Conditions: No special initial conditions needed

PROCEDURE	RESULTS
1. Access Calendar option	Not available
2. Access Suggest_Event option	Not available
3. Access Virt_Exhib_Tour option	Not available
4. Access Tickets option	Not available

5.3.9.2.10 Test Case "Search and Collections Menu"- Content Display

Goal: to test if the content of the Search and Collections Menu screen is being displayed
Initial Conditions: No special initial conditions needed

PROCEDURE	RESULTS
1. Topic_Explorer option appears	OK

2. Collections option appears	OK
3. Data_Generation option appears	OK
4. Virtual_Tours option appears	OK
5. Search option appears	OK
6. Search_Guide option appears	OK
7. Personalization_Search option appears	OK
8. Copyright_Information option appears	OK

5.3.9.2.11 Test Case "Search and Collections Menu"- Accessibility

Goal: to test if the options of the Search and Collections Menu are accessible\operating
Initial Conditions: No special initial conditions needed

PROCEDURE	RESULTS
1. Access Topic_Explorer option	Not available
2. Access Collections option	Not available
3. Access Data_Generation option	Not available
4. Access Virtual_Tours option	Not available
5. Access Search option	OK
6. Access Search_Guide option	Not available
7. Access Personalization_Search option	Not available
8. Access Copyright_Information option	Not available

5.3.9.2.12 Test Case "Shop and Business Menu"- Content Display

Goal: to test if the content of the Shop and Business Menu screen is being displayed
Initial Conditions: No special initial conditions needed

PROCEDURE	RESULTS
1. Online_Shop option appears	OK
2. Access Procurement appears	OK

5.3.9.2.13 Test Case "Shop and Business Menu"- Accessibility

Goal: to test if the options of the Shop and Business Menu are accessible\operating
Initial Conditions: No special initial conditions needed

PROCEDURE	RESULTS
1. Access Online_Shop option	Not available
2. Access Procurement option	Not available

5.3.9.2.14 Test Case "User Home Menu"- Content Display

Goal: to test if the content of the User Home Menu screen is being displayed
Initial Conditions: No special initial conditions needed

PROCEDURE	RESULTS
1. Mark Site option appears	OK
2. Save Image option appears	OK
3. Snap Page option appears	OK
4. Refresh option appears	OK

5. Mark List option appears	OK
6. Snap List option appears	OK
7. Back option appears	OK
8. Home option appears	OK
9. Exit option appears	OK

5.3.9.2.15 Test Case “User Home Menu”- Accessibility

Goal: to test if the options of the User Home Menu are accessible\operating
Initial Conditions: No special initial conditions needed

PROCEDURE	RESULTS
1. Access Mark Site option	It works ok and when selected the user is prompted to enter a title and the URL of the site to be saved. Then by clicking the save button the site was saved. One of the test was to add the http://www.systema.gr site to the list of bookmarks and it worked.
2. Access Save Image option	In our system it caused problems and we did not managed to save an image
3. Access Snap Page option	This option does not operate
4. Access Refresh option	OK
5. Access Mark List option	OK
6. Access Snap List option	OK
7. Access Back option	OK
8. Access Home option	OK
9. Access Exit option	OK

5.3.9.2.16 Test Case “Search_all_DB’s Option”- Operational

Goal: to test if the Search_all_DB’s option is working using several strings
Initial Conditions: No special initial conditions needed

PROCEDURE	RESULTS
Search for “coin”	The following 5 results were found: - Krenzer - 2 cent - 5 cent - 10 cent - 50 cent
Search for “posters”	The following 5 results were found: - DMB_123482.xml - Ausstellung Armin Hofmann,

	Posters/Museum of Modern Art New York - Jazz Posters by Niklaus Troxler - Coca Cola Posters als Praen - 100 Years of Circus Posters
Search for "jazz posters"	The following 1 result was found: - Jazz Posters by Niklaus Troxler

5.3.10 Reference System

The purpose of this chapter is to specify the tests conducted for the topic map viewer.

Module	***Responsible Partner***	***Contac***
Reference System	SPACE	

5.3.10.1 Testing strategy

The test strategy consists of a series of different tests that will fully exercise the Reference System. The Reference System provides access to the repositories (TEXTML-Server) holding cultural heritage meta data. It is split into two main sub components:

- Data Generation Service (provides data generation functionalities)
- Search Service (provides search and retrieval functionalities)

Both sub components are accessible through an ASP.NET web service. The primary purpose of these tests is to uncover the systems limitations and measure its full capabilities. A list of the various planned tests and a brief explanation follows below.

- System Test:

  The System tests will focus on the behaviour of the Reference system. User scenarios will be executed against the system as well as screen mapping and error message testing. Overall, the system tests will test the integrated system and verify that it meets the requirements defined in the requirements document.

- Performance Test

  Performance test will be conducted to ensure that the Reference system's response times meet the user expectations and does not exceed the specified performance criteria. During these tests, response times will be measured (only an estimation) . This will subject the system to tests that could not be performed in our test environment because of limited number of machines.

- Security Test

  Security tests will determine how secure the Reference sub components are. The tests will verify that unauthorised user access to confidential data is prevented. This will subject the system to tests that could not be performed in our test environment because of the open access to the components.

- Stress and Volume Test

  The Reference system will be subject to high input conditions and a high volume of data during the peak times. The System will be stress tested using twice the number of expected users. This will subject the system to tests that could not be performed in our test environment.

- Recovery Test

Recovery tests will force the system to fail in a various ways and verify the recovery is properly performed. It is vitally important that all data is recovered after a system failure & no corruption of the data occurred.

5.3.10.1.1 Functional requirements vs. module services to be tested

List in the following table the Functional Requirements that have been implemented in the module, specifying for each requirements, which are the services that will be tested.

Reference	***Requirement***	***ID/Services***
FR-RS-01-03	Insert data into repository	SV-RS-01-01–03
FR-RS-01-04	Update data into repository	SV-RS-01-01–04
FR-RS-01-05	Delete data into repository	SV-RS-01-01–05
FR-RS-01-07	Provide (interface for) external data entry components	SV-RS-01-07–07
FR-RS-02-01	Search	SV-RS-02-01–01
FR-RS-02-02	Transform query into proper format	SV-RS-02-02–02
FR-RS-02-03	Search in (local) Cultural Heritage meta data repositories	SV-RS-02-03–03
FR-RS-02-04	Manage search session	SV-RS-02-04–04

5.3.10.1.2 Functional requirements vs. module services not to be tested

Reference	***Requirement***	***ID/Services***	
FR-RS-01-01	Create a new repository	SV-RS-01-01–01	Not available
FR-RS-01-02	Delete repository	SV-RS-01-02–02	Not available
FR-RS-01-06	Ensure data integrity	SV-RS-01-06–06	Not available
FR-RS-02-05	Create ID	SV-RS-02-05–05	Not available
FR-RS-02-06	find ID	SV-RS-02-06–06	Not available
FR-RS-02-07	Delete ID	SV-RS-02-07–07	Not available
FR-RS-02-08	Process results	SV-RS-02-08–08	Not available

5.3.10.1.3 Coverage criteria

In the following table are indicated the functionalities provided with the 1st prototype interface for data management and search & retrieve services.

Data Generation sub component

Functionalities	***Description***	***Related Module services***
Version	Return Version of the Web Service.	Auxiliary service
ListDoctypes	Returns a list of document types for each repository.	Auxiliary service
Edit	Locks a record for one user. True if successful, false if record is already locked by another user or an error occurred. One can use this method instead of EditRecord if the record data is has been retrieved by the use of another component.	SV-RS-01-01–03 SV-RS-01-01–04
EditRecord	Same as Edit but returns the record data instead of Boolean. Record data if successful, "" if record is already locked by another user or an error occurred.	SV-RS-01-01–03 SV-RS-01-01–04
GetLockUser	Get identifier from user that has currently locked the record.	SV-RS-01-01–03 SV-RS-01-01–04

Save	Saves the record and removes the lock from this record. True if successful, false if record is not locked for this user or an error occurred.	SV-RS-01-01–03 SV-RS-01-01–04
Delete	Deletes a record. The record must be unlocked or locked for this user. True if successful, false if record is already locked by another user or an error occurred.	SV-RS-01-01–05

Search sub component

Functionalities	***Description***	***Related Module services***
Version	Return Version of the Web Service.	Auxiliary service
ListRepositories	Return a list of repositories connected to the Search Service.	Auxiliary service
ListDoctypes	Returns a list of document types for each repository.	SV-RS-02-01–01 SV-RS-02-02–02 SV-RS-02-03–03 SV-RS-02-04–04
ListAccessProfiles	Returns a list of index definitions (as XML document) for each repository.	SV-RS-02-01–01 SV-RS-02-02–02 SV-RS-02-03–03 SV-RS-02-04–04
ListQueryTypes	Lists the query types (query formats) that can be used with this service.	SV-RS-02-01–01 SV-RS-02-02–02 SV-RS-02-03–03 SV-RS-02-04–04
SearchRetrieve	The main method of the Search Service. Returns query hits and the records found respectively.	SV-RS-02-01–01 SV-RS-02-02–02 SV-RS-02-03–03 SV-RS-02-04–04
GetRecords	Returns the records specified in a record list filtered by the optional doctypes list.	SV-RS-02-01–01 SV-RS-02-02–02 SV-RS-02-03–03 SV-RS-02-04–04

5.3.10.1.4 Pass/fail criteria

- Critical: Fatal error
- High: Needs immediate attention
- Medium: Needs to be resolved as soon as possible, but not a showstopper (usually the correct data input is unknown).
- Low: Cosmetic error

5.3.10.1.5 Regression test

Scope of Regression Testing is based on the judgement of the system test engineer and project manager. The judgement is limited to the following:

- Full Regression Testing, which entails the complete software system to be tested against all the requirement specifications;

- Partial Regression Testing which entails the software system to be tested partially but against a pre-defined subset of requirement specifications.

5.3.10.1.6 Suspension and resumption of testing

TBD

5.3.10.1.7 Schedule

A brief explanation of scheduled test follows below:

Activity	***Start***	***Due***	***Duration***
Ramp up / System familiarisation	01-07-02	05-07-02	5 days
System Test & Recovery Test	08-07-02	17-07-02	7 days
Reporting	17-07-02	19-07-02	2 days

5.3.10.2 Test report

For each Test run and for each FR os Service list in the following the result of the related test.

DATA GENERATION SUBCOMPONENT

Version

Input	**Output**	**Pass/Fail**
Many Integer number	<?xml version="1.0" encoding="utf-8" ?> <string xmlns="http://www.regnet.org/datageneration/">0.1 </string>	LOW
<String>	System.ArgumentException: Cannot convert “string” to System.Int32	LOW

Listrepositories

Input	**Output**	**Pass/Fail**
Many Integer number	<?xml version="1.0" encoding="utf-8" ?> - <ArrayOfString xmlns:xsd="http://www.w3.org/2001/XMLSchema" xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance" xmlns="http://www.regnet.org/datageneration/"> <string>rn_plakat_v01</string> <string>rn_dmb_v01</string> <string>rn_various_v01</string> </ArrayOfString>	LOW
<String>	System.ArgumentException: Cannot convert “string” to System.Int32	LOW

ListDoctypes

Input	**Output**	**Pass/Fail**

Many Integer number (#)	<?xml version="1.0" encoding="utf-8" ?> - <ArrayOfString xmlns:xsd="http://www.w3.org/2001/XMLSchema" xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance" xmlns="http://www.regnet.org/datageneration/"> <string>No connection to #.</string> </ArrayOfString>	LOW
<String>	<?xml version="1.0" encoding="utf-8" ?> - <ArrayOfString xmlns:xsd="http://www.w3.org/2001/XMLSchema" xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance" xmlns="http://www.regnet.org/datageneration/"> <string>No connection to “string”.</string> </ArrayOfString>	LOW
Rn_plakat_v01	<?xml version="1.0" encoding="utf-8" ?> - <ArrayOfString xmlns:xsd="http://www.w3.org/2001/XMLSchema" xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance" xmlns="http://www.regnet.org/datageneration/"> <string>No connection to rn_plakat_v01.</string> </ArrayOfString>	MEDIUM
plakat	<?xml version="1.0" encoding="utf-8" ?> - <ArrayOfString xmlns:xsd="http://www.w3.org/2001/XMLSchema" xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance" xmlns="http://www.regnet.org/datageneration/"> <string>No connection to plakat.</string> </ArrayOfString>	MEDIUM
dmb	<?xml version="1.0" encoding="utf-8" ?> - <ArrayOfString xmlns:xsd="http://www.w3.org/2001/XMLSchema" xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance" xmlns="http://www.regnet.org/datageneration/"> <string>No connection to dmb.</string> </ArrayOfString>	MEDIUM

Edit

Input	**Output**	**Pass/Fail**
recordId= "1" userId= "1"	System.IndexOutOfRangeException: Index was outside the bounds of the array.	MEDIUM
recordId= "0" userId= "0"	System.IndexOutOfRangeException: Index was outside the bounds of the array.	MEDIUM
recordId= "#"	System.IndexOutOfRangeException: Index was outside the	MEDIUM

userId= "#"	bounds of the array.	
recordId= "string" userId= "string"	System.IndexOutOfRangeException: Index was outside the bounds of the array.	MEDIUM

EditRecord

Input	**Output**	**Pass/Fail**
recordId= "1" userId= "1"	System.IndexOutOfRangeException: Index was outside the bounds of the array.	MEDIUM
recordId= "0" userId= "0"	System.IndexOutOfRangeException: Index was outside the bounds of the array.	MEDIUM
recordId= "#" userId= "#"	System.IndexOutOfRangeException: Index was outside the bounds of the array.	MEDIUM
recordId= "string" userId= "string"	System.IndexOutOfRangeException: Index was outside the bounds of the array.	MEDIUM

GetLockUser

Input	**Output**	**Pass/Fail**
recordId=0	<?xml version="1.0" encoding="utf-8" ?> <string xmlns="http://www.regnet.org/datageneration/" />	MEDIUM
recordId="1"	<?xml version="1.0" encoding="utf-8" ?> <string xmlns="http://www.regnet.org/datageneration/" />	MEDIUM
recordId= "#"	<?xml version="1.0" encoding="utf-8" ?> <string xmlns="http://www.regnet.org/datageneration/" />	MEDIUM
recordId= "string"	<?xml version="1.0" encoding="utf-8" ?> <string xmlns="http://www.regnet.org/datageneration/" />	MEDIUM

Delete

Input	**Output**	**Pass/Fail**
recordId= "1" userId= "1"	System.IndexOutOfRangeException: Index was outside the bounds of the array.	MEDIUM
recordId= "0" userId= "0"	System.IndexOutOfRangeException: Index was outside the bounds of the array.	MEDIUM
recordId= "#" userId= "#"	System.IndexOutOfRangeException: Index was outside the bounds of the array.	MEDIUM
recordId= "string" userId= "string"	System.IndexOutOfRangeException: Index was outside the bounds of the array.	MEDIUM

Search sub component

Version

Input	**Output**	**Pass/Fail**
Many Integer number	<?xml version="1.0" encoding="utf-8" ?>	LOW

	<string xmlns="http://www.regnet.org/searchservice/">0.9</string>	
<String>	System.ArgumentException: Cannot convert “string” to System.Int32	LOW

Listrepositories

Input	**Output**	**Pass/Fail**
Many Integer number	<?xml version="1.0" encoding="utf-8" ?> - <ArrayOfString xmlns:xsd="http://www.w3.org/2001/XMLSchema" xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance" xmlns="http://www.regnet.org/searchservice/"> <string>coins</string> <string>dmb</string> <string>fbr</string> <string>kva</string> <string>plakat</string> <string>onb</string> </ArrayOfString>	LOW
<String>	System.ArgumentException: Cannot convert “string” to System.Int32	LOW

ListDoctypes

Input	**Output**	**Pass/Fail**
<repositories> <string> dmb </string> </repositories>	<?xml version="1.0" encoding="utf-8" ?> - <ArrayOfString xmlns:xsd="http://www.w3.org/2001/XMLSchema" xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance" xmlns="http://www.regnet.org/searchservice/"> <string>DUBLINCORE</string> <string>NAME</string> <string>OBJECT</string> <string>PLACE</string> </ArrayOfString>	LOW
<repositories> <string> coins </string> </repositories>	<?xml version="1.0" encoding="utf-8" ?> - <ArrayOfString xmlns:xsd="http://www.w3.org/2001/XMLSchema" xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance" xmlns="http://www.regnet.org/searchservice/"> <string>BANKNOTE</string> <string>COIN</string> </ArrayOfString>	LOW
<repositories>	<?xml version="1.0" encoding="utf-8" ?> - <ArrayOfString	LOW

<string> fbr </string> </repositories>	xmlns:xsd="http://www.w3.org/2001/XMLSchema" xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance" xmlns="http://www.regnet.org/searchservice/"> <string>BIBLIOGRAPHIC</string> <string>DUBLINCORE</string> <string>NAME</string> <string>OBJECT</string> <string>PLACE</string> </ArrayOfString>	
<repositories> <string> kva </string> </repositories>	<?xml version="1.0" encoding="utf-8" ?> - <ArrayOfString xmlns:xsd="http://www.w3.org/2001/XMLSchema" xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance" xmlns="http://www.regnet.org/searchservice/"> <string>BIBLIOGRAPHIC</string> <string>DUBLINCORE</string> <string>NAME</string> <string>OBJECT</string> <string>PLACE</string> <string>SURROGATE</string> </ArrayOfString>	LOW
<repositories> <string> plakat </string> </repositories>	<?xml version="1.0" encoding="utf-8" ?> - <ArrayOfString xmlns:xsd="http://www.w3.org/2001/XMLSchema" xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance" xmlns="http://www.regnet.org/searchservice/"> <string>DUBLINCORE</string> <string>NAME</string> <string>OBJECT</string> <string>PLACE</string> </ArrayOfString>	LOW
<repositories> <string>fbr</string> <string>kva</string> <string>plakat</string> <string>onb</string> <string>dmb</string> <string>coins</string> </repositories>	<?xml version="1.0" encoding="utf-8" ?> - <ArrayOfString xmlns:xsd="http://www.w3.org/2001/XMLSchema" xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance" xmlns="http://www.regnet.org/searchservice/"> <string>BANKNOTE</string> <string>BIBLIOGRAPHIC</string> <string>COIN</string> <string>DUBLINCORE</string> <string>LEAFLET</string> <string>LEAFLET-ITEM</string> <string>MERKZETTEL</string> <string>NAME</string> <string>OBJECT</string> <string>ORDER</string>	LOW

	<string>ORDER-ITEM</string> <string>PLACE</string> <string>PREFERENCES</string> <string>SURROGATE</string> <string>USER</string> </ArrayOfString>	
<repositories> <string> onb </string> </repositories>	<?xml version="1.0" encoding="utf-8" ?> - <ArrayOfString xmlns:xsd="http://www.w3.org/2001/XMLSchema" xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance" xmlns="http://www.regnet.org/searchservice/"> <string>DUBLINCORE</string> <string>LEAFLET</string> <string>LEAFLET-ITEM</string> <string>MERKZETTEL</string> <string>NAME</string> <string>OBJECT</string> <string>ORDER</string> <string>ORDER-ITEM</string> <string>PLACE</string> <string>PREFERENCES</string> <string>USER</string> </ArrayOfString>	LOW
Many not well formed XML string	System.Xml.XmlException: This is an unexpected token. Expected 'EndElement'. Line 1, position 23 System.Xml.XmlException: There is invalid data at the root level. Line 1, position 1.	LOW
<repositories> <string> “dummy string” </string> </repositories>	<?xml version="1.0" encoding="utf-8" ?> <ArrayOfString xmlns:xsd="http://www.w3.org/2001/XMLSchema" xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance" xmlns="http://www.regnet.org/searchservice/" />	LOW

Listquerytype

Input	Output	Pass/Fail
Many Integer number	<?xml version="1.0" encoding="utf-8" ?> - <ArrayOfString xmlns:xsd="http://www.w3.org/2001/XMLSchema" xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance" xmlns="http://www.regnet.org/searchservice/"> <string>KVP-V01</string> <string>KVP-V02</string>	LOW

	<string>TML-V01</string> </ArrayOfString>	
<String>	System.ArgumentException: Cannot convert "string" to System.Int32	LOW

Listaccessprofile

Input	**Output**	**Pass/Fail**
Rn_plakat_v01	<?xml version="1.0" encoding="utf-8" ?> <string xmlns="http://www.regnet.org/searchservice/"> <unknownRepository> </string>	MEDIUM
plakat	<?xml version="1.0" encoding="utf-8" ?> <string xmlns="http://www.regnet.org/searchservice/"> <indexdefinition VERSION="1.0"> <admindescription></admindescription><indexes><index NAME="fulltext" TYPE="FullText"><elements><element NAME="regnet-document"><content><elemdata DEPTH="INFINITE" /></content></element></elements></index><index NAME="doctype" TYPE="List"><elements><element NAME="section"><content><elemattrib NAME="name" /></content></element></elements></index><index NAME="crt" TYPE="List"><admindescription>creator name text</admindescription><elements><element NAME="crt"><content><elemdata DEPTH="INFINITE" /></content></element></elements></index><index NAME="otn" TYPE="FullText"><admindescription>object title name</admindescription><elements><element NAME="otn"><content><elemdata DEPTH="INFINITE" /></content></element></elements></index><index NAME="oct" TYPE="FullText"><admindescription>object creation date as text</admindescription><elements><element NAME="oct"><content><elemdata DEPTH="INFINITE" /></content></element></elements></index><index NAME="ocs" TYPE="Y_Date"><admindescription>object creation start</admindescription><elements><element NAME="ocs"><content><elemdata DEPTH="INFINITE" /></content></element></elements></index><index NAME="dc_title" TYPE="FullText"><admindescription>title</admindescription><elements><element NAME="dc_title"><content><elemdata DEPTH="INFINITE" /></content></element></elements></index><index NAME="dc_creator" TYPE="List"><admindescription>creator</admindescription><elements><element NAME="dc_creator"><content><elemdata DEPTH="INFINITE" /></content></element></elements></index><index NAME="dc_publisher" TYPE="FullText"><admindescription>publisher</admindes	LOW

	cription><elements><element NAME="dc_publisher"><content><elemdata DEPTH="INFINITE" /></content></element></elements></index><index NAME="dc_contributor" TYPE="List"><admindescription>contributor</admindescription><elements><element NAME="dc_contributor"><content><elemdata DEPTH="INFINITE" /></content></element></elements></index><index NAME="dc_date" TYPE="FullText"><admindescription>data as text</admindescription><elements><element NAME="dc_date"><content><elemdata DEPTH="INFINITE" /></content></element></elements></index><index NAME="nte" TYPE="FullText"><admindescription>name text (all person and organization names in the document)</admindescription><elements><element NAME="nte"><content><elemdata DEPTH="INFINITE" /></content></element></elements></index><index NAME="pte" TYPE="FullText"><admindescription>place text</admindescription><elements><element NAME="pte"><content><elemdata DEPTH="INFINITE" /></content></element></elements></index><index NAME="OBJECT fulltext" TYPE="FullText"><elements><element NAME="ooa"><content><elemdata DEPTH="INFINITE" /></content></element><element NAME="crt"><content><elemdata DEPTH="INFINITE" /></content></element><element NAME="crq"><content><elemdata DEPTH="INFINITE" /></content></element><element NAME="otn"><content><elemdata DEPTH="INFINITE" /></content></element><element NAME="oct"><content><elemdata DEPTH="INFINITE" /></content></element><element NAME="ocs"><content><elemdata DEPTH="INFINITE" /></content></element><element NAME="cxp"><content><elemdata DEPTH="INFINITE" /></content></element><element NAME="xri"><content><elemdata DEPTH="INFINITE" /></content></element><element NAME="dcd"><content><elemdata DEPTH="INFINITE" /></content></element></elements></index><index NAME="crt2" TYPE="List"><elements><element NAME="crt2"><content><elemdata DEPTH="INFINITE" /></content></element></elements></index><index NAME="crt3" TYPE="List"><elements><element NAME="crt3"><content><elemdata DEPTH="INFINITE" /></content></element></elements></index><index NAME="cxp" TYPE="List"><elements><element NAME="cxp"><content><elemdata DEPTH="INFINITE" /></content></element></elements></index><index NAME="omd" TYPE="List"><elements><element NAME="omd"><content><elemdata DEPTH="INFINITE" /></content></element></elements></index><index NAME="med" TYPE="FullText"><elements><element NAME="med"><content><elemdata DEPTH="INFINITE"	

	/></content></element></elements></index><index NAME="xri" TYPE="List"><elements><element NAME="xri"><content><elemdata DEPTH="INFINITE" /></content></element></elements></index><index NAME="xri2" TYPE="List"><elements><element NAME="xri2"><content><elemdata DEPTH="INFINITE" /></content></element></elements></index><index NAME="xri3" TYPE="List"><elements><element NAME="xri3"><content><elemdata DEPTH="INFINITE" /></content></element></elements></index><index NAME="cxs" TYPE="List"><elements><element NAME="cxs"><content><elemdata DEPTH="INFINITE" /></content></element></elements></index><index NAME="dcd" TYPE="List"><elements><element NAME="dcd"><content><elemdata DEPTH="INFINITE" /></content></element></elements></index><index NAME="dc_type" TYPE="List"><elements><element NAME="dc_type"><content><elemdata DEPTH="INFINITE" /></content></element></elements></index><index NAME="dc_format" TYPE="List"><elements><element NAME="dc_format"><content><elemdata DEPTH="INFINITE" /></content></element></elements></index><index NAME="dc_language" TYPE="List"><elements><element NAME="dc_language"><content><elemdata DEPTH="INFINITE" /></content></element></elements></index><index NAME="dc_relation" TYPE="List"><elements><element NAME="dc_relation"><content><elemdata DEPTH="INFINITE" /></content></element></elements></index><index NAME="dc_coverage" TYPE="List"><elements><element NAME="dc_coverage"><content><elemdata DEPTH="INFINITE" /></content></element></elements></index><index NAME="dc_rights" TYPE="List"><elements><element NAME="dc_rights"><content><elemdata DEPTH="INFINITE" /></content></element></elements></index><index NAME="nqu" TYPE="List"><elements><element NAME="nqu"><content><elemdata DEPTH="INFINITE" /></content></element></elements></index><index NAME="nro" TYPE="List"><elements><element NAME="nro"><content><elemdata DEPTH="INFINITE" /></content></element></elements></index><index NAME="pro" TYPE="List"><elements><element NAME="pro"><content><elemdata DEPTH="INFINITE" /></content></element></elements></index><index NAME="pre" TYPE="List"><elements><element NAME="pre"><content><elemdata DEPTH="INFINITE" /></content></element></elements></index><index NAME="pco" TYPE="List"><elements><element NAME="pco"><content><elemdata DEPTH="INFINITE" /></content></element></elements></index></indexes></indexdefinition> </string>	
rn_dmb_v01	<?xml version=”1.0” encoding=”utf-8” ?>	MEDIUM

	<string xmlns=”http://www.regnet.org/searchservice/”> <unknownRepository></string>	
dmb	<?xml version=”1.0” encoding=”utf-8” ?> <string xmlns=”http://www.regnet.org/searchservice/”> <indexdefinition VERSION=”1.0”> <admindescription> </admindescription> <indexes> <index NAME=”fulltext” TYPE=”FullText”> <elements> <element NAME=”` egent-document”> <content> <elemdata DEPTH=”INFINITE” /> </content> </element> </elements> </index> <index NAME=”DOCTYPE” TYPE=”List”> <elements> <element NAME=”section”> <content> <elemattrib NAME=”name” /> </content> </element> </elements> </index> <index NAME=”opd” TYPE=”FullText”> <admindescription>object physical description</admindescription> <elements> <element NAME=”opd”> <content> <elemdata DEPTH=”INFINITE” /> </content> </element> </elements> </index> </indexes> </indexdefinition> </string>	LOW
“string”	<?xml version=”1.0” encoding=”utf-8” ?> <string xmlns=”http://www.regnet.org/searchservice/”> <unknownRepository></string>	LOW

integer	<?xml version="1.0" encoding="utf-8" ?> <string xmlns="http://www.regnet.org/searchservice/"> <unknownRepository></string>	LOW

Searchretrieve

Input	**Output**	**Pass/Fail**
<searchRetrieveRequest> <repositories> <string>coins</string> <string>dmb</string> <string>fbr</string> <string>kva</string> <string>plakat</string> <string>onb</string> </repositories> <query> <queryTypeId>TML-V01</queryTypeId> <queryTerm> <query VERSION='1.0' RESULTSPACE='RDOTNET'> <key NAME='fulltext'> <elem> <anystr/>cat<anystr/> </elem> </key> </query> </queryTerm> </query> <startRecord>1 </startRecord> <maximumRecords>20 </maximumRecor	System.Xml.XmlException: This is an unexpected token. Expected 'NAME'. Line 1, position 261	MEDIUM

ds> </searchRetrieveRequest>		
<searchRetrieveRequest> <repositories> <string>rn_plakat_v01</string> <string>rn_dmb_v01</string> </repositories> <doctypes> <string>OBJECT</string> <string>NAME</string> </doctypes> <query> <queryTypeId>TML-V01</queryTypeId> <queryTerm> <query VERSION='1.0' RESULTSPACE='RDOTNET'> <key NAME='fulltext'> <elem> <anystr/>cat<anystr/> </elem> </key> </query> </queryTerm> </query> <startRecord>3</startRecord> <maximumRecords>4</maximumRecords> </searchRetrieveRequest>	System.NullReferenceException: Object reference not set to an instance of an object. at Search.SearchService.SearchRetrieve String searchRetrieveRequest) in D:\regnet\releases\prototype_1.0\searchservice\ SearchService.asmx:line 340	MEDIUM
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Getrecord

Input	Output	Pass/Fail
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6 Description of present XML data structure in REGNET

The following chapter describes the present data structure within the REGNET System. It should be taken as a guideline for further data generation. It was developed on the basis of test results and experiences during the test processes.

6.1 Introduction

Previous descriptions and definitions are contained in REGNET deliverable D4 page 16-17. There are described the basic REGNET data structure (primary data, secondary data, process data), the organisation in document types/sections, mapping of original data into RN structure, data conversion, and the data entry tool.

Scope of this chapter is to give an overall description of present REGNET data structure and to describe the instructions/guidelines for further data generation/transformation into the system that were developed based on recent experiences.

6.2 Basics of REGNET data structure

6.2.1 Information groups

Currently we have following categories of "information groups" in the system:

Object data: (Museum) OBJECT, ARCHIVAL (Object), BIBLIOGRAPHIC (Object), MEDIUMOBJECT

Object data is the most important information type in the system. As far as possible all original data fields are mapped into fields of a documentation standard.

(Museum) OBJECT – AMICO

ARCHIVAL (Object) – EAD

BIBLIOGRAPHIC (Object) – MARC

MEDIUMOBJECT – AMICO Media meta data (mainly digital or physical images)

Thematic text contributions: THEME, THEMEIMAGE, THEMEOBJECT

Thematic text contributions were created within the REGNET project in order to demonstrate the thematic approach to contents. Thematic text contributions are in the structure created by REGNET members and not mapped to any other data field standard. In order to ensure simple search access all thematic text contributions are also mapped into Dublin Core meta data fields. The Dublin Core data fields are added as "section" (will be explained below) to the original thematic text contribution.

Present data structure of these contributions is the result of two different approaches. First of all a table in MS Word format was designed for data entry by IMAC. In the next phase participants delivered contributions in MS Excel format created by TARX. The problem was, that both approaches used their own data structure. Data fields as they are defined now are a sum of the both data field definitions.

There was also E-Shop information (mainly SHOPITEM) contained in the original thematic text contributions. These data fields were extracted from the original data and mapped into a separate E-Shop information group.

The three categories of thematic text contributions:

- THEME: thematic text, these are texts describing a theme/topic in general. E.g. there may be texts giving a general overview to a theme ("Linnaeus") or to parts of a theme ("Botany", "Zoology").
- THEMEOBJECT: thematic texts describing objects related to a topic
- THEMEIMAGE: thematic texts describing digital image related to a topic, the digital images are at least visible as a thumbnail.

"Auxiliary" data: VOCABULARY, THESAURUS, ESHOP, NAME, PLACE

"Auxiliary" data contains all kind of information groups that are needed/created in addition to "core" data. Most databases use vocabularies and thesauri for list controlled fields. VOCABULARY contains for example a list of language abbreviations and is directly added to the individual database. Thesauri are stored in the so called ontology database. A test version with THESAURUS has been set up as test1.

E-Shop data is in general extracted from the original record and mapped into CATXML structure in a separate section added to the "core" object/theme record. E-Shop data is delivered to the developers of the PCM component. E-Shop data extracted from the original data currently contains data about the VENDOR and data of the SHOPITEM.

We have also extracted person/organisation and PLACE information from object records. This "duplicated data" may prepare the creation of a list of persons/places contained in the REGNET system. We have used the word "NAME" for the person/organisation category because there are in some data fields persons as well as organisations contained and an automatic distinction was not possible. Further auxiliary data can be for example an event database. We will use this model for documentation of photographic objects in the BAA, the event database contains all relevant events that could be connected to the photos.

Meta data: DUBLINCORE

Object data and thematic contributions are also mapped into Dublin Core meta data fields in order to provide facilities for further access and interoperability of data. DC fields are added as a section to the object/theme information group. There might also be data imported into REGNET that cannot be mapped into a documentation standard and is left in the original structure. With mapping into DC meta data fields we create a "lowest common denominator" for search access. Actually just the data fields describing the original object is mapped into DC as this is the most important information for the collections.

For example: a museum record is mapped into OBJECT, additional images into MEDIUMOBJECT, only the "core" information, the object is mapped into DC meta data fields.

Data entry for the portal (described in D4): ADDRESS, COLLECTION, EVENT, LINK, NEWS, NEWSLETTER, PROFILE, VOCABULARY

The information groups in the data entry for the portal are designed for the portal.

To sum up one can say that during transformation data are reorganised into the according information groups of REGNET. This is the present status of data structure that can be extended if necessary. Updating of "duplicated data": some data fields are therefore duplicated, e.g. data fields of an object record are also contained in the DC meta data fields. The online data entry tool manages automatically the problem with updating. The user should only change the object/theme record, these changes are automatically performed in the "duplicated" fields.

6.2.2 XML structure of data

Data organised in relational databases refer to a completely different data model as data described in XML. We can say that XML data is "de-normalised" data and therefore one record describing e.g. one museum object contains all relevant information and is not connected to another XML file. One XML record can contain several information groups: e.g. an OBJECT record contains one section containing object information, one section containing the description of a digital image of the object information and sections containing bibliographic data about related publication and one DC meta data set describing the object. Within information groups data is currently only available in "flat" structure, that means that there is just one hierarchical level in XML structure available.

Information groups are internally called sections (=doctypes, that refers to an older version of the system): doctype = section = information group

Roottag: regnet-document

A simple record :

```
<?xml version="1.0" encoding="UTF-8"?>
```

```
&lt;regnet-document VERSION="1.0"&gt;
    &lt;section name="OBJECT"&gt;
        &lt;doctype&gt;OBJECT&lt;/doctype&gt;
        &lt;ooa&gt;4&lt;/ooa&gt;
        &lt;oty&gt;S&lt;/oty&gt;
        &lt;cxp&gt;Aa, Hillebrand van der&lt;/cxp&gt;
        &lt;cxt&gt;um 1659&lt;/cxt&gt;
        &lt;cxt2&gt;um 1722&lt;/cxt2&gt;
        &lt;ril&gt;http://csc002.cscaustria.at/pub/regnet/onb/1/00/00000004.TIF&lt;/ril&gt;
    &lt;/section&gt;
    &lt;section name="DUBLINCORE"&gt;
        &lt;doctype&gt;DUBLINCORE&lt;/doctype&gt;
        &lt;dc_subject&gt;Aa, Hillebrand van der&lt;/dc_subject&gt;
        &lt;dc_date&gt;um 1659&lt;/dc_date&gt;
        &lt;dc_date&gt;um 1722&lt;/dc_date&gt;
        &lt;dc_publisher&gt;ONB&lt;/dc_publisher&gt;
        &lt;dc_type&gt;text&lt;/dc_type&gt;
        &lt;dc_language&gt;de&lt;/dc_language&gt;

    &lt;dc_relation&gt;http://csc002.cscaustria.at/pub/regnet/onb/1/00/00000004.TIF&lt;/dc_relation&gt;
        &lt;dc_rights&gt;Copyright ONB&lt;/dc_rights&gt;
    &lt;/section&gt;
&lt;/regnet-document&gt;
```

A record containing two descriptions of object photos:

```
&lt;?xml version="1.0" encoding="UTF-8"?&gt;
&lt;regnet-document VERSION="1.0"&gt;
    &lt;section name="OBJECT"&gt;
        &lt;doctype&gt;OBJECT&lt;/doctype&gt;
        &lt;ooa&gt;84&lt;/ooa&gt;
        &lt;otn&gt;Heilige Anna ten Drieën&lt;/otn&gt;
        &lt;oty&gt;beeld&lt;/oty&gt;
        &lt;ott&gt;soortnaam&lt;/ott&gt;
        …………

        &lt;dcd&gt;2001-07-05&lt;/dcd&gt;
    &lt;/section&gt;
```

```
    <section name="DUBLINCORE">
        <doctype>DUBLINCORE</doctype>
        <dc_title>Heilige Anna ten Drieën</dc_title>
        <dc_creator>anoniem</dc_creator>
        <dc_subject>Heilige Anna ten Drieën</dc_subject>

        …………….

        <dc_rights>Copyright Stedelijk Museum Mechelen</dc_rights>
    </section>
    <section name="MEDIUMOBJECT">
        <doctype>MEDIUMOBJECT</doctype>
        <xri>99517 B</xri>
        <xrt>foto</xrt>
        <xti>KIK</xti>
    </section>
    <section name="MEDIUMOBJECT">
        <doctype>MEDIUMOBJECT</doctype>
        <xri>30147 A</xri>
        <xti>KIK</xti>
    </section>
</regnet-document>
```

6.3 Integration of images

There are two ways of integrating images into the data entry application.

1. File upload: files (that might also be MS Word files, sound files, etc.) can be directly uploaded into the system. This feature is available in the REGNET datainput tool for the portal. In general it is useful to add this feature if there are not large amounts of data expected to be uploaded.
2. Add images (or other files) via a hyperlink: The images are stored at a separate web server and can be accessed via a hyperlink. Within REGNET some partners have their images stored at their own servers (e.g. ALI, MC) or the images are stored at a repository at AIT.

Recommended format for the web version of images:

thumbnail: appr. 128 x 128

web version: appr. 640 x 640

Images in these resolutions can normally not be printed out by a public end user in a satisfactory way. All images should be in JPG format, with exception of those that are suited to GIF. As explained above there can be several kinds of files uploaded or accessed via hyperlink. To display/process these formats the computer of the end user must have installed the appropriate software. At present we have mostly files in MS Office formats, images in JPG and GIF integrated into the databases.

Remarks concerning the naming of files stored at AIT server: this server is a Linux server. As consequence image file names must not contain special characters as e.g. accents or umlauts and no blanks.

6.4 Instructions and explanations for data integration

The starting point for transformation and integration of data into REGNET is CSV (comma separated value) or XML format (describing the original structure). Most present database systems as well as Excel provide the feature “export into csv”. Data has to be exported de-normalised from relational databases as in XML we do not refer to the model of tables and each record has to contain all relevant information. Text formats can not be transformed automatically in a XML format suited to XML databases. We managed the transformation of contributions in Word because they were delivered in Word tables, so the pattern of the table described the data structure and could be processed automatically (left column is the name of the data field, right column contents of data field).

As a result of our present experiences a checklist for the description of original data structure and data fields has been developed:

6.4.1 Preparation of data analyses: data description that should be required from content providers

1. Please give us a list of all data fields you use. Even if you use a standard (e.g. MDA) you might not use all information units. Please describe particularly the fields that are added by your institution or not used in the original context (in most cases data can only be analysed via spot test, so there might be some data fields that were seldom used and therefore overseen in the transformation).
2. Please describe which fields are mandatory. (If a field is mandatory it is not necessary to check during the stylesheet transformation if a field is empty or not. We only transform fields that have contents)
3. Please describe contents of data fields at least with cryptic names (e.g.ADF56D,…).
4. Please translate data field names into English (it not already in English).
5. Describe which fields belong together, if that is not clear. E.g. copyright could be a statement referring to the photo of the object or to the object itself.
6. Please tell us which data fields could have multiple occurrences, can be duplicated/multiplied in your system (data fields with multiple occurrences have to be processed via a loop).
7. Which fields are depending from other fields (hierarchy)?

All the points mentioned above have an impact on the XSL stylesheet transformation and should be clear before defining the transformation. The process of data transformation was already described in the last report.

6.4.2 Steps for transformation performed in the REGNET project

Orig. Format	1st Step	2nd Step	3rd Step
Access	de-normalised export in csv	transform csv into XML	original XML into REGNET XML via XSL
Excel	export in csv	csv (XML	original XML into REGNET XML via XSL
Word in table format	export in XML (via Word to XML converter)	XML into a XML that can be used for transformation by	XML into REGNET XML via XSL

		REGNET tool	
other relational databases	de-normalised export into csv	csc (XML by REGNET tool	original XML into REGNET XML via XSL
MARC	export in XML		transformation into REGNET XML via XSL

Target of mapping is to enable easy search access, to enable future easy data exchange, to prepare data for a predefined publication process.

6.4.3 Current Results: REGNET databases

Collection databases: for each collection was set up a separate database (varying data) and the individual databases are accessible via the partner acronym.

Thematic text contributions are all in one database (csc000.cscaustria.at/themes) as they all have the same structure and it may be that several partner create contributions to one theme.

Ontology database: containing all meta data definitions of the databases and the thesauri.

ONB (csc000.cscaustria.at/onb) including a feature for selling images (STONB in standard application, csc000.cscaustria.at/stdonb)

SUL just test records for books (csc000.cscaustria.at/sul)

MECH (csc000.cscaustria.at/mech)

ICCS (csc000.cscaustria.at/iccs)

SUSU (csc000.cscaustria.at/susu)

MUS (csc000.cscaustria.at/mus)

FBR (village museum Feldbrunnen, test data from IMAC) (csc000.cscaustria.at/fbr)

KVA (csc000.cscaustria.at/kva)

THEMES (csc000.cscaustria.at/themes)

Sample databases from AIT: DSK, DMB, poster collection (csc000.cscaustria.at/pcb).A standard REGNET user is defined in each database. If a partner wants changes in security definitions for his database, it will be changed as requested.

Important: all databases are created to enable internal access for partner, so they are “expert level” and not end user level. Access for public end users will be enabled by distributed search. Unified data structure prepares simple search access for distributed search and a simplified publication process.

6.5 REGNET data fields

6.5.1 Object-related data fields

Data fields AMICO for object:

http://www.amico.org/AMICOlibrary/dataspec.html

DTD

http://www.csceurope.org/covax_demo/doc/demo.dtd/amico-2in1_DTD.txt

Tag Name	Tag	DC	Note
ADP__amico_data_processing	adp		not used
AID__amico_identifier	aid	dc_identifier	not used
ALY__amico_library_year	aly		not used
AVD__amico_validated_date	avd		not used
AVV__validation_dictionary_version	avv		not used
CAD__creator_active_date	cad		
CAP__creator_active_place	cap		
CBD__creator_birth_date	cbd		
CBP__creator_birth_place	cbp		
CBQ__creator_birth_qualifier	cbq		
CDD__creator_death_date	cdd		
CDP__creator_death_place	cdp		
CDQ__creator_death_qualifier	cdq		
CDT__creator_dates_locations_text	cdt		
CGN__creator_gender	cgn		
CLS__classification_scheme	cls		
CLT__classification_term	clt	dc_description (if no opd)	
CNO__creator_notes	cno		
CRB__creator_biography	crb		
CRC__creator_culture_nationality	crc		
CRN__creator_name	crn	dc_creator	
CRQ__creator_qualifier	crq		
CRR__creator_role	crr		
CRT__creator_name_text	crt		
CXD__context_description	cxd		
CXP__context_related_person	cxp		
CXS__context_related_site_place	cxs		
CXT__context_time_period_dates	cxt		
DCB__documented_cataloged_by	dcb		
DCD__documented_cataloged_date	dcd		
DEL__amico_deletion_flag	del		not used
MCM__measurement_component_measured	mcm	dc_format	
MDU__measurement_dimension_units	mdu	dc_format	
MDV__measurement_dimension_value	mdv	dc_format	
MED__measurement_dimension	med	dc_format	
MEQ__measurement_qualifier	meq	dc_format	

MET__measurements_text	met	dc_format	
OCE__creation_date_end	oce	dc_date	
OCH__condition_examination_history	och		
OCP__creation_place	ocp	dc_coverage (?)	
OCQ__creation_date_qualifier	ocq		
OCR__critical_responses	ocr		used for remarks
OCS__creation_date_start	ocs	dc_date	
OCT__creation_date_text	oct	dc_date	
OEH__exhibition_or_loan_history	oeh		
OEN__edition	oen		
OIN__inscriptions_and_or_marks	oin		
OMD__materials_and_techniques_description	omd	dc_description (if no opd)	
OMM__materials_and_techniques_materials_term	omm		
OMS__materials_and_techniques_support	oms		
OMT__materials_and_techniques_process_ technique_term	omt	dc_description (if no opd)	
OOA__owner_accession_number	ooa		used for identifier
OOC__owner_credit_line	ooc		
OON__owner_name	oon		
OOP__owner_place	oop		
OPA__physical_orientation_arrangement	opa		
OPD__physical_description	opd	dc_description	
OPO__provenance_prior_owners_text	opo		
OPP__object_parts_pieces	opp		
ORL__copyright_link	orl		
ORS__copyright_statement	ors	dc_rights	
OST__state	ost		
OTH__treatment_conservation_history	oth		
OTN__object_title_name	otn	dc_title	
OTT__title_type	ott		
OTY__object_type	oty	dc_description (if no opd)	
RDD__related_document_description	rdd	dc_relation	
RDL__related_document_identifier_link	rdl	dc_relation	
RDR__related_document_relationship_type	rdr	dc_relation	
RID__related_image_description	rid	dc_relation	

RIL__related_image_identifier_link	ril	dc_relation	
RIP__related_image_preferred	rip	dc_relation	
RIR__related_image_relationship_type	rir	dc_relation	
RMD__related_multimedia_description	rmd	dc_relation	
RML__related_multimedia_identifier_link	rml	dc_relation	
RMR__related_multimedia_relationship_type	rmr	dc_relation	
RWD__related_works_description	rwd	dc_relation	
RWL__related_works_identifier_link	rwl	dc_relation	
RWR__related_works_relationship_type	rwr	dc_relation	
STD__style_period_description	std	dc_coverage	
STT__style_period_terms	stt		
SUI__subject_matter_iconography	sui	dc_subject	
SUP__subject_matter_preiconographic_description	sup		
SUT__subject_matter_index_terms	sut		
Additional tags that were created for the REGNET system			
CXQ__context_description_role	cxq		
CXR__context_related_place_role	cxr		
OTQ__object_type_role	otq		

DC Publisher (= name of the content provider) and type (a rough classification) are added automatically during transformation. Sometimes there are more than one field of the same category necessary with slightly different meanings. E.g. two object titles or several keyword (keyword 1, keyword 2, keyword 3). To solve this problem to all further tags was added a number. So the system displays them separately, also the caption of these additional tags were closely named after the original data field.

CLT__classification_term	clt	
CLT__classification_term2	clt2	
CLT__classification_term3	clt3	
CLT__classification_term4	clt4	

6.5.2 MEDIUMOBJECT- AMICO Media Meta data

DTD: http://www.csceurope.org/covax_demo/doc/demo.dtd/amico-2in1_DTD.txt

Fields currently used in REGNET:

Tag Name	Tag	DC	Note
XCC__dc_creator_corporatename	xcc	dc_creator	
XCM__amico_format_colormetric	xcm		

XCP__dc_creator_personalname	xcp	dc_creator	
XCR__dc_creator_role	xcr		
XDA__dc_date	xda	dc_date	
XDC__dc_contributor_corporatename	xdc	dc_contributor	
XDE__dc_description	xde	dc_description	
XDL__metadata_delition_flag	xdl		
XDP__dc_contributor_personalname	xdp	dc_contributor	
XDR__dc_contributor_role	xdr		
XFC__amico_format_compression	xfc	dc_format	
XFD__amico_format_dimensions	xfd	dc_format	
XFE__amico_format_encoding	xfe	dc_format	
XFF__amico_format_filesize	xff	dc_format	
XFP__amico_format_colorpalette	xfp		
XID__dc_resource_identifier	xid		
XLY__metadata_library_year	xly		
XMN__amico_media_note	xmn		
XPR__metadata_data_processing_note	xpr		
XPU__dc_publisher	xpu	dc_pulbisher	
XRI__dc_relation_identifier	xri	dc_relation	
XRS__dc_rights	xrs	dc_rights	
XRT__dc_resourcetype	xrt		
XRY__dc_relation_type	xry	dc_relation	
XTI__dc_title	xti	dc_title	
XVD__amico_metadata_validation_date	xvd		

6.5.3 REGNET Theme contributions

The thematic text contributions are imported into the system in the structure that was defined within the project. In order to provide better access to data each record is also mapped to Dublin Core meta data fields.

6.5.3.1 THEME (thematic text describing a topic)

Caption	**XML tag name**	**DC**	**Comment**	**Origin**
Partner Acronym	acronym			none
Title	title	dc_title		both
Language	language	dc_language	of thematic text	both
Audience Level	audience_level			both
Size Level	size_level			both
Author	author	dc_creator	Author of thematic text	both
Author Organisation	author_org			Excel

Contributor	contribution	dc_contributor	Contributor to thematic text	both
Contributor Organisation	contributor_org			Excel
Date	date	dc_date	creation of thematic text	both
Modified by	modified_by			both
Mod. Author Organisation	modified_author_org			Excel
Modified date	modified_date			both
Modified Description	modified_description			both
Copyright	copyright	dc_rights		both
Content	content	dc_description (?)	the thematic text in XML	Word
Content (Link)	content_link	dc_description (?)	link to thematic text in MS Word	Excel
Description	description	dc_description		Excel
Link	links	dc_relation	links to ID of related texts	both
Link (Image)	links_image	dc_relation_link		Word
Primary keyword	prim_keyword	dc_subject		both
Secondary keyword	sec_keywords	dc_subject		both
Identifier	identifier	dc_identifier	not really correct as DC Identifier!	both
Encoding	encoding	dc_format	type of file	Excel
File size	file-size	dc_format		Excel
File size unit	file_size_unit	dc_format	e.g. KB, MB	Excel
Documented Author	doc_author		Author of meta data	Excel
Doc. Author Organisation	doc_author_org			Excel
Documented Date	doc_date		date of meta data creation	Excel
Documented Comment	d_comment			Excel
Document Validator	doc_validator			Excel
Doc. Validator Organisation	doc_val_org			Excel
Doc. Validataion Date	doc_val_date			Excel
Modified Validator	mod_validator			Excel
Mod. Validator Organisation	mod_val_org			Excel
Mod. Validataion Date	m_val_date			Excel
Mod. Comment	m_comment			Excel

Comment	comment			Excel

Since we have two principle ways of generating contributions for Themes (Word and Excel) in two different structures there are sometimes two parallel fields. Excel generated contributions only contain the meta data to the text. The text itself is in a Word document that can be reached via a hyperlink. So we have one field called "content" resulting from Word contributions that contains the thematic text and a field "content link" with the hyperlink to a Word file.

6.5.3.2 THEMEOBJECT (thematic text describing an object related to a topic)

Caption	XML tag name	DC	Comment	Origin
Partner Acronym	acronym			none
Title	title	dc_title		both
Language of Meta data	language_metadata	dc_language	of object description/ meta data	both
Audience Level	audience_level			both
Size Level	size_level			both
Author	author	dc_creator	Author of thematic text	both
Author Organisation	author_org			Excel
Contributor	contribution	dc_contributor	Contributor to thematic text	both
Contributor Organisation	contributor_org			Excel
Date	date	dc_date	creation of thematic text	both
Modified by	modified_by			both
Mod. Author Organisation	modified_author_org			Excel
Modified date	modified_date			both
Modified Description	modified_description			both
Copyright	copyright	dc_rights		both
Content	content	dc_description	the thematic text in XML	Word
Content (Link)	content_link	dc_description	link to thematic text in MS Word	Excel
Link	links	dc_relation	links to ID of related texts	both
Link (Image)	links_image	dc_relation_link		Word
Primary keyword	prim_keyword	dc_subject		both
Secondary keyword	sec_keywords	dc_subject		both
Identifier	identifier	dc_identifier	not really correct as DC Identifier!	both
Encoding	encoding	dc_format	type of file	Excel
File size	file-size	dc_format		Excel
File size unit	file_size_unit	dc_format	e.g. KB, MB	Excel
Documented Author	doc_author		Author of meta data	Excel
Doc. Author	doc_author_org			Excel

Organisation				
Documented Date	doc_date		date of meta data creation	Excel
Documented Comment	d_comment			Excel
Document Validator	doc_validator			Excel
Doc. Validator Organisation	doc_val_org			Excel
Doc. Validataion Date	doc_val_date			Excel
Modified Validator	mod_validator			Excel
Mod. Validator Organisation	mod_val_org			Excel
Mod. Validataion Date	m_val_date			Excel
Mod. Comment	m_comment			Excel
Replica	replica			Word

6.5.3.3 THEMEIMAGE (thematic text describing an image related to a topic)

Caption	**XML tag name**	**DC**	**Comment**	**Origin**
Partner Acronym	acronym			none
Title	title	dc_title		both
Language of meta data	language_metadata	dc_language	of image description/ meta data	both
Audience Level	audience_level			both
Size Level	size_level			both
Author	author	dc_creator	Author of thematic text	both
Author Organisation	author_org			Excel
Contributor	contribution	dc_contributor	Contributor to thematic text	both
Contributor Organisation	contributor_org			Excel
Date	date	dc_date	creation of thematic text	both
Modified by	modified_by			both
Mod. Author Organisation	modified_author_org			Excel
Modified date	modified_date			both
Modified Description	modified_description			both
Copyright	copyright	dc_rights		both
Content	content	dc_description	the thematic text in XML	Word
Content (Link)	content_link	dc_description	link to thematic text in MS Word	Excel

Link	links	dc_relation	links to ID of related texts	both
Link (Image)	links_image	dc_relation_link		Word
Primary keyword	prim_keyword	dc_subject		both
Secondary keyword	sec_keywords	dc_subject		both
Identifier	identifier	dc_identifier	not really correct as DC Identifier!	both
Encoding	encoding	dc_format	type of file	Excel
File size	file-size	dc_format		Excel
File size unit	file_size_unit	dc_format	e.g. KB, MB	Excel
Color Palette	color_palette			Excel
Color Metric	color_metric			Excel
Resolution Level	resolution_level			Excel
Resolution Value	resolution_value			Excel
Dimension	dimension	dc_format		Excel
Documented Author	doc_author		Author of meta data	Excel
Doc. Author Organisation	doc_author_org			Excel
Documented Date	doc_date		date of meta data creation	Excel
Documented Comment	d_comment			Excel
Document Validator	doc_validator			Excel
Doc. Validator Organisation	doc_val_org			Excel
Doc. Validataion Date	doc_val_date			Excel
Modified Validator	mod_validator			Excel
Mod. Validator Organisation	mod_val_org			Excel
Mod. Validataion Date	m_val_date			Excel
Mod. Comment	m_comment			Excel
Image of Replica?	image_of_replica			Word

6.5.4 Dublin Core Tags

http://dublincore.org/

Caption	XML Tag Name
Title	dc_title
Creator	dc_creator
Subject	dc_subject

Description	dc_description
Publisher	dc_publisher
Contributor	dc_contributor
Date	dc_date
Type	dc_type
Format	dc_format
Identifier	dc_identifier
Source	dc_source
Language	dc_language
Relation	dc_relation
Coverage	dc_coverage
Rights	dc_rights

6.5.5 E-Shop (VENDOR and SHOPITEM): Catxml

http://www.catxml.org/?eBusiness-Standard.com

In the databases of the REGNET project content providers there is data concerning the vendor and the item contained, so these fields are mapped into CATXML data fields. Data fields used in REGNET are defined by ZEUS. In most cases only item information is extracted.

6.5.5.1 SHOPITEM

Caption	**XML Tag**	**Note**
Product name	prodname	
Universal Product Code	upccode	
Price	price	
Manufacturer company	company	parent tag: manufacturer
Manufacturer name	name	parent tag: manufacturer
Description	description	
Category	category	
CategoryID	categoryid	

6.5.5.2 VENDOR

Caption	**XML Tag**	**Note**
Name	name	
Street	street	
City	city	
State	state	
Province	province	
PostCode	postcode	
ZIP	zip	

Country	country	
Phone	phone	
Fax	fay	
Email	email	
URL	url	

6.5.6 Archival Objects – EAD DTD

http://www.oasis-open.org/cover/ead10-980828.zip

6.5.7 Bibliographic Objects – USMarc DTD

The DTD is available through: http://www.csceurope.org/covax_demo/doc/demo.dtd/usmarc_dtd.txt and needs no further additions.

7 Preparation of demonstration: CSC development

7.1 Iterations

This task is divided into two iterations:

- First iteration : CSC preparation deals with the identification of the 3 CSC and supported business function.
  - Prepare a document template for Service Supplier, in order for them to provide necessary information about:
  - Businness function they need to support.
  - List of affiliated cultural centers.
  - Available material quantification (collection, business).
  - Supported languages.
  - Identification of the 3 target CSC with their profiles.
  - Cultural centers, managed by their Service supplier, prepare necessary material.
  - Process re-engineering continue on the basis of task 2.4.
  - Market preparation continue on the basis of task 2.5.
- Second iteration: CSC deployment deals with the deployment of necessary material.
  - Packaging of necessary software.
  - Service Suppliers populate databases.
  - Training of target users
  - Release and Documentation: Training material.

7.2 Methodology

The proposed process is based on the following steps:

First iteration:

1. Questionnaire preparation by VALT, send to Service suppliers (AIT, IMAC, TARX, SPAC, ZEUS, ICCS) until 2002-04-30
2. Services suppliers reply before 2002-05-10Selection of the 3 target CSC at the Turin Meeting
3. CSCs manage the material preparation of the affiliated cultural centers. Material must be ready before 2002-05-31
4. Internationalisation done by task 3.3 is driven by the needs expressed here.
5. VALT goes on BP re-engineering (parallel sub-task) and contribute to D6.
6. IMAC manages the market preparation (parallel sub-task) and contribute to D6.

Second iteration:

1. VALT packages necessary software and send it to the target CSC (2002-06-14)
2. CSCs populate databases and install software.
3. CSCs train target users.
4. *Test are managed at the CSC level and at the Regnet level.

Figure 10 shows the template for the description of future CSCs.

Template of CSC profile

Region:
Responsible organisation:
URL:
Language(s):

Affiliated cultural organisations:

Name	Domain	URL (if any)	Collection (if relevant)	Business material (if relevant)

Business function (qualify your needs)

Category	Function	Not useful	Not necessary	Useful	Mandatory
News & Archive					
	News & Archive				
Search & Browse					
	Theme explorer				
	Collection				
	Virtual tours				
	Search				
	Search guide				
	Search profile				
	Copyright information				
CH Data					
	Topic Map Entry				
	Data Entry				
Events & Exhibition					
	Event calendar				
	Virtual exhibition				
	Virtual tours				
	Tickets				
Info & Services					
	Forum				
	Guest book				
	Address book				
	Job offers				
	Membership				
	Feedback				
	Personalize				
Education & Research					
	Training catalogue				
	Event calendar				
	Cooperative thesauri				
Ebusiness					
	eSHOP				
	eProcurement				
	Delivery				
	Auction				
ePublishing					
	ePublishing				
Others					
	WAP access				

Figure 10: Template for CSC profiles

8 First iteration

8.1 Questionnaire

The following questionnaire has been sent to services suppliers. Each service center has to specify its interest concerning the different business functions.

The following Cultural Service Centers (CSC) has been identified:

Middle and Northern Europe 1	
Responsible organisation	AIT
Affiliated cultural institutions	ONB
Languages	English, German

Middle and Northern Europe 2	
Responsible organisation	IMAC
Affiliated cultural institutions	SUL, LMG, NRM, KVA, VMS-AMS, Arte 24
Languages	English, German, Swedish, French

Western Europe	
Responsible organisation	TARX
Affiliated cultural institutions	Mechelen, Museon, Gnanollers
Languages	English, Dutch, Spanish

Southern Europe 1	
Responsible organisation	SPACE
Affiliated cultural institutions	ALI, CC
Languages	English, Italian

Southern Europe 2	
Responsible organisation	ZEUS
Affiliated cultural institutions	To be defined
Languages	English, Greek

Eastern Europe	
Responsible organisation	ICCS
Affiliated cultural institutions	Union of Bulgarian Artists, Ural State University, Ethnographic Museum Sofia
Languages	English, Bulgarian, Russian

All the answers are in the Appendix 12. A synthesis has been elaborated based on answers done by cultural centers.

8.2 Synthesis

The synthesis is based on following quotation:

1: the functionality is not useful;2: the functionality is not necessary;3: the functionality is useful;4: the functionality is mandatory.Then all functionalities with an average score of at least 3.5 are selected as 1st priority (in green on the following table). All functionalities with an average score less of 3 are selected as low priority (in yellow on the Table 23).

Function	AIT	SUSU	IMAC	SPACE	TARX	ZEUS	Mean
Category 1: News & Archive							
News & Archive	4	3	3	3	2	4	3,2
Category 2: Search & Browse							
Theme explorer	4	4	4	4	4	4	4,0
Collection	4	4	4	4	4	4	4,0
Virtual tours	4	4	4	3	4	3	3,7
Search	4	4	4	4	4	4	4,0
Search guide	4	3	4	4	4	4	3,8
Search profile	4	3	4	3	4	3	3,5
Copyright information	4	3	4	4	4	3	3,7
Category 3: Cutural heritage data							
Topic Map Entry	4	3	3	3	4	4	3,5
Data Entry	4	3	4	4	4	4	3,8
Category 4: Events and exhibition							
Event calendar	3	2	4	3	3	3	3,0
Virtual exhibition	3	4	4	3	3	3	3,3
Virtual tours	3	2	4	2	4	3	3,0
Tickets	3	2	3	3	2	3	2,7
Category 5: Information and services							
Forum	4	2	3	2	2	4	2,8
Guest book	3	3	3	2	2	4	2,8
Address book	3	3	3	2	2	4	2,8
Job offers	3	3	2	3	2	2	2,5
Membership	4	3	4	4	3	3	3,5
Feedback	3	3	3	3	4	4	3,3
Personalize	4	2	4	3	4	4	3,5
Category 6: Education and research							
Training catalogue	3	2	4	2	3	3	2,8

Event calendar	3	2	4	2	3	3	2,8
Cooperative thesauri	3	2	4	3	4	2	3,0
Category 7: eBusiness							
eSHOP	4	4	4	4	4	4	4,0
eProcurement	4	4	4	4	4	4	4,0
Delivery	4	3	2	3	3	4	3,2
Auction	3	3	3	3	2	4	3,0
Category 8: ePublishing							
ePublishing	4	3	4	4	4	4	3,8
Category 9: others							
WAP access	4	3	2	3	4	4	3,3

Table 23: Potential services and their priorities

9 To do list

Next tables represents a codification of the modules and the current state of to do actions. Updating in this tables will generate new versions on the whole IR document. The partner of the to do list is the partner in charge of solving the action or in charge of co-ordinating the solution.

No	***Task***	***Description***	***Responsible***	***Actual status***
1	REGNET System Implementation	Requirement for validation phase	- REGNET implementation group	Ongoing
2	Validation start	Roll up procedure	All partners (Project Management Meeting)	During the project management meeting (Sofia, June 2002)
3	Technical Quality Criteria Definition	To define the technical quality criteria and to agree on schedules and requirements	- Test designer - REGNET implementation group - REGNET consortium - Validation PM	3t (not done)
4	Content Quality Criteria Definition	To define the technical quality criteria and to agree on schedules and requirements	- Test designer - REGNET content group - REGNET consortium - Validation PM	Checklist of content quality criteria available
5	Usability Quality Criteria Definition	To define the technical quality criteria and to agree on schedules and requirements	- Test designer - REGNET content group - REGNET consortium - Validation PM	REGNET usability index
6	Reporting Workflow Specification	To agree on the reporting workflow	- Test designer - REGNET consortium - Validation PM	Done

No	Task	Description	Responsible	Actual status
7	Agreement on Functional Test Cases	To agree on test cases	- Test designer - REGNET consortium - Validation PM	Done, for almost all components test cases are available
8	Validation Phase Agreement	To agree on the sub-project schedule, the tasks and the task assignments	- Test designer - REGNET consortium - Validation PM	Done during project management meeting (Sofia, June 2002)
9	REGNET Validation Phase	Roll up procedure		Started
10	REGNET Load + Stress Tests	Roll up procedure		Open
11	Finalisation of test criteria	To finally define the pass / fail criteria	- Test designer - REGNET consortium - Validation PM - REGNET implementation group	Open
12	Detailed user modelling (test scenarios)	To define the exact simulated user behaviour	- Test designer - Validation PM - REGNET implementation group	Partly done
13	Test data gathering	To acquire the data needed for testing	- REGNET content group - Technical support staff - Validation PM	Partly done
14	Software acquisition	To acquire the software needed for testing	- Tool specialist	Not necessary
15	Set-up of test environment	To set-up the test environment	- Tool specialist	Decision for a not-automated test environment, set-up accordingly
16	Test case implementation	To implement the test cases in test software	- Tool specialist	Done

No	***Task***	***Description***	***Responsible***	***Actual status***
17	Carrying out of tests	To carry out the test	- Tools specialist	Done
18	Results gathering	To gather data for evaluation	- Tools specialist	Done
19	Results evaluation + Recommendations	To evaluate the results and to give recommendations	- Test designer - REGNET implementation group - Validation PM	Done
20	Performance testing QA	To ensure that all issues agreed upon are addressed	- Validation PM - Test reviewer	Open
21	REGNET Functional Tests	Roll up procedure	-	Done
22	Creation of test manual	To create the test manual for the end users	- Test designer	Done
23	Carrying out tests	To carry out the tests	- REGNET content group - Tester - Test person - Validation PM	Done
24	Reporting and monitoring	To report all issues and to monitor issue resolutions	- REGNET content group - Validation PM - REGNET implementation group	Done
25	Functional tests QA	To ensure, that all issues have been successfully addressed in time	- REGNET content group - Validation PM - Test reviewer	Done
26	REGNET Usability Tests	Roll up procedure		Partly done
27	Heuristic tests	Roll up procedure		Done
28	Carrying out of tests	To carry out the heuristic tests	- REGNET content group	Done

No	***Task***	***Description***	***Responsible***	***Actual status***
29	Data gathering	To collect the result data of the heuristic tests	- REGNET content group - Validation PM	Done
30	Results evaluation + Recommendations	To evaluate the results of the heuristic tests and to give recommendations for improvement	- Test designer - Validation PM - Usability specialist	Done
31	Heuristic tests QA	To ensure, that all improvements agreed upon are implemented	- Test reviewer - Validation PM	Done
32	Scenario based tests	Roll up procedure		Done
33	Create test guidelines	To create the test guidelines	- **Test designer** - Usability specialist	Partly, integrated in questionnaires
34	Translation of template	To translate the questionnaires	- REGNET content group	Open, not necessary at the moment
35	Set-up test environment	To set up the test environment	- REGNET content group	Done (manually)
36	Identify test persons	To acquire test persons	- REGNET content group	Partly Done
37	Carry out tests	To carry out the test	- REGNET content group - Tester - Test person	In WP 4
38	Collect reports	To collect the results of the tests	- **Validation PM**	In WP 4
39	Evaluate reports + Recommend	To evaluate the outcome of the tests and to give recommendations for improvement	- Test designer - Usability specialist - Validation PM	In WP 4
40	Scenario based tests QA	To ensure, that all improvements agreed upon are implemented	- REGNET content group - Validation PM - Test reviewer	In WP 4

No	***Task***	***Description***	***Responsible***	***Actual status***
41	Card Sorting	Roll up procedure		Done
42	Create test guidelines	To create the guidelines for card sorting	- Test designer	Done
43	Translate cards	To translate the cards into the test persons language	- REGNET content group	Not necessary at the moment
44	Set-up test environment	To install the software / to set up test room	- REGNET content group	Done
45	Identify test persons	To acquire test persons for tests	- REGNET content group	Partly done, continuation in WP 4
46	Carry out tests	To carry out the test	- REGNET content group - Tester - Test person	Partly done, continuation in WP 4
47	Collect Reports	To collect all results and to send them to the evaluator	- REGNET content group - Validation PM	Partly done, continuation in WP 4
48	Evaluate Reports and Recommend	To evaluate the test and to recommend improvements	- Test designer - Usability specialist - Validation PM	Partly done, continuation in WP 4
49	Scenario based tests QA	To ensure, that all improvements agreed upon are implemented	- Test reviewer - Validation PM	Open
50	REGNET Content gathering and Content QA	Roll up procedure		Ongoing
51	Content gathering (continuously)	Continuos procedure	- REGNET content group	Ongoing
52	Content QA (continuously)	Roll up procedure		Partly Done
60	Content Integrity Checks	To ensure that data upload works properly	- REGNET content group - Technical support staff	Done

No	***Task***	***Description***	***Responsible***	***Actual status***
61	Content Quality checks	To ensure that content meets commonly defined quality criteria	- REGNET content group	Open
53	REGNET Agreement on Validation Phase Completion	Roll up procedure		
54	Reporting on REGNET Load + Stress Tests	To report on the outcome of the load testing phase	- Validation PM - Test reviewer - REGNET consortium	Open
55	Reporting on REGNET Functional Tests	To report on the outcome of the functional phase	- Validation PM - Test reviewer - REGNET consortium	Done
56	Reporting on REGNET Content gathering and Content QA	To report on the outcome of the content QA phase	- Validation PM - Test reviewer - REGNET consortium	Open, WP 4
57	Reporting on REGNET Usability Tests	To report on the outcome of the usability test phase	- Validation PM - Test reviewer - REGNET consortium	Open, WP 4
58	Formal Closure and Formal Reporting on Validation	To report on the outcome of the validation phase	- Validation PM - REGNET consortium	Open
59	REGNET Test Results Implementation Phase	To implement all issues and to tackle all incidents	- REGNET implementation group	Partly done

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