



Automating Production of Cross Media Content for Multi-channel Distribution

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DE9.5.5

Final report on Demonstration on content production and distribution for Mobile phones and new generation of PDAs

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Abstract: the present document presents the final report of the development of the experimental test-bed for distribution towards Mobile Phones and new generation of PDAs

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1 Executive Summary and Report Scope

The present document holds the detailed specification of the demonstrators focused on production and distribution of content towards Mobile phones and new generation of PDAs. Within AXMEDIS the mobile demonstrator aims at showing the benefits coming from the combination of several technologies in a mobile environment.

Thanks to a basic subset of the overall AXMEDIS framework contents can be designed and tailored to offer a fully-fledged set of services in parallel to heterogeneous groups of moving users, thus exploiting all tools made available by the project to this end as a real and new distribution channel.

The mobile demonstrator is divided into two components: the “factory”, where contents are produced and the “client application”, which allow users to have a unique access to available services and contents. Section 2 is a brief introduction, Section 3 summarizes the technical note depicting the architecture while Section 4 describes the demonstrator show case. Section 5 illustrates the performed demonstrations and related data are reported into Section 6. Section 7 summarizes the questionnaires results.

2 Introduction

The overall mobile scenario covers two interrelated sub-scenarios, the first one dealing with content production, categorization, storage and management (the Factory), and the other one related to the distribution of those contents on mobile devices, including browsing, selection and fruition.

In the Factory, content authors and distributors select contents to be presented, assign those to proper categories, and define access/retrieval rights and costs for any of them.

For accessing contents through the mobile client application, the user shall register prior to being granted access to the application itself. During the registration phase, some demographic data and some preferences are collected for subsequent usage (even if only very little data is mandatory). Once registered, the user can finally access the core application, which displays the available contents divided by categories for enhanced browsing, searching and retrieval. When needed, depending on the mobile device features, the AXMEDIS viewer is downloaded.

3 Technical Note

From a technical point of view, the Mobile demonstrator integrates different AXMEDIS core modules for realizing a chain from the content production to the distribution, namely these components are:

- AXCS service for users registration
- AXMEDIS Production Tools for contents ad licenses production
- database, Query Support and Query on Demand services for contents search
- AXMEDIS Mobile Player for content fruition
- CAMART area services for contents usage reporting
- PMS for rights verification

The Mobile Demonstrator is a .NET Web Application that allows administrators and end-users to manage, search and get AXMEDIS contents. For the complete Mobile Distribution Technical Note please see [1].

3.1 Overview of the Architecture and solution

At a very high level the system components are summed up as follows:

- ❑ **Factory:** this is the part of the system that holds a local instance of the AXMEDIS tools and it is interconnected to the P2P infrastructure. Here the contents are aggregated, produced and distributed.
- ❑ **Client Application:** this is the part of the system that resides on the user's mobile device and provides an access for browsing and display of contents.

Actors

In this scenario the following actors are foreseen:

- ❑ **Manager:** interacts with the Factory and prepares, publishes & distributes content for the mobile clients.
- ❑ **User #x:** a generic user that can interact with the mobile client application by using a suitable personal device.

Figure 1 sketches the architecture and its interconnection with the AXMEDIS core components.

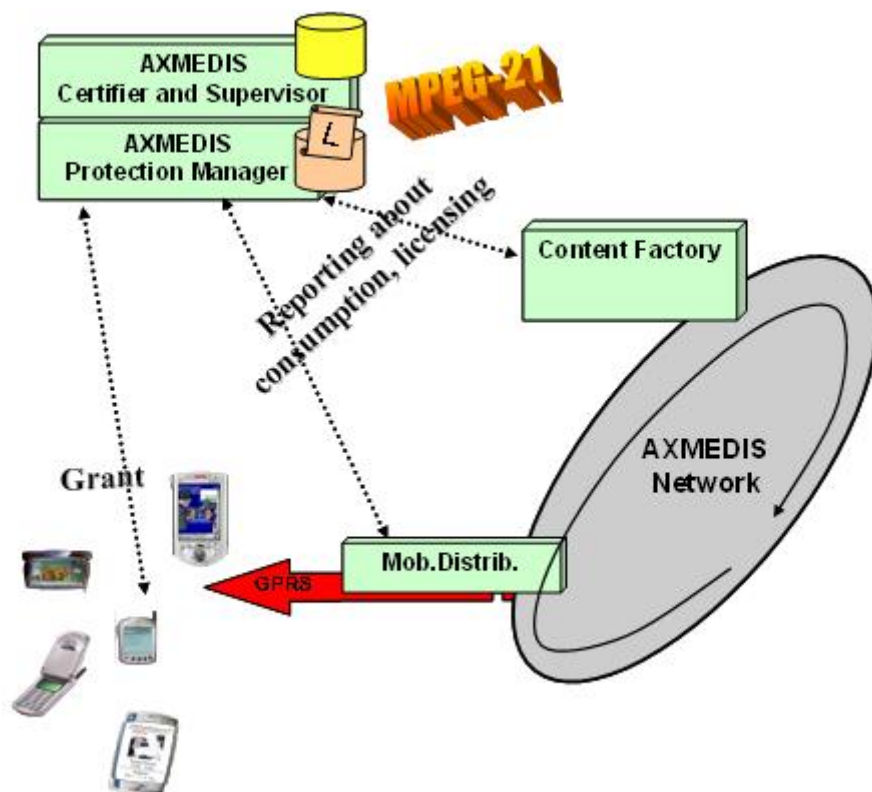


Figure 1. Architecture

4 Description of the demonstrator show case

The AXMEDIS Mobile distribution will enable its user to access to the demonstration portal and get the contents for which he is most interested. Having said this let's focus on the operations to be performed that basically are:

- at the Factory side:
 - create content
 - protect content
 - create licenses
 - create catalogue
 - select contents
 - organize contents into catalogue categories
 - adapt content for devices
 - manage device profiles
 - get statistic information about contents usage
- from the devices:
 - register user
 - login
 - view and browse catalogue
 - get content
 - query on demand

4.1 How to test the demonstrator

As we already mentioned, the Mobile demonstrator allows to put on the scene the complete AXMEDIS chain from the production until the distribution and fruition of the contents. In the following we present a summary of the User Guide to its two main blocks, the Factory and the client side. To test the demonstrator lively you can follow the link to the Demo instance available from the AXMEDIS Web Portal into the specific section.

4.2 Factory side

A publisher prepares content that wants to distribute: s/he needs to select a list of objects and a set of devices for which adapt the contents. By using the AXMEDIS Query support the publisher searches the desired objects and selects the ones to be used.

4.2.1 Devices management

At the Factory side, one of the most important tasks is the definition of supported device profiles.



Figure 2. Devices management.

Figure 2 shows the main interfaces used at the Factory side for the device profiles management. The Factory user can insert the definition of new device profiles, extract the most relevant information, retrieve the list of the profiles inserted so far and delete profiles that have become unuseful.

4.2.2 Categories management

In order to offer a guide to the user browsing through contents, on the client side contents are logically organized into categories. This requires the category definition on the Factory side a priori.

4.2.3 Contents management

The contents management at the factory side consists of contents search and selection, assignment to categories and adaptation for device profiles. Figure 3 depicts the sequence of these steps through the related interfaces.

The figure shows a sequence of four screenshots from a web application interface, illustrating the content management process:

- STEP 1/4:** The 'Look into' section shows a search form with 'Field' (DCMI:contributor), 'Operator' (CONTAINS), and 'Value' (empty). A 'Search' button is present.
- STEP 2/4:** The 'Contents from query' section displays a list of artists with checkboxes: ☒ Angelico Beato, ☒ Arcimboldi Giuseppe, ☒ Balla Giacomo, ☒ Bellini Giovanni, ☒ Bellotto Bernardo, ☐ Bernini Gian Lorenzo, and ☐ Boccioni Umberto. Navigation links include 'First Page', 'Previous Page', 'Next Page', and 'Last Page'. Buttons for 'Add contents', 'Select All', 'Deselect All', and '* Next' are at the bottom.
- STEP 3/4:** The 'Categories Management' section prompts the user to 'Select one or more categories into which selected contents will be put.' The list includes ☒ aaa, ☐ Other painters, and ☐ French painters. An 'OK' button is at the bottom.
- STEP 4/4:** The 'Devices Selection' section prompts the user to 'Please select for which devices contents gave to be adapted.' The list includes ☐ 123, ☐ Samsung, ☐ Samsung-i320, ☐ test98, and ☒ test_ok. An 'OK' button is at the bottom.

Each screenshot includes a 'Change language' link at the bottom.

Figure 3. Contents management steps.

Contents are searched through the Query Support Service [2], then some are selected for the catalogue, they are assigned to categories and adapted for a set of devices.

4.3 Client side

By means of a mobile phone or an advanced PDA, the mobile user can browse the available content categories and select for delivery and display the most relevant items. When trying to access a content, the user is also informed about the distribution model (acquisition, rental, pay per use...) for that content, thus experi-

menting also how a DRM empowered system, specifically designed to cover the whole value-chain from production to display.

4.3.1 Getting the player

The AXMEDIS Mobile Demonstrator home offers to the user the minimal set of information to access and navigate: a link for getting the Mobile Player to install and a link to the Catalogue page, as shown by Figure 4.



Figure 4. Home page.

By clicking on the “Download Mobile Player” the user can get the player.

4.3.2 Accessing the catalogue

In order to access the catalogue, the user needs to be registered first. A registration form suitable for the Mobile devices is provided to users accessing via Mobile devices, as can be seen in Figure 5.



Figure 5. Registration form.

On the Mobile devices, just mandatory fields are shown into the registration form. Also the different display capabilities respect to the desktop devices are taken into account.

Once registered, or logged in with a previously created account, the user gets the list of the available contents categories.

4.3.3 Accessing contents

By selecting a category the user can get the list of the related contents, as shown by Figure 6. For each content he can get some information and he can decide to acquire, as from Figure 7.



Figure 6. Contents list into a category.



Figure 7. Content details.

As from Figure 6, by selecting a category the user gets the list of the contents belonging to that category. For each content a minimal set of information is given: title, short description and creator. For further information, the user can select the “Metadata” link, this leads to the page reported by Figure 7, with extended information: contributor, creator, title, date, description, type.

By using the “Acquire” link instead, the user can get the contents directly on his device for a direct fruition, as shown by Figures 8-9.



Figure 8. Sample content visualization, vertical orientation.



Figure 9. Sample content visualization, horizontal orientation.

5 Demonstrations done

5.1 Number of people accessed the demonstrator

Currently we have 50 users registered on the site for a total of 198 accesses. The preferred device type has been the PC, followed by PDA and Smartphone; none ha indicated pentablet, as reported by Figure 10.



Figure 10. Users preferred device types.

5.2 Which strategy has been applied to attract them

As a strategy to attempt involving a large number of users in the demonstration and assessment process Giunti Labs has decided to ask for support partners in other EU research and development projects where the company is involved. To this end a suitable invitation e-mail has been prepared, which briefly explains the AXMEDIS project, what ILABS' role in the project is and what the invitation is aiming at. Links to the project portal, to ILABS' demonstrators and to a questionnaire have been included as well. The complete text of the invitation is reported in the box below.

Dear Colleagues,

within the context of the EU-funded AXMEDIS project (please have a look at <http://www.axmedis.org/com/>) Giunti Labs has developed a set of demonstrators suitable for the multi-channel delivery of multi/cross-media contents on different output devices, including kiosks, PDAs and smart phones.

The demonstrators are now publicly available and we are currently performing an extended survey with the involvement of external users. We would be therefore really grateful if you can dedicate some of your valuable time to access the demonstrators at: <http://axmedis-xp.giuntilabs.com/kiosk> and play with the application. A short explanation and guide can be found on the Kiosk specific section is at http://www.axmedis.org/com/index.php?option=com_content&task=view&id=76&Itemid=49.

At the end, please don't forget to fill in the questionnaire you can find at <http://www.questionpro.com/akira/TakeSurvey?id=1011073> : your feedback will be processed in an aggregated way in order to assess the actual appreciation of the project achievements. Please feel free to forward this message to anybody who might be interested in the AXMEDIS technologies and the survey.

Thanks in advance for your kind support and enjoy the AXMEDIS solutions!

The previous invitation has been sent to the mailing lists of the following EU projects:

- WearIT@Work
- TENCompetence
- Key2Nature
- IRMOS
- PROTAGE
- GRAPPLE
- ELU
- PROLIX
- LUISA
- CONSENS

Taking into account the size of the respective consortia, it can be considered that approximately more than 400 potential users have been reached by the invitation.

As a drawback, it has to be highlighted that this massive survey took place throughout Summer 2008 and therefore the holiday breaks in the different countries have affected negatively to overall amount of collected data and feedbacks.

It has to be noted too that Giunti Labs developed two different demonstrators (kiosk/PDA and mobile phones) but, in order to simplify the users' access and reduce the time spent with demo and survey, it has been decided to provide a single access to both demonstrators through a specific page in the AXMEDIS portal. Consistently with this choice also the questionnaire (see dedicated section in this document) is the same for both demonstrator: this means that the survey offers and aggregated feedback about the AMXEDIS solutions within the context of mobility but without explicit distinction amongst different categories of users' mobile devices.

5.3 Who they are

Besides the involvement of a large and statistically significant number of users, the aim of the aforementioned strategy was also that of collecting feedbacks from a very heterogeneous and international group of persons coming both from the academic world and from the industry, including SMEs.

In terms of gender it can be said that approximately 20% women and 80% men have been contacted, while from the instruction perspective the minimum level is undergraduate students. Trying to categorise the potential users, without the aim of being exhaustive, we have:

- Academic world
 - o Full professors
 - o Associate professors
 - o PhD students
 - o Researchers
 - o Contractors
 - o Consultants
 - o Undergraduate students
- Industry and SMEs
 - o CEOs
 - o General directors
 - o Project managers
 - o Production managers
 - o Research and development responsible
 - o Researchers
 - o Field operators in productions plants
 - o Field operators in maintenance
 - o Software developers
 - o Software designers
 - o Hardware designers
 - o Hardware developers
 - o External consultants

In terms of fields where the potential users are involved, we have:

- Academic world
 - o Computer science
 - o Engineering (electronic, civil, space)
 - o Linguistic
 - o Literature
 - o Pedagogy
 - o Mathematics
 - o Economic science
 - o Philosophy
 - o Physics
- Industry and SMEs
 - o Aeronautic
 - o Automotive
 - o Healthcare
 - o Fire fighting
 - o E-learning solutions

- Software production
- Hardware production
- Solutions integration
- Web design
- Consultancy
- Other categories
 - Consultancy in change management
 - Consultancy in project management
 - Consultancy in social, human and organizational aspects
 - Hospitals and doctors
 - Human computer interaction design
 - Industrial design

The previous lists can give an idea of the high degree of potential heterogeneity that has been reached by Gi-unti Labs through its survey strategy. In the next section some statistics about the users who actually accessed and used the demonstrators are provided.

5.4 Which profile they have

Registered users are mainly Italian males, employees, between 20 and 40 years old, and over 60, indicating the PC as preferred device. A diagram of the users preferences is reported by Figure 11.



Figure 11. Users preferences.

As from Figure 11, most ages are between 20 and 40, and over 60, but many users did not reply to this request. Most are males, but almost half of the users preferred to not specify their sex. Some users did not

specify their profession either, anyway the most recurrent profession is employee. The preferred device type is PC. About the users geographical distribution, the prevalent country is Italy.

5.5 Other demonstrations

Further to the structured feedback collection campaign described in the previous sections, other demonstrations have been performed throughout the last 6-9 months by Giunti Labs' personnel. These have been mainly of four specific kinds:

- internal demos to selected colleagues – mainly software developers and interaction designers – to collect informal feedbacks about usability and navigability of the proposed solutions. In total, around 10 of these demos have been performed. No structured feedback is reported.
- internal demos to members of the company management board, namely CEO, general director, president, operational director, marketing director. These demos were mainly aimed at creating a common understanding at high level and within the company about the project achievements, in order to start discussing exploitation opportunities and potential cooperation with selected partners in the consortium, specifically with DSI.
- external demos to selected Giunti Labs' customer. The aim in this case was twofold: presenting outcomes coming from the R&D department, which are not commercial yet but could become part of Giunti Labs' offer, and assessing the actual interest from potentially interested customers with respect to the innovative solutions proposed by the AXMEDIS project. Around 10 of such demos were performed. No structured feedback is available.
- external demos to potential Giunti Labs' customer. Here the purpose was mainly to show what kind of advanced and innovative activities are carried on in Giunti Labs besides the production of the well known existing commercial offer. In this case there was no aim at all to collect feedbacks but in general it can be said that a positive reaction has been observed and sometimes also a good appreciation was expressed. Around 5-6 of such demos have been performed.

6 Data analysis

6.1 Description and number of contents accessible form the demonstrator

At the moment the contents accessible via the current on-line catalogues are:

- 20 contents accessible by PDA grouped into the following categories:
 - o Art: cards about the following artists:
 1. Gauguin Paul
 2. Monet Claude
 3. Cezanne Paul
 4. Renoir Pierre-Auguste
 5. van Gogh Vincent
 6. Toulouse-Lautrec Henri de
 7. Klimt Gustav
 8. Pissarro Jacob Camille
 9. Rodin Francois-Auguste-René
 10. Courbet Gustave

These contents have been automatically generated by ILABS via AXCP rules in a suitable format for PDA, so the all have a common structure:

- title at the top
- a portrait of the artist
- information about born and death date
- a summary of his life and works
- a citation

A sample content is reported below by Figure 12.

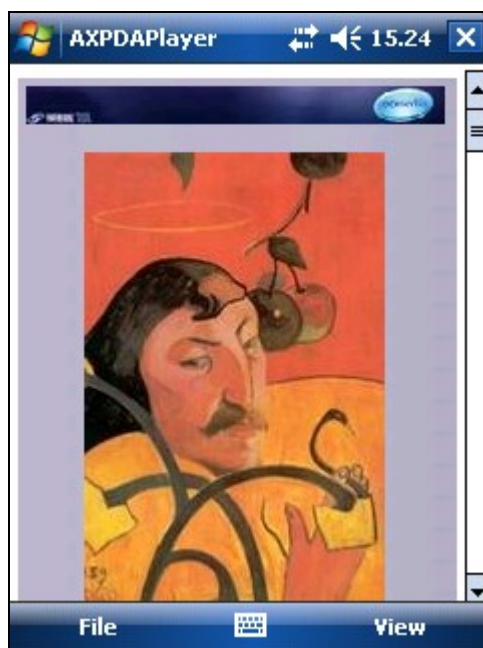


Figure 12. Sample content for PDA: artist card.

o Music: cards about the following instruments:

1. Akkordzither
2. Campanelli a tastiera
3. Chitarra battente
4. chitarra Lapi
5. Ciaramella
6. Launeddas
7. Mandolino Napoletano Porto
8. Organetto bitonale
9. Spinetta ottavina
10. Zampogna

These contents have been automatically generated by ANSC via AXCP in a suitable format for PDA. They are SMIL contents presenting text, images and audio in some cases. A sample Music content is reported into Figure 13.



Figure 13. Sample content for PDA: musical instrument card.

- 20 contents accessible via Mobile grouped into the following categories:
 - o Artists per century: eight sequences of short cards about artists per centuries:
 1. Artists of 200
 2. Artists of 300
 3. Artists of 400
 4. Artists of 500
 5. Artists of 600
 6. Artists of 700
 7. Artists of 800
 8. Artists of 900

These contents have been automatically generated by ILABS via AXCP in a suitable format for Mobile. They are mp21 SMIL contents presenting text and images. A sample content is reported into Figure 14.



Figure 14. Sample content for Mobile: artist of 500.

- Masterpieces: nine sequences of short cards about artists' masterpieces:
 1. Works of Paul Gauguin
 2. Works of Leonardo
 3. Works of Raffaello
 4. Works of Caravaggio
 5. Works of Canaletto
 6. Works of Francisco Goya
 7. Works of Claude Monet
 8. Works of Pierre-Auguste Renoir
 9. Works of Edgar Degas

These contents have been automatically generated by ILABS via AXCP in a suitable format for Mobile. They are mp21 SMIL contents presenting text and images. A sample content is reported into Figure 15.



Figure 15. Sample content for Mobile: Leonardo's masterpieces.

- Pills of artistic themes: three sequences of short cards ("pills") about some artistic themes:
 1. Religious subject pills
 2. Historical subject pills
 3. Portrait pills

These contents have been automatically generated by ILABS via AXCP in a suitable format for Mobile. They are mp21 SMIL contents presenting text and images. A sample content is reported into Figure 16.



Figure 16. Sample content for Mobile: portrait pills.

6.2 Number of transactions and distribution of content accessed

Currently there are 40 contents accessible from Mobile. Registered users have performed a total of 29 transactions. Transaction per content are reported by Table 1.

PDA			
	Content Title	Content identifier	# of transactions
1	Campanelli a tastiera - PDA version	URN:AXMEDIS:00002:OBJ:E92A7EF9-C031-340E-B7FF-42EAF95A2FD8	1
2	Mandolino napoletano Porto - PDA version	URN:AXMEDIS:00002:OBJ:B8944685-65EB-3701-8F3F-87F4B310EE76	1
3	Paul Cezanne - PDA version	URN:AXMEDIS:00002:OBJ:AEC96A7B-BC56-3B44-9672-6C71BCBDD976	1
4	Chitarra battente - PDA version	URN:AXMEDIS:00002:OBJ:EE8EE9DA-E7C9-3DF5-B81F-943D973D13B7	1
5	Henri de Toulouse-Lautrec - PDA version	URN:AXMEDIS:00002:OBJ:31CAC255-3D6F-3661-9CD1-0CCA0F37523E	1
6	REVIEW2007 16 Oct PDA AUDIO pre_review Organetto bitonale	urn:axmedis:00000:obj:114cef24-b8e7-461a-81fc-75494782301b	1

7	Chitarra Lapi - PDA version	URN:AXMEDIS:00002:OBJ:30C56A2D-CFDA-3D74-80F3-7DE7EDEE6406	1
8	Zampogna - PDA version	URN:AXMEDIS:00002:OBJ:A2A7B91A-AF88-3712-B2E8-E9227D6C6E72	1
9	Claude Monet - PDA version	URN:AXMEDIS:00002:OBJ:698100BC-3545-3CB9-B476-55D0A0E8C91B	1
10	Spinetta ottavina - PDA version	URN:AXMEDIS:00002:OBJ:0431B58D-21D9-3D31-B657-C01076DA87FE	1
11	Akkordzither - PDA version	URN:AXMEDIS:00002:OBJ:898DD685-A1EB-3620-AEBB-D244B54546A6	1
12	Launeddas - PDA version	URN:AXMEDIS:00002:OBJ:1383B2F6-068A-3A8C-966C-45C49FB29DED	1
13	REVIEW2007 16 Oct PDA AUDIO pre_review Launeddas	urn:axmedis:00000:obj:b3564106-4dba-434a-b1eb-3dcb0003874d	1
14	Organetto bitonale - PDA version	URN:AXMEDIS:00002:OBJ:B63D0726-A2D4-3C26-AA33-E6BEC4834708	1
15	Pierre-Auguste Renoir - PDA version	URN:AXMEDIS:00002:OBJ:A51D3FA5-AB61-3A1B-B1D2-E0B88B65EBC0	1
16	Paul Gauguin - PDA version	URN:AXMEDIS:00002:OBJ:27C22E92-BB08-3C3E-B77B-DE4BC151FEA8	1
17	Ciaramella - PDA version	URN:AXMEDIS:00002:OBJ:A013F46D-93FB-3C59-BB88-8382D377AB2F	2
18	REVIEW2007 16 Oct PDA AUDIO pre_review Zampogna	urn:axmedis:00000:obj:8f616790-a075-4d7d-b7b9-3d10c1493edc	3
Mobile			
	Content Title	Content identifier	# of transactions
19	Artists of 900 - mobile version	urn:axmedis:00000:obj:4490d27d-99d2-405d-82dc-88a223791bb6	1
20	Works of Paul Gauguin - mobile version	urn:axmedis:00000:obj:19de444b-1e5b-4952-a675-22097a9c2f0b	1
21	Works of Claude Monet - mobile version	urn:axmedis:00000:obj:7eb84778-8c33-4ed8-8e4a-54d5839bee3c	1
22	Artists of 400 - mobile version	urn:axmedis:00000:obj:cfb87644-8d82-4016-8566-b71020a61be5	1
23	Works of Leonardo - mobile version	urn:axmedis:00000:obj:7e719274-2857-4a4a-85ee-9e97d22502b4	2
24	portrait pills - mobile version	urn:axmedis:00000:obj:b4a24e2b-5334-4c64-8f05-9a4323a319ac	2
TOTAL:			29

Table 1. Transactions per content.

From the users transactions reported in Table 1, the most required content is the PDA version of the card of the instrument “Zampogna”, then another PDA instrument (“Ciaramella”) and the Mobile versions of Leonardo’s masterpieces and pills of portrait. The overall distribution shows that the users interest is quite spread among the contents.

6.3 Availability over the period

The demonstrator is publicly accessible since April 2007. The availability has been granted 24/24, 7/7 except for a few short time maintenance (around once a month for a day). In a real museum scenario, it can be hypothesized to update the catalogue during the closing time.

7 Responses from the questionnaire of the show case

In order to collect users feedbacks about the Demonstrator, we have asked them to complete a questionnaire with multiple-answers questions. The size of the questionnaire has been kept quite small (10 questions) with the aim to give users a not too-long task, that could have cause them to stop before finishing.

In the following we report the full questionnaire.

1. Access to demonstrator and user registration processes
 - ☐ Very easy
 - ☐ Easy
 - ☐ Difficult
 - ☐ Very difficult
2. Demonstrator structure and menus
 - ☐ Self-explanatory
 - ☐ Good
 - ☐ Difficult to understand
 - ☐ Very difficult to understand
3. Graphical user interface (GUI)
 - ☐ Very attractive
 - ☐ Attractive
 - ☐ Poor
 - ☐ Very poor
4. Selecting and navigating a catalogue
 - ☐ Very easy
 - ☐ Easy
 - ☐ Difficult
 - ☐ Very difficult
5. Contents accessible through the demonstrator
 - ☐ Very attractive
 - ☐ Attractive
 - ☐ Poor
 - ☐ Very poor
6. Selecting and buying contents
 - ☐ Very easy
 - ☐ Easy
 - ☐ Difficult
 - ☐ Very difficult
7. Features and technologies emerging from the demonstrator are
 - ☐ Highly relevant
 - ☐ Relevant
 - ☐ Moderately relevant
 - ☐ Not relevant
8. Business potential of the proposed solutions

- Very large
- Large
- Moderate
- Low

9. Your experience with the demonstrator

- Very satisfying
- Satisfying
- Moderately satisfying
- Not satisfying

10. Overall impression of the AXMEDIS project

- Excellent
- Good
- Average
- Bad

Until now, we got the following answers:

	Count	Completed / Started	Completed / Viewed	Started / Viewed
Completed	15	88,24%	27,78%	
Started	17			31,48%
Viewed	54			

Table 2. Summary of the questionnaire answers.

As from Table 2, the questionnaire has been seen by 54 users, but just about one over 4 started to answer, and not all of them completed it.

Table 3 reports the details about the users answers to each question; furthermore also mean, standard deviance and variance are calculated.

Q1	ANSWERS	%
Access to demonstrator and user registration processes		
Very easy	9	52,94%
Easy	7	41,18%
Difficult	1	5,88%
Very difficult	0	0,00%
Total	17	
Mean	1,53	
Standard Dev.	0,62	
Variance	0,39	
Q2	ANSWERS	%
Demonstrator structure and menus		
Self-explanatory	5	31,25%
Good	8	50,00%
Difficult to understand	3	18,75%
Very difficult to understand	0	0,00%
Total	16	
Mean	1,88	
Standard Dev.	0,72	
Variance	0,52	
Q3	ANSWERS	%
Graphical user interface (GUI)		
Very attractive	4	25,00%

Attractive	7	43,75%
Poor	3	18,75%
Very poor	2	12,50%
Total	16	
Mean	2,19	
Standard Dev.	0,98	
Variance	0,96	
Q4	ANSWERS	%
Selecting and navigating a catalogue		
Very easy	4	26,67%
Easy	10	66,67%
Difficult	1	6,67%
Very difficult	0	0,00%
Total	15	
Mean	1,80	
Standard Dev.	0,56	
Variance	0,31	
Q5	ANSWERS	%
Contents accessible through the demonstrator		
Very attractive	2	13,33%
Attractive	10	66,67%
Poor	2	13,33%
Very poor	1	6,67%
Total	15	
Mean	2,13	
Standard Dev.	0,74	
Variance	0,55	
Q6	ANSWERS	%
Selecting and buying contents		
Very easy	3	20,00%
Easy	10	66,67%
Difficult	2	13,33%
Very difficult	0	0,00%
Total	15	
Mean	1,93	
Standard Dev.	0,59	
Variance	0,35	
Q7	ANSWERS	%
Features and technologies emerging from the demonstrator are		
Highly relevant	2	14,29%
Relevant	8	57,14%
Moderately relevant	4	28,57%
Not relevant	0	0,00%
Total	14	
Mean	2,14	
Standard Dev.	0,66	
Variance	0,44	
Q8	ANSWERS	%
Business potential of the proposed solutions		
Very large	1	6,67%
Large	11	73,33%
Moderate	2	13,33%
Low	1	6,67%

Total	15	
Mean	2,20	
Standard Dev.	0,68	
Variance	0,46	
Q9	ANSWERS	%
Your experience with the demonstrator		
Very satisfying	2	13,33%
Satisfying	8	53,33%
Moderaty satisfying	3	20,00%
Not satisfying	2	13,33%
Total	15	
Mean	2,33	
Standard Dev.	0,90	
Variance	0,81	
Q10	ANSWERS	%
Overall impression of the AXMEDIS project		
Excellent	4	26,67%
Good	6	40,00%
Average	4	26,67%
Bad	1	6,67%
Total	15	
Mean	2,13	
Standard Dev.	0,92	
Variance	0,84	

Table 3. Details of users answers to questionnaire.

To summarize, almost all users accessed easily to the demonstrator, they think the portal has good structure and menus and it is easy to select and navigate a catalogue, to select and buy contents, having a satisfying experience with the demonstrator. The graphical interface is quite good but it be enhanced. The available contents seem to be attractive but, in general, the number of accesses per user is not sufficient to make the technological innovation introduced by the overall AXMEDIS project fully understandable and appreciated.

8 References

[1] Mobile Distribution Technical Note

http://www.axmedis.org/documenti/view_documenti.php?doc_id=3992

[2] AXMEDIS Query Support

<http://www.axmedis.org/tiki/tiki-index.php?page=AXMEDIS+Database+and+query+Support>