



The Interactive-Music Network

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Abstract:

This document reports the specification of the MUSICNETWORK including the organizational aspects, the services provided and the technical aspects of the WWW portal of the MUSICNETWORK .

Keyword List:

Music, multimedia, infotainment, edutainment, music notation, standards, music libraries, optical music recognition, music distribution, protection, accessibility, music creation, education, music archives, music publishing, digital rights management, asset management.

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1 Executive Summary and Report Scope

According to the Technical Annex of MUSICNETWORK project, this deliverable contains the specification of the main activities planned to reach the objectives of the MUSICNETWORK.

The goals of the specification are:

- to build a suitable network to bring music in the multimedia interactive age.
- To fix detailed objectives and the methodology to set-up and management each working group.
- To fix detailed objectives and integration methodology to fuse the results produced by the working group in a unique model or a set of guidelines for current standard adoption.
- To create a www site for providing MUSICNETWORK services to potential end-users.
- To set up general guidelines to perform the dissemination activities.

The responsible of the specification activity is DSI. The main objective of MUSICNETWORK of Excellence is to create a community to bring the Music European industries and content provides in the interactive multimedia era. This is possible by putting together research institutions, industries and experts to have the needed mass to reach the unique objective of studying and defining music modeling and coding for the new age.

To this end in this document to specify mechanisms are defined for:

- 1. creating a suitable collaborative environment to facilitate the access to research results and technological solutions,**
- 2. becoming a suitable channel to look for training, technology transfer and access to expertise in the multimedia music field,**
- 3. using research institutes and collaborations with standardization bodies to solve the problems of music coding for integrating multimedia and distribution,**
- 4. increasing awareness, confidence, consensus of content owners and providers in the new solutions, technologies and music modeling, removing problems that limit the digitizing of music archives.**

The activity of specification will be mainly focussed on detailing the work in three areas:

- www interface towards potential users (WWW.INTERACTIVEMUSICNETWORK.ORG). The www site is the first entry point to provide a set of services to the end-users of the MUSICNETWORK. It mainly includes Definition of a unified model and stile for all pages of the site. Definition of the public area, partners project area, project participator area. Pages for the on-line submission of request to become a Participator. Search engine for queering on the www site. Specific pages for each area will be defined.
- working group detailed planning. Specification of an effective dissemination plan for promoting the MUSICNETWORK, definition of mechanisms for joining new participants to the MUSICNETWORK. Specification and definition of the general methodologies for working group set up and management: working group set-up, state of the art and standard review, market monitoring and analysis, technology watch and contribution to standard bodies, model definition and guideline production, technical workshop organisation, end-users network support. Definition of a general strategy to perform: (i) technology watch, (ii) market analysis, (iii) assessment of technologies, (iv) collection and cataloguing of technical information and solutions, (v) description of cases that will be used for validation and for describing problems and needs. The integration of technical review and dissemination and demonstration activities will be the key aspects to reach the objectives of the MUSICNETWORK. Specific actions will be considered according to the needs of the different working groups
- Dissemination activity as the early dissemination plan in the next months and the definition of the main guidelines for the dissemination in the whole duration of the project.

Please note that, since we started with the activity in parallel to the study of the mechanisms, at the moment in which this document has been written several of the aspects detailed in this document have been effectively experimented as correct and valid. For this reason, the document is in part a report and in part a specification. I hope that these to aspects will be clarified during the document.

2 Working Group Specification

To bring music coding into new multimedia interactive applications is a complex task which requires for its definition, understanding and solution the integration of the knowledge of several aspects. To this aim, we have identified 7 areas of work, where several different competencies have to be used/integrated in order to produce models and solutions to be shared by a large part of users. The results produced by each group will be integrated to produce a unified analysis and possible solutions. This is the main technical aim of the project that starting from M13 (September 2003) will stimulate the identification of integrated solutions and models.

The working groups that have been identified are:

- **WG-Notation:** coding music notation, coding for audio, including modern music notation, format conversion, lyric modeling (multilingual aspects), fonts, definition of standard for music symbols, educational aspects, production and postproduction aspects, etc.
- **WG-Library:** multimedia-related technologies, standards and management perspectives for music libraries (including music documentation centers, broadcasting and orchestra archives, music-related museums, archives, industry catalogues and other collections), especially classification/identification (e.g., ISBN, EDI, GRid), cataloguing (AACR, RAK, MARC etc.), information exchange (Z39.50, XML etc.), products/services (e.g., DABIS, FESAD, Phononet), metadata (e.g., P/META, SMEF, DCMI, MPEG-7 etc.), including a more general view on information retrieval (ontology-based search technologies, multilingual aspects); music-related digital library issues (digitization, asset management, copyright/licensing, Digital Rights Management/DRM etc.)
- **WG-Standard:** multimedia standards for music coding, audio and video coding (mpeg7, mpeg21, etc.), Internet portable formats (XGML, XML, etc.), synchronization (SMIL), media integration, authoring environment (Macromedia, Arturia, Digidesign, Arkaos, Steinberg, Adobe, IRCAM, etc.), ergonomical aspects, WEB animation solutions, Interactive and WEB Tv and their adoption for multimedia music fruition, etc. IRCAM will reinforce its participation in standardization activities, particularly in MPEG7 and MEPEG21 and will coordinate other experts belonging to the Group involved in standardization, so as to produce feedback on progress.
- **WG-Distribution:** distribution of coded music, streaming, Internet, distribution models (B2B, B2C, P2P, etc.), UMTS, WEB-tv, Mobile, transaction models (on-line, off-line, kiosks, virtual shops, transaction with certification partner), etc.
- **WG-Protection:** protection of coded music, encryption, watermark, Digital Right Management, SDMI (that is losing relevance), active and passive protection, etc.
- **WG-Accessibility:** music coding for print impaired people (visually-impaired people and other impaired aspects, such as dyslexia), user interfaces, special assistive devices for impaired people, spoken music output and printing for impaired people, etc.
- **WG-Imaging:** coding images of music sheets, image score acquisition and restoring, acquisition of music sheets with different types of page support, digitizing ancient music scores, restoring music sheets, optical music recognition, transformation from images of music scores to symbolic format (printed and handwritten music notation), recovering of historical music sheets.

The working groups address transversal problems and applications, such as the copyrights aspects, the educational aspects of music, legal problems, etc. The integration activity of the Working group work is the tool to construct a complete view of the mentioned transversal aspects. Other working group can be added by using a specific policy defined in this document.

In the following table, the relationships among working groups and initial partners of the MUSICNETWORK are pointed out. For each working group, a co-ordinator has been defined. Each partner may belong to more than one working group according to their competencies and activity. The working group co-ordinator has the leadership of the corresponding work-package, and therefore it has to organize workshops and co-ordinate the work done by other contributors of the working group. Each Working group co-ordinator has (in the external service category of cost) a specific budget to attract/invite/appeal selected experts at workshops in order to reach the critical mass needed to perform the work.

Each partner and participant of the MUSICNETWORK will have full access to the documents produced by all groups. The X reported in the following table are only indicative of the major interest of the partners involved in the MUSICNETWORK coordination. In effect, all the partners will participate at the life of all the WGs by subscribing at all the forums and by collaborating each other and with all participants.

Partner	Role	Working Groups						
		MN	ML	MMS	DCM	PROT	MPIP	CIMS
DSI	Project and ML: coordinator	X:coord		X		X		X
ARCA		X	X				X	
CRL				X	X	X		
EXITECH			X		X		X	
FHGIGD	PROT: coordinator				X	X:coord		X
FNB	MPIP: coordinator	X	X				X:coord	
GMM				X	X		X	
ILSP				X			X	X
IRCAM	MMS: coordinator	X	X	X:coord				
MICA	ML: coordinator		X:coord		X			X
NOTISSIMO		X		X	X			
RIGEL	DCM: coordinator			X	X:coord	X	X	
UNIVLEEDS	CIMS: coordinator	X	X					X:coord

2.1 Attracting and Joining New Participants

Crucial to the success of the MUSICNETWORK project is implementation of the plan to recruit a knowledgeable user community. The potential user community will be developed through an analysis of relevant business resources to identify organizations likely to be interested in the MUSICNETWORK vision. These are likely to be companies involved in music and music distribution, including media service providers and digital rights protection services.

For this purpose the activity of dissemination is strongly relevant. In addition, the mechanism to get a new participant has to be very easy and accessible. For that we plan to use a very simple point of registration, the www page. This is not too restrictive since most of the services that we provide are given by means of the WWW portal. It is strongly probable that if someone has not access to Internet has not a direct interest in the service of the MUSICNETWORK and thus in pushing or getting music in the internet age. In any case, also the registration via fax will be provided.

Once the necessary participants have been identified, support will be provided to co-ordinate the delivery of MUSICNETWORK resources, documents, articles, projects etc. On-going support will be provided to participants throughout the project. These activities will be performed by means of the WWW pages and according to the dissemination strategy reported in this document.

The participants of the MUSICNETWORK belong to several different areas of interests. They can be divided in several classes depending on their role. Some of them may cover frequently more than one simple role. This makes the classification not simple and linear. In addition, in the large spectrum of possible actors some of them are single people others are institutions. To this end, the registration form has to cope with this variability giving to them the possibility of joining the MUSICNETWORK and taking advantage from its services. It is obvious that given the objectives of the MUSICNETWORK a major attention will be given to the institutions. They, in fact, have the possibility to become more visible with the MUSICNETWORK promoting their skill and activities in a dedicated www page in the MUSICNETWORK Portal.

In the following a classification of potential participants is reported.

- content producers for music scores
 - music copyists, encoders, engravers, music typesetters, composers, music schools and conservatories, music owners,
- audio content producers
 - broadcasting agencies, music owners, music schools and conservatories,
- content publishers
 - publishers, labels, broadcasting agencies,
- contents distributors
 - broadcasting agencies, service providers, content distributors (score, audio, etc.),
- archives and collectors:
 - music libraries, multimedia distributors, documentation centers, audiovisual/multimedia archives, music-related museums
- content professionals for metadata
 - librarians, archivists, cataloguers (including providers of commercial/trade/retail catalogues)
- tool creators for content manipulation, distribution, etc.

- experts on music imaging, multimedia software developers;
- research centers and technology providers
 - research & development institutions and organizations, music tools builders, computer music research institutes, technology providers,
- contract and legal managers, legal support providers
 - economy and marketing, copyright collecting societies, phonic associations, publishers associations, experts in copyright,
- content users
 - musicologists, music schools and conservatories, musicians, players, performers, orchestras, chamber music groups, music teachers and students (educational sectors), visually impaired people, universities, broadcasting agencies, audiophiles, music amateurs...

The MUSICNETWORK is mainly focused on attracting some categories of this large view and sector.

2.2 Maintaining Active Interest of Participants

In order to grow and reach the critical mass, the interest of participants has to be maintained very high.

This interest can be maintained high by means of several different activities. These activities have to be differentiated according to the different interests and roles that the different people and institution have in the music value chain. To this purpose, we have identified the following activities:

- WWW site with several services and updates per year
 - Service of document searching and uploading
 - Distribution of a newsletter when needed.
 - Forums and working groups
 - Personal www pages of the Participants. To be able to establish a link between the participants which leads to their Internet site is an excellent means of reinforcing their visibility. It is a good way for promoting some solutions, that a participant wants to make known.
- Forum and Working groups. Activities on the working group forums sending to the subscribers directly email about the messages posted in forum. The exchange of messages on the forum of MUSICNETWORK allows the participants to confront their points of view and to be likely to present more innovating ideas. Being obviously more frequent than the workshops, it maintains under tension the evolution of the dialogues. The action of the working group leaders is important also: they can cause subjects of discussion or contribution, by formulating direct questions with the participants, according to their fields of interests and competencies.
- Organization of conferences and workshops and the publication of the material on the www site including report and slides. Conferences are a way to create content for the MUSICNETWORK and a way to attract in the MUSICNETWORK who has the technology that can be provided. At the same time, conferences and workshops are good occasions to put together practitioners and experts to solve relevant problems and to work on guidelines of best practice.
 - Discussions and open workshops and panels
 - Free Tutorials on hot topics
 - Organization of specific workshop even in separate areas and locations
- Production of guidelines and review of major standards of the sectors. Posting of the documents on the site is also a good way for maintaining the interest of the participants. They can indeed show the result of research tasks which they carried out; they can show the activity of their company, or laboratory, or university.
- Promotion of the MUSICNETWORK in fairs
 - Fairs are momentous in which a part of the industrial potential participants are more accessible. To this end, it is very important to promote technology in those occasions and to accept their interactions with technical peoples of the MUSICNETWORK.
 - Promotion of the material of the participants on the stand of the MUSICNETWORK at the major fairs and conferences
- Analysis of problems and providing solutions to the proposers in clear or blind manner.

The measurement of the audience of the site is a sign of the success of the project.

The regular organisation of workshops should interest the participants. Many specialists in each field can indeed, in public, confront their points of view, bring new ideas, and share contributions.

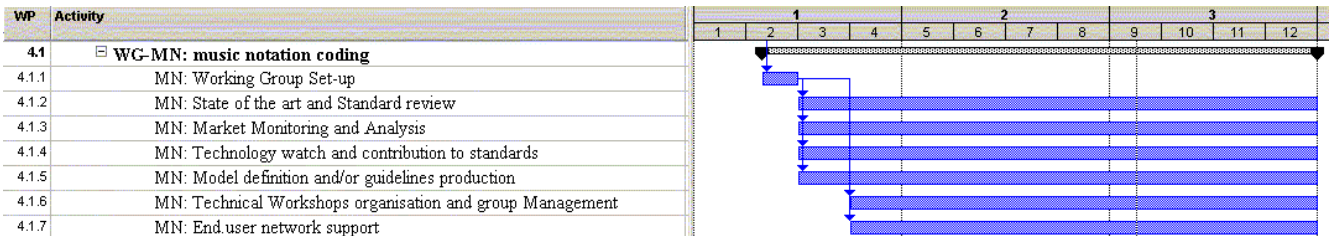
These workshops are organised at the time of great public events (MusikMesse, Midem, ...), or are set up specifically when needed. The place left to the participants in the preparation (asking for communications) and the organisations of the workshops (slides, contributions) stimulate their interest for the MUSICNETWORK.

Choosing the papers that will be presented and discussed during the conferences, events or fairs, choosing the people who will present the contributions is the role of the wg leaders. But the participants themselves are fundamental actors in the activity.

2.3 Working Group Methodology

The activity of each working group will be developed with the following methodology considering several aspects and the impact of the specific area of the working group upon these aspects.

The work of each WP has been divided in sub-WP as depicted for Working group ML in the Gantt and in the global Gantt reported in the Annex 1. The activity performed is divided in subWP as follows:



- **Working Group Set-up:** MUSICNETWORK will set up a group of multi-disciplinary experts to cover the three main areas of music representation description, functional and application levels
 - The set-up and start-up of the working group. Identification of the list and mechanisms for attracting participants.
 - Definition of the meeting dates for the following months. Identification of the major events at which these meeting can be joined.
 - Definition of the general goals to be reached by each WG.
 - Building and updating WWW pages of the working group.
 - Set up of the general mailing list of the working group and of the network.
 - Definition of a classification structure for all music detailed aspects and tools.
- **State of the art and Standard review:**
 - identification of the state of the art in the specific area of the working group. Publication of this on the WWW pages of each WG.
 - identification and monitoring of the standards, standard the facto widely recognized in the specific area of the working group: collection of information and documents related to these standards. Analyzing the relationships among the standards.
 - identification and monitoring of technical leading partners of the sector, in terms of market and technical solutions. Identification of companies, research centers, best practice partners with the name of the responsible. At technical level single people are sometimes, in this field, more important than institutions.
 - assignment of a responsible for each standard (some of them are naturally present in the consortium since they are or have been involved in standard bodies) by the working group participants.
 - verification of standards against the needs expressed by the requirements and test cases.
- **Market Monitoring and Analysis:**
 - Monitoring the market size of tools and activities related to the working group.
 - Monitoring the leading partners evolution in the area of the working group.
 - Monitoring the user type for the functionalities and formats related to the working group.
 - Monitoring the political and legal aspects related to the formats and tools of the working group area.
 - Monitoring the legal aspects related to the exploitation of content for the working group area.
 - Monitoring the behavior of music content providers on the aspects of the working group.
 - Monitoring and analyzing the end-user profile and the use context for the technology of the working group.
- **Technology Watch and Contribution to Standards:** experts and several participants selected in the Working Group are actively involved in standardization activities (W3C, MPEG7, MPEG21, Dublin Core, MARC). They will regularly report about the progress of standards, and of strategic moves of key industries involved in the different groups. The working group will test and evaluate new solutions which may emerge during the project life.
 - Monitoring the technology used by leading partners of the sector.
 - Monitoring security aspects related to the exploitation/modeling/distribution of content by using the technologies discussed, provided and monitored by the working group.
 - Assessment of the current technology for the new media and distribution mechanisms.

- Definition of mechanisms and key aspects for assessing technology,
- Description of the main functionalities of each category of tools related to the working group area
- survey of solutions and technologies adopted in the working group area.
- The production of a report with comments regarding the applicability of each standard in the specific music area managed by the working group.
- Contribution with specific guidelines to the most related bodies of standards, such as Mpeg7 and Mpeg 21.
- **Model Definition and guidelines production:** The leader of the working group will co-ordinate the production of guidelines, and on the ground of them, will produce whenever necessary appropriate models of hypermedia/multimedia representations of musical content as examples of output from the systems.
 - Social and cultural analysis of user needs and working group technologies.
 - Description of the detailed user needs which can be related to aspects of the working group.
 - Production of consumptive technology reports of the working group.
 - Identification of the best practice to cope with problems identified and highlighted by the WP2, with the collection of reference data for evidencing key problems.
 - Model analysis to cope with the problems proposed in WP2.2.
 - Implementation of off-line and on-line questionnaires in order to get impression on new technologies and interfaces.
 - Production of reports/guidelines concerning the most important technical solutions identified for the problem proposed and collected during WP2.2. Reports can be based on new models or on the adoption of current standards.
 - Strategies and guidelines for achieving best practices, including practices in the field of education;
 - Strategies and guidelines for improving interoperability and exchanges among systems;
- **Technical Workshop Organisation and Group Management:** Specialised workshops will be performed to co-ordinate investigative work in the 3 functional areas: Description, Functional, and Application level. These workshops will be held 1-3 times per year and will happen generally simultaneously to enable cross fertilisation among the groups.
 - Definition of workshop goals and responsible.
 - Integration of new participants.
 - Participants will be used for the validation of the work of the MUSICNETWORK and WWW site.
 - Selection and invitation of the area experts.
 - Preparation of the agenda and generation of minute reports.
 - Definition of goals for the following months, consumptive analysis of the work performed.
 - Building and updating WWW pages of the working group.
 - Preparation and distribution of a monthly news letter for the participants
- **End User Network Support:** MUSICNETWORK will capitalize all the work in the above-mentioned tasks to produce yearly paper deliverables, and structured electronic documents on technology and market watch, standards watch, etc. Electronic dissemination will be organized through web and mail communication, while continuous feedback and debate will be moderated through an online forum.

2.4 Schema for WG activities.

The following schema has been followed to identify the activities of each WG. The two sections of the schema has been presented in separate subsection in the section presenting the activities of the WGs.

Main goals of the Working Group

- What it is intended to do in the next 2 years and half, main objectives ?
- Why these objectives have to be reached?
- How do you intent to reach that objectives?
- Which standards will be considered and assessed ?
- Which test cases or database for assessment will be created ?
- Which partial results will be reached during the next two years and half ?
- When the above partial objectives will be reached ?

Resources and Competencies Needed

- Which actors are needed to reach the above goals ?
- Who would like to attract in the WG to reach the objectives?

2.5 Main planned activities of WG-Notation

2.5.1 Main goals of the Working Group

The most important aim of the Notation WG is to push the content and technology providers to work at the analysis or production of a common format suitable for the new multimedia age. This will be done by performing an analysis of the state of the art to look for the best practices and available standards considering: NIFF, SMDL, XML, MPEG7, MPEG4, MPEG21, SMIL, SVG. In alternative we plan to stimulate the realization of a widely adopted format for music notation representation. A format that will deal with the needs of all the actors (publishers, music editor producers, copyists, integrators, etc.) involved in the realization and the distribution of an *interactive multimedia* music piece. Music Notation has not to be seen only related to music printed on a sheet, now and much more in the future, music notation will be accessed using different kinds of devices, from the PC to the UMTS terminal, from the classical printed music sheets to the electronic lectern. Devices which are much more interactive than a sheet of paper.

The main objectives of the WG are the following that has been divided in sub tasks:

- O1. make a review and analysis of the state of the art of music notation formats & tools
 - O1.1 Collection and analysis of notation formats & tools.
 - O1.2 definition of characteristics of notation formats to be analyzed.
 - O1.3 definition of characteristics of notation tools to be analyzed.
 - O1.4 analyze notation formats
 - O1.5 analyze notation tools
 - O1.6 produce a report on these aspects
- O2. stimulate the Music Notation community in the definition of a shared *multimedia music notation* format. This activity will be performed in collaboration with the WG on Standard. The main step will be to assess the possibility of revitalizing SMDL standard and/or to collaborate with MPEG standard.
 - O2.1 Identification of the major innovative applications
 - O2.2 Identification of the major functionalities
 - O2.3 Identification of the major requirements
 - O2.4 Definition of the main standard guidelines
 - O2.5 Preparation of the call for proposal
 - O2.6 Assessment of proposals and integration
 - O2.7 organization of specific WG meetings
- O3. collaboratively collect a database of music notation examples as test cases for notation formats. This will be done in collaboration of Imaging and Standard WGs.
 - O3.1 Define a classification methodology (period, frequency of occurrence, ...)
 - O3.2 Search on the web, on books, etc. for music notation examples
- O4. analyze the current conversion capabilities among notation formats. This activity will be done in collaboration of Standard WG.
 - O4.1 Define and search the music pieces to be used as test cases for conversion
 - O4.2 Define the metrics to be used to assess conversion performance
 - O4.3 Perform the conversions and produce the metrics
 - O4.4 Analyze the results
- O5. make a review of the music e-learning tools. They are one of the first applications of multimedia music.
 - O5.1 Search for music e-learning tools on the web
 - O5.2 Classify the tools (by age, instrument, media, pedagogical aspects...)
 - O5.3 Definition of characteristics of music e-learning tools to be analyzed
 - O5.4 Analyze the music e-learning tools
 - O5.5 Produce a report on these aspects
- O6. review the documents posted by the participants
 - O6.1 reading and analyzing documents
 - O6.2 build a classified index with news, projects etc.

Objectives O2 & O3 are in common with the WG-Standards and will be collaboratively supported.

The integration of the activity performed by this WG is planned to be initially performed with WGs of Standards and Imaging. In a second phase, the integration will be extended to the other working groups and in particular with those of:

- Educational aspects for including the needs of the education into the music notation standard. This has to be mainly planned since the beginning.
- Accessibility aspects for including their needs into the music notation standard.
- Library aspects for including cataloguing, classification, identification aspects into the music notation standard.

Objectives	2002		2003												2004												2005												
	11	12	1	2	3	4	5	6	7	8	9	10	11	12	1	2	3	4	5	6	7	8	9	10	11	12	1	2	3	4	5	6	7						
O1 - Formats & tools	O1.1																																						
	O1.2																																						
	O1.3																																						
	O1.4																																						
	O1.5																																						
O2 - Standard	O2.1																																						
	O2.2																																						
	O2.3																																						
	O2.4																																						
O3 - Database	O3.1																																						
	O3.2																																						
O4 - Conversion	O4.1																																						
	O4.2																																						
	O4.3																																						
	O4.4																																						
O5 - E-learning	O5.1																																						
	O5.2																																						
	O5.3																																						
	O5.4																																						
O6 - Documents																																							

■ = scheduled time
 ■ = update/maintenance

2.5.2 Resources and Competencies Needed

The actors needed to define and assess a multimedia music notation format are:

- Computer music research institutes
- Music tools builders
- Musicologists, composers, musicians
- Librarians, archivists, copyists
- Music schools and conservatories
- Music teachers and students
- Multimedia professionals
- Music publishers

Content providers as music publishers, multimedia libraries, ... can be of great support in the collection of music notation examples for the construction of the test cases database.

2.6 Main planned activities of WG-Library

2.6.1 Main goals of the Working Group

The MUSICNETWORK WG-Libraries is an EC-funded opportunity for music libraries (including music documentation centers, broadcasting and orchestra archives, music-related museums, archives, industry catalogues and other collections) to keep pace with technological, legal and standardization developments in the multimedia music area.

The main goals of this Working Group are:

- Bring together the view of the music library community with a cross-domain perspective including museums, archives, industry catalogues and other collections;
- Motivate and enable the community to look at the “big picture”, especially concerning metadata, information retrieval and digital library developments;
- Keep the community informed on technological, legal and standardization developments;
- Analyze market developments and identify and discuss future business models for music libraries;
- Make the results accessible as a practical future agenda of music libraries.

Initial Situation

Facing social challenges as well as developments in Information Society Technologies, "libraries are changing fast: but they need to change even faster." (PULMAN Guidelines, 1st ed., June 2002, p.5) Multimedia possibilities for music libraries are just emerging and hard to track, also for librarians and archivists. But in order to extend the classical functions of libraries into the digital world – to accumulate and to preserve knowledge, to provide access to

the society's cultural artifacts, and to foster communication, education and scholarship – it is necessary to keep pace with technological, legal and standardization developments in the multimedia music area.

Main objectives:

O1. Technology and market survey

Horizontal: identification of topic areas

- O1.1 Identification/survey of the most relevant topics and problem areas for music libraries with regard to interactive and multimedia technologies
 - O1.1.1 Continuously (WG-Library forum, mailing list etc)
 - O1.1.2 On the occasion of conferences, WG-Library workshops etc
- O1.2 Structuring within a database or equivalent representation
- O1.3 Making the structured survey publicly accessible (on the MUSICNETWORK website etc.)
 - A. Cataloguing/bibliographic requirements
 - B. Metadata
 - C. Exchange of information
 - D. Information retrieval/knowledge retrieval
 - E. Digitization/coding
 - F. Digital distribution
 - G. Copyright/licensing
 - H. Digital rights management/digital copyright management
 - I. Digital asset management
 - K. Payment/clearing
 - L. Storage

O2. Technology and market survey

Vertical 1: identification of actors/stakeholders and existing solutions

- O2.1 Identification/survey of the methods, conventions, products, activities, and actors in the respective topic areas, if any (see above, A.–L.) as far as relevant for music libraries
 - O2.1.1 Continuously (WG-Library forum, mailing list etc)
 - O2.1.2 On the occasion of conferences, WG-Library workshops etc
- O2.2 Structuring within the above-mentioned database or equivalent representation
- O2.3 Making the structured survey publicly accessible (on the MUSICNETWORK website etc.)
 - 1. Standards/rules
 - 2. Technologies/formats
 - 3. Products/systems/applications
 - 4. Services
 - 5. Research and development projects
 - 6. Researchers/research groups
 - 7. Companies/technology providers/software developers
 - 8. Standardization bodies
 - 9. Authorities, associations and organizations
 - 10. End users/customers

O3. State-of-the-art analysis

Vertical 2: evaluation of existing solutions

- O3.1 Discussion and assessment/analysis of the methods, conventions, and products in the respective topic areas, if any (see above, A.–L.) from a music libraries' perspective
 - O3.1.1 Continuously (WG-Library forum, mailing list etc)
 - O3.1.2 On the occasion of conferences, WG-Library workshops etc
- O3.2 Best-practice examples, if any
- O3.3 Overall analysis of market developments
- O3.4 Identification and discussion of future business models for music libraries
- O3.5 Select bibliographies
- O3.6 Structuring within the above-mentioned database or equivalent representation
- O3.7 Making the structured State-of-the-art analysis publicly accessible (on the MUSICNETWORK website etc.)
 - 1. Standards/rules
 - 2. Technologies/formats
 - 3. Products/systems/applications
 - 4. Services
 - 5. Research and development projects

O4. Model definition and guidelines proposition

Vertical 3: guidelines, recommendations

- O4.1 Specification of requirements for the methods, conventions, and products in the respective topic areas, if any (see above, A.–L.) from a music libraries' perspective
- O4.2 Suggestion of adaptations to existing, or suggestion of new methods, conventions, and products
- O4.3 Structuring within the above-mentioned database or equivalent representation
- O4.4 Making the structured guidelines and recommendations analysis publicly accessible (on the MUSICNETWORK website etc.)
 1. Standards/rules
 2. Technologies/formats
 3. Products/systems/applications
 4. Services
 5. Research and development projects

		2002		2003										2004										2005												
Objectives		11	12	1	2	3	4	5	6	7	8	9	10	11	12	1	2	3	4	5	6	7	8	9	10	11	12	1	2	3	4	5	6	7		
O1 - Survey	O1.1.1																																			
	O1.1.2																																			
	O1.2																																			
	O1.3																																			
O2 - Survey	O2.1.1																																			
	O2.1.2																																			
	O2.2																																			
	O2.3																																			
O3 - Analysis	O3.1.1																																			
	O3.1.2																																			
	O3.2																																			
	O3.3																																			
	O3.4																																			
	O3.5																																			
	O3.6																																			
	O3.7																																			
O4 - Guidelines	O4.1																																			
	O4.2																																			
	O4.3																																			
	O4.4																																			
Deliverables	DE2.2.1																																			
	DE4.2.1																																			
	DE4.2.2																																			

2.6.2 Resources and Competencies Needed

In order to achieve the main goals of WG-Libraries it is required to bring the following actors together:

- Music libraries
- Documentation centers
- Audiovisual/multimedia archives
- Broadcasting agencies
- Music-related museums
- Librarians
- Musicologists
- Cataloguers (including providers of commercial/trade/retail catalogues)
- Publishers and producers (e.g. with regard to CIP-like initiatives)
- Music schools, Music conservatories, Music universities
- Software developers
- Service providers
- Experts in copyright, technology, economy, and marketing
- Archive/library users (e.g., music teachers and students, composers, orchestras/ensembles/musicians)

Following the identification of actors/stakeholders (O2), it is crucial to establish close connections to key actors in the respective topic areas. This is partly achieved by the involvement of persons and representatives of organizations in the working group, partly by other forms of cooperations with key associations (e.g., IAML, IAMIC), research groups and projects (e.g., RILM, PULMAN, European Music Navigator), or events (e.g., IAML conference).

- Researchers/research groups
- Companies/technology providers/software developers
- Standardization bodies
- Authorities, associations and organizations
- End users/customers

With respect to the identification of topic areas relevant for music libraries (O1), the close cooperation with the respective Working Groups within MUSICNETWORK will be crucial. This is partly achieved by the involvement of experts of other Working Groups in WG-Libraries, partly it will be achieved by common workshops and by common indexing of documents, website content etc.

With respect to the significant overlapping of the relevant topic areas (see below), and to the feedback of WG-Library group members to the first Open Workshop, it will be necessary to set up WG-Library workshops etc. without parallel sets of sessions for other Working Groups.

WG-Standard (IRCAM) and WG-Accessibility (FNB)

- A. Cataloguing/bibliographic requirements
- B. Metadata
- C. Exchange of information
- D. Information retrieval/knowledge retrieval

WG-Notation (DSI) and WG-Imaging (UNIVLEEDS)

- E. Digitization/coding

WG-Distribution (RIGEL) and WG-Protection (FHGIGD)

- F. Digital distribution
- G. Copyright/licensing
- H. Digital rights management/digital copyright management
- I. Digital asset management
- K. Payment/clearing
- L. Storage

2.7 Main planned activities of WG-Imaging

2.7.1 Main goals of the Working Group

The main purpose of this working group to explore issues on the digitisation, representation, restoration and automatic transcription of music documents (Optical Music Recognition (OMR)); converting paper-based music document into machine readable formats, in order to explore effective use of the latest interactive and multimedia technologies for cultural heritage restoration and preservation of musical documents, such as printed music scores, handwritten manuscripts and ancient music scores.

The main objectives of this Working Group include:

1. Technology watch of hardware for image acquisition
 - Related hardware, e.g. flatbed scanner, book scanner, digital camera, etc
2. Technology watch of software for image acquisition
 - Related software, e.g. scanner software platforms such as TWAIN, and image applications such as PaintShopPro, Photoshop, etc
3. To collect domain specific issues and solutions for music imaging acquisition
 - For example, ancient music scores acquisition with uneven surfaces and fragile conditions
4. Music Imaging bibliography collection:
 - To collect and maintain publications related to music imaging, with particular focus on Optical Music Recognition (OMR).
 - First version (EndNote and HTML format) is already online and publicly accessible on the MUSICNETWORK website
 - This collection requires regular updating and maintaining. Current plan is to produce one distribution every 3 months.
- 4.1. Further planned activities:
 - 4.1.1. To add links (where possible) to full paper and/or to attach abstract of papers

- 4.1.2. To include literature on music restoration
- 4.1.3. To include literature on music translation including Braille translation
- 4.1.4. To include literature on Braille notation recognition
5. OMR software survey:
 - To collect and survey state-of-the-art commercially available OMR software.
 - 5.1. To compile a “feature list” of each OMR software under evaluation
 - 5.2. To evaluate processing time (speed) for each OMR software under evaluation
6. To define a list of standard and unambiguous music primitives and names (e.g. note-head, stem, etc)
7. To collect ground-truth dataset for OMR benchmarking
 - In order to perform a comparative study of commercial OMR system (objective 5), we require a ground truth dataset containing music sheets with different style of fonts, density, sizes and page layout
 - 7.1. Target: 100 pages of representative data (printed music only)
 - 7.2. To establish a group of volunteer testers
 - To manage and organise the tester group to provide doubled test and count for confirmation and to provide better error detection and minimise inconsistencies
 - Double testers for confirmation to detect any inconsistencies
8. To propose and discuss OMR benchmarking approaches and assessment matrix
 - 8.1. To discuss and propose approaches for evaluating OMR software
 - Current proposal include a 3 Level approach (primitive, note and interpretation)
 - This require a clear and comprehensive guideline
9. To categorise main issues and challenges in Music Imaging
10. Music imaging applications and case studies
 - 10.1. To collect successful story on music-imaging related applications
11. To collect and survey current best practices and recommendations in related areas
 - Guidelines/standards in the areas of music imaging, e.g. document acquisition resources (related hardware and software)
12. Music Imaging model definition and/or guidelines production
 - From the survey of related best practices and recommendations, the WG intend to propose a set of domain specific guideline or model definition for music imaging
13. Identification of the most significant related activities:
 - 13.1. actors of the sector
 - 13.2. research groups
 - 13.3. http links
 - 13.4. associations
 - 13.5. events and fairs
 - 13.6. and others
14. To locate and contact:
 - major actors, relevant people,
 - related projects and affiliated research group/institution in the sector
15. To setup resources, collect useful data and information and to provide on-line achieve of the resources (via MUSICNETWORK website)
16. Specification of Optical Music Recognition
17. Specification of Optical Music Document Restoration
18. To collect and survey music imaging related image/graphical representation (file format)

Besides general duties and activities as describes in this document, such as open workshops, online forum, etc, WG-Imaging intends to organise an additional workshop on Music Imaging and continue to involve in related events supported by MUSICNETWORK.

In general, these objectives are vital for the advances, development and commercialisation of music imaging domain. Objective 1 and 2 are useful resources for all users. Objective 3 is important for the consideration of practitioners planning or working on music imaging related projects. Objective 4 creates a valuable resource for all music imaging researches.

Current, there is a number of commercially available OMR software. However, no comprehensive comparative study has been carried out, and hence Objective 5 is urgently needed. In order to provide unambiguous comparative study between different software, terminology for all musical primitives (e.g. note-head, stem, etc) has to be standardise and this is the task of Objective 6. For a non-bias survey of OMR software, a representative and sufficiently large ground-truth dataset of music sheets containing different style of fonts, density, sizes and page layout has to be collected; hence Objective 7 is one of the vital goals.

Simple recognition rate (as in Optical Character Recognition) does not offer good/meaningful measure for OMR system due mainly to the complex musical notation which may change (visually) depending on the contexts, and hence a good assessment matrix is require to provide meaningful assessment for OMR system. Current proposal include a 3 level approach with measurement at primitive-level, note-level and interpretation- (score-) level.

The following activities have been planned in order to achieve the objectives as mentioned above:

- Survey, web-search and enquiries to related organisations/companies are to be carried out for Objectives 1 and 2.
- Discussion (online and offline) and web-search have been planned for Objective 3.
- Existing OMR bibliographies from Roth, Fujinaga and Ng have been merged to create initial version of Music Imaging bibliography collection. Ongoing mantainance activities include information from authors and information from related proceedings and conferences (Objective 4).
- Survey on currently available OMR software (commercial) is currently ongoing with online discussion (MUSICNETWORK Forum) and web-search (Objective 5). Once the OMR software list is created, all the software will be ordered and installed at ICSRiM (www.ICSRiM.org.uk) and other collaborator testers for testing.
- Music notation experts and reference materials will be consulted to carry out Objective 6.
- Major publishers and libraries will be contacted to contribute sample test data for Objective 7.
- Online discussion, web and literature search is to be carried out for Objective 8-11, 13-14, 15-18.
- From the survey of related best practices and recommendation, Objective 12 will be proposed.

Standards to be considered and assessed include:

- Related file formats for imaging, such as graphical music representation (e.g. SVG)
- Related recommendation and guideline on digitisation and imaging techniques will be considered and assessed.

In order to provide a comprehensive and non-bias test dataset for the OMR software, WG-Imaging intends to collect a 100-pages (initially) ground truth sample music sheets input for OMR benchmarking. This test dataset should contain music sheets with different style of fonts, density, sizes and page layout.

WG-Imaging also creates and maintains an OMR related publication list.

During the next two and a half years, the WG-Imaging intend to achieve all of the objectives as described above, with priority to

- Music Imaging bibliography collection and maintenance (Objective 4)
- OMR software survey (Objective 5)
- OMR dataset collection (Objective 7)

Some of the objectives have been started and they are to be maintained with continuous update throughout the project. Initial schedule for the above partial objectives is as followed:

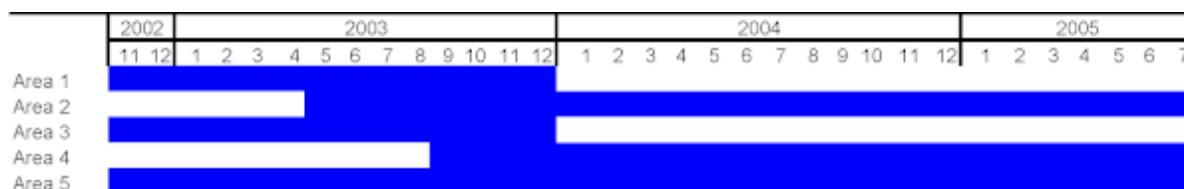
Objective	mar	apr	may	iun	Jul	Aug	Sep	oct	nov	dec	ian	feb	mar	apr	may	iun	iul	aug	sep	oct	nov	dec	ian	feb	mar	apr	may	iun	iul
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scores has until now been somewhat limited, and the main provision of music in alternative formats has been through Braille Music, which has been in production in many countries for over a century.

The WG Accessibility addresses the main areas in a series of workshops and meetings; disseminates information about new developments and tools; and contributes to the adoption of an inclusive Design For All approach in this field. The WG Accessibility aims to address key aspects concerning provision of music for the print impaired in the digital age. Following the initial discussions, the following specific themes have been identified as the most important ones, particularly for the first 18 months of the project, namely:

- encourage integration of production, consumption and distribution for Braille, Spoken and Modified Print Music
- contribution to international standards and guidelines (Braille Music, Modified Print)
- working network between organisations needed
- contribution to copyright, IPR and legal standards and legislation at national and European level
- advisory role for other Music Network groups (eg WGs libraries, standards, education) and integration activities

A number of strategies have been adopted to achieve these general and specific objectives during the course of the next 2.5 years.



Work will continue on each of the areas above throughout the project, but the greater focus for months 1-18 lies in Areas 1 & 3. The work in Area 2 begins from month 6, the work in Area 4 from month 12 and Area 5 activities run for the duration of the project.

In order to achieve these goals, a number of key activities are now underway:

Survey activities

Identification of the state-of-the-art in the area of accessibility, taking note of leading technical solutions in this sector. This work will continue throughout the project and will be widely disseminated. The State of the art activities include a number of surveys, namely:

- a survey of tools to create music in alternative formats

A general review of tools to create music in alternative formats, both for educational and leisure practices, for application to the domain of music in alternative formats. This information will allow end users to make a informed decision about these materials.

- Survey of work by International Standardisation Bodies

A general survey of the work by International Standardisation Bodies (W3C, WBU, WAI) with regards to accessibility. The survey will also cover work in the area of Braille Music, Spoken Music and Enhanced Print Music. This work began in month 3 of the project, with early draft reports in month 12, followed by recommendations and standard revisions thereafter. In particular, the WG Accessibility will encourage the amendment of the existing international guidelines on Braille Music notation to reflect the digital era. Similarly, the WG Accessibility will encourage the creation of coherent guidelines for the production of Modified Print Music. For Spoken Music, the WG Accessibility has already successfully encouraged the adoption of the DAISY digital audio talking book format and standards.

- International Survey on accessible music

There is a need to find out more information about the attitudes and needs of people in this field. To this end an online survey has been established, the results of which will be collated and analyzed. Further, after month 18 a more detailed survey will be undertaken with all those attracted to the WG Accessibility work and the results will form the basis of a final comprehensive document on this area for publication in textbook format alongside guidelines and best practice in this field.

Cohesion and integration between workgroups

In order to help to elaborate the framework for a standard, and to enhance integration of issues relating to accessibility with existing and emerging standards, the WG accessibility contributes to the ongoing music notation activities and will involve contributions to the database of tolls and convertors. Similar contributions are made to

other workgroups, such as the WG Standards on the review of the use of open standards. These activities are seen as vital in ensuring that coherent messages are delivered to the Music Network end-users and allow the accessibility activities to be clearly explained outwith more academic environments.

Building Identification of the most significant associations

Associations have been identified regarding their contributions to the field of accessible music. A database of suitable and relevant contacts has been established, and currently has some 5,000 entries. An interactive service where users can ask questions on accessibility of music and music in alternative formats of experts in these fields. This service is provided on the Music Network website through the discussion fora. Information about events and fairs is thus widely disseminated.

The WG Accessibility is encouraging the participation of members at many international conferences ,and has arranged to give papers, demonstrations etc throughout the duration of the Music Network. These conferences include:

- International Federation of Library Associations (IFLA)
- International Association of Music Libraries (IAML)
- International Conference on Music & Artificial Intelligence (ICMAI)
- Conference on Assistive Technologies for Vision & Hearing Impairment (CVHI)
- European Bureau of Library, Information and Documentation Associations (EBLIDA)
- European Association of Information Services (EUSIDIC)
- International Council for Education of People with Visual Impairment (ICEVI)
- International Conference on Technology and Persons with Disabilities (CSUN)
- World Blind Union (WBU)

In addition, an international conference on **Accessible Music (AM 2003)** has been organized for Month 15 of the project. This conference (<http://projects.fnb.nl/am/conference.html>) will bring together many of the key actors in this field and is actively supported by the Music Network. It is hoped that this will be a catalyst for achieving many of the above aims, and in particular for Area 3, to build a working network between the organizations in this field. It is intended to repeat this activity in month 27 of the project (AM 2004), and thereafter on an ongoing annual basis. This should represent a key measurable outcome from the Music Network for the WG Accessibility.

Some of the above objectives have already been partially achieved, and others will be achieved at different stages throughout the project. An early success has been the general agreement on the working definition of accessible music, and this is important for the Area 1 objective, namely, to encourage integration of production, consumption and distribution for Braille, Spoken and Modified Print Music. A number of conferences are planned during the first 18 months of the Music Network, and the WG Accessibility will support these external activities where possible. In fact, there will probably be three international conferences in this area during this timescale (18 months), whereas in the preceding 5 years there were none.

2.8.2 Resources and Competencies Needed

To achieve the above objectives it is necessary to attract as broad an audience as possible, including (although this is not an exhaustive list):

- Publishers, Music Libraries, Music Librarians, Academics, Multimedia distributors
- Music encoders, Musicians Professional & Amateur, sighted and visually impaired
- Composers, Musicologists, Archivists, Organizations supporting print impaired people
- Educational theorists, Music Teachers, Syllabus designers
- International, national and local organizations, associations and networks

2.9 Main planned activities of WG-Standard

2.9.1 Main goals of the Working Group

The development of new multimedia content is one of the most interesting ways for valorization of musical content and musical archives. This development for edutainment or infotainment is quite difficult due to a number of key issues, which are:

- first, the lack of music notation (music score) integration in the multimedia delivery chain
- the poor integration of standards in a general framework and an unified model
- the lack of main authoring tools and multimedia standards regarding musical functions (MIDI, audio tracks, synchronization...)
- the lack of integrated Digital Asset Management databases and tools for their integrated inspection.

The Multimedia Standards working group is focused on the main objective to reach better integration of music in all forms (audio, score, audio representations, ethnomusicology representations, and so on) in the multimedia production.

First objective: Integration of musical notation in multimedia standards.

The Multimedia Standards working group will try first to examine the ways to integrate musical notation in the most important open standards, such as W3C standards or MPEG standard. The multimedia standards working group must also encourage the musical community to elaborate a musical notation standard for its own purpose, or to adopt or enhance an existing one. One must remark that a standard was elaborated in the 90s, under the ISO organization, but this standard is at the draft stage and was never definitely adopted by ISO.

Second objective: New usages, new solutions and new applications

The Multimedia Standards Working group must survey the evolution of standards, particularly open standards, by making periodically reviews of their technical evolution, and making surveys of their use across the on-line published musical multimedia presentations, and by participating to the most important conferences and meetings related to open standards. It must also identify new usages, new solutions and new applications which are made possible by the use of emerging technologies and standards.

The working group is focused on mainly two groups of standards regarding multimedia: on the first hand open standards, as produced by standardization bodies such as ISO (MPEG standards) or by international organizations such as W3C, and on the second hand proprietary standards which are the most often used in multimedia production.

The methodology for reaching these objectives is based on four main work packages:

- Survey of activities from standardization bodies.
- Active participation to the Music Notation working group.
- Survey, review and assessment of music multimedia presentations on line and offline
- Development of a database and on line tools server, in order to test and assess new solutions and technologies.

A - Survey of activity from main standardization bodies.

This survey will be made by the mean of direct participation to the activity of the standardization bodies : IRCAM is already member of the MPEG group, and collaborate actively to the Audio sub-group, and intend to collaborate to the MPEG 21 future standard. The Multimedia standards Working Group will also participate to the main meetings and conferences, either of the MPEG group and of the W3C. The following activities will be pursued:

- Setting up of the planning of main conferences and meetings
- Participation to conferences and meetings
- Reports to the multimedia standards working group

The planning of main conferences and meetings for 2003 has already been established. The planning of the conferences will be revised every 3 months. Reports from conferences will be made periodically.

B - Active participation to the Notation working group.

In order to help to elaborate the framework for a standard, and to help integration and interoperability of music notation with existing standards, the following stages are envisaged:

- Elaboration of a work plan
- Database of musical examples
- Development or review of tools and converters, available on-line

A first draft of the future workplan has already been established. This workplan is to be revised in the six next months, and to be completed before September 2003. The database of musical examples will be elaborated beginning in August 2003, as well as the database of tools and converters.

C - Global review of methodologies and technologies currently used in multimedia music presentation.

To this end, the following surveys will be done:

- A review of on-line published musical multimedia analysis, or musical multimedia presentations
- A review of methodologies used in multimedia presentation of music, done by the mean of questionnaires and interviews of authors or producers of multimedia presentations on-line.
- A review of technologies used in multimedia presentations of music, and especially a survey of the use of open standards. This will be done by using the results of questionnaires and interviews.
- A review of music specialized tools, specially musical analysis tools, either from the academics world or from the commercial offer, as they are implemented in the commercial musical notation software tools (Finale, Sibelius...).

A first review of on-line published musical multimedia analysis has already been done. This review is to be revised every 6 months. Methodology and technological review will begin in August 2003, and specialized tools review will begin in February 2004.

D - Development of a content database available on-line, and server for software tools.

For the purpose of testing new solutions and technologies, a repository will be developed and filled with basic content, that is to say, text, images, audio, and video files. These archives will be made available on line, and available to participants of the Multimedia Standards Working group. To this end, the following stages are envisaged:

- Set up of the technological background (database and server on-line)
- Search for multimedia contents (free of rights) and insertion in the database
- Repository and server for software tools (when possible), for making multimedia software and tools (musical analysis tools) available on line for participants to the Multimedia Standards Working Group.

IRCAM is already developing such a database for its own purpose, and can make it available for the MUSICNETWORK on September 2003. Multimedia content will be inserted in the database beginning in September 2003. Software tools will be inserted beginning in February 2004.

Here is a schematic view of the previewed planning:

		2002		2003												2004												2005								
		11	12	1	2	3	4	5	6	7	8	9	10	11	12	1	2	3	4	5	6	7	8	9	10	11	12	1	2	3	4	5	6	7		
Conferences	Conference planning	■	■																																	
	Participation to conferences																																			
	Reports																																			
Music Notation Standard	Workplan elaboration																																			
	Database																																			
	Tools and converters																																			
Technology review	Online publications review	■	■																																	
	Methodology review																																			
	Technology review																																			
	Specialized tools review																																			
Content database	Technological background																																			
	Multimedia content																																			
	Software tools server																																			

2.9.2 Resources and Competencies Needed

Resources and competencies needed belong to two groups. First, we need to attract the potential producers of music multimedia presentations, as well as potential users in the field of edutainment or infotainment. To this end, the following users need to be attracted:

- Musicologists,
- Librarians, archivists,
- Music schools and conservatories
- Universities
- Music teachers and students
- Composers, music lovers, performers

In addition, we need also to attract multimedia professionals, music journalists, radio producers, multimedia producers and technicians, as well as information technology industries and software builders.

We need also to attract actors from standardization bodies, either to explain to the community of users the aims and goals of standardization bodies, and to draw their attention to the particular problems of music and specially music notation.

2.10 Main planned activities of WG-Protection

2.10.1 Main goals of the Working Group

The protection of digital content is a hot topic due to illegal distribution of data in peer-to-peer (P2P) networks. MP3-compressed audio files are currently the most frequently “shared” media types. However, illegal distribution of other media types is increasing which indicates that barriers like transmission time are vanishing due to increased bandwidth and compression techniques. This shows that solutions, which will also influence the distribution of digital data, addressing a reduction of illegal distribution are more and more mandatory not only for monetary reasons: E.g. even unknown content creators at least want to track the distribution of their content and its

commercial use. However, current solutions seem to be driven by technologists and not addressing the needs of the users.

In the WG protection we use the terms ‘technologist’, ‘content providers’ and ‘customer’ as described below:

‘technologist’	summarizes the people who are related to the development of new protection technology including researchers and product developers.
‘content providers’	are organisations which typically deploy protection techniques developed by technologists
‘customer’	are users who are affected by protection techniques during buying. A typical example is the user at home who wants to buy an MP3-compressed audio file and who is agonized by strongly restrictive DRM solutions.

These are the general groups dealing with protection techniques. We will use these terms in the definition of the different goals which have to be addressed in this working group.

The development of protection techniques is driven by technologists. Therefore requirements of users, which includes content providers as well as customers, are not considered adequately. This led to a lack of information exchange between technology providers and technology users. As a consequence the use of protection technology is quite limited because users are not aware of the possibilities but rather afraid of the negative effects which might come along with protection techniques. Also, with the lack of protection techniques publishers are reluctant with the distribution of digital content due to possible loss of control of the content. The major goal of this working group is to address technologists and content providers and to establish a fruitful communication. This communication will improve the information exchange between both groups and influencing the development and the use of protection techniques. Both groups will directly benefit from this communication. Thus, more and more media will be distributed in the digital format. This is achieved by several objectives:

- Objective 1: Technology related aspects considering hardware and software.
- Objective 2: User related aspects of content providers and customers.
- Objective 3: Legal aspects are generally very important.
- Objective 4: Economic aspects are very important for content providers.
- Objective 5: Besides standardization activities guidelines will be produced .
- Objective 6: Online information.

Objective 1

Technology related aspects considering hardware and software. This objective is split in the following sub-objectives:

- **Objective 1.1** identification of commercially available DRM and protection techniques
- **Objective 1.2** identification of standardization issues in the field of DRM
- **Objective 1.3** analysis of commercial DRM and protection techniques
- **Objective 1.4** identification of actors of the market
- **Objective 1.5** integration of actors of the market

The analysis is on a functional basis and describes the functionality of the available system. Any qualitative judgment is at least at the beginning of the project not possible due to the extension strategy of the network. Integration so far was difficult because collaboration is time intensive for companies. Therefore other strategies have to address commercial organizations. These include the possibilities for advertisement activities and description of products.

As technological aspects are strongly influenced by and strongly influence the distribution a cooperation with WG distribution is necessary.

Objective 2

User related aspects of content providers are essential for the deployment of techniques. User requirements of customers are important for their success due to acceptance:

- **Objective 2.1** user requirements of content providers
- **Objective 2.2** user requirements of customers
- **Objective 2.3** sensitization of content providers
- **Objective 2.4** sensitization of customers

Customers’ user requirements are collected indirectly. Sensitization of customers is not done in the MUSICNETWORK. Strategies are addressed how customers can easily understand the advantages and necessity of DRM systems.

Objective 3

Legal aspects have been identified in the first workshop as very important for content providers. Due to this necessity the WG Protection have to increase the contribution of people dealing in this area.

- **Objective 3.1** identification of experts
- **Objective 3.2** integration of experts
- **Objective 3.3** identification of main issues

This objective is strongly correlated with aspects of WP distribution

Objective 4

Economic aspects also were identified during the first workshop as very important. For example business models play an important role for the use of DRM technology.

- **Objective 4.1** identification of experts
- **Objective 4.2** integration of experts
- **Objective 4.3** identification of main issues

Similar to objective 4 this objective is strongly correlated with aspects of WP distribution

Objective 5

It showed that standardization is difficult area. Therefore besides standardization activities guidelines will be produced which will be important for technologists, content providers and standardization activities.

- **Objective 5.1** identification of standardization issues in the field of DRM
- **Objective 5.2** analysis of standardization issues in the field of DRM
- **Objective 5.3** analysis of user requirements
- **Objective 5.4** development and deployment guidelines
- **Objective 5.5** participation in standardization activities

This activity has to be coordinated with WP distribution and WP standardization.

Objective 6

Online information is updated continuously. Additional possibilities will be established for commercial organizations to increase their activities in the MUSICNETWORK.

- **Objective 6.1** support of the forum
- **Objective 6.2** submission of news
- **Objective 6.3** (external) documentation
- **Objective 6.4** collection of links

External documentation is the summarization of the above described additional possibilities for commercial organizations.

Additional aspects:

A test case and database for assessment, similar to the work group imaging, is not needed. However, we intend to establish possibilities to upload white papers and technical reports on existing systems.

Objective	2002	2003											2004											2005							
	11 12	1	2	3	4	5	6	7	8	9	10	11	12	1	2	3	4	5	6	7	8	9	10	11	12	1	2	3	4	5	6
O1 - technology related aspects																															
O1.1 search commercial DRM																															
O1.2 search standardization																															
O1.3 analysis commercial DRM																															
O1.4 identification of actors of the market																															
O1.5 integration of actors of the market																															
O2 - user related aspects																															
O2.1 requirements providers																															
O2.2 requirements customers																															
O2.3 sensitization of providers																															
O2.4 sensitization of customers																															
O3 - legal aspects																															
O3.1 identification of experts																															
O3.2 integration of experts																															
O3.3 identification of main issues																															
O4 - economic aspects																															
O4.1 identification of experts																															
O4.2 integration of experts																															
O4.3 identification of main issues																															
O5 - standardization and guidelines																															
O5.1 identification of standardization issues																															
O5.2 analysis of standardization issues																															
O5.3 analysis of user requirements																															
O5.4 development and deployment guidelines																															
O5.5 participation in standardization activities																															
O6 - online information																															
O6.1 suport of the forum																															
O6.2 submission of news																															
O6.3 (external) documentation																															
O6.4 collection of links																															

The previous described goals are planned to be reached by the following activities:

- Communication between technologists and content providers (objective one) is the most important target because of the current lack of communication between the different groups as described above. As communication is the start of other activities, it is challenging to improve communication because of the reluctance and negative attitude of technologists, content providers and customers. First steps are addressing the by inviting major players to workshops. A discussion based on forum or emails can be regarded as almost impossible as long as the actors are not directly addressed.
- Identification of main issues and challenges (objective two) has already started and was discussed on the first open workshop. This discussion is continued on the website and on future workshops.
- Technological aspects (objective three) will be elaborated and published in the forums and in uploaded documents.
- User requirements include requirements of the content distributors and the customers. This is essential because customers are not directly addressed in the workgroup protection. However, almost everybody is a potential customer and can therefore contribute her/his experiences and expectations to user requirements. Additionally, a lot of users already published their experiences, expectations and opinions on protection schemes in public forums or newsgroups. This is information will be collected and published.
- Legal aspects (objective five) are important and have to be considered by technologists and content providers. For addressing these issues it is vital to stimulate technologists and content providers asking there questions and problems. Therefore the primary goal is to collect these aspects. The secondary goal is to find answers to these questions. Because of the previous described reasons it is very likely that only academic organizations will contribute to the answers dealing with legal aspects. Therefore we have to offer them possibilities to increase their visibility, e.g. by inviting them to the workshops and having a talk about legal issues there. As an additional benefit commercial organizations will be attracted and this will results in further discussions and communication.
- Economic issues (objective six) are related to objective five and must be treated similar. However, the experience of content providers can be helpful to find answers to the questions and problems people have. Yet, content providers will probably not disclose any information which will improve the market situation of competitors.
- Sensitization (objective seven) is very significant and influences the success of protection technology. In the MUSICNETWORK we cannot sensitize customers. Sensitization of content providers in the scope of MUSICNETWORK is equivalent to the amount of objective information provided. Thus objective seven is addressed by objective one, two and three.
- Online information (objective eight) has already been published and will be updated regularly. This will be achieved by increasing the online information provided by partners and active members in the protection group.
- Standardization (objective nine) are and will be addressed by contacting groups which are involved in standardization activities. The goal is to contribute to standardization so that the result fulfils the requirements of music distribution. However some organisations have the opinion that standardization is not desired. Instead of this they propose to elaborate solutions specific to the content provider. If this is the case we would limit to guidelines which will be generated in the workgroup and which will be based on experiences of content providers already offering a distribution service using protection technology.

The experiences gained in the initial phase of the project shows, that the amount of contribution depends on the organization participating. On the one hand, there are companies which are generally reluctant in participating the network. The main reason for this is that participation is related with some effort which is proportional to costs. Therefore a lot of companies will remain passive in the MUSICNETWORK as long as they do not directly benefit from the network. Because of this, it is necessary to increase there visibility in the network. The initial phase will allow DRM related organizations to upload technical reports or white papers. This will lead to a discussion which will stimulate the commercial organizations' participation because they are directly addressed. On the other hand, there are public research institutes and universities which will directly benefit from participation due to their increased visibility. This is also important, because the quality of the contribution will rise. However, it is important to keep a reasonable balance between academic and economic contributions to avoid the workgroup protection becoming a theoretical and impractical workgroup.

Standards which will be considered can be categorized in standards of partial aspects like the description of the digital rights and in overall DRM-systems. Typical examples for standards which improve the interoperability of different systems are:

- DOI (digital object identifier)
- ICE (information and content exchange)
- ODRL (open digital rights language)
- XrML (extensible rights markup language)
- ...

These standards describe rights handling, information and content exchange and digital data identifiers. Typically they are only a small (but important) part in an overall DRM-system. Standardization efforts of complete DRM systems include:

- MPEG21
- MPEG4 IPMP
- OMA (Open Mobile Alliance's Download standard)
- ...

Besides the above listed standardization efforts there are vendor specific formats:

- IBM EMMS
- InterTrust
- Microsoft WRM
- ...

Additionally, several groups work on standardization of DRM technologies which will be contacted by MUSICNETWORK. Among them are:

- ISMA DRM task force
- Open eBook Forum's Rights and Rules Working Group
- ...

Intermediate results during the next two years and half:

- Communication between technologists and content providers will be enhanced. As a first step technologists and content providers must realize that MUSICNETWORK is a suitable platform for a fruitful communication. Major players will have been addressed.
- Identification of main issues and challenges has already started and will be continued to provide a comprehensive report.
- Technological aspects have already been considered. A technical report will be published summarizing technical aspects and major developments.
- User requirements will be collected and validated.
- Questions addressing legal aspects will be collected. Organizations capable of answering the questions will have been addressed.
- Questions addressing economic issues will be collected. Organizations capable of answering the questions will have been addressed. Additional commercial organizations are asked to share their experiences.
- Methods for sensitization
- The previous information will be available online.
- Standardization and guidelines will be available online.

Some of the previous described goals strongly depend on the participation of the addressed organizations. Therefore we have to consider the reluctant behaviour of commercial organisations. Partial results can be expected:

- Communication between technologists and content providers will increase strongly during month 1 and month 12. A maximum of information exchange will be reached in month 33.
- Identification of main issues and challenges has already started with the open workshop. These issues are strongly dependent on the interests of the participating organizations. E.g. currently the major interest is in sheet music due to the majority of publishers. The main issues are verified and updated during the future workshops and discussed in the forum.
- The first results of technological aspects are publicly available on the homepage.
- User requirements will be collected till month 12.
- Legal aspects will be finished in a first step in month 15. Future discussion and updates will be done continuously.
- Economic issues can be expected till the end of month 24. This is mainly because of the fact the commercial partners will not share their experience at the beginning of the project freely.
- Sensitization is expected to be addressed till month 34.
- Online information is already available and will be updated regularly.
- Standardization and guidelines has started by contacting relevant standardization groups. Depending on the need of standardization, which will be discussed in the work groups, future targets will be addressed and expected together with guidelines till month 36.

2.10.2 Resources and Competences Needed

To reach the above described goals several actors are necessary (more details can be found above).

- Technologist: including academics, research institutes, universities but also commercial organizations
- Content providers: commercial organizations and libraries
- Customers: are not directly addressed

Technologists and content providers can be addressed by:

- Existing research contacts can be used and strengthened
- Creating new contacts via phone or email
- Dissemination activities: posters, flyers, exhibitions
- Publication in conferences and journals
- Online activities: MUSICNETWORK, participation in other forums, mailing lists
- Dedicated events are MUSICNETWORK Open Workshops, WEDELMUSIC conferences, SPIE conference and CAST Workshop

2.11 Main planned activities of WG-Distribution

2.11.1 Main goals of the Working Group

The main objective of this Working Group, as of the MUSICNETWORK, is to bridge the large gaps existing between academy and music industries, technology and content providers, with special focus on European technologies and research of music distribution. Many good products in the marketplace fail to exploit the potential of new multimedia technologies, European research needs to focus even more on real exploitation of technological results, reaching and improving the return on investments level typical of U.S. research.

The Working Group on Distribution of Coded music provides its contribute to the MUSICNETWORK mission in the area of on-line distribution of multimedia content. The aim is to analyse the different aspects of the multimedia content distribution phenomenon, investigating the major problems, the different approaches and business models.

Digital distribution market is indeed full of promises and opportunities as well as expectations. Some of the main opportunities can be briefly summarised in the following list:

- reduction in distribution costs;
- chance to reach a wider audience at low cost;
- flexibility in the offer, meaning the chance to offer personalised content (at personalised prices: customers get and pay for only what they really need);
- access to “niche” markets previously not economical to enter;
- development of new markets;
- valorisation of existing archives and cultural heritage .

However, there are organisational, political, legal and competition issues which are preventing the market to be successful. Existing problems arise from different aspects of the whole music distribution chain, at organizational level (retrieval and organisation of the multimedia content), technical level (management, protection and delivering of music content) and most of all at the level of market and underlying business models.

One of the main objective of the Working Group on Distribution of Coded music is to investigate major problems affecting the market of on-line distribution of digital music and multimedia content, analysing the possible different approaches and adoption of proper business models.

Active participation to the working group needs to be stimulated and open discussions and workshops are organised with the aim of creating a community for sharing of information, knowledge, point of views and experiences.

Building such a collaborative environment, a community, where participants and member are the different actors involved in the distribution of multimedia content, is the key factor to obtain a series of benefits for participants, and achieve the objectives for the Working Group. The community, in fact, allows participants to:

- have the unique opportunity to exchange information, share experiences and raise issues and requests among people with different backgrounds, objectives and roles in the distribution market,
- extensively access to a large database of research results and technological solutions,
- increase mutual awareness and confidence by building consensus towards the new solutions and technologies and the new business models.

As indirect benefits, it will be possible for participants to:

- increase their competitiveness by adopting emerging technologies which are proven and tested on a common test-bed,
- stimulate the exploitation of new functionalities that may open new markets for new ways of music distribution and fruition.

To reach the Working Group mission and the overall MUSICNETWORKS goals, the following objectives are defined and addressed:

- Analysis of the state-of-the-art, technological and market surveys, analysis of the legal framework,
- Gathering of business requirements and collection of the major problems from each perspective (actors in the sector),
- Collection, development, proposal and acceptance of best practices and potential new solutions,
- Stimulation of the adoption and/or implementation of new solutions and best practices, evaluation and analysis of results.

Such challenging objectives involve a lot of work in several correlated fields causing the Working Group’s scope to be very wide, comprising systems, services, platforms and solutions (included business models) for the distribution of digital music and multimedia content over the Internet. At least a part of the distribution chain should exploit the Internet as the communication infrastructure (subscription, commerce transaction, payment, delivery, right management). However, the main focus is on solutions totally based on the Internet, from promotion and user’s purchase to digital delivery and rights management.

Key issues are business models, new technologies and distribution media (mobile environments, Web services, XML, Web-TV and streaming), content protection aspects (mechanisms like encryption and watermarking applied to on-line distribution systems), content information retrieval (metadata management). Special attention is reserved to the legal framework were the market is developing and to the quality and accessibility of music distribution services.

The structure of the market of digital music and multimedia content distribution needs to be analysed in deep, considering all the stakeholders and their mutual relationships: technology providers, software developers; content owners, music publishers, music labels; copyright collecting societies; content providers and distributors; end users like musicians, musicologists, audiophiles and music amateurs.

The process to achieve the Working Group objectives can be structured according to the sequence of activities summarised in the following table:

	Activity		Description
A0	Working Group management		The set of activities aiming to plan, stimulate, manage and guide the work and results of the WG DCM.
	A0.1	Detailed work planning	Detailed definition of the work plan and prioritization of activities. Set up of procedures for communication and knowledge management.
	A0.2	Knowledge management	Management of the foreseen large amount of information produced and collected by the DCM Working Group itself and in conjunction with other MUSICNETWORK Working Groups.

	A0.3	External collaborations	Planning and management of communication procedures to share results with external entities (other MUSICNETWORK Working Groups, other European networks and national institutions)
A1	State-of the art analysis		State-of-the-art analysis, surveys and comparison of present distribution market organization from different perspectives.
	A1.1	Technology Survey	Analysis and comparison of existing technologies for distribution systems, digital asset management, DRM, protected delivery systems.
	A1.2	Market Survey	On-line digital distribution market survey, identification of the main actors, their roles and objectives. Identification of market leaders for the different market sectors.
	A1.3	Business models analysis	Survey, analysis and comparison of existing business models
	A1.4	Legal framework	Global picture of the existing legal framework and weak points
A2	Test cases collection		Definition and collection of test cases about digital music distribution
A3	Major problems and business requirements analysis		Major problems in the market and user requirements and needs
	A3.1	Major problems	Problems affecting the distribution market,
	A3.2	Business requirements	Requirements and needs from the main actors.
A4	Developing and proposing new solutions		High level specifications of possible solutions, guidelines, best practices and success stories.
	A4.1	Success stories	Collection of relevant success stories
	A4.2	Guidelines and best practices	Collection of guidelines and best practices related to multimedia content distribution
	A4.3	New solutions	Specification of brand new solutions by participants.
A5	Implementation and adoption		Stimulate participants to implement the new developed solutions or adopt existing solutions considered as best practices.
	A5.1	Adoptions of best practices	Disseminate and stimulate adoption of best practices collected by the Working Group.
	A5.2	New solutions	Stimulate participants to implement the new developed solutions (if any).
A6	Test and evaluation		Test and evaluation of the proposed and adopted solutions. Evaluation of the results of the Working Group within the community.

Table 1: Activities of the Working Group on Distribution of Coded Music

The main expected results of the Working Group activities are summarised in the following table:

	Result	Type	1 st draft	2 nd draft	final version
R1.1	Technology survey	Doc	completed	15 jan 04	TBD
R1.2	Market survey, analysis of existing business models,	Doc	30-apr-03	31-mar-04	TBD
R1.3	Analysis of aspects related to the legal framework	Doc	30 jun 03	30-apr-04	TBD

R2.1	Collection of test cases	Doc	31 jul 03	31 dec 03	TBD
R3.1	Report on Problems and Business Requirements	Doc	31 may 03	30-nov-03	TBD
R4.1	Collection of case studies and success stories	Doc	31 jul 03	31 jan 04	TBD
R4.2	Collection of best practices and guidelines	Doc	30 sep 03	31 jul 04	TBD
R4.3	Collection of proposals for new solutions and models	Doc	31 dec 03	30 sep 04	TBD
R6.1	Report on evaluation of systems and applications	Doc	31-mar-04	30-nov-04	TBD

Table 2: Main results for the Working Group on Distribution of Music

The market and technology surveys, as well as the collection of user and business requirements, focus on key elements like market products, enabling technologies, user needs and research activities; the work started at the beginning of the MUSICNETWORK activities, and it continues during all the network lifetime, in order to collect and update information, evaluate the bleeding-edge products, systems, tools and research, gathering at the same time business and user needs. The most important fairs and conferences and most promising research projects are also monitored.

A special section of the working group will bring to attention the most important issues, problems or barriers affecting the development of the multimedia content distribution sector, also collecting case histories and significant experiences from participants and submitters. Furthermore, a collection of guidelines, best practices and success story will be provided to help the main actors and, most important, to create the basis to work together towards a more efficient and satisfactory market.

Rigel Engineering, as coordinator of the Working Group, has the responsibility of managing, supporting and stimulating the on-line community activities, as well as organising and managing the content for the workshops, events and meetings. Furthermore, being the MUSICNETWORK structured as a community, the activities are planned with a certain degree of flexibility, in order to accommodate requests, interests and priorities of the participants. The level of completion and detail that will be reached for the results also depends on the level of active participation to the Working Group activities. However, a process of prioritisation is in progress with the objective to define realistic goals to be reached within the MUSICNETWORK project framework.

Proposition of standards are envisaged for critical aspects of multimedia content delivery systems, as for instance, for the protected communication protocol used for communications and transactions management between the delivery systems and the related clients or third-party applications.

A database has been developed and is managed at Rigel Engineering S.r.l. to maintain and organise all the documents, reports, product descriptions, news which have been and are produced or revised by the Working Group. The database is then used as main source for the content of the MUSICNETWORK website.

As soon as the test cases are defined and collected they are uploaded into the database.

The work to be performed within the Working Group and the main milestones are scheduled according to the following Gantt diagram (milestones are document and report deliveries):

DAMS	Digital Asset Management Systems (DAMS can contain DRM). Technologies, platforms and solutions for digital content management and distribution (acquisition, storage, organisation, securing, publishing/make available, selling and delivery).	Libraries, Protection
Metadata	Content information (Classification, rights, ...)	Libraries, Protection, Standards, Notation,
Driving forces	The main interests driving the strategies and behaviors of each actor in the market.	Libraries, Protection

Table 4 : Preliminary definition of keywords for the Distribution Working Group

2.12 Main planned activities of WG-Education

2.12.1 Main goals of the Working Group

The work group on education (WG-Education) has a transversal role in the project. This is mainly due to the intrinsically transversal nature of education. As a matter of fact each WG has activities with educational implication (notation has a direct implication on how music is taught; accessibility has implication on teaching tools and techniques, imaging on training activities related to restoration ...). Nowadays technology can be of great benefit for the educational environment especially as far as multimedia is concerned in a field like music. There is a lot of culture related to music, from art to literature. Often music teaching in school (not in conservatory) is limited to notation and performing (even if often to a lower degree). Only rarely is taken into account the connected cultural aspect (historical and sociological environment ... even fashion/social phenomenon connected to music like the Beat Generation).

The working group intends to foster exchange of points of view, results, doubts, needs, information. This working group is open to participants coming from all other groups and we hope to provide a review of the current situation, some explanation of different approaches, dissemination of key emergent themes and technologies and information about main contributors, events and problematic areas. Main objective of WG Education are the following:

- State of the art identification,
- Market monitoring,
- Technology watch,
- Contribution to standards.

As previously mentioned there are a set of objectives that the WG-Education addresses. Some are more generic and common to any working group, other are specific, in detail:

Objective	Kind	How
Points of view exchange ...	Generic	Via forum discussion, article posting, document uploading
State of the art identification	Specific	identification of the state of the art in the area of education; identification and monitoring of relevant standards; taking note of leading technical solutions; verification of standards against expressed needs
Market monitoring	Specific	Monitoring market and leading partners evolution via data collection (statistics, case studies ...) and document posting / uploading
Technology watch	Specific	Monitoring used technology. Survey of top success solutions and technologies via data collection (statistics, case studies ...) and document posting / uploading
Contribution to standards	Specific	Contribution to evolving standards via suggestion submission, and involvement in related bodies

Objectives	2003												2004												2005						
	1	2	3	4	5	6	7	8	9	10	11	12	1	2	3	4	5	6	7	8	9	10	11	12	1	2	3	4	5	6	7
Discussion																															
State of the art																															
Market monitoring																															
Technology watch																															
Contribution to standards																															

2.12.2 Resources and competencies needed

Due to its transversal role is necessary to have a multidisciplinary approach and therefore we will need involvement from all WGs present in the project (at least the one initially devised) plus people from the educational side. In summary the involved actors will be:

- Notation Experts
- Librarians & Archivists
- Imaging Experts
- Accessibility Experts
- Protection Experts
- Distribution Experts
- Education Experts

Users (Target)

Due to its transversal role is quite difficult to define a homogeneous set of customers for the education sector in relation to music network. We can, expect that major customer can be partitioned into two major categories: consumers and professionals. As the market is constantly shifting, the opportunity exists to ensure inclusive design, new solutions and adoption of emerging multimedia technologies and environments. Users for these technologies are to be found in vocational and educational environments in every country and at every level of society.

Methods

Due to its transversal role is necessary to find common reasons to attract the various users just mentioned. We believe that the best way is to provide users with the following things:

- Forum discussion,
- Article posting,
- Document up/downloading facility,
- Statistics availability,
- Case studies availability,
- Survey of top success solutions and technologies availability,
- Survey of relevant standards availability.

Interaction/Interactivity

We expect to interact with all other WGs present in the project. Our main interaction will consist in accepting contributions from all of them and providing to all of them an open agora for discussing themes relevant to them but also directly connected to education.

2.13 Working Group Integration

The working groups will address transversal problems and applications, such as the copyrights aspects, the educational aspects of music, legal problems, etc. The integration activity of the Working group work will be the tool to construct a complete view of the mentioned transversal aspects.

The main objectives are:

- (i) To integrate the work performed by the seven working groups mentioned in the WP4
- (ii) To stimulate the adoption of new models and guidelines for the solution of problems identified in WP2
- (iii) To validate the model and guidelines produced by using tests cases set-up in WP2.\

In this WP, all the knowledge produced into the WP4 for music modelling and coding will be integrated to produce a clear view of what is needed at a music model for making it suitable for multimedia and interactive applications. The integration will also produce integrated procedures for music conversions of format and integrated models for music distribution, protection, interaction via graphics user interface, etc., all aspects of music coding. The adoption of these new integrated models and procedures will be stimulated via the channels available by the project partners and the several MUSICNETWORK participants that will be joined during the project. The validation of the proposed models, procedures, methods will be produced by monitoring trial solutions.

2.14 Creating New WGs, and potential new WGs

Main aim of MUSICNETWORK is to bring music coding into new era of interactivity. In order to follow the changes of technologies in digital music community, MUSICNETWORK is putting much effort to keep track of the needs of the main actors.

Since the beginning, we have publicly made the request to have proposals to make other Working Groups. Some of them reached the Project Coordinator during the November and December other were proposed at the First Open workshop and meeting in December 2002 in Darmstadt. In addition, at the first Workshop, through a questionnaire, all participants had the opportunity to voice their opinion about the need of creating new Working Groups, which would get involved with different fields of music technology.

After a thorough analysis of the submitted questionnaires, it was shown that there was the need of creating more Working Groups that most of the participants regarded their creation to be essential. The proposed working group were: audio processing, cultural heritage, educational, and legal aspects. We had for the first three good candidates for working group coordinators.

A decision committee meeting has been convoked and it decided to create the first three Working Groups. The process to set up these WG was to assign them to partners in first instance and to external volunteer in the second. The results are reported in the following. In addition, it was decided to use the same mechanism used for the initial WGs for creating the content of the new-WGs.

The three new Working Groups that have been identified are:

- **WG-Audio:** This working group is focused on working on audio processing aspects such as: conversion from audio to music notation, query by content, beat tracking, audio shrinking and stretching, audio recognition and comparison for personalization, etc.
- **WG-Culture:** (Robert Cohen, RIPM, has still to accept this work). This working group addresses the cultural aspects of music and musicology, maintenance and usage of cultural heritage. This permits to consider the music in the historical period and the interpretation aspects related to the musical context.
- **WG-Educational:** (Davide Fuschi, Giunti Multimedia a Project Partner). This group analyzes and work on educational aspects of music with the support of the information technology and pedagogical aspects. In particular it addresses the aspects of: cooperative work on music notation, performances, virtual conductor, virtual orchestra, playing instruments by using internet support, e-learning, distance teaching, courseware tools, assessing music performances, self learning, software tools for music education, etc. This WG is new with respect to the WGs initially planned for the project. It has been already started and the description is reported in the following.

These new Working Groups have started being active since January of 2003 and the participation in them is increasing on daily basis. MUSICNETWORK is aiming at keeping track of rising needs for creating new Workgroups according to the real needs of the digital music community. Throughout the following events and conferences, where MUSICNETWORK will participate, new questionnaires will be distributed when the need for a

new Workgroup is shown in the Web forum, and if it is needed new Workgroups might be created, illustrating that MUSICNETWORK has reached a level of self-adjusting and it responds to the needs that arise within its function.

3 WWW Site of MUSICNETWORK, WWW.INTERACTIVEMUSICNETWORK.ORG

3.1 General Structure

From the user requirements the following services have been identified.

- Question and answer service
- Upload and download of documents, (already provided)
- Identification of most significant actors in the market, (partial)
- Identification of business models (partial)
- Identification of typical problems, (partial)
- Research group presentation and activities (partial)
- Internet links of interest (partial)
- Survey on state-of-the-art technologies (partial)
- Event and fairs announcements (partial)
- Test cases database
- Presentation of expert's results, (started)
- Access to an up-to-date bibliography, (started)
- Forum and mailing list for discussion of problems (already implemented)
- Trial applications and tests results
- Identification of major sources of information (partial)
- Easy access for Visually Impaired people (partial)
- Disseminate related results and information to MUSICNETWORK participants (partial)

Generally speaking, the answers to users requirements must be given in the form of:

- General surveys and state-of-the-art reviews
- Pointers to articles, comparison charts...
- Tutorials, documentation,
- When possible, examples and success stories, with details on:
 - Technologies and tools used
 - Extracts (if possible)
 - Analysis of methodology (when available)
 - Information about availability (where, when...)

In order to best cope with the user requirements the interactiveMUSICNETWORK web site was implemented using PHP modules and MySQL database on an Apache server. The web site is compatible with any other web server and should be moved on a Microsoft IIS web server as well. The style sheet technology was used for guarantee a uniform model and style of the site layout. All the code (except for the search engine where a commercial tool is used) was projected, implemented and tested by Exitech. The main reason for doing this is the fact that we like to have a very high level of site personalization. Anyway if commercial tool will be found guaranteeing all the web site user requirements in a better manner it may substitute our code.

The www site is the first entry to provide a set of services to the end-users of the MUSICNETWORK and it was divided in two area: a public area accessible for Internet anonymous users and a private area accessible for the MUSICNETWORK registered users.

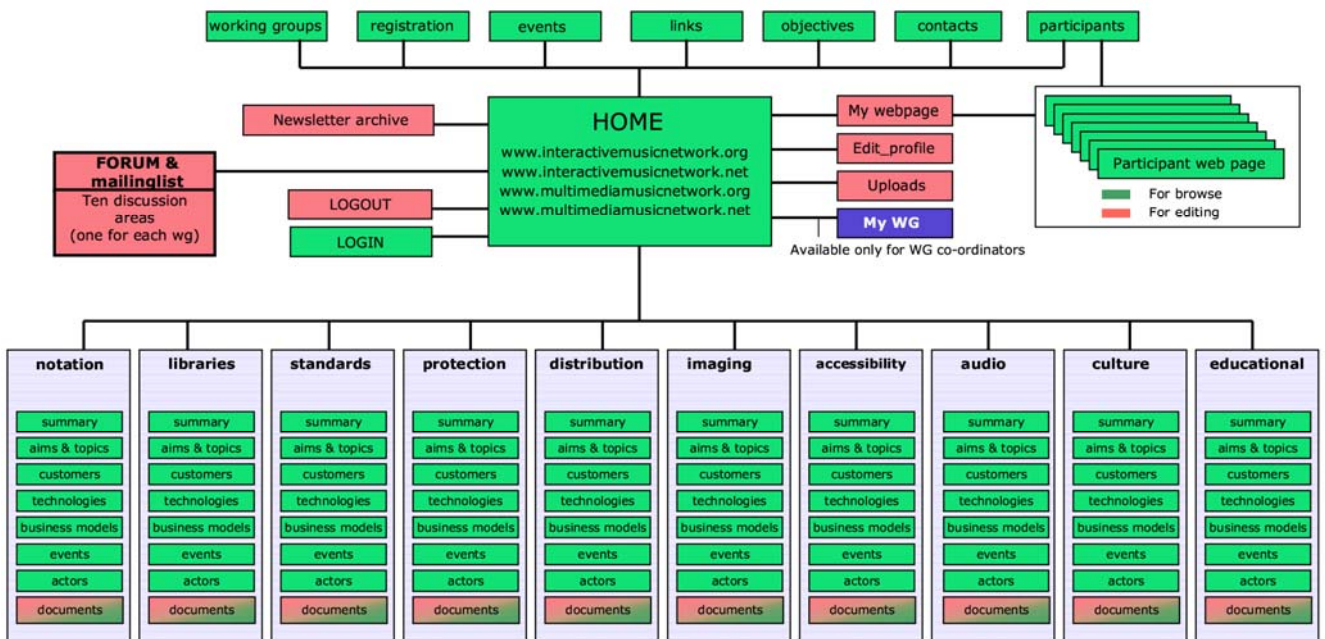
The definition of two areas contents follow the idea to encourage the users to register, but trying to offer a high quality service for the anonymous users.

The registration to the MUSICNETWORK is free, has no expiration date and the user may access to several services.

- Free access to the MUSICNETWORK services:
 - Forum and mailing list (divided in several thematic areas),
 - Uploads
- Free bimonthly news email
- Free access to all uploaded documents

- The participants should be invited (and economically supported) to the **MUSICNETWORK workshops**

The interactive MUSICNETWORK web site contain a generic area for the general project data and several sections dedicated to the working groups.



MUSICNETWORK web site map (the private area are indicated in red)

Each working group (wg) section contain information regarding the wg scope, aims & topics, customers, technologies events and scope. The document area included into each the wg section contains the files uploaded by any registered user (see Providing and uploading Documents section for details). Other html pages may be added into the wg section if requested by the wg coordinators.

3.1.1 User classification

The web site was projected for three classes of user:

- Anonymous users – may browse the public area (see next sections for details). There are no specific services for this class of user (of course they may use the search engine and download the public available posted documents)
- Registered users – the major number of services was designed for this class of users – they have access to all the web site (except to the administration tools)
- Administrators – they have access to all the services designed for the registered users and they also access to some tolls for web site management

3.1.2 Registration

In order to subscribe to the music network the user has to fill a registration form. Some data as login, first name, last name and email are required. Also the acceptance of the subscription condition is necessary for the form submission.

From the registrations form the user should select the working group of his/her interest, the newsletter reception and may express the interest in collaboration into the project.

Other inserted data are used for statistical purposes.

After the registration the user will receive an automatically generated password at the email inserted into the registration form.

The data inserted (except for login) should be lately modified by the user after login into the web site.

Login:	<input type="text"/> *	Subscribe to MUSICNETWORK newsletter (bimonthly release):	<input type="radio"/> Yes <input type="radio"/> No
Affiliation (NONE if does'n apply):	<input type="text"/>		
Role:	<input type="text"/>		
May MUSICNETWORK mention your affiliation in a public visible list	<input type="radio"/> Yes <input type="radio"/> No	Register to WorkGroups private areas:	
First Name:	<input type="text"/> *	I subscribe to:	WG maillist
Last name:	<input type="text"/> *	Music Notation	<input checked="" type="checkbox"/> <input checked="" type="checkbox"/>
Email: (where the password has to be send)	<input type="text"/> *	Music Libraries	<input checked="" type="checkbox"/> <input checked="" type="checkbox"/>
Country:	<input type="text"/>	Music Standards	<input checked="" type="checkbox"/> <input checked="" type="checkbox"/>
Expertise keywords:	<input type="text"/>	Music Protection	<input checked="" type="checkbox"/> <input checked="" type="checkbox"/>
Major interest about the Musicnetwork:	<input type="text"/>	Music Distribution	<input checked="" type="checkbox"/> <input checked="" type="checkbox"/>
Interest in posting contribution on the www site:	<input type="radio"/> Yes <input type="radio"/> No	Music Imaging	<input checked="" type="checkbox"/> <input checked="" type="checkbox"/>
Interest in submitting technical problems:	<input type="radio"/> Yes <input type="radio"/> No	Music Accessibility	<input checked="" type="checkbox"/> <input checked="" type="checkbox"/>
Interest in attending next major MUSICNETWORK workshops:	<input type="radio"/> Yes <input type="radio"/> No	Music Audio	<input checked="" type="checkbox"/> <input checked="" type="checkbox"/>
		Music Culture	<input checked="" type="checkbox"/> <input checked="" type="checkbox"/>
		Music Educational	<input checked="" type="checkbox"/> <input checked="" type="checkbox"/>

Please read the [subscription condition](#) before submitting this form.

I accept. I don't accept.

Data requested into the registration form:

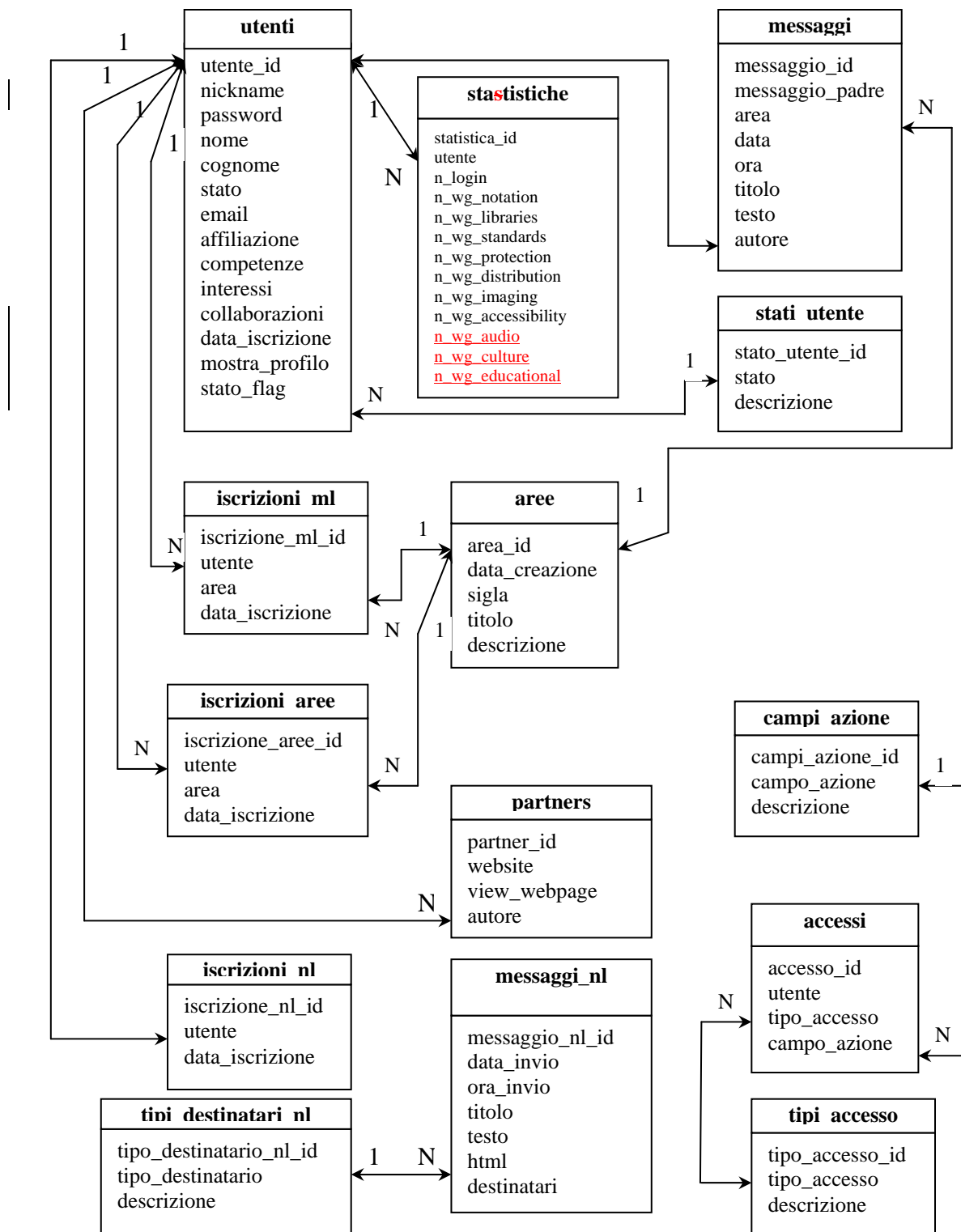
- Login – used for access to the registered users area
- Affiliation – used for company web page title, the affiliation will be listed into a public visible list if user agree.
- Role – (technical, commercial, management)
- First name, last name
- Email – will be used for send the access password
- Country
- Expertise keywords – user expertise areas, will be used for contact the user if problem solving service will receive questions with that keywords
- Major interests – used for service improvement
- Interests for www site contribution, submitting problem, workshops – used for service improvement and statistics
- Newsletter subscription – if active the user will receive the MUSICNETWORK newsletters
- WG registration – if first column is checked the user will be allowed to access the wg private area (forum and documents); if the second column is checked the user will receive by email all the messages posted into the forum

The information inserted by the user are stored into a database. The user password are stored in a encrypted form and nobody have access to them. MUSICNETWORK is the sole owner of the information collected on this web site and the database data will never be passed to other companies.

The database structure was projected in order to allow any future changes.

Presently it is organised in three main areas:

- ✓ User data (data collected from the form, access statistics, sent messages, uploaded documents, etc.)
- ✓ Newsletter area (keep trace of the messages sent by email, messages sent date, etc.)
- ✓ Access types (project administrator, wg administrator, etc.)



MUSICNETWORK database structure

MUSICNETWORK MySQL Database structure:

1. User data

- ✓ User table (*utenti*) contains all the user personal data (login, encrypted password, name, country, affiliation, expertise, interests, subscription date, agreement to show the affiliation, state flag)
- ✓ Statistics table (*statistiche*) contains the data regarding the user access to the web site (number of login and working group areas visits)

- ✓ Message table (*messagi*) contains the data regarding the messages into the forum (id, answer to, working group where the message is addressed, date, hour, message title, message text and author)
 - ✓ Mailing list table (*iscrizioni ml*) contains the possible mailing list subscriptions with users, working groups and subscription date)
 - ✓ Areas subscription table (*iscrizioni aree*) contains the possible areas subscriptions with users, working groups and subscription date)
 - ✓ Areas table (*aree*) contain the areas for which the subscription is possible
 - ✓ Participant table (*partners*) contains a list of the institution subscribed to the MUSICNETWORK web site with the page name and path, page visibility and user allowed to edit it
2. Newsletter area
- ✓ Newsletter subscription table (*iscrizioni_nl*) contain the type of newsletter (at the moment there are only one possible newsletter but the structure was projected in order to allow new type of newsletters) with the subscribed users and subscription date
 - ✓ Newsletter destination (*tipi_destinatari_nl*) contains the group name of users that will receive the email with the related description
 - ✓ Newsletter messages (*messaggi_nl*) contains the newsletter messages archive with date, hour, title, text/html contain and addressee
3. Access types
- ✓ Access name (*accessi*) defines a list of possible accesses to the web site
 - ✓ Access type (*tipi accesso*) link an access name to an access type (at the moment only administrator, wg administrator and registered user)
 - ✓ Access type range (*campi azione*) define a range of areas where the access may be allowed

3.1.3 Offered services

The web site will offer the following services:

- browsing of the content (public)
- search engine (public)
- forum with mailing list (only for registered user)
- newsletter (only for registered user)
- personal web pages (only for registered user that accept a public visible affiliation)
- wg subscriber list (only for wg co-ordinators)
- administration tools (only for project co-ordinator)
- problem solving (only for registered user)
- Expert Search: search only on the list of participants WWW pages

The registered users have a SERVICE section displayed after login containing the following items:

- My WG (only for wg co-ordinators)
- My webpage (only for registered user that accept a public visible affiliation)
- Forum (all)
- Upload doc (all)
- Newsletter (all)
- Edit profile (all)
- Logout (all)

Into the next sections a detailed of the MUSICNETWORK web site presentation will be given.

3.2 Standard Model and Accessibility aspects

There are several organization which can certify the web site accessibility for impaired people.

One of the most famous is Bobby, a comprehensive web accessibility software tool designed to help expose and repair barriers to accessibility and encourage compliance with existing accessibility guidelines. Bobby was created at CAST, a not-for-profit research and development organization whose goal is to expand opportunities for people with disabilities through the innovative use of computer technology.

The web site was tested in order to fill the Bobby's Priority 1 Accessibility (<http://bobby.watchfire.com/bobby/html/en/index.jsp>) using the Web Content Accessibility 1.0 Guidelines.


In order to best fill with the user requirements the site will be tested also with the collaboration of impaired people. The suggest and comments will be collected and technical solution will be checked and implemented for solving any problem regarding the accessibility.

Special attention should be paid for the Accessibility Working Group content; that pages should be available also in a more accessible version (if the already proposed one doesn't fit enough with the requirements).

3.3 Public Area and Multilingual Aspects

The public area is the biggest part of the web site (green part into the previous shown site map). It was designed for given to the potential participants all the information regarding the MUSICNETWORK activities.

All the interactive MUSICNETWORK web site contents was provided in English but some of the pages should be multilingual (French, German, Greek and Italian version was already added for the web site entry point). The user should switch between the languages by using the correspondent flag on the top of the page. The starting language of that pages is English.

This page is also available in: 

INTERACTIVE MUSIC NETWORK

It has been established in order to help bring music into the interactive multimedia era.

music industry, content providers and research institutions together. The MUSICNETWORK draws on the assets and new technologies, tools, products, formats and models.

3.4 Initial Pages and Working Group Description

Into the initial pages some general project information are given. The sector pages are:

- **home** (general information on the project, aims, services offered)
- **objectives** (quite detailed description of the MUSICNETWORK objectives)
- **participants** (list of project partners and participants with a link to the self filled html pages)
- **working groups** (short working group description)
- **events** (list of the major events in the field of music, the list is divided following the MUSICNETWORK participation)
- **registration** (the registration form)
- **links** (list of interesting link by category: projects, international association, Music Information Centers country by country, international sites and music programs)
- **contacts** (list of contact people)

The working groups pages was organised in order to best describe the performed activities. The menu of each wg lists: summary, aims & topics, customers, technologies, business models, events, actors, documents[p]

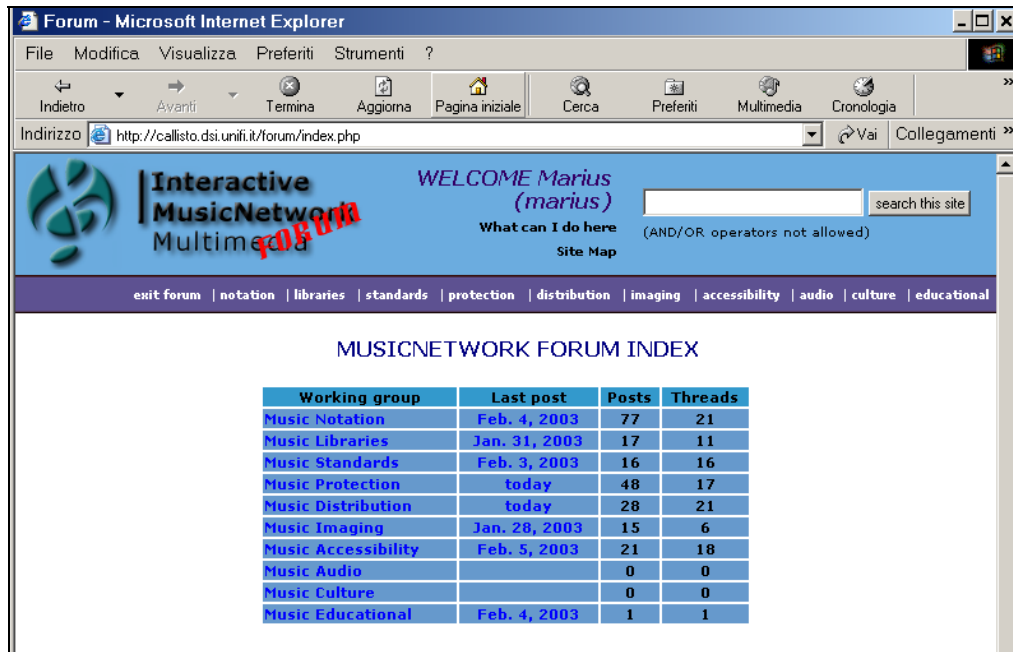
The working group pages content was provided by the wg co-ordinators.

3.5 Working Group Forum

One of the most important section of the web site is the Forum. Each working group has a forum where the registered users should view all the messages, answer to posted threads and add new threads. The registered user will visualize only the forum they choose into the registration form.

By selecting the working group the user access to the messages list. The window contain all the generic needed link for wg changing, exiting, list of uploaded documents into the wg and the link for interaction with the forum (write new thread, reply, expandable list of reply's and message viewing).

The messages are ordered by last reply date (from the last one to the first one) but the user can choose a personalized view ordering the items by title (alphabetically) by author, number of reply, reply date or thread creation date in a ascendant or reversed order.



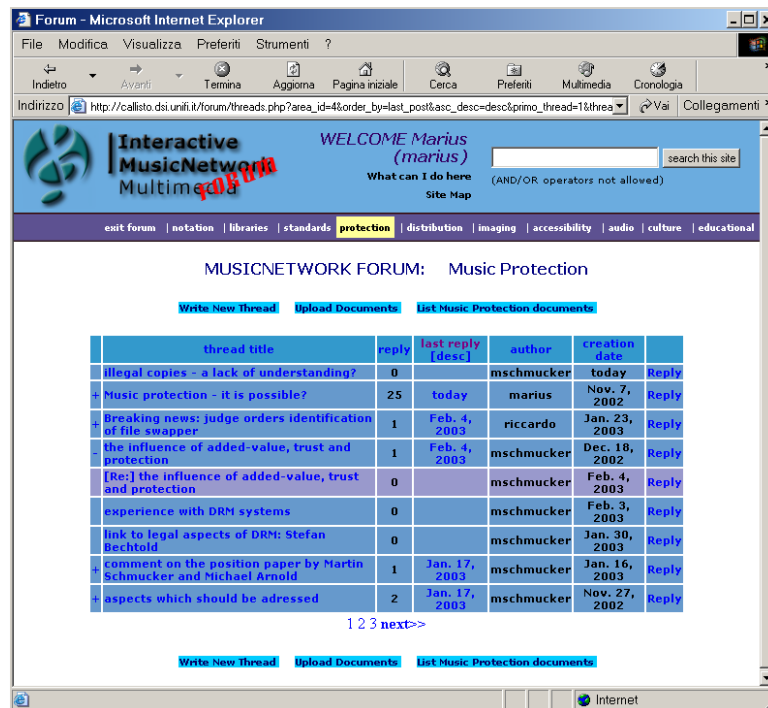
The first window of the forum

By hitting the “reply” button the user may write an answer to the selected message. The message will be registered into the database and will be send by email to all the user that choose to receive mail when a new message is posted into the forum. The message author will receive an email also if he doesn’t choose it.

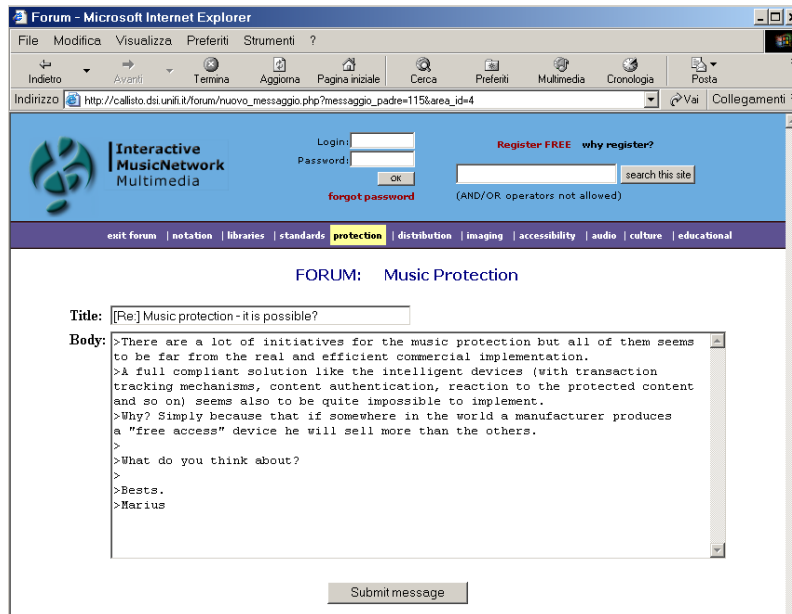
The MUSICNETWORK forum is in practice an integration between a classic forum and a mailing list. By putting them together our intention is to offer to our user a high quality service with a maximum level of commodity.

This personalized configuration of the forum was the main reason for not using commercial tools for forum and mailinglist management. All the code was projected and implemented by Exitech.

At the moment the only mode to post messages into the forum is to access the web site. It is proposed what also by direct replying to the email message it should be posted into the forum list and send to all user subscribed to the mailing list. That should be done directly by using the PHP mail function or by interfacing with a mailing list dedicated software.



The music protection forum window.



The message reply window

3.6 Providing and uploading Documents

An important section of the web site is related to the possibility to upload documents. The registered users are allowed to upload any kind of files in the working group of interest. The service users have to pay special attention to point 5 of the subscription condition:

The MUSICNETWORK registered user may upload documents on the several working groups (documents[p] menu). The user that decide to upload documents has to agree with:

- ✓ the uploaded documents are not covered by copyright or the user is the copyright owner. The user has all the rights necessary to provide, post, upload, input or submit the documents.
- ✓ the user is the only responsible on the public availability of the posted documents, MUSICNETWORK does not claim ownership of the materials uploaded on this site. However, by posting your Submission(s), the user understand and agree that he/she is giving a license under his/hers intellectual property rights to all other authorized users, including the rights to download, copy, modify, distribute and repost. In addition, the user is giving to MUSICNETWORK all the necessary rights to make the Submission(s) available on this site.
- ✓ no compensation will be paid with respect to the use of your Submission, as provided herein. MUSICNETWORK may remove any Submission at any time in its sole discretion.
- ✓ the Submission does not contain any viruses, Trojan horses, worms or other components designed to limit or harm the functionality of a computer

The registered user (after login) should choose the “upload docs” from the Service menu, browse for the file to upload, decide the three (maximum) working group where the file has to be uploaded and decide if the file will be visible only for registered user or public visible.

After the file was uploaded a text file is automatically generated (from Acrobat PDF, word documents and postscript file) in order to make it available for the search engine. The conversion processes are queued in order to avoid collisions.

As shown in the next figure the anonymous user can view the complete list of uploaded documents (name and description) but cannot open the documents uploaded as “visible only for the registered user”.

UPLOAD DOCUMENTS

[back to home](#)

Upload file (name without space):

Description:

visible only for registered users
 public

For file size over 10 MB contact [webmaster](#)
 Please read carefully the [subscription condition](#) before uploading

Select working group (max 3)

Music Notation	<input type="checkbox"/>
Music Libraries	<input type="checkbox"/>
Music Standards	<input type="checkbox"/>
Music Protection	<input type="checkbox"/>
Music Distribution	<input type="checkbox"/>
Music Imaging	<input type="checkbox"/>
Music Accessibility	<input type="checkbox"/>
Music Audio	<input type="checkbox"/>
Music Culture	<input type="checkbox"/>
Music Educational	<input type="checkbox"/>

The protection mechanism used for this kind of files is quite soft and an expert anonymous user may access to the “protected documents”.

MOODS-PFR.pdf
MOODS, Music Object Oriented Distributed Systems for orchestra, Final public Report
MusicDistribution-Protection.pdf
MUSIC Distribution and Protection
musicnetwork-damstadt-v1-7-positions.ppt
WG- Music Notation
WG- Presentation and aim, Summary of the sections in Darmstadt 2002, Bellini and Nesi Posit
Notation and on Music Notation and XML.

Part of uploaded documents list

In order to best organize the uploaded documents section several model should be used. It is possible to organize the documents in directories or to create an index page with documents classification. In that page the wg coordinator may create a kind of document index, classified as best as he/her think.

The steps to be followed by the wg coordinators to do that should be:

- ✓ look at the documents uploaded into the wg
- ✓ download the template (as it is shown on the web)
- ✓ fill/modify it
- ✓ upload the file back to the site (using a special upload service into my_wg area - for example)

3.7 Search Engine

A service offered by the MUSICNETWORK web site is the search engine. The engine was choose in order to fulfill a set of requirements as freeware, capability to perform database search and to allow some protection on the result (in case the user is not registered), possibility of personalization, etc.

Search engine requirements:

- ✓ Perform search into the html file
- ✓ Perform search into the txt file
- ✓ No search into the php code
- ✓ Allows to eliminate some directory from the search path
- ✓ Allows search into a part of the database (forum messages)

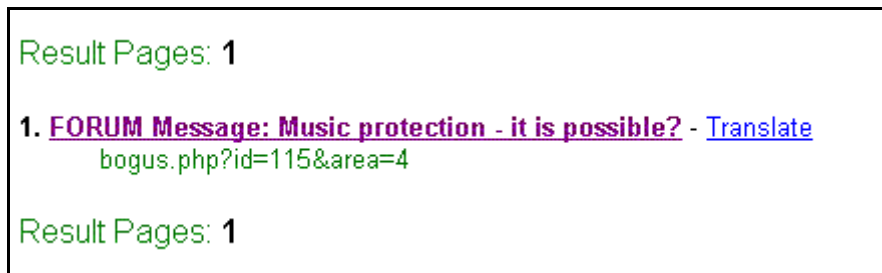
In order to perform searches into the uploaded documents a conversion is performed after the upload. We convert PDF, word and PS files to text during the upload process. The engine search into the text files and shows the correspondent PDF, doc or PS file into the result list. The process should be extended to other file types if required.

A possible engine (used into the site at 10.02.2003) is the DGS Search engine version 0.9.6 developed by Digital Genesis Technologies (<http://www.digitalgenesis.com>).

DGS Search work on any platform that can support a PHP enabled web server such as Linux, FreeBSD, Solaris, and Windows9x/NT/2000. It works with your local file system and can also connect to MySQL, PgSQL, MSSQL, InterBase or ODBC databases.

DGS Search has been tested using PHP v3.0.12, and 4.0.4 on Apache 1.3.x and IIS 4.0 to connect to MySQL 3.2x.x, MSSQL 7.0 and FoxPro 2.6 (ODBC).

The result are linked to a PHP file that perform the user access right and visualize the html page or a “content available only for registered user”message.



The search result is linked to a php page for access rights control

The search engine should be changed at any time with other product if more advanced features are offered. Administrator Area

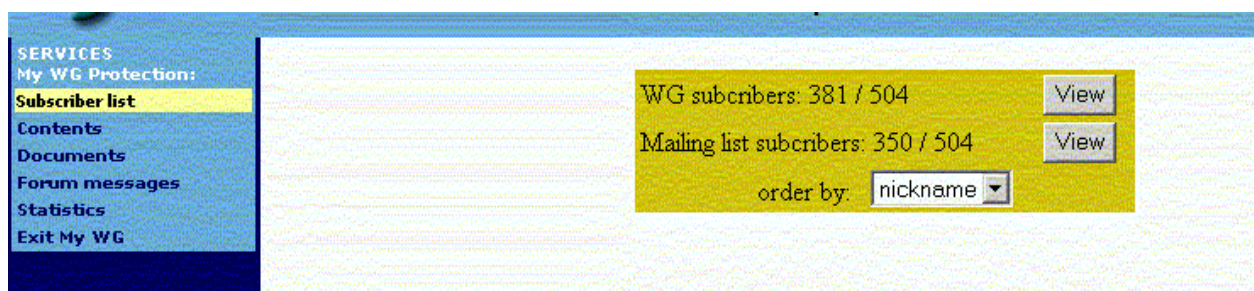
In the MUSICNETWORK web site two administrator figures were implemented: working group administrator and project administrator. Both administrators are automatically recognized by the system.

3.7.1 Working group administrator services

The tools for the working group administrator are listed into the services menu after his/hers login.

There was proposed the following services:

1. View wg subscriber list
2. View some statistics on his WG
3. Update wg contents
4. Manage forum messages (limited to wg)
5. Manage documents



This page will allow to best present and organize the wg contents. The first two services will be implemented as a reduced set of project administrator service.

In order to update the WG contents a new page will be created. That page should show a list of all the wg pages, by clicking on an item a form containing all the (html) content will be displayed, after modifying it the co-ordinator has to push a SAVE button and the new page will be generated (a preview function should be provided).

The manage documents section should show two options

- A) - manage documents structure
- B) - manage documents file

A) - manage documents structure

It is intended to allow the creation of groups and subgroups where the documents will be uploaded (classified). The available options will be to create group (text field), create subgroup for group (selection menu), rename group or subgroup (selection menu) as (text field) and delete group (selection menu) - only if empty.

The coordinator may move file between groups and subgroups and the user may decide where to upload the document.

B) - manage documents file

The coordinator may remove uploaded documents if there was posting errors, copyright infringements, illegal material, etc.

3.7.2 Project administrator services

The project administrator has the possibility to manage the MUSICNETWORK database without any limitation. The access point for the administrative tools is different but if the administrator was already logged into the MUSICNETWORK web site he is automatically recognized.

The services provided are divided in several categories:

- Login Information
 - ✓ **login** (list of number of login by user)
 - ✓ **wg** (list of number of login by working group)
 - ✓ **users for country** (list of number of login by country)
 - ✓ **wg subscribers** (number of subscribers by wg)
 - ✓ **newsletter subscribers** (number of subscribers at newsletter)
 - ✓ **messages posted** (number of posted messages by user)
 - ✓ **upload** (number of uploaded documents by user)
- Users
 - ✓ **User's list** (list all the subscribed user)
 - ✓ **Create new access** (create the access rights for selected user)
 - ✓ **View/edit access** (modify the access rights for selected user)
 - ✓ **User's states** (disable/enable user subscription)
 - ✓ **Access types** (list of possible access rights: administrator, wg administrator)
 - ✓ **Access ranges** (list of possible access rights: subclass of previous item – the wg where the administrator may operate)
- Webpages
 - ✓ **Webpages** (Give the possibility to assign the web page to another user or to remove the user web page and delete the uploaded web page content)
- Forum
 - ✓ **Forum** (for eliminate forum messages)
- Mailing list
 - ✓ **Subscribers list** (list of people subscribed by wg and by mailinglist)
 - ✓ **Resent message** (allow to resent a message from the database if the mailing list log files demonstrate a sending failure)
- Newsletter
 - ✓ **View messages** (list of already send messages)
 - ✓ **Write new message** (for create and sent new message)
- Areas
 - ✓ **Areas** (give the possibility to create a new working group – that operation has to be integrated manually as only the database structure will be modified)

Country	users
AFGHANISTAN	3
AUSTRALIA	3
AUSTRIA	7
BELGIUM	12
BRAZIL	5
CAMEROON	1
CANADA	7
CHINA	5
COLOMBIA	1
DENMARK	13
EGYPT	1
ESTONIA	1
FINLAND	2
FRANCE	36
GEORGIA	1
GERMANY	38
GHANA	4
GREECE	8
GRENADA	1
HUNGARY	5
ICELAND	1

Users by country listed into the project administrator area

Note: It is expected that the project administrator (or webmaster) contact registered user that fill wrong data into the registration form. In the previous figure there are 3 users that choose Afghanistan, two of them have email address with Italian suffixes. The reason of that selection should be that Afghanistan is the first item into the countries list.

In some cases automatic script should be implemented in order to perform the email existence or to confront inserted data. There are no way to understand the user country if the email is from international companies or email service providers.

3.8 Statistic Reporting

In this section some statistic regarding the web site use are shown. The data was obtained by querying the MUSICNETWORK database at February, 10, 2003 and also some old data should be reported in order to best demonstrate the web site activity.

The observation period start at 30.09.2002.

3.8.1 General statistics

General statistics about the web server activity are reported in follow (the result was collected by using analog 5.24 - <http://www.analog.cx>).

(Figures in parentheses refer to the 7-day period ending 10-Feb-2003 12:33).

Successful requests: 171,636 (10,529)

Average successful requests per day: 1,291 (1,504)

Successful requests for pages: 64,809 (5,333)

Average successful requests for pages per day: 487 (761)

Failed requests: 7,054 (179)

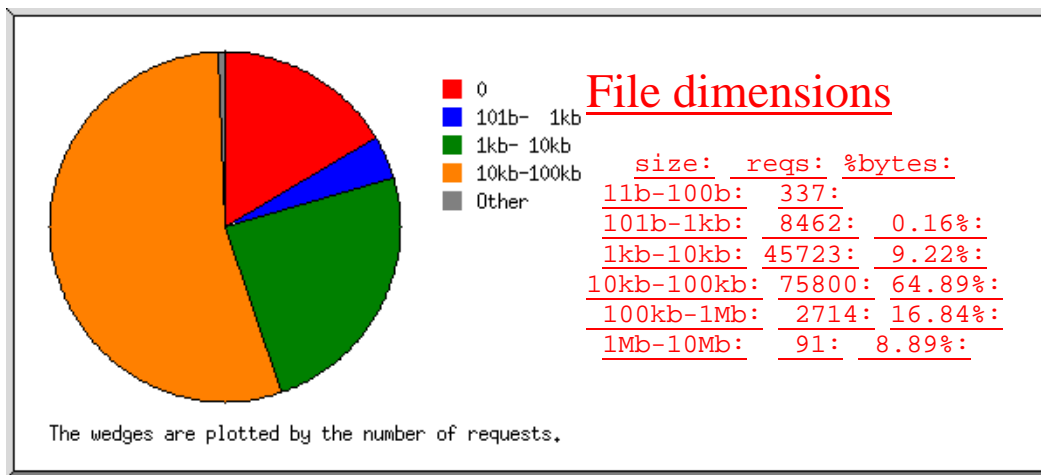
Redirected requests: 2,730 (245)

Distinct files requested: 5,912 (1,003)

Distinct hosts served: 3,054 (245)

Data transferred: 2.272 gigabytes (116.983 megabytes)

Average data transferred per day: 17.503 megabytes (16.711 megabytes)



General statistics about the web site services and about the registered users accesses (collected by querying the database):

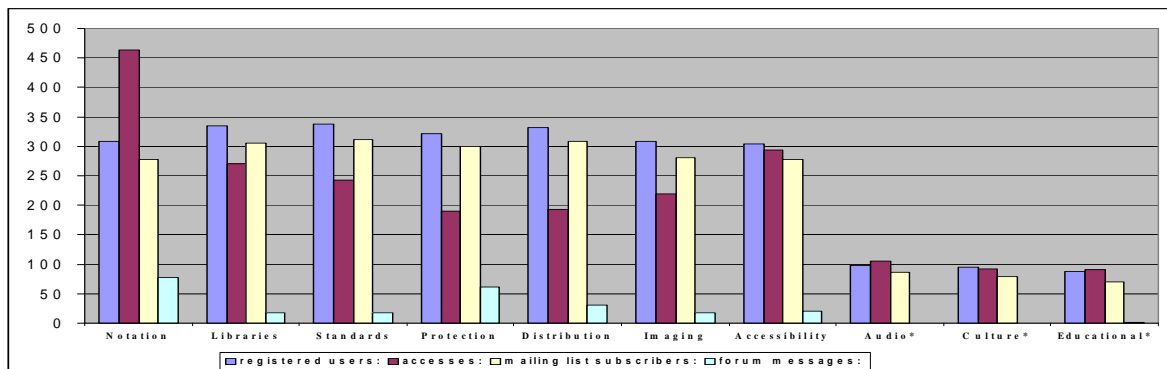
	(at 10.02.2002)	(at 05.12.2002)
Number of visitors:	4742	2640
Number of registered users:	421	311
Web pages (registered institutions):	151	120
Number of login:	1308	464
Number of forum messages:	248	49
Number of uploaded documents:	136	23
Newsletter subscribers:	400	303
Newsletter:	6	1
Countries:	51	49

3.8.2 Working group statistics

Working Group:	Notation	Libraries	Standards	Protection	Distribution	Imaging	Accessibility	Audio*	Culture*	Educational*
registered users:	309	335	338	322	332	308	304	98	95	88
accesses:	463	270	243	190	193	220	294	105	92	91
mailing list subscribers:	278	306	312	300	309	280	278	86	79	70
forum messages:	77	17	18	62	31	18	21	0	0	1

* the last three working groups was added into the web site structure at 30.12.2002.

The graphic of the previous table is shown in the next figure:



3.9 Problem Solving Service

One of the aim of the MUSICNETWORK project is to support people in solving their problem. The web site should be the interface between user and expert also in this case.

A special web site section will be dedicated to problem submission. The service will be reached from the home page and will allow the user to expose the problem and upload documents for best problem comprehension. One short document and an example.

A form should be filled in order to request expert opinion. The form contains a number of keywords that should help to classify the kind and the area of problem.

The submitted data will be stored into the database and the problem will be submitted to experts.

The experts will be contacted following the expertise keyword inserted into the registration form in the subscription phase. The selection of the experts will be done by the WG coordinators. The process to produce the solution or the suggestion to solve the problem will have to be constrained to be in 4 weeks.

At the conclusion of the problem solving phase the problem and the solution should be exposed on the web site with consensus of the user.

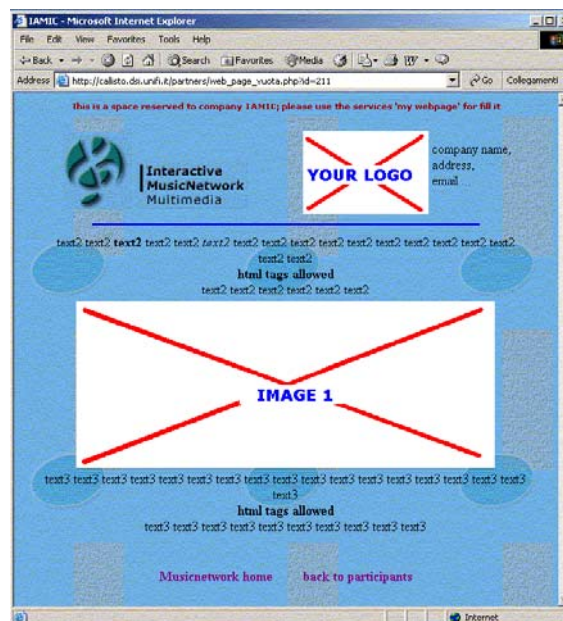
3.10 Personal Pages of Participants and Participant List

In order to offer to the participants the possibility to better present themselves into the MUSICNETWORK community a page was reserved for each participant.

The activation of these pages is performed manually by the coordinator in order to avoid conflicts (mainly the administrator has to decide – according with possible candidates – who may fill the institution webpage). The person who do it may be changed in any time without loose data.

ARTEC	ITALY
Associazione Musica Attiva ONLUS	ITALY
Audio Research Labs	UNITED STATES
Austrian Academy of Sciences	AUSTRIA
BEK - Bergen center of Elelctronic Arts	NORWAY

On the participants menu of the home page the complete list of institution is shown. If the page was not yet set up the institution name is linked to a generic html page which show the structure of final document.



From the user point of view, for fill the pages, it is enough to select “my webpage” item from the services menu and write the presented text areas.

3.11 Participant Classification and categorizations

The participants have to be classified in some manner. The main reason for doing that is to identify those which are more active in the network and which can help the network to sustain after the conclusion of the project.

To this end, the profile of the participant will be enlarged in order to get from them more information about their skill and intention. The same information will be used by the search engine when a query for searching experts and tools is performed.

The added information to the participant profile will be the following list of ticks. It is not useful to have additional information since other keywords are already requested in the form and the selection of the WG is another source of information. In the following list multiple ticks have to be possible.

- Associations for content
- Industrial association
- Archive, library
- Music information center
- Content producer
- Educational institutions: conservatory, music school,
- Content Distributor
- Broadcaster: radio and tv
- Research groups, private or public, university or institution
- Industrial activity
- Standardization body
- Information Technology providers, industry
- Legal bodies
- End user, music lover, etc.
- Student
- Professional

The categorization of partners can start in a second phase. The main reason for doing that is to identify those which are more active in the network and which can help the network to sustain after the conclusion of the project. Presently the participants of the MUSICNETWORK can be formally classified in:

- Partners: which are main contractors and associated members of the consortium
- Participants: which include the above group and are those that have simply performed the registration on the www site.

In a situation in which, the MUSICNETWORK will have to sustain its activity it is very important to identify those that can contribute to this. They should have since the beginning a greater visibility with respect to the simple participants. In addition, over and above the visibility, they have to receive more benefits. In order to identify these aspects the Business Model for the MUSICNETWORK has to be identified. The MUSICNETWORK will provide to them products or services at special prices or for free in exchange of their registration fee.

They can be called: **Distinguished Participants.**

Presently we can put them in a special list and WWW page. Presenting their contribution to the MUSICNETWORK in terms of effort, money, hosting conferences, etc.

In a second step, they will have to contribute with a fee according to the Business Model that will be defined in the project evolution. In that phase they will have the possibility of

- Making dissemination by using the mailing list of the MUSICNETWORK, and by using the newsletter distribution
- promoting their products to the events of the MUSICNETWORK
- promoting their activity and products on special WWW pages on the WWW site of the MUSICNETWORK
- receiving printed version of all the documents produced by the MUSICNETWORK in their complete version, at special price
- Attending conferences of the MUSICNETWORK and tutorial at special prices.
- Getting a slot for presenting their activity in the Workshop of the MUSICNETWORK.
- Accessing to the full data base of test cases for OMR, Music Notation, protection, etc.
- Creating consortiums for International Projects according to the idea proposed.
- Getting a number of free hours or tokens for consultancy from the MUSICNETWORK experts to assess their problems in a blind manner. The MUSICNETWORK will be committed to produce a report in which the problems are analyzed in the context of the market and technological state of the art, and suggestions and solutions are given if any.

We have in the next months to concentrate our work in these areas which are our added value.

Presently, according to the experience of project partners, the participants that can be interested to become Distinguished Participants can be:

- Industrial and content associations
- Major industries
- Major research centers
- Etc.

3.12 Status page for the MUSICNETWORK

A page reporting the description of the MUSICNETWORK and the link to the EC and its officer. In addition, the same page has to include the official deliverables of the project:

- Requirements
- Presentations
- Flyers
- Posters
- Etc.

The page has also to state that the money for the network are coming from the EC.

3.13 Newsletters

The project administrator may create and sent bimonthly a new letter addressed to all the users which subscribe the service. The content has to be collected between the project partners and participants.

The editing responsibilities for the production of the newsletter has been assigned to ILSP.

The screenshot shows a web form for sending a newsletter. The form is enclosed in a rectangular border. At the top, it has a 'From:' field with the value 'musicnetwork@dsi.unifi.it'. Below that is a 'Subject:' field with a text input box containing '[MN]'. The 'Body:' field is a large, empty text area with a vertical scrollbar on the right side. Below the text area, there is a 'Type:' section with two radio buttons: 'text' (which is selected) and 'html'. Underneath is a 'Send to:' section with four radio buttons: 'registered user subscribe to newsletter' (selected), 'all registered user', 'wg coordinators', and 'webpage owners'. At the bottom of the form, there are two buttons: 'Send' and 'Reset'.

The newsletter archive is also visible for the registered users on the MUSICNETWORK web site. As shown in the next figure it is possible to perform a request for viewing only part of the newslist archive:

NEWS LETTER

From:

To:

Order by: asc desc

The result is shown in the following figure:

title	date	sended to
[MN] - symposium announcement/invitation	Feb. 11, 2003	registered user subscribe to newsletter
[MUSICNETWORK] your private www page inside the NETWORK	Feb. 4, 2003	webpage owners
[MUSICNETWORK] Service at MusiK-Messe, Frankfurth, Germany	Feb. 4, 2003	webpage owners
[MN] WEDELMUSIC2003 Call-for-Papers, Leeds, UK, September 2003	Jan. 29, 2003	all registered user
[MN] MUSICNETWORK web site - new service	Jan. 23, 2003	webpage owners
[MUSICNETWORK] news letter, December 2002	Dec. 23, 2002	all registered user
[MUSICNETWORK] WELCOME from the Coordinator and some details	Nov. 25, 2002	all registered user

<< new request

The proposed structure has been followed in the first issues distributed in March, some additions have been made in this version of the structure:

- general aim of the MUSICNETWORK
 - description of the activities of each WG with the following structure
 - notation
 - activities, main threads
 - main decisions as reported in the slides of the review meeting
 - main www updated information
 - ...
 - standard
 - ...
 -
 - ...
- Announce of the next MUSICNETWORK events
- list of events mentioned in the wg forums
 - few lines each, including events that are still active, they can be CFPs or conference call.
- News
 - Relevant documents posted
 - Relevant projects started
 - Communication of Distinguished Participants
 - Activity of eCulture
 - Activity of Digicult
 - ...
- Relevant http links passed on the network
 - Links to news
 - Links to products
 - Links to

4 Dissemination Strategy

The above mentioned goals will be reached by using the following strategy and activities:

- To **create a peer to peer discussion forum** connected with the WWW pages of the MUSICNETWORK to exchange public material and discussion in moderated manner;
- To set up and maintain a set of **mailing and discussion lists** about the different working group areas of action;
- **To create a list of Participants.** The main actors from each of the categories involved in the creation, distribution and fruition of multimedia music will be included as participants: content providers, multimedia software builder, archives, music content experts, music notation experts, music and multimedia publishers, end users, specific technology providers in the working group areas, etc. They will be stimulated to become network participants by:
 - Direct contact via MUSICNETWORK partners mailing lists,
 - Organization and corresponding invitation at workshops and conferences,
 - Promoting network activity at conferences, fairs and exhibitions,
 - Publishing articles and promotional material on well known and diffuse journals and magazines,
 - Providing the possibility of monitoring the technology status and accessing to technical and market reports produced by the MUSICNETWORK ,
 - Distributing promotional e-mails by using public multimedia and music related mailing lists.
- **To disseminate the information and innovations produced by the MUSICNETWORK** at conferences and fairs/exhibitions on music and multimedia to encourage the technology transfer about reliable solutions and music software industries, content provider industries and associations. This will be performed by several dissemination actions:
 - organizing public workshops in which the activity of working groups is presented together with the general activities of the network. Specific experts will be invited to present their work at these workshops. At these workshops the different actors of the multimedia music arena will be invited: content providers, technology providers, experts, and end-user representatives.
 - attending fairs/exhibitions as simple attendees and/or with stands (e.g., MIDEM, MILIA, Frankfurt Musik Messe, etc.).
 - actively organizing conferences or sections in well known conferences (e.g., WEDELMUSIC, ISMIR, EVA, ICMC, ICHIM, IAML, etc.). At these workshops, the different actors of the multimedia music arena will be invited: content providers, technology providers, experts, and end-user representatives, etc.; The consortium foreseen the needs of attending, North America, and Asia-Pacific Conferences and Fairs such as: NAMM Show, Los Angeles, USA (2003, 2004), NAB, Las Vegas, USA (2003, 2004), ICMC, Singapore, (2003), SEAMUS, Arizona, USA (2003), MPEG, Trondheim, Norway (2003), MPEG, Hawaii, USA (2003), etc.
 - The support and availability of MUSICNETWORK in the promotional activities supported and promoted by the European Commission. In some of the above-mentioned Fair and Conferences the EC has its visibility and exhibition area.
 - Possible links with projects in the area of Music Tuition such as IMUTUS IST project.
- **To produce guidelines, tutorial notes, reports**, stating the state of the art and the best practice in the several areas of intervention and technologies considered by the working groups of the MUSICNETWORK ;
- To produce and distribute via email a **monthly newsletter** reporting the activity of the MUSICNETWORK and news in the area of multimedia music;
- **To disseminate the ideas** and related results of the network considering technical, cultural and commercial levels;
- **To create a large list of representative European technology providers**, solutions and projects. Also non European projects will be considered for monitoring the activities in the outer countries;
- **To realize a WWW site focussed on making public the results** about the above mentioned specific aspects and technologies and for providing information, services and solutions to common problems met in technologies of music coding, protecting, converting, and distribution;
- **To connect the WWW site of the network** with the major organizations in the area of Multimedia music;
- **To distribute dissemination material** to the specific associations which are present in the multimedia music area such as: AMIS, APRS, EBLIDA, EPA, IAMIC, IAML, IASA, IASPM, ICMA, IFLA, MLA, IFPI, etc., according to the agreement established and others that will be defined during the project;
- **To collaborate with other networks of excellence**, if any, that present related technical topics to increase the dissemination capabilities organizing joined events, and promoting networks activities to network participants:
 - Create a list of related networks in the WWW page, we can host for them a WWW page: PULMAN, FIGARONET, etc.
 - To cross posting news and messages from and to these networks

Dissemination Material:

- To define a logo for the project;
- To prepare promotional posters to be used in fairs and conferences and as promotional tools;
- To prepare promotional flyers to describe the general goals of the network and the work performed by the working groups;
- To prepare promotional material to attract the subscription to the MUSICNETWORK and working groups;
- To produce a CD rom containing the most important documents, guidelines, test cases, assessment methodology, discussions, and reports of the MUSICNETWORK ;
- To public articles in information technology, multimedia and music-oriented journals, conferences and magazines: "IEEE Computer", "Computer Music Journal" (MIT press), "ACM Human Computer Interaction", IEEE Multimedia, Multimedia Journal, PIXEL, etc.;
- To publish articles in technical, cultural, business oriented journals and newspapers to reach the management staff of content providers: "The Strad", "The Orchestras", "Music and People", "World Street Journal", "Sole 24 Ore", etc.

All the partners are actively committed to disseminating their experiences, and have laid out concrete goals in the Objectives and Results. The partners will prepare the dissemination material during the project. All dissemination activities will be conducted under the co-ordination of the dissemination WP co-ordinator to ensure the delivery of a consistent message to the outside.

Each dissemination activity will be monitored in order to measure the effectiveness of the action. The partners that will attend fair and other multimedia and music related meeting for other projects will prepare a short report that will be included in the dissemination report of the project and on the WWW site. All press releases will be collected and assessed in order to evaluate their effectiveness and their costs in terms of time and direct costs. For the workshops questionnaires will be prepared, collected and analyzed in order to improve the quality of presentation and the solutions proposed. During dissemination a particular attention will be given to the diffusion of results to institutions for print-impaired people. Specific documents will be prepared for them.

During the project the WWW pages will be improved and some information material for its distribution along the networks of EC will be prepared.

4.1 Dissemination goals

The main goals of the dissemination activity of the MUSICNETWORK are:

1. To increase awareness and confidence to build consensus among content owners and providers towards new solutions, technologies, music modeling, and current standards, removing problems that limit the exploitation of the potential of multimedia music archives, content collections and digitizing actions.
2. To stimulate the exploitation of new functionalities which open new markets for new ways of content distribution: e-publishing, e-book, virtual libraries, advertising, entertainment via WEB-TV, UMTS, personal computers, CD-roms, etc.
3. To increase the number of participants of the MUSICNETWORK to cover all states of the European Union and competencies for the working groups and building a collaborative forum.
4. To make possible the exploitation of the results produced by the working groups of the MUSICNETWORK beyond the participants of the network.
5. To promote the MUSICNETWORK as the virtual reference Center of Excellence in Europe regarding the technologies of multimedia interactive music.

4.2 Dissemination Material

The available dissemination material is:

- Flyer in A4 format, paper and digital
- WWW pages, they have been updated and completely restructures a couple of times.
- Articles mentioned in the next section
- Posters for covering stand walls
- Short and long presentation with Slides in Power Point
- Informative emails and letters
- Multilingual presentation page of the MUSICNETWORK : Italian, English, Greek, German, France.

4.3 Actions of Dissemination

Performed activities:

1. **The list of participants** has been create. Presently the list comprises 420 participants coming from more than 50 different states and 4 continents. This success has been obtained by strongly promoting MUSICNETWORK to a set of different events and meeting
2. **Conferences and meeting** in which MUSICNETWORK has been promoted
 - EVA London 2002, July 2002. (UNIVLEEDS) flyer distribution,
 - WEDELMUSIC2002 Conference, December 2002, Darmstadt (FHGIGD, DSI, UNIVLEEDS, IRCAM, etc.), Exposition and conference, flyer distribution, presentation
 - **Organized:** 1st MUSICNETWORK Workshop, December 2002, Darmstadt (all partners). The documents, presentation, minutes of the discussions, etc. Have been posted in the WWW site of the MUSICNETWORK and made available for all.
 - Global Venture Forum Osaka, 2002 (CRL), flyer distribution
 - ICMAI, September 2002, (FNB), presentation of a Paper and Poster
 - ISMIR October 2002, Paris (IRCAM) , flyer distribution
 - Resonance 2002, October, Paris (IRCAM) , flyer distribution
 - **Coorganised:** Rome, Italy, October 2002, a short seminar (DSI), presentation, flyer distribution
 - IST November 2002, Copenhagen, (DSI, MICA) , flyer distribution
 - Tempo Reale Workshop, Florence, TR, December 2003 (DSI) , flyer distribution, presentation
 - MIDEM, January 2003, with a Panel (DSI, MICA) , flyer distribution, presentation in a Panel
 - IBC 2002, September 2002, Amsterdam, (DSI, FNB), fair, flyer distribution
 - ICMC 2002, flyer distribution (UNIVLEEDS)
 - UK EPSRC Digital Music Network Launch Day (UNIVLEEDS), Dec 2002, announcement and flyers.
 - MPEG7 meetings (IRCAM), flyer distribution
 - MPEG4 Meetings, via other participants, announce
 - MPEG21 Meetings, via other participants, announce
 - Meeting in Milan, September 2002, Major publishers: Ricordi, Nuova Carish, Rugginenti, Suvini, Sonzongno, Curci, corso magenta (DSI)
 - And many other events that have not been charged on the MUSICNETWORK budget.
3. **Published articles:**
 - ICMAI 2002 article
 - A short article on the Cultivate newsletter
 - EVA 2003 Article
 - A long article in the German IAML Newsletter “Forum Musikbibliotheken” (MICA), February 2003
 - A short announce in an article on ACM Transaction on Human Computer Interaction
 - Announces in three chapters that will be pressed in Computer Music Books.
 - Several short messages in relevant www sites: ministry, EC, news, etc.
4. **Next Events:**
 - **Coorganised:** DAISY Conference, Amsterdam, WG on Accessibility, May 2003 (FNB, DSI), presentation, poster and flyer distribution
 - EVA 2003, Florence, March. (DSI), presentation and flyer distribution
 - WEDELMUSIC2003, Leeds, UK, September (UNIVLEEDS, IRCAM, DSI, FHGIGD), presentation and flyer distribution
 - **Organised:** 2nd MUSICNETWORK Open Workshop, September (UNIVLEEDS, IRCAM, DSI, FHGIGD), presentation and flyer distribution
 - European Music Navigator Open e-commerce Symposium 2003, March, (MICA, CRL) presentation and flyer distribution
 - IBC 2003, Amsterdam, September (DSI, FNB), fair, flyer distribution
 - **Organised:** MusikMesse, March 2003, Frankfurt, Fair, a stand, presentation and flyer distribution (DSI)
 - MAXIS 2003, UK, April, announce and flyer distribution (UNIVLEEDS)
 - EAS International Music Congress Vienna, May 2003 (MICA), presentation and flyer distribution
 - IAMIC Conference, Rome 2003, June, Announce and flyer distribution (DSI)
 - EVALondon 2003, UK, Accessibility, flyer distribution and a paper (UNIVLEEDS, FNB, DSI)
 - Resonance 2003, France, October (IRCAM)
 - IAML Annual Conference 2003, July 2003 Tallinn (MICA)
 - 69th IFLA General Conference, August 2003 Berlin (MICA)
 - IST Event 2003 Milano, October 2003 (DSI)
 - ISMIR 2003 (IRCAM)
 - ICMC 2003 (UNIVLEEDS)
 - International Federation of Library Associations (IFLA) (FNB)
 - International Association of Music Libraries (IAML) (FNB)
 - International Conference on Music & Artificial Intelligence (ICMAI) (FNB)

- Conference on Assistive Technologies for Vision & Hearing Impairment (CVHI) (FNB)
- European Bureau of Library, Information and Documentation Associations (EBLIDA) (FNB)
- European Association of Information Services (EUSIDIC) (FNB)
- International Council for Education of People with Visual Impairment (ICEVI) (FNB)
- International Conference on Technology and Persons with Disabilities (CSUN) (FNB)
- World Blind Union (WBU) (FNB)
- **News Letter and mailing lists:**
 - Presently it has been only produced sporadically when needed for informing the participants about relevant innovation in the services. They are strongly pressed by the mailing list of the WGs.
 - We have 10 mailing list that are strongly active in sending technical information about the activities and discussions of the WGs.
- The www site of the MUSICNETWORK with his pages is connected to the major institutions of the world in this field. More than 150 participants are now filling their personal pages to complete the cross linking and indexing of their skill into the MUSICNETWORK www site. The page result visible and even by using only "interactiveMUSICNETWORK" as searching key word on Google 55 sites are identified. At the beginning no sites where extracted with that keyword.
- The messages about the creation of the MUSICNETWORK has been sent on several mailing lists: DSI list, IAML, PULMAN, DIFFUSE, FNB List, IRCAM List, MICA List, IFPI, IFLA, Cultivate, etc.
- The logo has been defined an several posters have been produced for the MUSICNETWORK stand of the MUSIKMESSE. A nicer poster will be produced for promotional purpose.
- Collaboration has been started with Pulman network and MusicNavigator.
- Flyer has been produced and distributed in 1500 copies.
- The WWW site has been set up with the major services:
 - Multilingual presentation of the MUSICNETWORK
 - Presentation of the working group
 - Documentation and documents, upload and download
 - Mailing lists of working groups
 - 10 Forums and working groups
 - personal pages of the participants.

4.4 General Guidelines

The main goal of the dissemination activity in the MUSICNETWORK is to increase the awareness of the two major groups of interest involved in the in this scenarios. They are the content providers, music industries, archives, etc. (on the left of t he next figure) and the technology providers (on the right of the same figure).

The most important goal is to reduce the gap between these to worlds to allow them to work together to find new solutions and markets. This can be done by putting together these to groups of people that have different cultures, different attitudes, different uses, and different consideration of each others.



The MUSICNETWORK activity

For this purpose we have identified two different activities, each of which is focused on a different group: technical conference and fairs. It is obvious that these to cases are extreme and that some mixed conditions can be present. In those cases, a mixed approach is suggested.

4.5 Conferences and workshops

At the technical conferences the MUSICNETWORK may attract technology providers that may see in the network a way to exploit their competencies. For this reason, we have organized the first Open Workshop joined with a Major research conference in the area of Music Multimedia and Distribution: the WEDELMUSIC International Conference. It is a quite new conference but well focused on these aspects with a growing number of attendees: 70 for the 2001 and 95 in the 2002.

In this case, the promotional material has to be detailed and technical, the availability of the WWW access to the web pages is convincing and interesting. The meeting has to be organized in sections with some crucial theme to be discussed. A short tutorial section can be added, for example at the beginning of the day just to introduce one of the topic that will be discussed in the working sections.

The presenting approach from the side of the MUSICNETWORK coordinators has to be flexible and cooperative since the technical contributors are those that for the great part contribute to the creation of the technical content into the MUSICNETWORK database.

At this technical meeting, open workshop sections are strongly mandatory. At these sections, the participants may contribute with their positions and presentation opening the discussions. It is very important in several cases, to have the possibility of inviting relevant expert of the sector in order to motivate the participants to:

- attend the meeting
- present their position for the presence of competent audience that could validate their position.

In a second phase, it could be needed to organize some restricted sections and workshops in which working documents are processed in order to finalize guidelines or new standards. These will have to be motivated on the basis of a real work preformed and a detailed work to be done on specific documents.

4.6 Fairs and expositions

At the fairs the MUSICNETWORK may attract companies belonging to the first group, those of technology users. They attend fairs to make business and only sporadically attend conferences, when they are already convinced to make a change, to use a new technology, etc. At fairs they are use to perform activities of technology watch, competitor analysis, etc. The MUSICNETWORK may attract them, since it can provide then a fast and effective view of the state of the art.

In this case, the promotional material has to be short and not too technical. While the presenting approach has to be professional and well shaped and customized. In the case of real contact, the technical level has to be very convincing and skilled especially for the protection, distribution and business models.

In these cases, the best results can be obtained by presenting the MUSICNETWORK with a stand and to provide them a service of problem solving and partner search.

In addition, to attract them it can be very effective to give them a short presentation in order to explain in short time the purpose of the MUSICNETWORK. After the presentation it should be good to have time for presenting the last activities of the MUSICNETWORK trying to involve them. For example,

- asking them to contribute at identifying the topics of the next technical events
- presenting a short panel on the most hot topics of the sector: protection, distribution, multimedia and notation, standards, etc.

4.7 Co-organization of events

The MUSICNETWORK may co-organize other event. In these cases, the MUSICNETWORK has to have in change the possibility of influencing the structure and the adverting process of the event.

In a co-organized event the MUSICNETWORK will have the complete management of some smaller activities. They may be panels, sections or expositions. The selection and the involvement of the MUSICNETWORK in these activities depends on the audience of the event and thus the possible actions will have to be selected according to the guidelines reported above.

4.8 Conference Management and rules

This section reports a regulation about the management of conferences and workshops.

Presently, we have at east three types of activities with conferences or workshops.

The MUSICNETWORK can only support economically MUSICNETWORK activities. We cannot use money to sponsor an external event. The coordinator, DSI, can only directly pay for the approved MUSICNETWORK events (with the rules and limits already fixed and used for the First Open Workshop):

- travel of experts,
- for catering,
- for rooms (only for full MUSICNETWORK events)
- promotion (only for full MUSICNETWORK events),
- etc.

The approval has to include a mandate to accept or not the expenses. This is a constraint that comes from the mechanism that are present to claim the expenses. As you know, DSI has to provide CS and each relevant expense has to be supported by initial offer and invoice. In addition, each expense has to be described and discussed and motivated.

MUSICNETWORK events can be recognised by:

- a) WWW page of the event in the MUSICNETWORK www site. No simple link ma directly the content page into the www site of the MUSICNETWORK. This will permit to index the page and the conference in the search engine of the MUSICNETWORK, etc.
 - The www page has to include: description, scope, sponsors, etc.
 - The same page has to link the programme,
 - The same page has to list the people that will be invited by the MUSICNETWORK, with their affiliation and nationality. The slides of these people and their documentation related to the talk that they give at the conference/workshop has to be linked to the page and published on the MUSICNETWORK www site
- b) clearly written that is a MUSICNETWORK event in their main www page, flyers, call for papers, documentation to be distributed to participants, mailing, etc.
- c) managed by one of the partners of the project
- d) approved by the MUSICNETWORK committee
- e) any expense has to be directly negotiated by the provider to the DSI and paid from the DSI to the provider. The provider of the service cannot be one of the project partner.

Without satisfying these aspects DSI cannot formally pay any cents of Euro.

The involvement of the MUSICNETWORK in the event can be as follows:

- I. the organisation of a workshop or conference in the same manner of the first open workshop in Darmstadt. To this end, a responsible of the event has to be identified. The responsible has to guarantee that the above points will be satisfied, providing content for creating the www page on the official site into the MUSICNETWORK www site, etc.
- II. the organisation of a Panel into a Workshop. It has to be listed in the program as a MUSICNETWORK panel. Clearly mentioned in the flyer of the event as a separate activity with a special promotion of the event, etc. The responsible has to guarantee that the above points a-e will be satisfied, providing content for creating the www page on the official site, etc.
- III. participation of the MUSICNETWORK to an event to make dissemination. This can be done by any partner without authorisation by using their own travel budget. If the event is not in Europe it has to be authorised by the EC via the Project Co-ordinator. Without authorisation the costs cannot be charged on the Cost Statement. The authorisation has to be requested to the DSI and we will make the same asking to the officer. The distribution of Flyers is mandatory.
- IV. other event organised by MUSICNETWORK partners as a non MUSICNETWORK event: MAXIS, EMN, etc. They are very good occasion to make dissemination. An Oral presentation of the MUSICNETWORK is preferred. If it is not possible the simple distribution of flyers is mandatory. In general, the organiser has to support the MUSICNETWORK promoting it. In general, it is not correct to send at that event an additional MUSICNETWORK partner to specifically make promotion when the organiser is also a MUSICNETWORK partner. We have to work in economy and avoid travelling for trivial and duplicated roles.

Events of type (I) and (II)- can ask to have invited experts. DSI has to directly invite them and pay them to work in a MUSICNETWORK activity. We can support for them the travel up to a given maximum and a limited number of days: one day before the event plus the even duration plus one more day if they come from outside Europe. Any invited expert has to be directly authorized and if he/she comes from outside Europe the request has to be accompanied by a curriculum Vitae and a motivation of why they are important for the event and for the MUSICNETWORK. Please do not candidate people that have a profile that can be easily find in Europe, this will be easily verified by using databases.