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FLaReNet

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FLaReNet Final Report

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Table of content

1 Project Objectives

1.1 The context

Language Technologies (LT), together with their backbone, Language Resources (LR), provide an essential support to the challenge of Multilingualism and ICT of the future. The main task of language technologies is to bridge language barriers and to help creating a new environment where information flows smoothly across frontiers and languages, no matter the country, and the language, of origin.

To achieve this goal, all players involved need to act as a community able to join forces on a set of shared priorities. However, until now the field of Language Resources and Technology has long suffered from an excess of individuality and fragmentation, with a lack of coherence concerning the priorities for the field, the direction to move, not to mention a common timeframe.

This lack of coherent directions is partially also reflected by the difficulty with which fundamental information about LR&Ts can be reached: basically, it is very difficult, if not impossible, to get a clear picture of the current situation of the field in simple terms such as who are the main actors, what are the available development and deployment methods, what are the "best" language resources, what are the areas for which further development and investment would be most necessary, etc. Substantial information is not easily reachable not only for the producers but also for policy makers and funding agencies.

Under this respect, since some time large groups have been advocating the need of a LR&T infrastructure, which is increasingly recognised as a necessary step for building on each other achievements, integrating resources and technologies and avoiding dispersed or conflicting efforts. A large range of LRs and LTs is there, but the infrastructure that puts LR&Ts together and sustains them is still largely missing; interoperability of resources, tools, and frameworks has recently come to be understood as perhaps the most pressing current need for language processing research. Infrastructure building is thus indicated by many as the most urgent issue and a way to make the field move forward, together with real sharing of resources, and an effort to make resources available for all languages.

The context encountered by the FLaReNet project was thus represented by an active field needing a coherence that can only be given by sharing common priorities and endeavours. FLaReNet has contributed to the creation of this coherence with a number of coordinated activities on various fronts, by engaging the community at large in new collaborative initiatives for language resource identification and creation and by gathering a wide community of experts and making them participate in the definition of an exhaustive set of recommendations.

1.2 What are Language Resources

The term "Language Resources" traditionally refers to usually large sets of language data and descriptions in machine readable form, to be used in building, improving or evaluating natural language, speech or multimodal algorithms or systems. Typical examples of LRs are written, spoken, multimodal corpora, lexicons, grammars, terminologies, multimodal resources, ontologies, translation memories, but the term is also extended to include basic software tools for their acquisition, preparation, annotation, collection, management and use. The creation and use of these resources span several related but relatively isolated disciplines, including NLP, information retrieval, machine translation, speech, multimodality. FLaReNet endorses this broader definition of LRs, having recognised the need for an "extension" of the term and in the

light of recent scientific, methodological-epistemological, technological, social and organisational developments in the application fields of content processing/access/understanding/creation, Human-Machine, Human-Human & Machine-Machine communication, and the corresponding areas from which the theoretical underpinnings of these application fields emerge (linguistics, cognitive science, AI, robotics).

1.3 The FLaReNet mission, policy and strategy

FLaReNet – Fostering Language Resources Network – is an international Forum, composed by a large community, aiming at developing the needed common vision and fostering a European strategy for consolidating the sector, thus enhancing competitiveness at EU level and worldwide. Its goals are:

- to facilitate interaction among LR&T stakeholders and ultimately re-build a community around LR and LTs, as well as to promote and sustain international cooperation;
- to coordinate a community-wide effort to *analyse the sector* of LR&Ts along all the relevant dimensions: technical and scientific, but also organisational, economic, political, cultural and legal;
- to identify short, medium, and long-term strategic objectives and provide *consensual recommendations* in the form of a plan of action targeted to a broad range of stakeholders, from the industrial and scientific community to funding agencies and policy makers.

This report describes how these goals have been accomplished through several coordinated and coherent initiatives.

2 The Consortium and the Network

FLaReNet has brought together leading experts of research institutions, academies, companies, consortia, associations, funding agencies, public and private bodies both at European and international level. This way, both LR producers and users were represented and actively involved, in addition to technology developers. And in turn, broad participation of different key-figures and experts in the various working groups has ensured that recommendations were formulated through a consensual bottom-up process in which the relevant scientific, technical, organisational, strategic aspects and positions were taken into account.

The FLaReNet Consortium was originally composed by 38 Institutions, representing the FLaReNet partners (27 beneficiaries and 11 non-funded members). They were complemented by a Support Group composed mainly by companies (25 members).

One of the FLaReNet mandates – and a measure for its success – was the progressive enlargement to new members. This enlargement was originally conceived as an iterative process gradually promoting members of the Supporters set into the Members group.

A more significant distinction in membership was then introduced by the Steering Committee between *Institutional Members* (IM) and *Individual Subscribers (IS)*. People who joined the Network on the FLaReNet website became Individual Subscribers. The Steering Committee, then, reserved the right to ask for an official involvement of individuals' Institutions. Those institutions agreeing to it became Institutional Members of the Network. This distinction in membership represented two different degrees of involvement. Individual subscribers were expected to contribute to the discussion over major themes, get early access to emerging recommendations and provide feedback over FLaReNet reports. Institutional members were

expected to provide significant input and advice about major themes of relevance, to make proposals about topics deserving special workshops to be discussed, and in particular to endorse FLaReNet recommendations and disseminate them in their respective communities.

At the end of the project, the FLaReNet community counts 398 Individual subscribers and 99 institutional members from 57 different countries.

3 Major Project Results and Achievements

FLaReNet outcomes are essentially **of directive nature**: to **help the EC**, and national funding agencies, **identify priority areas** of LRs and LT that need public funding to develop or improve.

In the development of recommendations FLaReNet has asked for the contribution of the **entire community**, by means of a continuous direct consultation of key players and stakeholders. **Discussion and consensus building** thus have been at the very core of the network activities, and FLaReNet has spent substantial effort toward creating occasions where key topics of the field of Language Resources and Technology could be discussed and debated. In parallel, FLaReNet has carried out an intensive **fieldwork** for the discovery and documentation of relevant facts and figures concerning the field of Language Resources and Technology at large, through directed and community-based surveys. This has resulted in a set of valuable and up-to-date data. The FLaReNet **community**, **data** and **recommendations** thus represent the major results achieved by the project.

3.1 The FLaReNet community

FLaReNet brings together leading experts of research institutions, academies, companies, consortia, associations, funding agencies, public and private bodies both at European and international level. This way, we ensure that both LR producers and users are represented and actively involved, in addition to technology developers. And in turn, broad participation of different key-figures and experts ensures that recommendations are formulated through a consensual bottom-up process in which the relevant scientific, technical, organisational, strategic aspects and positions are taken into account.

The FLaReNet Community is composed of a network of **99 Institutional Members** and **398 Individual Subscribers**, representing **57 different countries**.

Institutional Members per Project Stage

- Start Date (01/09/2008): 38
- 1st Year (01/09/2008-31/08/2009): 41
- 2nd Year (01/09/2009-31/08/2010): 17
- 3rd Year (01/09/2010-31/08/2011): 3
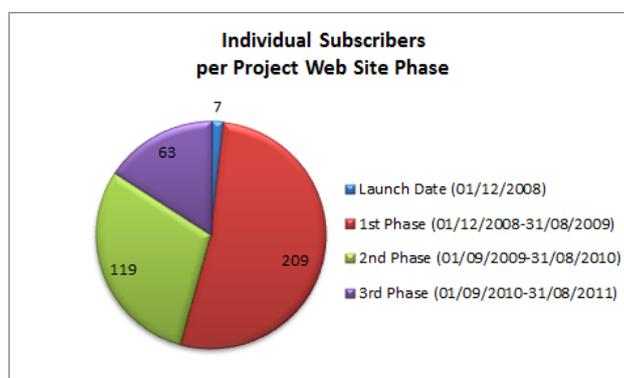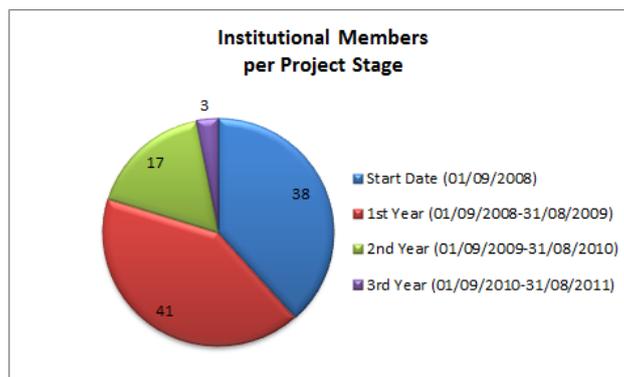
Provided that the more representative countries in the network are the ones belonging to the European Union (with Italy, Spain, France and Germany in pole position), the international dimension of FLaReNet is testified by the presence of subscribers from North and South America, Japan, Asia, Africa and Australia.

Individual Subscribers per Origin up to 31/08/2011

- EU Member Countries: 304
- ASIA: 31
- United States of America: 28
- Non-EU European Countries: 18
- AFRICA: 9
- Canada: 2
- SOUTHERN AMERICA: 2
- AUSTRALIA: 2
- EURASIA: 2
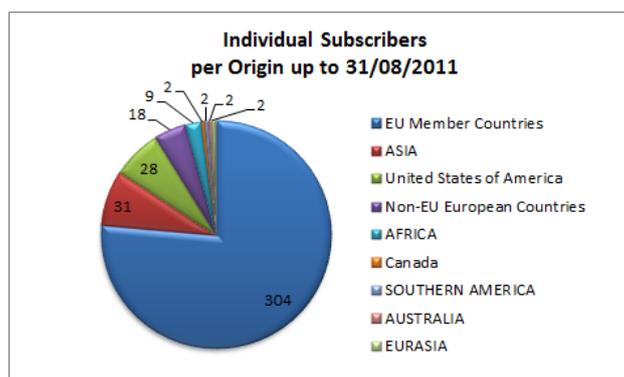
Community members belong to academia (71%), industry (20%, including resource distribution agencies, media, publishing houses), funding agencies and associations (17%), and, national and European government institutions (13%).

FLaReNet has also established a **Network of National Contact Points**, for the purpose of obtaining up-to-date and reliable information about current initiatives worldwide in the area of Language Resources (Data, Tools, Evaluation and Meta-Resources). The Network consists at present of 105 experts from *78 countries or regions*: 32 countries or regions in the European Union (26 Member States and 6 regions), 9 non-EU European countries and 37 non-European countries. The role of the National Contact Points is to provide information on the initiatives on Language Resources in their country/region, as well as to ensure a permanent link between FLaReNet and their country/region, and to provide further reliable information about the HLT research activities and entities, industries and administrations in their country/regions. A Map showing all the countries for which there is a FLaReNet contact point is available on the FLaReNet web site[2].

Over the duration of the project, FLaReNet has truly become a community of experts that – by acting as an aggregator and facilitator of information sharing and discussion – is one of the first

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[2] http://www.flarenet.eu

scientific social networks in the field of Language Resources and Technology. This community represents now a legacy that needs to be sustained to keep the momentum created by FLaReNet.

3.2 The FLaReNet data

Having recognised the lack of information about existing language resources as one of the major factors hindering the development of the field, FLaReNet has undertaken a number of actions to survey existing resources, inform about them, and enhance their visibility. Community involvement is the underlying leitmotif that is common to all activities.

FLaReNet, together with ELRA, has launched the *LRE Map of Language Resources and Tools*[3]. The Map is an entirely new instrument for discovering, searching and documenting language resources, here intended in a broad sense, as both data and tools. The purpose of the LRE Map is to complement ongoing cataloguing efforts in order to enhance visibility for all resources, for all languages and intended applications.

Other data come from the *Repository of Standards, Best Practices and Documentation*, the *Wiki Survey of the national and transnational initiatives in the area of Language Resources*[4], the *Language Library*,[5] a *Database* of the various technical and organisational methods, techniques and models used by academic and industrial players in the area of Language Resources for building and maintaining resources, and a *Survey of methods for the automatic construction of LRs*. All this data is collected in the FLaReNet "*Databook*"[6].

3.3 The FLaReNet recommendations: a collective enterprise

As a response to its main mission, FLaReNet has identified a number of consensual priorities and strategic objectives for the field of Language Resources and Technology, which have been provided to the community through a series of *Blueprints of Actions and Infrastructures*. The whole community at large has been involved in this task, by means of a continuous direct consultation of key players and stakeholders, in the attempt to reflect the widest possible view. Moreover, FLaReNet has maintained regular cooperation activities with relevant projects and initiatives, both non-European and European, in order to establish a kind of global coordination of the LR field.

The FLaReNet recommendations target a broad spectrum of users:

- HLT stakeholders at large, including producers, users and developers of Language Resources and Technologies, both academic and industrial (for instance, academic or industrial researchers, service and media providers, providers of translation and localization services, etc.)
- Funding agencies and policy-makers, at national and EC level.

Recommendations were iteratively built during the project, by successive refinement. The final version appears as the first chapter of the Final FLaReNet Deliverable "*Language resources for the Future – the future of Language Resources*", as a Strategic language Resources Agenda. These final recommendations may be published as a book in the Cambridge Studies in NLP series.

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[3] http://www.resourcebook.eu/LreMap

[4] http://www.flarenet.eu/?q=WG7

[5] For a description of the goals of the Language Library, see http://www.lrec-conf.org/lrec2012/

[6] See also http://www.flarenet.eu/?q=FLaReNet_Data_Book

4 Summary of Activities

In this chapter we briefly summarize the main activities carried out during the three years of the project, organized around major themes.

4.1 Creation and strengthening of the FLaReNet community

4.1.1 The Series of FLaReNet Forums

FLaReNet has established a tradition with a series of Annual Meetings aimed at gathering the entire FLaReNet community and at highlighting and discussing the major hot topics of the field of LR&Ts.

The first Annual Meeting was the FLaReNet Launching Event – "The European Language Resources and Technologies Forum: Shaping the Future of the Multilingual Digital Europe", that took place in Vienna, Austria, Österreichische Akademie der Wissenschaften (Austrian Academy of Sciences), 12-13 February 2009.

The Second FLaReNet Forum - "Language Resources of the Future – the Future of Language Resources", was held in Barcelona, Spain, on 11-12 February 2010.

The Third FLaReNet Forum – "Language Resources in the Sharing Age – The Strategic Agenda", took place in Venezia, Italy, on 26-27 May 2011.

The Vienna Forum

The most important community-building event in 2009 was the **FLaReNet Launching Event**, which was organised in Vienna, 12-13 February 2009. The "European Language Resources and Technologies Forum: Shaping the Future of the Multilingual Digital Europe" was a collaborative workshop composed of a series of thematic working sessions on specific topics. The intention was to approach each topic trying to identify controversial aspects, risks, missing elements, gaps to be filled, what can/cannot be achieved. The meeting was conceived as a means for raising discussions in an interactive and creative way, thus stimulating open questions, new ideas, and visions for the field towards a multilingual digital Europe. A set of questions/issues have been prepared and spread to the participants under the form of both open questions and of "hot topics" to be discussed at the Forum.

In preparation of the Vienna Event, FLaReNet compiled lists of experts and contacted them for ensuring their commitment to participate in the activities of the WGs, starting with the Launching Event: the aim is to create *think-tanks of experts* involved in the various FLaReNet activities.

To ensure cooperation and alignment with projects and initiatives outside the EU, as well as to set up a scenario for discussion future policies and priorities for the field of Language Resources and Technologies in a worldwide context, an *International Round Table* was organised in conjunction with the Vienna Forum, with non-European participants.

The Vienna Workshop and its thematic sessions have been very successful and demonstrated a great interest for a discussion on the current state and future progress of LR&Ts.

The Barcelona Forum

Following the success of the previous Forum, it was decided to replicate the same formula, i.e. a collaborative workshop composed of a series of thematic working sessions on specific topics. This year, they were: Metadata and documentation, Services and functionalities for an Open

Resource Infrastructure, Sharing or not sharing, availability and legal issues, Social networking and Web 2.0 methods for language resources, Language resources of the future, and International Cooperation.

The purpose of the Forum was to approach each of them trying to identify controversial aspects, risks, what is missing, gaps to be filled, what can/cannot be achieved.

The meeting was conceived as a means for triggering discussions in an interactive and creative way, thus stimulating open questions, new ideas, and visions of the future.

Each session was structured so as to make it as interactive as possible: after introduction by the Session chair, there were a couple of invited long talks, followed by five to seven short talks, partly given by members of the FLaReNet community, and partly by external contributors and FLaReNet newcomer subscribers. Discussion was shaped with the help of discussants, i.e. pre-defined people whose role was to help liven up the general discussion at the end of each session by making a "controversial" comment or asking a question related to the session topic, possibly in a provocative way.

A call for discussants was launched among the FLaReNet subscribers before the Forum in order to involve the entire community as much as possible.

This year special highlight was the FLaReNet Polling: after the announcement of the event, the FLaReNet community was asked to take part in a couple of polls related to hot issues and priorities of intervention for Language Resources and Technology. The results of the polls were disclosed at the FLaReNet event. They also represent a valuable community input for the Blueprint of Actions and Infrastructures.

The forum saw a truly international audience, with the participation of 120 people coming from 22 different countries including India, Japan and USA. According to the opinion of the participants it was a very successful event.

The Venice Forum

As usual, the Forum took the form of a collaborative workshop composed of a series of thematic working sessions on specific topics.

A special topic of this Forum was represented by the collection of FLaReNet Recommendations (or Blueprint of Actions and Infrastructures, henceforth 'the Blueprint'). The Forum attendants were asked to validate and improve the Blueprint with the aim of reaching a consensual view on the top priorities listed in the document. The result of this community consultation, which took place during the Forum itself and afterwards through the Web site, is reflected in the first chapter of the FLaReNet final deliverable "Language Resources for the Future – The Future of Language Resources, The Strategic Language Resource Agenda".

Through its program, the Forum addressed several key issues of the field. The session about Identification and tracking of Language Resources aimed at stimulating the debate on new means for discovery and identification of LRs, and the development of simple mechanisms for searching/accessing information about resources. The session on "Open Data" intended to explore how the Open Data concept applies to language resources and its implications in terms of access, redistribution, reusability, and attribution, also considering what is going on in other disciplines. The session "Go green: reuse, repurpose and recycle resources" welcomed contributions about practical experiences in re-use and repurposing of resources, both in terms of data and in terms of reuse of development methods, existing tools, use of translation/transliteration tools, etc. The session "Innovation needs data" aimed at highlighting the challenges (in particular, from an industrial point of view) that need to be overcome in order

to stimulate the production of the large quantity of resources required, and at the same time to ensure the necessary quality to get acceptable results in industrial environments. The session "Data for all languages: think big" intended to confront current and emerging methodologies for efficient development of language resources for all languages, in particular the less resourced ones. Finally, the session "Long life to our resources" explored the most appropriate means for data archiving and preservation, maintenance of LRs, and sustainability of linguistic tools and resources.

As usual, the Forum was conceived as a means for triggering discussions in an interactive and creative way, thus stimulating open questions, new ideas, and visions of the future.

A complete list of speakers and discussants is available on the Forum web pages, as well as presentation slides and the complete proceedings.

4.1.2 Recruiting campaign

In order to constantly increase the people involved in FLaReNet, as well as to ensure their commitment to the objectives of the Network, a permanent **recruiting campaign** has been in place throughout the lifetime of the project. People wishing to join the Network could do so by filling an appropriate web form available on the FLaReNet web site. The FLaReNet Network has been open to participation by public and private, research and industrial organizations. Invitation to join, either personal or by means of mailing lists were used in order to enlarge the number of members as much as possible.

4.1.3 Meetings

Meetings and workshops, either thematic or general ones, were the primary means for attracting new members and to reinforce participation of existing ones, but participation was encouraged also by means of online discussions, polls, and forum threads. A detailed list of meetings, either organised or co-organised by FLaReNet, is provided in Sections 6.2 and 6.3.

4.1.4 Other means of community involvement

Apart from actions for enlarging the FLaReNet community, those aimed at **consolidating** it were especially important. Participants to the community needed to feel they belonged to a group of people that was actually shaping the field of Language Resources and Technologies by delineating its direction for the next future. The User Forum, the creation of Thematic Groups and "think-tanks" of experts and the launch of closed meetings were the privileged ways for creating close and connected groups of people.

Communication flows (mailing lists, policies about regular updates of the network about project events; planning of a periodic newsletter) were regular means to keep the FLaReNet community actively involved.

4.2 Initiatives to support knowledge and availability of Language Resources and Technologies

Having recognised the lack of information about existing language resources as one of the major factors hindering the development of the field, FLaReNet has undertaken a number of actions to survey existing resources, inform about them, and enhance their visibility. Community involvement is the underlying leitmotif that is common to all activities.

Survey activities

Extensive effort was dedicated – within the various Work packages – to the preparation of surveys in different areas related to LR&Ts that would help draw up a picture of the field along several different descriptive dimensions

A survey on existing language resources and current status of HLT market, mostly from player profile perspective. This survey, which resulted in D2.1, tried to focus on some of the major features that would help understand all issues related to LRs from descriptive metadata to usability in key application, to the composition of various BLARKs for important technologies, to the legal/ethical/privacy issues, etc.

Regarding the inventory of existing resources, the project decided to join forces with ELRA and LREC2010 (the major conference on Language Resources and Evaluation) to conduct a survey on used LR&Ts within the work submitted for publication by the LREC authors. This is referred to as **LREC2010 Map** and aimed to collect description of resources mentioned in the submitted paper (resources used, developed, being produced, etc.). Such Map helped draw a picture of existing resources (in addition to the major data centres catalogues) but also monitor the evolution of the field in more detail over the years (compared to what has been reported upon in D2.1).

A study for identification of the problems occurring in using language resource and language technology standards and to identify emerging needs for future LRT standards (D4.1). Here, the approach chosen is based on studying existing documents related to LRT standards, to study existing LRT standards, to evaluate current implementations of these standards, to ask implementers about the problems they have identified in using such standards and to ask all LRT stakeholders about missing standards or other problems they see in this respect.

The third survey started, leading to D5.1, was centred on an investigation of the available methodologies, campaigns and services for evaluating and validating LRs.

Finally, a *survey of automatic production methods for LRs* (D6.1). This comprises a survey of the most demanded resources that are used as the core element of some NLP applications and an overview of the current techniques for automatic construction of LRs. The last academic proposals for automatic acquisition and production of LRs have been also reviewed, in order to confirm the interest that these topics raise in the community of researchers, and as the basic information to start a classification of methods and resources addressed.

4.2.1 LRE Map of Language Resources and Tools

FLaReNet, together with ELRA, has launched the LRE Map of Language Resources and Tools. The Map is an entirely new instrument for discovering, searching and documenting language resources, here intended in a broad sense, as both data and tools. The purpose of the LRE Map is to complement ongoing cataloguing efforts in order to enhance visibility for all resources, for all languages and intended applications.

In a nutshell, the Map is an integrated database of information about language resources coming from various sources, most notably from major conferences but also from the community itself.

Authors submitting a paper to one of the conferences that joined the initiative were asked to provide basic informative data about the resource that represent the background of their research. With only the data related to the LREC 2010 Conference, the Map already contained almost 2000 descriptions of resources. This was a sensational success, and the Map got an enthusiastic acceptance during LREC 2010, when it was presented.

Already before its official launch, the COLING 2010 conference agreed to adopt the initiative, and since then also EMNLP, ACL-HLT, RANLP, IJCNLP, Interspeech, Oriental COCOSDA Conferences and Springer Journal "*Language Resource and Evaluation*" (LRE) joined in.

This is a major achievement: this way, the Map will become an instrument used by all the major Conferences of the field. It will contribute not only to achieve massive documentation about resources, but also to seed a change of culture in the field, actively engaging each researcher in the documentation task about resources.

The LRE Map is publicly available[7] through a browsing interface that allows to interactively search for details on resources' uses, languages, availability etc. Editing and updating functionalities have been added for the second version, which was officially released in conjunction with LREC2012 Conference.

The idea is to make the Map become a repository of information about language resources and, at the same time, a community for users of resources, a place to share and discover resources, discuss opinions, provide feedback, discover new trends, etc.

4.2.2 Repository of standards, best practices and documentation and Standards Landscape

FLaReNet has promoted the creation of a shared repository with standards, best practices, data formats, annotations schemes/tools and documentation of most well-known language resources. These materials, easily accessible by everyone, are seen as a first step to overcome current problems in the production of language resources, thus enhancing efficiency, quality and interoperability and promoting standardization. This is an important concrete step in promoting standardisation and adoption of best-practices, in view of the needed interoperability among LRs and LT. The repository is accessible from the FLaReNet web site[8].

The Standards Landscape document proposes an overview of the current scene towards an Interoperability Framework and acts as a reference point for the current standards that the community fosters and encourages to adopt/improve. This initiative is in close synchronization with other relevant initiatives such as CLARIN, ELRA, ISO, TEI and META-SHARE. The main goal of this document is to give a practical orientation for various LT players, both commercial and academic; the main message being that a harmonized domain of language resources and technology can be achieved stepwise, but that an effort to adopt standards is necessary to overcome fragmentation. The document builds on the CLARIN Standardisation Action Plan and adapts and extends it to the needs of the broader LT Community, beyond the SSH research areas including industry.

4.2.3 Language Library

After the success of the LRE Map introduced in LREC 2010 – now used in many Conferences as a normal step in the submission procedure – FLaReNet and ELRA have launched for LREC2012 the LREC Language Library. The LREC Language Library is intended to be a collaborative enterprise of the LRT Community, an important contribution to the community-built Open Resource Infrastructure. An LREC Repository has been prepared, hosting a number of resources on all modalities (speech, text, images, etc.) in as many languages as possible. When submitting a paper, authors are invited to process some pieces of this data, in the language(s) of choice, in one

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[7] http://www.resourcebook.eu/LreMap

[8] http://www.flarenet.eu/?q=FLaReNet_Repository_of_Standards_and_Guidelines

or more of the possible dimensions addressed by the submission (e.g. POS-tag the data, extract/annotate named entities, annotate temporal information, disambiguate word senses, transcribe audio, etc.). The processed data are then put back in the Repository, part of the META-SHARE network, and will be made available to all the LREC participants before the conference, to be compared and analysed.

This collaborative work on annotation/transcription/extraction/… over the same data and on a large number of processing dimensions will set the ground for a large Language Library, linked to the LRE Map for the description of the data, where everyone can deposit/create processed data of any sort – all our "knowledge" about language.

4.2.4 Feedback from Contact Points on National Initiatives in the Area of Language Resources

A network of international FLaReNet Contact Points from 78 countries or regions was created In order to conduct a survey of the National and Transnational initiatives in the area of LRs. This is a wiki-based document that will be updated by the contact points. A meeting of the contact points will be gathered at LREC 2012, also to discuss the state of art of the field and future initiatives.

4.2.5 The FLaReNet Databook

The FLaReNet Databook has been collected in compliance with the FLaReNet commitment to provide a picture of the current state of the LRT field, believing that making all quantitative data available public and open to the community is of utmost importance.

The FLaReNet Databook is not only the collection of all the factual material collected during the activities of the project, but also a set of innovative initiatives and instruments that will remain in place for the continuous collection of such "facts".

4.3 Formulation of strategies and recommendations for the sector of Language Resources and Technologies

Activities belonging to this category broadly shared a common workflow: meetings and events were the privileged places where important issues emerged from the community and became broadly discussed. The Steering and Coordination Committees then performed a distillation of the major topics, also on the basis of (but not limiting to) the FLaReNet plan of activities. Finally, the topics distilled were delivered to the community and to the EC under the form of recommendations.

FLaReNet recommendations were issued in four phases: a) recommendations from the Vienna Event[9], b) the first Blueprint of Actions and Infrastructures (D8.2a)[10], c) the second Blueprint of Actions and Infrastructures (D8.2b)[11], and d) the FLaReNet Book "Language Resources for the Future – the Future of Language Resources"[12].

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[9] http://www.flarenet.eu/sites/default/files/Vienna09_Short_Report.pdf

[10] http://www.flarenet.eu/sites/default/files/D8.2a.pdf

[11] http://www.flarenet.eu/sites/default/files/D8.2b.pdf

[12] http://www.flarenet.eu/sites/default/files/FLaReNet_Book.pdf

4.3.1 FLaReNet Consultation activities

FLaReNet has sought the help of the entire community to develop recommendations and to identify their priority in the attempt to reflect the widest possible view. To this end, the recommendations gathered from meetings and events were organised and circulated among the FLaReNet subscribers under the form of a questionnaire that was launched online immediately before the FLaReNet Barcelona Forum in February 2010. The questionnaire was also sent in digital format to all FLaReNet subscribers and members/supporters. Replies helped structure the second release of recommendations (D8.2b) and they are described in detail in a dedicated Report[13].

4.3.2 Analysis activities

Within the various work packages, extensive effort was dedicated to build upon the survey activity carried out in the first year of the Network, with the purpose of deepening the knowledge of some key aspects related to Language Resources and Technology.

During the years, the following activities were carried out:

- An analysis of the various technical and organisational methods, techniques and models used by academic and industrial players in the area of Language Resources for building and maintaining resources was performed
- An identification of the most widespread standards, with a recommendation of the necessary steps for their harmonization and promotion
- An analysis of the factors behind sustainability of Language Resources, and the development of a sustainability model

In addition to these, two major surveying activities were aimed at identifying the national and transnational initiatives in the area of Language Resources and at reporting about the Language Resources needed for research investigations, and for technology development and evaluation in ICT and related applications.

4.3.3 Incubation of new ideas

While analysing the needs of the field for the formulation of recommendations, new ideas, of great significance for the field, emerged. Consensus has been gathered around them and their definition and first steps for their implementation have already started, by initiative of some FLaReNet partners.

We just mention here some of these new insights: the ISBN for LRs, the definition of an "impact factor" for LRs, the creation of a meta-body for a world-wide coordination of major policy and strategic initiatives. Not to mention the first strong message launched by FLaReNet since the beginning, i.e. the need of an Open Resource Infrastructure, which is becoming a reality through META-SHARE.

4.3.4 Formulation of recommendations

Final FLaReNet recommendations are contained in the so-called *Blueprint,* which is a synthesis of the discussions and activities of the three years of the FLaReNet project. Thanks to the participation of outstanding experts in the field, the content of this document can be considered as the **expression of the Language Resources community setting its own agenda** of future

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[13] http://www.flarenet.eu/sites/default/files/FLaReNet%20questionnaire%20results.pdf

actions to be undertaken **concerning a broad spectrum of dimensions related to Language Resources**[14].

Recognizing that the development of the sector of LTs is conditioned by various factors, all interested stakeholders need to operate seriously together and forge partnerships to push LTs. FLaReNet tackled this issue by bringing different stake-holders together, and having them discuss about several key topics, such as the lack of infrastructures for the domain, and try to foster joint plans, projects and roadmaps. Some early results are already visible: an EC funded Network of Excellence started in 2010 – META-NET – with one of its main goals being the design and set-up of an infrastructure for sharing language resources and technology at large – i.e. META-SHARE. This was the main recommendation of FLaReNet in its first year.

Together, and under the umbrella of a shared view of today's priorities, a future can be shaped in which full deployment of Language Resources and Technologies is consolidated through coordination of programs, actions and activities. While there has been considerable progress in technology developments in the last decade, the significant challenge of overcoming current fragmentation and imbalance inside the LTs community for all languages still remains an issue. Thanks to initiatives such as the FLaReNet project, this situation is now starting to be tackled and a new awareness is now spreading about the need and importance of joining forces and building a compact community.

The FLaReNet recommendations cover a broad range of topics and activities, spanning over production and use of language resources, licensing, maintenance and preservation issues, infrastructures for LRs, resource identification and sharing, evaluation and validation, interoperability and policy issues.

In principle, the addressees of this Blueprint belong to a large set of players and stakeholders in Language Technologies (LTs), ranging from individuals to research and education institutions, to policy-makers, funding agencies, SMEs and large companies, service and media providers. Its main goal is thus to serve as an instrument to support stakeholders in planning for and addressing the urgencies of the LRTs of the future. The recommendations contained in the present document should therefore be taken into account by any player, whether on a European, National, local, or private level, wishing to draft a program of activities for his/her own communities.

In the Blueprint, the various actions recommended are organised around nine dimensions that are relevant for the field of Language Resources: a) *Infrastructure*, b) *Documentation*, c) *Development*, d) *Interoperability*, e) *Coverage, Quality and Adequacy*, f) *Availability, Sharing and Distribution*, g) *Sustainability*, h) *Recognition* and i) *International cooperation*. Some of these dimensions are of a more infrastructural nature, some are more related to research and development, some yet more to political and strategic aspects, but they all must be seriously considered when making up a strategy for the future of the field. All of them eventually have an impact in the development and success of LRs, and represent the areas where actions need to be taken to make the field of Language Resources and Technologies grow.

It is useful to see the various dimensions as a coherent system where each one presupposes the other, so that action at one of the levels requires some other action to be taken at another one. For instance, open availability of data presupposes interoperability (which in turn is boosted by openness); to discover and develop new paradigms, and for data to be usefully exploited, the availability of large quantities of data requires the ability to link the information carried by data. Increased data quantity implies a change in their availability towards openness, etc.

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[14] According to the FLaReNet definition, Language Resources are all language data sets and basic tools.

Taken together, these directions are intended to contribute to the creation of **a sustainable LRT ecosystem.**

4.4   Cooperation activities

Recognising that strategic initiatives around LRs are necessarily of a global world-wide nature, FLaReNet has maintained regular cooperation activities with relevant projects and initiatives, both non-European and European, in order to establish a kind of global coordination of the LR field. In particular, regular relations have been established with PANACEA[15] (UE), CLARIN[16] (UE), LanguageGrid[17] (Japan), MultilingualWeb[18] (UE), T4ME/META-NET[19] (UE), SILT-Interop[20] (USA), Cyberling[21] (USA) and LanguageCommons[22] (USA).

Permanent connections have been established with major European and international organisations (such as AFNLP, ISO, Linguistic Data Consortium, AFNLP, COCOSDA, Oriental-COCOSDA, WRITE, TDIL[23], MAAYA[24], NHN[25], AFEKA, and Tubitak Uekae) in order to both elicit feedback and disseminate results and recommendations.

Thanks to the FLaReNet/ELRA LRE Map, cooperation in the field of documentation of Language Resources was also established with many important conferences and associations in the field of Language Resources, such as ACL, Interspeech, LREC2012, EAMT, LTC, RANLP, Oriental Cocosda, and IJCNLP.

Finally, future cooperation activities beyond the life span of the project are nurtured by the Network of National FLaReNet Contact Points, consisting of 105 experts from 34 countries or regions in the European Union (26 Member States and 6 regions), 9 non-EU European countries and 36 non-European countries.

4.5   Dissemination Activities

Communication and dissemination activities were central to FLaReNet.

Among the activities targeted at communication and dissemination we mention the following:

- information, promotion and presentation of the Network through the World Wide Web
- creation of a User Forum
- production of advertising material for the Network

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[15] http://www.panacea-lr.eu/

[16] http://www.clarin.eu

[17] http://langrid.nict.go.jp/en/index.html

[18] http://www.multilingualweb.eu/

[19] http://www.meta-net.eu/

[20] http://www.anc.org/SILT/

[21] http://elanguage.net/cyberling09/

[22] http://languagecommons.org/

[23] Technology Development for the Indian Language, India

[24] World Network for Linguistic Diversity

[25] National Human Language Technology Network, South Africa

- creation of leaflets for distribution at the major conferences and events of the sector
- participation in conferences, exhibitions and major events related to the main topics of the project
- publication of notes in electronic journals, bulletins and newsletters
- publication of papers at some major conferences
- organisation of co-located events in national and international conferences
- organisation of thematic workshops and FLaReNet events
- liaisons with research projects, associations, funding agencies, etc.
- contacts with government representatives.

Details about the activities mentioned above can be found in Section 6.

5 Impact and Sustainability

Since its very beginning, FLaReNet has recognised the need of overcoming the European dimension for a truly incisive footprint to be left. Although the main scenario of intervention is - and has to remain - European, a global dimension is to be taken into consideration when planning and designing the future of Language Resources and Technologies. The issue of International Cooperation has been among the most prominent ones of the FLaReNet project, and a considerable number of events were dedicated to discussing future policies and priorities in a worldwide context. For a growth of the field to take place, a common effort that tries to look for synergies and to overcome fragmentation is needed.

It is an achievement, and an opportunity for our field, that recently a number of strategic-infrastructural initiatives have started, or are going to start, all over the world. This is also a sign that funding agencies recognise the strategic value of our field and the importance of helping a coherent growth also through a number of coordinated actions.

FLaReNet has carried out a capillary work through which hot topics such as the need for sharing language resources, for making data and tools open and interoperable, for documenting resources and tools, and others have been spread over in the community. Over the years, these themes have become more prominent and higher in researchers' priorities than they were three years ago, when the project started. The series of the FLaReNet Forums has represented an amplifier for these themes, which could thus reach a wider audience, also by means of the involvement of experts coming from neighbouring fields.

The impact of FLaReNet in the field can be perceived by a number of indicators: the broad coverage of European and International players involved in the Network, the width of National contact points network, the success of initiatives organised by FLaReNet and actively involving the community at large, the resonance obtained by the series of FLaReNet Forums.

The main assets of FLaReNet can be briefly summarised as

a) the community

b) fieldwork towards discovery and documentation of relevant facts and figures concerning the field of Language Resources and Technology at large and

c) the resulting set of recommended priority actions that would foster further development of the sector.

These assets need to be sustained so as not to lose momentum and not to waste the opportunity offered by having set up and completed the project. FLaReNet has envisaged a number of different directions for sustaining its main results.

As far as the FLaReNet Community is concerned (see section 3.1), this is an important heritage that needs to be nurtured and maintained. A portion of the FLaReNet subscribers has also adhered to the META-NET initiative, so that the two sets of members partially overlap. However, to ensure continuity and maintain its particular asset of being a sub-community specifically related to language resources, an agreement with the ELRA Board for exploitation of FLaReNet members is underway and will be shortly discussed at the ELRA General Assembly.

The FLaReNet fieldwork has gathered and revealed a set of facts and figures concerning the field of LRT (existing language resources, their production models, current and existing activities in the various countries, the gaps wrt. resources and technologies, a panorama of existing standards and plans for their adoption, etc.). These will soon be obsolete if no update is taken up after the projects ends. Having considered this, FLaReNet has believed and invested in new instruments for community-based documentation efforts that are supposed to become (at least partially) self-sustainable after appropriate fostering measures will have been adopted.

This is the case, for instance, of the LRE Map, for the discovery and documentation of language resources. Considerable dissemination efforts have been made by FLaReNet to spread notion and awareness in the community that documentation of language resources is an endeavour to be responsibly undertaken by every researcher, user or producer of a language resource. By putting documentation of language resources into the very hands of those who use them, a difference can be made. Actually, the sheer success of the LRE Map in rapidly gathering information about language resources and the accuracy of this information (far exceeding that of other catalogues) is nothing but a confirmation of the validity of a community-based documentation model. The Language Library (see 4.2.3) adopts a similar approach in the attempt to build a deposit containing all our "knowledge" about language by massive accumulation of processed data of any sort, constructed in a collaborative manner.

The very same philosophy has been applied to the collection of information related to on-going projects and initiatives in the LRT field in the various countries to which the FLaReNet National Contact Points belong. Collection of this information has been promoted by means of wiki-like methods, so that this is becoming a cooperative enterprise. Also the continuation of this initiative is being discussed within ELRA.

A meta-body could be envisaged for sustaining global strategies in the LRT sector. This is one of the recommendations of FLaReNet and is being discussed inside ELRA.

However, since the explicit goal of FLaReNet was the development of recommendations targeting funding agencies, the true impact of the project can only be measured on the long run, if and when these recommendations will be adopted by policy makers and to what extent they will be realised.

6 Further Information

6.1 FLaReNet Annual Events

- FLaReNet Launching Event – "The European Language Resources and Technologies Forum: Shaping the Future of the Multilingual Digital Europe", Vienna, Austria, Österreichische Akademie der Wissenschaften (Austrian Academy of Sciences), 12-13 February 2009.
- Second FLaReNet Forum - "Language Resources of the Future – the Future of Language Resources", Barcelona, Spain, Institut d'Estudis Catalans, 11-12 February 2010
- Third FLaReNet Forum – "Language Resources in the Sharing Age – The Strategic Agenda", Venezia, Italy, Ca' Foscari University, 26-27 May 2011

6.2 Panels

- Panel "ALR and FLaReNet", Singapore, 7 August 2009.
- FLaReNet / SILT Workshop and Panel on Semantic Annotation, Pisa, Italy, 17 September 2009
- CLARIN / FLaReNet LTC Panel Debate "How to make standards attractive = how to make attractive standards?", Poznan, Poland, 7 September 2009
- SILT, FLaReNet and Asian Collaboration for Interoperability of Language Resources, Hong Kong, Hong Kong SAR, 18 January 2010

6.3 Co-organised events

- FLaReNet-INTEROP Meeting, Pisa (Italy), Istituto di Linguistica Computazionale del CNR, 22 September 2008
- CLARIN / FLaReNet Workshop on Usage Scenario, Athens, Greece, 4-5 April 2009
- FLaReNet-SILT Meeting, Boulder, Colorado, USA, 30 May 2009
- FLaReNet-CLARIN Meeting for the development of an Action Plan on Standards, Berlin, Germany, 11 July 2009.
- FLaReNet / SILT Workshop on Lexicon-Ontology Relationship, Pisa, Italy, 19 September 2009
- FLaReNet / CLARIN Workshop on Standards at NEERI 2009, Helsinki, Finland, 30 September 2009
- SILT / FLaReNet Workshop "Toward an Operational Definition of Interoperability for Language Technology", Waltham, Massachussets, USA, 1-2 November 2009
- Joint LTC / FLaReNet Satellite Workshop "LRL 2009 - «Getting Less-Resourced Languages On-Board!»", Poznan, Poland, 5 November 2009
- FLaReNet / Language Grid Meeting, Pisa, Italy, 24-25 November 2009
- CLARIN and FLaReNet workshop "Best practices for speech and multimodal databases" , Stockholm, Sweden, 25-26 November
- FLaReNet / Language Grid Meeting, Barcelona, Spain, 13 February 2010
- LREC 2010 Workshop on Methods for the automatic acquisition of Language Resources and their evaluation methods, La Valletta, Malta, 23 May 2010
- LREC 2010 FLaReNet-COCOSDA-WRITE Workshop on Language Technology issues for International Cooperation, La Valletta, Malta, 25 May 2010

- LREC 2010 [Workshop on Legal Issues for Sharing Language Resources (LISLR): Constraints and Best Practices](), La Valletta, Malta, 17 May 2010
- [LRT Standards Workshop](), La Valletta, Malta, 18 May 2010.
- [Workshop on Language Resources, Technology and Services in the Sharing Paradigm](), co-organised by FLaReNet, Language Grid and META-SHARE in connection with IJCNLP 2011, Chiang Mai, Thailand, 12 November 2011
- [LRL 2011 - "Addressing the Gaps in Language Resources and Technologies"](), a Joint LTC / ELRA / FLaReNet / META_NET Workshop organized in conjunction with LTC '11 (an event endorsed by FLaReNet), Poznan, Poland, 25 November 2011

6.4   Presentations

1. N. Calzolari, [FLaReNet Presentation]() at the *International Conference on Language and Speech Technology "LangTech 2008"*, Rome, Italy, 28-29 February 2008
2. N. Calzolari and J. Mariani, [FLaReNet Presentation and mention in the concluding remarks]() at the *LREC 2008 COCOSDA / WRITE Workshop*, Marrakech, Morocco, 01 June 2008
3. N. Calzolari, [FLaReNet Invited Talk]() at the *ULA Workshop 2008*, Boulder, Colorado, USA, 18-20 March 2008
4. N. Calzolari, [FLaReNet Presentation]() at *AI*IA 2008*, Cagliari, Italy, 11-13 September 2008
5. J. Mariani, Recommendation for cooperation with FLaReNet at the *NecTec International Advisory Committee* meeting, Bangkok, Thailand, 22-23 September 2008
6. J. Mariani and N. Calzolari, Recommendation for participation in FLaReNet at the Austrian Academy Corpus Advisory Committee meeting, Vienna, Austria, 17-18 November 2008
7. N. Calzolari, [FLaReNet Presentation]() at the *Giornata Informativa sui Programmi TAL inseriti nel 7° Programma Quadro*, Roma, Italy, 03 February 2009
8. N. Calzolari, [FLaReNet invited talk]() at [ALRS 2009](), Phuket, Thailand, 20-21 March 2009
9. N. Bel, FLaReNet presentation, [Jornada del Processament Computacional del Català]() – Barcelona, Spain, 26 March 2009
10. N. Calzolari, "From PAROLE to FLaReNet and beyond", [PAROLE Consortium Workshop "New Horizons for Linguistic Resources in a Global Context"](), Barcelona, Spain, 07-08 July 2009
11. G. Budin, [FLaReNet presentation]() at "LISA@Berkeley Globalization Conference: Language – Society – Technology", Berkeley, California, USA, 03-05 August 2009
12. N. Calzolari, [representing FLaReNet]() at the Panel on "Asian Language Resources and FLaReNet", [7th Workshop on Asian Language Resources]() in conjunction with [ACL-IJCNLP 2009](), Singapore, 07 August 2009
13. N. Bel, Presentation of FLaReNet at the *Annual Meeting of the Sociedad Española de Procesamiento del Lenguaje Natural*, 8-10 September 2009
14. N. Calzolari. Presentation of FLaReNet as a Chair of the *FLaReNet/SILT Panel on Semantic Annotation*, GL2009 Conference, Pisa, Italy, 17 September 2009
15. N. Calzolari, Introduction of the *[FLaReNet / SILT Workshop "Toward an Operational Definition of Interoperability for Language Technology"]()*, Brandeis University, Waltham, MA, USA, 1-2 November 2009
16. N. Calzolari. Presentation of FLaReNet at the *NSF Workshop on Content of Linguistic Annotation Standards and Practices (CLASP)*, New York, USA, 7 November 2009
17. J. Mariani, Introduction of the *"Getting Less-Resourced Languages on-Board" Workshop*, LTC'09 Conference, Poznan, 6 November 2009
18. K. Choukri, Conclusion of the *"Getting Less-Resourced Languages on-Board" Workshop*, LTC'09 Conference, Poznan, 6 November 2009

19. N. Calzolari, "SILT, FLaReNet and Asian Collaboration for Interoperability of Language Resources". Invited Talk at the *ICGL Panel SILT, FLaReNet and Asian Collaboration for Interoperability of Language Resources*, Hong Kong, 18 January 2010

20. N. Bel, Presentation of FLaReNet at the *1st International Sketch Grammar Workshop*, 3-4 February 2010

21. N. Calzolari, Invited Presentation at the 2010 Meeting of the Open Linguistic Data Working Group, Harvard University 20-21 March 2010

22. C. Soria, "Preparing the field for an Open and Distributed Resource Infrastructure: the role of the FLaReNet Network", presentation at LREC 2010, La Valletta, Malta, 20 May 2010

23. N. Calzolari. Presentation of FLaReNet at the Workshop T11d - "Multi-lingualism and Cross-lingual Communication: How China and Europe can learn from each other", organized in the framework of the 3rd Biennial Meeting of the China-Europa Forum, Hong Kong, Hong Kong SAR, 8-9 July 2010

24. N. Calzolari. Presentation of FLaReNet at ESU 2010 "Culture & Technology", Leipzig, Germany, 26-28 July 2010

25. N. Calzolari, Opening of the Forum. Presentation held at the third FLaReNet Forum "Language Resources in the Sharing Age - the Strategic Agenda", Venezia, Italy, 26 May 2011

26. N. Calzolari, C. Soria, "The FLaReNet Recommendations". Presentation held at the third FLaReNet Forum "Language Resources in the Sharing Age - the Strategic Agenda", Venezia, Italy, 26 May 2011

27. J. Mariani, Introduction to Session 1: Identification and tracking of Language Resources. Presentation held at the third FLaReNet Forum "Language Resources in the Sharing Age - the Strategic Agenda", Venezia, Italy, 26 May 2011

28. C. Soria, *"*Capturing Community Knowledge of LRs: the LRE Map*"*. Presentation held at the third FLaReNet Forum "Language Resources in the Sharing Age - the Strategic Agenda", Venezia, Italy, 26 May 2011

29. J. Mariani, *"*A journey from LRE Map to Language Matrixes*"*. Presentation held at the third FLaReNet Forum "Language Resources in the Sharing Age - the Strategic Agenda", Venezia, Italy, 26 May 2011

30. K. Choukri, *"*Proposal for the International Language Resource Number". Presentation held at the third FLaReNet Forum "Language Resources in the Sharing Age - the Strategic Agenda", Venezia, Italy, 26 May 2011

31. N. Calzolari, "Opening the Language Library: let's build it together!". Presentation held at the third FLaReNet Forum "Language Resources in the Sharing Age - the Strategic Agenda", Venezia, Italy, 26 May 2011

32. S. Piperidis, Introduction to Session 3: Go green: reuse, repurpose and recycle resources. Presentation held at the third FLaReNet Forum "Language Resources in the Sharing Age - the Strategic Agenda", Venezia, Italy, 26 May 2011

33. J. Odijk, Introduction to Session 4: Innovation needs data. Presentation held at the third FLaReNet Forum "Language Resources in the Sharing Age - the Strategic Agenda", Venezia, Italy, 27 May 2011

34. N. Bel, Introduction to Session 5: Data for all languages: think big. Presentation held at the third FLaReNet Forum "Language Resources in the Sharing Age - the Strategic Agenda", Venezia, Italy, 27 May 2011

35. J. Mariani, C. Soria, "Identifying and networking forces: an international panorama". Presentation held at the third FLaReNet Forum "Language Resources in the Sharing Age - the Strategic Agenda", Venezia, Italy, 27 May 2011

36. K. Choukri, Introduction to Session 6: Long life to our resources. Presentation held at the third FLaReNet Forum "Language Resources in the Sharing Age - the Strategic Agenda", Venezia, Italy, 27 May 2011

37. N. Calzolari, "Community Endorsement of the FLaReNet Recommendations". Presentation held at the third FLaReNet Forum "Language Resources in the Sharing Age - the Strategic Agenda", Venezia, Italy, 27 May 2011

38. N. Calzolari and J. Mariani. "The FLaReNet Community: the Way Forward". Presentation held at the third FLaReNet Forum "Language Resources in the Sharing Age - the Strategic Agenda", Venezia, Italy, 27 May 2011

39. A poster describing the FLaReNet project was presented during META-Forum, Budapest, Hungary, 27-28 June 2011

40. A poster describing the FLaReNet LRE Map was presented during META-Forum, Budapest, Hungary, 27-28 June 2011

41. N. Calzolari, "Fostering Language Resources Network – The FLaReNet European Network". Presentation given at the Workshop on Multimedia Information Processing, Paris, France, 5-6 July 2011.

6.5   Publications

1. N. Calzolari, 2008. "Approaches towards a "Lexical Web": the role of Interoperability". In N. Ide, A. C. Fang (eds.), *ICGL 2008, The First International Conference on Global Interoperability for Language Resources*. City University of Hong Kong, pp. 34-42

2. N. Calzolari, 2008. "New European Infrastructural and Networking Initiatives". In C. Delogu (ed.), *LangTech 2008*, Rome, p.19

3. N. Calzolari, 2008. "Initiatives, Tendencies and Driving Forces for a "Lexical Web" as Part of a "Language Infrastructure"". In T. Tokunaga, A. Ortega (eds.), *Large-Scale Knowledge Resources. Series: Lecture Notes in Computer Science*, Vol. 4938/2008, Springer, pp. 90-105

4. J. Mariani, 2008. "Les technologies de la langue en soutien au Multilinguisme", *Proceedings Congrès Mondial sur la Traduction Spécialisée*, La Havane, 08-09 December 2008

5. M. Monachini, C. Soria, N. Calzolari, 2008. "The Lexical Grid: Lexical Resources in Language Infrastructures". Language Grid Final Deliverable. ILC-ARC/STA-3. Pisa

6. N. Calzolari, P. Baroni, N. Bel, G. Budin, K. Choukri, S. Goggi, J. Mariani, M. Monachini, J. Odijk, S. Piperidis, V. Quochi, C. Soria, A. Toral, (Eds.) 2009. *Proceedings for the FLaReNet Forum "The European Language Resources and Technologies Forum: Shaping the Future of the Multilingual Digital Europe"*. Istituto di Linguistica Computazionale del CNR, Pisa, Italy

7. Calzolari, N., Baroni, P., Bel, N., Budin, G., Choukri, K., Goggi, S., Mariani, J., Monachini, M., Odijk, J., Piperidis, S., Quochi, V., Soria, C., Toral, A. 2009. *The European Language Resources and Technologies Forum "Shaping the Future of the Multilingual Digital Europe"*. Extended Report. Istituto di Linguistica Computazionale del CNR, Pisa, Italy

8. N. Calzolari, P. Baroni, N. Bel, G. Budin, K. Choukri, S. Goggi, J. Mariani, M. Monachini, J. Odijk, S. Piperidis, V. Quochi, C. Soria, A. Toral. 2009. *The European Language Resources and Technologies Forum "Shaping the Future of the Multilingual Digital Europe"*. Short Report. Istituto di Linguistica Computazionale del CNR, Pisa, Italy

9. N. Calzolari, 2009. "FLaReNet: Shaping the Future of a Multilingual Digital Europe", *ERCIM News 77* (April 2009)

10. N. Calzolari, C. Soria, 2009. "The FLaReNet Thematic Network: a Global Forum for Cooperation", 7th Workshop on Asian Language Resources in conjunction with ACL-IJCNLP 2009 - Singapore (SG), 7 August 2009

11. N. Ide, J. Pustejovsky, N. Calzolari, C. Soria, 2009. "The SILT and FLaReNet International Collaboration for Interoperability", 3rd Linguistic Annotation Workshop in conjunction with ACL-IJCNLP 2009 - Singapore (SG), 6 August 2009

12. N. Bel, N. Calzolari, 2009. "Fostering Language Resources Network, FLaReNet". *Procesamiento del Lenguaje Natural* 43. Alicante: Sociedad Española para el Procesamiento del Lenguaje Natural, Univ. de Alicante, Dep. Lenguajes y Sistemas Informáticos. Pp. 383-384. ISSN 1135-5948

13. N. Calzolari, C. Soria, 2010. "Preparing the field for an Open Resource Infrastructure: the role of the FLaReNet Network ", in N. Calzolari, B. Maegaard, J. Mariani, J. Odijk, S. Piperidis, M. Rosner, D. Tapias (Eds.), *Proceedings of LREC 2010 - 7th International Conference on Language Resources and Evaluation (Valletta, Malta, 17-23 May 2010)*, European Language Resources Association (ELRA), pp. 1295-1300

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15. N. Calzolari, P. Baroni, M. Monachini, C. Soria, (Eds.), *Proceedings of "The 2nd European Language Resources and Technologies Forum: Language Resources of the future - the future of Language Resources"* (Barcelona, 11-12 February 2010), 120 pp., ILC-CNR

16. N. Calzolari, C. Soria, 2010. "Planning the future of Language Resources: the role of the FLaReNet Network". In A. Gelbukh (ed.), Computational Linguistics and Intelligent Text Processing, LNCS 6008. Springer, pp. 1-11

17. N. Calzolari, C. Soria, R. Del Gratta, 2010. "The LREC 2010 Map of Language Resources and Tools", CLARIN Newsletter No. 9-10, pp. 10-11

18. C. Cieri, K. Choukri, N. Calzolari, T.D. Langendoen, J. Leveling, M. Palmer, N. Ide, J. Pustejovsky, 2010. "A Road Map for Interoperable Language Resource Metadata", in N. Calzolari, B. Maegaard, J. Mariani, J. Odijk, S. Piperidis, M. Rosner, D. Tapias (Eds.), *Proceedings of LREC 2010 - 7th International Conference on Language Resources and Evaluation (Valletta, Malta, 17-23 May 2010)*, European Language Resources Association (ELRA), 2010, pp. 2506-2509

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25. K. Choukri, J. Park, O. Hamon, V. Arranz, to appear. "Proposal for the International Standard Language Resource Number", to appear in the proceedings of the Language Resources, Technology and Services in the Sharing Paradigm workshop at IJCNLP 2011, 12 November 2011

26. J. Mariani, 2011. Introduction of the "Identification and Tracking of Language Resources" session, in Proceedings of the 3rd FLaReNet Forum "Language Resources in the Sharing Age - the Strategic Agenda", Venezia, Italy, 26-27 May 2011

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28. J. Mariani, C. Soria, 2011. "Identifying and networking forces: an international panorama", in Proceedings of the 3rd FLaReNet Forum "Language Resources in the Sharing Age - the Strategic Agenda", Venezia, Italy, 26-27 May 2011

29. J. Mariani, C. Soria, P. Baroni, N. Calzolari, 2011. Survey of the National and Transnational Initiatives in the Area of Language Resources, FLaReNet Wiki, June 2011

30. J. Odijk, A. van Hessen, to appear. "Sharing Resources in CLARIN-NL', to appear in the proceedings of the Language Resources, Technology and Services in the Sharing Paradigm workshop at IJCNLP 2011, 12 November 2011

31. N. Calzolari, C. Soria (eds.) Submitted. "Language Resources of the future – The future of Language Resources. The Strategic Research Agenda". Cambridge Studies in Natural Language Processing, Cambridge University Press

32. N. Calzolari, R. Del Gratta, F. Frontini, I. Russo, 2011. "The Language Library: Many Layers, More Knowledge". *Proceedings of Workshop on Language Resources, Technology and Services in the Sharing Paradigm*, Chiang Mai, Thailand, November 12, 2011, pages 93–97.

6.6 *Other dissemination activities*

1. Joseph Mariani: mention of FLaReNet at the "Etats-Généraux du Multilinguisme" organized by the French Presidency of the European Union, Paris, France, 26 September 2008

2. Mention of FLaReNet to EC ICT event in Lyon and to the Language Technology (ICT 2008, 25-27 November 2008, Lyon, France, Europe's Information Society), connections with other initiatives, e.g. MEDAR;

3. Joseph Mariani: mention of FLaReNet at the Quaero CTC Workshop, Paris, France, 13 October 2008

4. Joseph Mariani: mention of FLaReNet in his Invited Talk at the World Congress of Specialized Translation, La Habana, Cuba, 08-09 December 2008

5. Joseph Mariani: mention of FLaReNet in his Invited Talk at the International Forum for Multilingualism, Bamako, Mali, 19-21 January 2009

6. Jan Odijk: mention of FLaReNet at STEVIN Board Meeting, Brussels, Belgium, 26 January 2009

7. Jan Odijk: mention of FLaReNet at STEVIN PC Meeting, Roosendaal, The Netherlands, 18 February 2009

8. Khalid Choukri: mention of FLaReNet at the 2nd International Conference on Arabic Language Resources and Tools, Cairo, Egypt, 22-23 April 2009

9. Joseph Mariani: mention of FLaReNet in his invited talk at the "Forum des Droits sur l'Internet", Paris, France, 23 April 2009

10. Nicoletta Calzolari: mention of FLaReNet at Translingual Europe, Prague, Czech Republic, 13-14 May 2009

11. Nicoletta Calzolari: mention of FLaReNet at the Forum TAL, Rome, Italy, 18 May 2009

12. Joseph Mariani: mention of FLaReNet in his invited talk at the DGA/DET/CEP (DoD) Seminar, Paris, France, 30 June – 1 July 2009

13. Joseph Mariani: mention of FLaReNet in his invited talk at the PAROLE Consortium Workshop "New Horizons for Linguistic Resources in a Global Context", Barcelona, Spain, 07-08 July 2009

14. Monica Monachini: : mention of FLaReNet in her invited talk "A 15-year journey in Standards for Lexical Resources", PAROLE Consortium Workshop "New Horizons for Linguistic Resources in a Global Context", Barcelona, Spain, 07-08 July 2009

15. Nicoletta Calzolari: mention of FLaReNet at Cyberling 2009 Workshop, Berkeley, California, USA, 17-19 July 2009

16. Nicoletta Calzolari, "Standards: strength and limitations". Presentation given at the FLaReNet-CLARIN Standards Event at NEERI09, Helsinki, Finland, 30 September 2009

17. Stelios Piperidis, "Individual and collective intelligence in language resources development: Normative and social approaches" [in Greek]. Invited Talk at the 7th Conference «Hellenic Language and Terminology», 22-24 October 2009, Athens, Greece

18. Jan Odijk, "Data Categories and ISOCAT: some remarks from a simple linguist". Presentation held at FLaReNet/CLARIN Standards Workshop, Helsinki, September 27, 2009 [pdf]

19. Jan Odijk, "Data Categories and their Semantics". Presentation held at the SILT/FLaReNet Workshop, Brandeis University, Waltham, USA, November 1, 2009 [pdf]

20. Jan Odijk et al., "Data Categories and their Semantics: Summary". Presentation held at the SILT/FLaReNet Workshop, Brandeis University, Waltham, USA, 2 November 2009 [pdf]

21. Steven Krauwer, "CLARIN and FLaReNet workshop in Stockholm: Introduction". Presentation held at the CLARIN and FLaReNet workshop "Best practices for speech and multimodal databases", KTH Stockholm 25-26 November 2009

22. Joseph Mariani, "Language Technology Infrastructures in support to Multilingualism". Keynote Speech at the 3rd International Universal Communication Symposium (IUCS 2009), Tokyo, Japan, 3-4 December 2009

23. Joseph Mariani further mentioned FLaReNet at the IWSLT'09 conference (Tokyo, Japan, 1-2 December 2009) and at the Interspeech'09 conference (Brighton, UK, 7-11 September 2009)

24. Jan Odijk, "Relations between Data Categories". Presentation held at the CLARIN Relation Registry Workshop, MPI, Nijmegen, January 8, 2010 [ppt]

25. Nicoletta Calzolari, "From a "vision" to concrete actions: for an Open Resource Infrastructure". Invited Talk at the ICGL Panel "When nice people don't share - 'shy' data, Web APIs, and beyond", Hong Kong, 19 January 2010

26. Nicoletta Calzolari mentioned FLaReNet while presenting MetaShare at the LT days 22-23 March 2010, http://cordis.europa.eu/fp7/ict/language-technologies/home_en.html_

27. Jan Odijk mentioned FLaReNet at CLIN 2010 (Utrecht, 5 February 2010) and at various STEVIN and CLARIN-NL meetings. On these occasions, researchers from the Netherlands and Flanders were pointed out the existence of FLaReNet and its goals, meetings it organizes (e.g. FLaReNet Forum) and how researchers can contribute to them

28. Nicoletta Calzolari mentioned FLaReNet while presenting MetaShare at the LT days 22-23 March 2010

29. Jan Odijk mentioned FLaReNet at various STEVIN and CLARIN-NL meetings. On these occasions, researchers from the Netherlands and Flanders were pointed out the existence of

FLaReNet and its goals, meetings it organizes (e.g. FLaReNet Forum) and how researchers can contribute to them

30. Stelios Piperidis mentioned FLaReNet during the Special Session - Panel discussion on "Research data and their sharing" , Sixth Hellenic Conference on Artificial Intelligence, Athens, Greece, 7 May 2010 http://www.setn2010.gr/resdata

31. Nicoletta Calzolari mentioned FLaReNet and its role in the development of the LREC Map during the Conference Opening Talk, La Valletta, Malta, 18 May 2010

32. Jan Odijk, "The CLARIN-NL Project", Presentation held at LREC 2010, Valletta, Malta, 19 May 2010

33. Jan Odijk, "CLARIN-NL: Language Resources and Technology Infrastructure for the Humanities in the Netherlands", presentation held at the NO-CLARIN Meeting, Oslo, 18 June 2010

34. J. Mariani, "Speech and Language Technology Frameworks in the European Research Area", MULTISAUND Seminar, Istanbul, 16-18 June 2010

35. J. Mariani, "Language Resources and Evaluation in Europe: A Historical Perspective", DGA Speech, Language and Multimedia Document Processing Seminar, Paris, 6-7 July 2010

36. Nicoletta Calzolari mentioned FLaReNet at the RELISH Workshop on Lexicon Tools and Lexicon Standards, Nijmegen, The Netherlands, 4-5 August 2010

37. Nicoletta Calzolari mentioned FLaReNet while presenting the LRE Map at COLING2010, Beijing, China, 23 August 2010

38. N. Calzolari, "Language Resources for Language Technologies: a Success Story". Presentation given at *Jornadas de Lingüística y Cognición*, Cádiz, Spain, 29-31 March 2011

39. K. Choukri, "Language Resources for Translation and Multilingual Technologies", in Proceedings of the *Tralogy 2011 Conference*, Paris, France, 3-4 March 2011

40. K. Choukri, "L'expérience des organismes qui gèrent et collectent des ressources langagières", Presentation held at the *Séminaire AFCP "Aspects éthiques et juridiques des corpus oraux"*, Lyon, France, 10 May 2011

41. N. Froeliger, A. Kowalska, J. Mariani, J.F. Nomine, C. Subra-Itsutsuji, A. Wallon (eds.), "Translation Careers and Technologies: Convergence Points for the Future", in *Proceedings of the Tralogy Conference*, Paris, France, 3-4 March 2011

42. J. Mariani, B. Magnini, Introduction, *the 3rd Interactive Systems Vision Group Seminar*, Rotterdam, Netherlands, 28 March 2011

43. J. Mariani, LT 2020 Vision Paper: The Future European Multilingual Information Society, *Multisaund Seminar*, Bursa, Turkey, 13-14 June 2011

44. J. Mariani, European Activities in Language Technology, in the perspective of FP8, *Speech Processing Conference*, Tel Aviv, Israel, 21-22 June 2011.

45. J. Mariani, Ethical Dimension of Crowdsourcing, Participation in the "Crowdsourcing" Panel Session, *Interspeech'2011*, Florence, Italy, 28-31 August 2011

46. J. Odijk, "CLARIN-NL Call 3" and "Requirements and desiderata". Presentations held at the *Call 3 information session*, Utrecht, Netherlands, 25 August 2011

47. J. Odijk, "Introduction to Language and Speech Technology", presentations held at the *LOT Winterschool*, Amsterdam, Netherlands, January, 2011

48. J. Odijk, 'Linguistic Research in the CLARIN Infrastructure', presentation for the KNAW eHumanities Workshop, NIAS, Wassenaar, 29 March 2011. Abstract contained in eHumanities Brainstorm Booklet

49. J. Odijk, 'User Scenario Search', internal CLARIN-NL document, 13 April 2011

50. S. Piperidis, "On the way to Language Resources sharing: principles, challenges, solutions", 2nd W3C Workshop: Content on the Multilingual Web, Pisa (Italy), 4-5 April 2011

51. N. Calzolari, "Language Resources for Language Technologies: a Success Story". Presentation given to the Ubiquitous Knowledge Processing (UKP) Lab, TU Darmstadt, Darmstadt, Germany, 9 September 2011
52. N. Calzolari, "Opening the Language Library at LREC 2012 – Let's build it together!". Presentation at New York Workshop on Collaborative Annotation, 7-8 October 2011 and at CLT Workshop, Gotheborg, Sweden, 3-4 October
53. FLaReNet was also mentioned during informal discussions between WP2 leader, Khalid Choukri, and various LR stakeholders during EAMT-2011 Conference[26] (Leuven, Belgium, 30-31 May), META-Forum 2011[27] (Budapest, Hungary, 27-28 June), Speechtek 2011[28] (New York, USA, 8-10 August) and Interspeech 2011[29] (Florence, Italy, 27-31 August).

6.7 Collaboration relationships

6.7.1 With international associations, consortia, bodies

FLaReNet entertains relationships with the following organisations:
- COCOSDA (Coordinating Committee on Speech Databases and speech input/output systems Assessment)[30]
- Oriental COCOSDA (Oriental chapter of Cocosda)
- LDC, Linguistic Data Consortium
- ISO, International Standardisation Organisation
- the European Multimedia Forum, represented by Margaretha Mazura
- the International Association of Specialized Translators
- ACALAN (African Linguists Association)
- Union Latine
- Funderes
- Linguamón
- Observatoire Européen du Plurilinguisme (OEP)
- Ambassador W. Lichem at the International Forum on Multingualism
- AFNLP (Asian Federation for Natural Language Processing)
- ISCA (International Speech Communication Association)[31]
- TDIL (Technology Development for the Indian Language) program (India)[32]
- MAAYA (World Network for Linguistic Diversity)[33]
- Alt-I (African Languages Technology Initiative, Nigeria)[34]
- MultiMedia University (Malaysia)[35]
- Tubitak Uekae, The Scientific and Technological Research Council of Turkey[36]
- National Human Language Technology Network (NHN)

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[26] http://www.ccl.kuleuven.be/EAMT2011/
[27] http://www.meta-net.eu/events/meta-forum-2011/
[28] http://www.speechtek.com/2011/
[29] http://www.interspeech2011.org/
30 http://www.cocosda.org/
31 http://www.isca-speech.org/iscaweb/
32 http://tdil.mit.gov.in/
33 http://www.maayajo.org/
34 http://www.alt-i.org/
35 http://www.mmu.edu.my/
36 http://www.tubitak.gov.tr/

- COLING, EMNLP, ACL, NAACL, IJCNLP, Interspeech, LREC2012, EAMT, LTC, and RANLP for use of the LRE Map
- W3C

6.7.2   With funding bodies and government institutions

- *NSF*, represented by Tanya Korelsky, by the Coordinator during LREC 2008 (Marrakech, May 2008)
- President of *CNIPA* (Roma, February 2009)
- Indian *TDIL* initiative, with Rajeev Sangal
- Directorate General for Interpretation and Conferences in the European Parliament
- NecTec International Advisory Committee meeting (Bangkok, 22-23/09/2008)
- Delegation for the French Language(s) (DGLF2)
- the French Ministry of Industry interministerial Working Group on Translation
- Vice-President of the European Parliament and the Portuguese Minister of Culture
- with the EC Delegate for Multilingualism in Paris (Alain Wallon)
- the French Direction Générale à l'Armement of the Ministry of Defense (Edouard Geoffrois)
- and Direction Générale de la Sécurité Extérieure of the Ministry of Defense (Didier Juvin)
- the Agence Nationale de la Recherche (ANR) head of the ICT sector (Bertrand Braunschweig)
- the Pilot Committee for multilingualism in the Euro-mediterranean program (Chair: Bernard Samy) at the French Ministry of Economy, Industry and Finance (MinEFI), with the DGLF2 (General Delegation for the French Language and for Languages spoken in France) of the Ministry of Culture, now Interministerial Delegation (DILF2) (General Delegate: Xavier North, Chargée de mission: Florence Gendrier)
- the Ministry of Research and Higher Education (participation in a study group on Research Infrastructure (TGIR) (Laurent Desbat) and in a study group on the preparation with FP8 (Alain Brenac, Alain Michard), together with the Ministry of Industry (Patrick Schouller)
- with the Ministry of Industry
- with the CNRS Ethics Committee

6.8   Endorsed events

1. The 7th Workshop on Asian Language Resources (in conjunction with ACL-IJCNLP), Singapore, 6-7 August 2009
2. The [4th Language & Technology Conference "Human Language Technologies as a Challenge for Computer Science and Linguistics"](), Poznan, Poland, 6-8 November 2009
3. The [1st Europe-Asia Spoken Dialogue Systems Technology Workshop]() easDS, Kloster Irsee, Germany, 9-11 December 2009.
4. [Workshop on Adaptation of Language Resources and Technology to New Domains](), Borovets, Bulgaria, 17 September 2009
5. [4th Language & Technology Conference "Human Language Technologies as a Challenge for Computer Science and Linguistics"](), Poznan, Poland, 6-8 November 2009
6. [8th International Workshop on Treebanks and Linguistic Theories](), Milan, Italy, 4-5 December 2009
7. [1st Europe-Asia Spoken Dialogue Systems Technology Workshop](), Kloster Irsee, Germany, 9-11 December 2009

8. [Final Worshop of the 2nd Evaluation Campaign of NLP and Speech Tools for Italian](#), Reggio Emilia, Italy, 12 December 2009

9. [2nd International Conference on Global Interoperability for Language Resources](#), Hong Kong, 18-20 January 2010

10. [1st Workshop on the Multilingual Semantic Web](#), organized in the framework of [WWW 2010 - 19th International World Wide Web Conference](#), Raleigh (North Carolina, USA), 27 April 2010

11. The Harvesting Day, Round 1, 21 July 2010

12. The Harvesting Day, Round 2, 21 September 2010

13. [TKE 2010](#) [Workshop "Establishing and using ontologies as a basis for terminological and knowledge engineering resources"](#), 14 August 2010

14. The [IWSLT 2010 - 7th International Workshop on Spoken Language Translation](#), Paris (France), 2-3 December 2010

15. The TRALOGY'11 conference "Translation and Technology" conference, Paris (France), 3-4 March 2010

16. The [2nd W3C Workshop: Content on the Multilingual Web](#), Pisa (Italy), 4-5 April 2011

17. The [1st Workshop on Question Answering over Linked Data (QALD-1)](#), in conjunction with ESWC 2011, Heraklion (Greece), 30 May 2011

18. The [4th Workshop on Building and Using Comparable Corpora (BUCC)](#), held in conjunction with [ACL-HLT 2011](#), Portland, OR (USA), 24 June 2011

19. [WoLeR 2011 - International Workshop on Lexical Resources](#), held in conjunction with [ESSLLI 2011](#), Ljubljana (Slovenia), 1-5 August 2011

20. [ESSLLI 2011 - 23rd European Summer School in Logic, Language and Information](#), Ljubljana (Slovenia), 1-12 August 2011

21. The [3nd W3C Workshop: A Local Focus for the Multilingual Web](#), Limerick (Ireland), 21-22 September 2011

22. LTC'2011, "Human Language Technologies as a Challenge for Computer Science and Linguistics", Poznan (Poland), 25-27 November 2011.

23. [2nd Workshop on the Multilingual Semantic Web](#) organized in the framework of [ISWC 2011 - 10th International Semantic Web Conference](#), Bonn (Germany), 23 October 2011.

6.9 Deliverables

- D1.1 - Project Presentation
- D1.2 - Project Web Site
- D1.3 - Progress Report
- D1.4 - Dissemination Plan
- D8.1 - Action Plan
- D1.5 - Evaluation Plan for the functioning of the Network
- D2.1a - Up-to-date chart of LR and players and classification along different lines
- D1.6 - Progress Report
- D1.7 - Annual Report
- D4.1 - Identification of problems in the use of LR standards and of standardisation needs
- D5.1 - Existing evaluation and validation of LRs

- D6.1a - Survey and assessment of methods for the automatic construction of LRs. Report on automatic acquisition, repurposing and innovative proposals for collaborative building of LRs
- D8.2a - Blueprint of actions and infrastructures
- D1.9 - Progress Report
- D1.10 - Progress Report
- D1.11 - Annual Report
- D2.1b - Up-to-date chart of LR and players and classification along different lines
- D2.2 - Identification of mature self-sustainable LRs vs. areas to be sustained & sustainability factors
- D3.1 - Report on the scientific, organisational and economic methods and models for building and maintaining LRs
- D4.2 - Proposal of a European Language Resource Standards Framework
- D7.1 - Survey of the national and transnational initiatives in the area of Language Resources
- D7.2 - Report on the Language Resources needed for research investigations, and for technology development and evaluation in ICT and related applications
- D8.2b - Blueprint of actions and infrastructures
- D1.13 - Progress Report
- D1.14 - Progress Report
- D1.15 - Final Report
- D1.16 - Project Presentation
- D2.2b - Identification of mature self-sustainable LRs vs. areas to be sustained & sustainability factors
- D3.2 - Report on winning strategies to ease future interlinking, reuse and exchange
- D4.2 - Proposal of a European Language Resource Standards Framework
- D4.3 - Proposal of a strategic action plan for LR standardization.
- D5.2 - Validation and Evaluation Protocol for LRs: how to make reusable and maintainable quality LRs, including recommendations for maximizing re-usability of LRs.
- D6.1 - Survey and assessment of methods for the automatic construction of LRs. Report on automatic acquisition, repurposing and innovative proposals for collaborative building.
- D6.2 - Report on the proposal for strategic lines to be supported.
- D7.2 - Report on the Language Resources needed for research investigations, and for technology development and evaluation in ICT and related applications.
- D7.3 - Report on the proposal for strategic lines to ensure proper language coverage for the needed Language Resources with a shared effort approach
- D8.2c - Blueprint of actions and infrastructures

6.10 Promotional and informative material

- [Leaflet announcing the FLaReNet Launching Event](#)
- [Poster dedicated to the FLaReNet Launching Event](#)
- [Poster dedicated to the FLaReNet Forum 2010](#)
- [Leaflet announcing the FLaReNet Forum 2010](#)
- [FLaReNet Poster at LREC EC Village](#)
- [FLaReNet Poster at META-Forum 2011](#)
- [FLaReNet LRE Map Poster at META-FORUM 2011](#)