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Infrastructure**

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EXECUTIVE SUMMARY

The META-NORD project is targeting a sustainable mechanism for cooperation and resource sharing as a part of the European open linguistic infrastructure. This is achieved through cooperation with existing national and European projects and working with national and international stakeholders to launch uptake projects and funding. The continuation of the created infrastructure is promoted by high visibility and the intrinsic usefulness of the project results on a national scale as well as active integration in META-NET activities. The future and sustainability of these activities has been further supported by the establishment of META-TRUST AISBL as a legal person which is meant to be a trustee of the community behind META and META-NET.

After the two year EU-funded phase, the META-NORD infrastructure will be continued on a sustainable long-time basis. Most of the META-NORD partner institutions have already committed to running META-SHARE nodes and to sustain this core operation for at least 24 months after the end of the project.

The project partners have been engaged in negotiations with other infrastructure initiatives and similarly aimed projects. It is expected that cooperation with CLARIN-ERIC will enhance the sustainability of the infrastructure, in several of the participating countries. In other cases, national centres have been or will be established to maintain the resources compiled within META-NORD and continue to collect resources. Even though some conditions of these cooperations still need to be settled, the consortium feels confident that satisfactory solutions have been found to secure the sustainability of the META-NORD infrastructure.

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Abbreviations

Table 1 Abbreviations

Abbreviation	Term/definition
CLARIN	Common Language Resources and Technology Infrastructure
CLARINO	Common Language Resources and Technology Infrastructure Norway
DIGHUMLAB	Digitalt Humaniora Laboratorium
DSL	Det Danske Sprog- og Litteraturselskab
ELDA	Evaluation and Language Resources Distribution Agency
ELRA	European Languages Resources Association
ERIC	European Research Infrastructure Consortium
HPC	High-performance Computing
INESS	Infrastructure for the Exploration of Syntax and Semantics
LFG	Lexical-Functional Grammar
LR	Language Resource
LT	Language Technology
LTI	Language Technology Infrastructure
NB	Nasjonallbiblioteket – National Library of Norway
NEALT	Northern European Association for Language Technology
SIG-INFRA	Special Interest Group for Language Technology Infrastructure

Introduction

This deliverable reports on the plan to ensure the sustainability of the open resource infrastructure established within the META-NET family of projects (T4ME, META-NORD, METANET4U, CESAR). It is an update of deliverable D5.1.1b, delivered in M17.

The first section elaborates a sustainability plan that is agreed by the META-NET family of projects and would be supported by the players involved in the projects and others from within the HLT community. We identify the various services offered via META-SHARE infrastructure and which are important and required by the Language Technology community. We then express the intent of various players with respect to the investment they involve in order to ensure the durability of the infrastructure. Sustainability as foreseen here is not achieved through self-sustainability of the platform, but through partnerships for a transition period of 2 to 5 years.

The second section details specific additional actions and plans of the META-NORD partners to ensure sustainability and viability of our work, such as exploring the clearinghouse model and creation of national language resource centres. We particularly elaborate specific actions for sustainability of horizontal priority areas of META-NORD in treebanking, wordnets and terminology resources.

The third section describes our proposals for cooperation with the open data community, collaboration with the Language Councils, involvement of national stakeholders through national workshops and dissemination channels.

Cooperation with NEALT and CLARIN is discussed in the fourth section.

1. Sustainability of the META-SHARE infrastructure

The META-SHARE infrastructure relies on the operation of interlinked META-SHARE nodes that are distributed and autonomously maintained by the participating institutions.

1.1. *META-SHARE Functionalities and Services*

End-user and system management functionality of the infrastructure is provided by the META-SHARE software platform. The following is a partial list of functionality currently provided by the platform or still to be implemented until the end of 2013:

- Functionality for unregistered users
 - Search, browse, access to samples;
 - Access to online information;
 - Registration;
 - etc.
- Functionality for registered users
 - Authentication;
 - Access to online information, help desks;
 - Transactions (access to LRs, licencing, download of LRs);
 - Management of user profiles;
 - Notifications and alerts on demand;
 - Comments and feedback on resources;
 - etc.
- Back-end functionality
 - Management of the hardware and software infrastructure
 - Management of the infrastructure content (resources, licences, metadata);

- Management of operations and transactions (download supervision, transaction, invoicing, billing, royalties, etc.);
- Update of meta-data schema, editor and converters;
- Management of user profiles (new rights, new categories, etc.);
- etc.

Although the back-end functions will be supported by the META-SHARE software platform they depend on personnel trained and available to perform these functions.

Besides this functionality, there are several other human-based services that should be provided to ensure successful exploitation of the platform:

- General Help desk;
- Legal Help desk;
- Metadata support and conversion;
- Management of bulk or non-standard downloads/uploads of LRs;
- etc.

For technical sustainability of the META-SHARE software platform at least the following activities have to be ensured:

- Implementation of critical bug fixes and change requests;
- Keeping the system documentation up to date.

For each server in the distributed network of core nodes the following minimal technical support activities have to be ensured:

- keeping the server up to date with respect to security-related software updates;
- installing bug fix releases of the META-SHARE platform;
- monitoring service availability and performance, including synchronisation between nodes.

Requirements for human, financial and technical resources to ensure these functionalities and services are being addressed through the partners' commitments (see section 1.2).

1.2. Commitments of the META-NORD partners

As META-SHARE is a distributed platform its sustainability depends on the willingness and ability of participating institutions to run META-SHARE nodes and to provide related services.

By signing letters of intent (indicating commitment but not legally binding), most of the META-NORD partner institutions have already committed to sustain META-SHARE in the following ways:

- To host and make available the META-SHARE repository of LRs through the META-SHARE network;
- To continue to host the repository of LRs and serve as a META-SHARE node for a period of 24 months;
- To continue providing technical and/or user support services, software-based and/or human services provided for a period of 24 months.

Respective letters have been signed by Tilde, the University of Helsinki (UHEL) and CSC (FIN-CLARIN), Språkbanken of the University of Gothenburg (UGOT), the University of Tartu (UT), the University of Copenhagen (UCPH) and the Institute of Lithuanian Language (LKI).

With an exception of the University of Tartu, these institutions have also committed to start or continue to participate in the META-SHARE software development.

Tilde has made an additional commitment to host, maintain, and provide user and technical support for the EuroTermBank platform – a dedicated META-SHARE node for storing and sharing multilingual terminology resources

In Norway, the National Library has set up a META-SHARE node and will continue to run it as part of its efforts in CLARINO (the Norwegian CLARIN project).

The University of Iceland is working on the formation of a national consortium, consisting of HI, the Árni Magnússon Institute, the Reykjavik University, the National and University Library, and perhaps a few others to maintain an Icelandic national repository of language resources.

1.3. Commitments of other META-NET partners

We have been informed that partners of other MET-NET family projects have also signed similar letters of intent and among these we mention the following institutions:

- Nyelvtudományi Intezet, Magyar Tudományos Akadémia – Hungary;
- Institute for Bulgarian language, Prof. Lyubomir Andreychin – Bulgaria;
- Uniwersytet Łódzki – Poland;
- Instytut Podstaw Informatyki Polskiej Akademii Nauk – Poland;
- University of Zagreb, Faculty of Humanities and Social sciences – Croatia;
- Faculty of Mathematics, University of Belgrade – Serbia;
- Jazykovedný Ústav Lodovita Stura Slovenskej Akademie Vied – Slovakia.

1.4. Commitments of ELRA

A particular contribution to the sustainability of META-SHARE is made by the European Language Resource Association (ELRA).

ELRA has decided to move from the current LR exchange and distribution mechanisms to the ones being developed within META-SHARE. ELRA will build its entire infrastructure on top of the platform that it will deploy with other partners as META-SHARE repository v3.

By doing this:

- ELRA will ensure that the current META-SHARE platform is fully exploited by the consortium. It is important that the users feel that a strong team is behind the infrastructure;
- ELRA strongly commits to sustain the current user support related to the use of META-SHARE (e.g. covering platform use: complaints and problem handling wrt. to LRs download, upload, licencing and other IPR support, etc.). This would continue, preferably as a joint-venture with the other consortium members;
- ELRA will exploit the current META-SHARE platform for the ELRA mission over the next decade and will make its more than one thousand resources (with cleared IPR) available for download, licencing, and commercial/non-commercial use from this new channel from around the end of 2012. This can be done in the current networked framework which ELRA will support but can also operate it with a smaller number of partners;
- ELRA will adopt the full range of META-SHARE licenses. With the support of the set-up legal team, it will continue its role on the legal assistance and help desk and of enhancing users' knowledge on IPR issues, looking forward to a unique set of licences;

- ELRA will provide technical support (through one of the development team members and IT professional) regarding software download, installation, configuration, and exploitation. It is certain that other members of the consortium will join;
- ELRA will ensure that services to set up local and non-local repositories are supplied as one of its new services, in particular free of charge for academics;
- This definite commitment will help META-SHARE to grow after the end of the EC project and will ensure that for some organisations like ELRA it becomes the business platform for daily activities;
- In addition to the business aspects operated by ELDA (Evolutions and Language Resources Distribution Agency), the ELRA Board will consider committing the financial and corresponding human resources for 2013-2014 to support the operation of such a platform, in particular when it comes to non-lucrative scenarios.

1.5.META-TRUST

The future and sustainability of META-SHARE has been forwarded through the establishment of META-TRUST AISBL (Association Internationale Sans But Lucratif) on September 12, 2012. Among the founding members are representatives for three META-NORD partners. META-TRUST AISBL is the legal person of the network of excellence META-NET and the Multilingual Europe Technology Alliance (META). It is an international not-for-profit organisation based on Belgian law and located in Antwerp, Belgium. META-TRUST AISBL is meant to be a trustee of the community behind META and META-NET and is open to new members.

The main objectives of META-NET are to establish META as an open alliance of all stakeholders and to foster a multilingual European information society in which Language Technologies enable communication and cooperation across languages, secure users of any language equal access to information and knowledge, and build upon as well as advance functionalities of networked information and communication technology.

For further information on META-TRUST, its purpose and membership procedures, see <http://www.meta-net.eu/meta-trust>.

2. Specific Sustainability Activities by META-NORD

The cornerstone of the long-time viability of the META-NORD service will be the involvement of the following main national and/or regional types of actors:

- producers, i.e. “competence centres”, typically public research centres, language institutes and academies, as well as private content owners like media companies and publishing houses;
- aggregators, i.e. “data centres” (repositories), usually supported by national and/or regional authorities;
- sponsors, i.e. public authorities, research agencies, language councils, companies with language resource needs.

Cooperation with these actors is planned through a number of models and organisation forms.

2.1.The clearinghouse model

One possible business model that is being considered for the META-NORD infrastructure is the clearinghouse concept. This model is currently developed by CSC in Finland which seeks a cooperation on the long-time storage of resources with other similar service centres in other

European countries using a cost-sharing principle. CSC is government-owned and serves the research community with funding from the Finnish Ministry of Education whereas commercial organisations can buy computing resources.

The Language Bank of Finland will be physically located at CSC. The model for the Language Bank of Finland is a clearinghouse model in the sense that it will procure resources from resource providers by negotiating viable licenses for them and by offering them to the language technology community. The resources are offered to researchers for free and many will also be available to the industry.

Finland will join CLARIN-ERIC in 2013, which means that CSC and UHEL in the FIN-CLARIN consortium will maintain the service for at least five more years in cooperation with other CLARIN data centres in Europe.

The University of Bergen has established a cooperation with The Language Resource Collection – Språkbanken in Norway for the purpose of establishing a clearinghouse for long term storage and distribution of language resources. They already have a simple clearinghouse service in operation and will extend this service in the context of the CLARINO project. This is the best opportunity for securing long term viability and interoperability of the resources and metadata in Norway.

2.2.National centres

The principles for how to include new actors and countries in this business model are further elaborated in the META-NORD project in cooperation with the best practices of other META-SHARE centres. Other business models have also been explored and it is possible that different types of service centres may arrive at different business models letting the content providers choose different service providers for different types of end-users.

To ensure sustainability and continuation of META-NORD activities, possibilities to create national META-CENTRES by the project partner institutions have been discussed, and in some countries implemented. These centres could form a sustainable backbone network for the European open linguistic infrastructure.

META-SHARE nodes have been established by six project partners – UCPH, UGOT, UHEL, LKI, Tilde and UT. In Norway, a META-SHARE node has been established at the National Library (NB) in cooperation with UIB. Many of the project partners have already created national centres or are in the process of creating them. In Finland, for instance, key national stakeholders in language technology had already been collaborating in FIN-CLARIN before META-NORD was launched. In Iceland, researchers working on language technology cooperate in the Icelandic Centre for Language Technology, which also has close ties to industry and the Icelandic Language Council. The Árni Magnússon Institute in Iceland has established Málþing (<http://www.malfong.is>), a national centre for language resources which will continue to be maintained regardless of the future of META-SHARE.

In Norway, NB has established The Language Technology Resource Collection for Norwegian – Språkbanken. NB will therefore be a natural centre for archiving and distributing language resources for Norwegian, in cooperation with CLARINO. Their mandate includes the aim to provide the language industries with basic resources and tools to develop better services and products for communication and access to information. The Norwegian META-NORD team has closely cooperated with NB in the areas of metadata for future cataloguing and archiving of information.

UCPH is the National Centre for language technology in Denmark. UCPH plans to distribute the Danish language resources and tools through two (partly interlinked) channels:

- through the Danish META-SHARE node which they will continue to host and also provide technical and/or user support for until the end of 2014 (cf. letter of intent a July 3rd, 2012), and;
- through the Danish research infrastructure, CLARIN. CLARIN will become a part of the larger Danish infrastructure for Humanities (DIGHUMLAB) and constitute part of the Danish membership contribution to the CLARIN European Research Infrastructure Consortium (CLARIN-ERIC).

In Denmark, the META-NORD national workshop functioned as the initiation of a language technology network among industry, researchers and funding agencies.

In Sweden, the META-NORD partner is Språkbanken (the Swedish Language Bank). This has functioned as a national language resource centre since 1975, and Språkbanken will continue to produce and distribute Swedish language resources for the foreseeable future, regardless of the status of META-SHARE or the participation of Sweden in the CLARIN ERIC. The META-SHARE format will be guaranteed to be one of the supported metadata formats, as will the CMDI/ISOCat format (see section 5). Språkbanken has a close collaboration with the Swedish National Data Service (SND), the national data archive for the humanities, social sciences, and social medicine, funded by the Swedish Research Council. The collaboration pertains in particular to practical questions of metadata formats, metadata harvesting, and distributed data sharing.

LKI will continue to maintain the META-SHARE node at LKI and update their own resources. They will encourage other organisations in Lithuania to join META-SHARE. The Institute of the Lithuanian Language is a state organisation and it is funded from the state budget. In the case of LKI, the sustainability of the META-NORD project results will very much depend on the budget possibilities. LKI together with other local institutions have started implementation of the project dedicated for digitalisation of language resources and possibility of their further use for language technologies, which is a part of wider program – “Lithuanian Language in the Information Society”. Implementation of this program will lead to the sustainability of all the projects, including META-NORD and further collaboration with international platforms.

In Estonia, UT is one of the founding members of the Center of Estonian Language Resources. As a member of CLARIN-ERIC, the Estonian government has guaranteed long-term support for this research infrastructure, which will also continue to archive and distribute the language resources in META-SHARE format.

2.3. Sustainability of the main types of resources

This section describes the consortium’s plans for the sustainability of the main types of resources that have been developed/documented within META-NORD, in particular those addressed in the context of the horizontal actions (Tasks 3.4, 3.5 and 3.6).

2.3.1. Sustainability of treebank resources

After the end of the META-NORD project, treebank resources provided during project Task 3.4 will be further maintained and disseminated through the INESS project, a nationally funded Norwegian project (financed by the Research Council of Norway) which will run until 2016 and to which UIB has declared the intention of long-time maintenance and support after 2016. The INESS project will host treebanks (including LFG treebanks, dependency treebanks, constituency treebanks and parallel treebanks) for any language on its HPC cluster where they will be searchable and downloadable. See D3.4 for more details.

2.3.2. Sustainability of terminology resources

Sustainability of the META-NORD work on terminology resources (cf. D3.6) will be ensured through tight collaboration with EuroTermBank (<http://www.eurotermbank.com>) which is maintained and supported by the EuroTermBank Consortium and Tilde. More than 100 terminology resources and several external databases have been consolidated and federated at the EuroTermBank database which has the necessary data access and sharing mechanisms to interlink with META-SHARE. To users and providers of terminological data, either of the two methods will be offered – interlinking with existing live databases or storing users' terminological data at EuroTermBank (on user account basis) while sharing it with the community. The facility of periodically updating the data will be provided for static terminological data. By interlinking a one-stop access to users' terminology at EuroTermBank, the conformity with the standards and all the necessary interfaces will be provided including re-use scenarios for various LT industries.

2.3.3. Sustainability of wordnet resources

UCPH offers to maintain and disseminate the interlinked wordnet resources to be provided during the project Task 3.5 (see D3.5) through the UCPH META-SHARE node. The monolingual wordnets which have been made available to META-NORD are hosted nationally, with long-term curation and preservation. UCPH has developed a common browser for the META-NORD wordnets which will be maintained after the project has ended. Other wordnets from the META-NET consortium have been invited to participate by linking their wordnets in the same platform.

The Danish wordnet, DanNet, is available through Det Danske Sprog- og Litteraturselskab (DSL) for download and visual browsing. DSL provides long-term curation.

The Finnish wordnet, FinnWordNet, is available through UHEL and the Language Bank of Finland and for download and visual browsing. UHEL will also provide occasional updates of the data and the interface after the end of the META-NORD project. The data will also be available for download from the Language Bank of Finland where it will have long-time backup and preservation.

The Swedish wordnet is available for download and browsing at Språkbanken (UGOT), where it will be preserved, curated and further developed. Språkbanken could also host a copy of the linked wordnet.

A wordnet for Norwegian has been procured by The National Language Resource Collection Språkbanken and the result is available on their website.

3. National cooperation and dissemination

This section describes the META-NORD partners' plans for national cooperation with the open data communities and the Language Councils, and their main plans for reaching out to members of their third parties networks and other stakeholders.

3.1. Open data communities

A possible way of increasing the visibility of the published resources and tools outside the META-SHARE network could be through contacts with the open data community. Several of the project partners have established such connections. Participants from HI have established connections with representatives from the Icelandic Society for Digital Freedom (<http://www.fsfi.is/>). Participants from UHEL are on the finn-oa@helsinki.fi email list maintained by FinnOA, a group of Finnish professionals interested in promoting open access to scientific information. Thus UHEL follows the news on open access actively and has the pos-

sibility to inform others on open access related issues. The Norwegian open data organisation DIFI was approached and invited to the national workshop in Norway. UCPH has also joined the Danish open data community by joining the public site Digitaliser.da, which is a united portal for the digitisation of Denmark.

Other project partners will assess the benefits of approaching similar communities in their respective countries to discuss the possibilities for cooperation.

3.2. Language Councils

All the participating countries have official Language Councils which in many cases are influential organisations with a long tradition. To increase visibility and awareness, close ties have been kept with these organisations. This was in part done through personal contacts since some of the META-NORD participants are members of the Language Councils in their respective countries. The Scandinavian Language Councils have a special Working Group for Language Technology (ASTIN) with which the consortium has kept in contact.

A concrete example of the cooperation with the Language Councils is that the annual meeting of the Scandinavian Language Councils in 2013, which will be held in Iceland, will have Nordic Language Technology and Nordic LT cooperation as a special theme. The initiative for this came from the Icelandic Language Council through its cooperation with META-NORD in Iceland.

The Swedish META-NORD partner Språkbanken (UGOT) has worked closely together with the Swedish Language Council for a number of years, a case in point being the jointly organised national META-NORD workshop held in November 2012. The language council has a dedicated advisory group on language technology, where UGOT is represented. The language council's expert on language technology questions (Rickard Domeij) is currently the chairperson of the NEALT special interest group on language technology infrastructure (NEALT SIG-INFRA; see section 5). The language council has been a partner in recent funding proposals (coordinated by UGOT) for a Swedish language technology infrastructure.

The Language Council of Norway has actively participated at META-NORD events and its director Arnfinn Muruvik Vonen participated in a panel at META-FORUM 2012 in Brussels. Furthermore, the Danish META-NORD partner, (UCPH), is collaborating closely with the Danish Language Council, a case in point being the successfully held national META-NORD workshop (October 2012) which was organised together with the council. UCPH is also represented in the Board of the Danish Language Council (by Bolette S. Pedersen) where they provide recommendations on language technology in Denmark.

3.3. Language whitepapers

All the Language White Papers were published in September 2012. The project partners have distributed copies of the papers to key stakeholders in language technology in their respective countries – representatives of government, funding agencies, industry, research communities, and user groups. They were also distributed at the national workshops held in September through November 2012.

The partners used the publication of the papers as an opportunity to draw attention to the importance of language technology for the future of our languages and the relatively poor situation of language technology in most of the META-NORD countries. The publication of the White Papers and the press release issued by META-NET and all the META-NORD partners on the occasion of their publication received considerable attention and media coverage, as documented on the META-NET website (<http://www.meta-net.eu/whitepapers/press-coverage>). This awareness will promote the sustainability potential of the project activities.

3.4. META-NORD national workshops

All the project partners organised META-NORD national workshops in 2012. They made great efforts to attract participants from all relevant stakeholders, and succeeded in using the workshops as an important means to strengthen and enlarge their third parties networks. In many of the countries, the workshops were coordinated with other LT related events (Estonian National Program for Language Technology) and/or organised in cooperation with other stakeholders, such as language councils (Denmark, Iceland, Norway, Sweden), parliaments (Lithuania), companies (Norway), and ICT associations (Latvia). For further information on the workshops see D5.4. These workshops have resulted in connections and cooperations which involve a larger audience in the META-NORD goals and thereby promote the sustainability potential of the project activities.

3.5. META-NORD Newsletter

Since the summer of 2012 the project partners have published a bi-monthly newsletter for their third parties network and other stakeholders. This newsletter has the role of raising awareness of language technology projects and resources and enhance the visibility of the work being done and the resources being collected by the consortium. Furthermore, it publishes information on relevant events such as conferences and workshops on language technology and resources. LKI has been responsible for the publication of the newsletter.

4. Cooperation with other infrastructure initiatives

Most of the participating partners have joined the NEALT special interest group on resource infrastructures, SIG-INFRA, founded in 2007. The purpose of SIG-INFRA is to strengthen the cooperation regarding language technology infrastructure (LTI) between the countries and regions associated to NEALT, to coordinate activities related to LTI in the associated countries and to promote the development and use of joint LTI in the associated countries.

META-NORD will also align itself with the activities of the CLARIN-ERIC, in order to avoid duplication of work and promote long-time viability of the META-NORD results. Denmark and Estonia are founding members of CLARIN-ERIC, and Finland will join CLARIN-ERIC in 2013. The membership of Norway and Sweden awaits a political decision; however, there is a funded Norwegian project CLARINO and there is a start of a cooperation between CLARIN and META-SHARE in Norway. A national consortium led by UGOT has received a planning grant from the Swedish Research Council for preparing a proposal for Swedish CLARIN ERIC membership to be submitted in late March 2013.

The possibility to transform the META-SHARE metadata into CMDI/ISOCat format has been discussed, so that CLARIN-ERIC could ensure that the metadata, the resources and tools collected and published by META-NORD will continue to be available after the end of the project period.

5. Conclusion

It is the general consensus that there is a need to create a sustainable mechanism for cooperation and resource sharing as part of the European open linguistic infrastructure. For the continued operation of META-SHARE nodes, commitment letters signed by META-NORD partners clearly show that these plans are already well on the way. The involvement of ELRA and the establishment of META-TRUST contribute to the overall META-NET sustainability.

In additional, the clearinghouse concept aims at cooperation on a long-time storage of resources with other similar service centres in other European countries, using cost-sharing

principles. Inclusion of new actors and countries in the business model will be further elaborated in the META-NORD project in cooperation with the best practices of other META-SHARE centres. In most META-NORD countries, national centres promoting LR availability have already been established.

Concrete plans exist for the curation of specific types of LRs provided within META-NORD. Treebank resources are maintained and disseminated through the INESS project coordinated by UIB. Terminology resources are taken care of by EuroTermBank, which is maintained and supported by the EuroTermBank Consortium and Tilde. The interlinked wordnet resources are maintained and disseminated nationally under coordination of UCPH through the UCPH META-SHARE node.

The participating partners have joined SIG-INFRA, the NEALT special interest group in order to strengthen cooperation and coordinate activities related to language technology in the associated countries. During the project, the META-NORD partners have taken several measures to increase awareness and visibility of their work, and of language technology and language resources in general. This includes contacting the open data communities in the META-NORD countries. Furthermore the project partners have firm connections with the respective Language Councils, using the Language White Papers and the META-NORD newsletter to strengthen and enlarge the partners' networks of third parties.