DELIVERABLE

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D1.8

TN Portal:
Search engine and interface 2\textsuperscript{nd} release

Revision: final

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Duration: 36 months

Organisation name of lead contractor for this deliverable:
FDCGO

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Revision History

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Statement of originality

This deliverable contains original unpublished work except where clearly indicated otherwise. Acknowledgement of previously published material and of the work of others has been made through appropriate citation, quotation or both.

Authors

Valerio Gower, FDGCO
Renzo Andrich, FDGCO
Andrea Agnoletto, FDGCO
Executive Summary

The overall goal of the ETNA thematic network was to establish a European Web Portal able to provide a unified access to information on European ICT assistive products, on related organizations, services, and to allow access to repositories of freeware, open source software products and tools useful for e-accessibility.

The initial vision was that of a single Portal evolving from the already-existing EASTIN system (European Assistive Technology Information Network) and including two major components: the ETNA information system – a search engine that aggregates information from various providers and repositories all over Europe and beyond, under responsibility of the ETNA network – and a virtual community connecting all stakeholders, under responsibility of ATIS4all, another Thematic Network belonging to the same cluster.

In the course of the projects the two components gradually took shape, thanks to the contributions of all partners within each network and the collaboration between the two networks. Eventually, technical and sustainability reasons suggested to rethink the initial vision and establish two distinct but coexisting Portals, instead of a single one. Both Portals will continue after the end of the ETNA and ATIS4all projects; they will be independent of each other in terms of resources and sustainability strategy; however, they will collaborate and communicate with each other at various levels.

The ETNA information system will be inherited by the EASTIN Association: the new Portal (EASTIN 2.0) will replace the current EASTIN system and will maintain the same brand and address (http://www.eastin.eu).

This deliverable describes the interfaces and functionalities of the second prototype of the ETNA Information System, which has been released at http://test.etna-project.eu. This prototype improves the first prototype released on February 15, 2013 (Deliverable D 1.6) by adding new functionalities, according to the specifications defined in D 1.5 “Search engine and interface specifications”, and taking into account a preview of the validation findings (which are going to be finalized in D 7.3 “Validation of the TN portal”). Therefore this deliverable replaces deliverable D 1.6 “TN Portal - Search engine and interface 1nd release”.

The first chapter (Introduction) synthesises how this prototype is positioned in the development process that will gradually lead to the future EASTIN 2.0.

The following chapters describe how the various functionalities have been implemented:

- The **Assistive products** search section, allowing to search any products (in broad sense: including either stand-alone or non-stand-alone products, resources for development, e-services, good examples of accessibility solutions);
- The **Product review and comment** facility, allowing registered users of the community to express personal views on products and to see other users’ reviews;
- The **Organisations** search section (in turn including the following sub-sections: companies, service providers and projects);
- The **Associate Info** search section (in turn including the sub-sections articles, case descriptions, ideas, frequently asked questions, forums, news and regulations).

Finally, the **resources upload tool** is described. This has been purposely designed to allow authorized data providers to manually upload in a central EASTIN database any of the above resources according to the ETNA taxonomy. According to the definitions provided in Deliverable D3.2 “Synopsis of the existing resources”, these providers are called “type B providers”, as opposed to “type A providers” who are those providing data by means of webservices-based automatic procedures.
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Introduction

This deliverable describes the main functionalities of the second prototype of the ETNA Information System that has been published at http://test.etna-project.eu – the webspace devoted to the ETNA developments. The prototype has been designed in compliance with the specifications defined in D 1.5 “Search engine and interface specifications” and taking into account a preview of the validation findings, that are going to be finalized in D 7.3 “Validation of the TN portal”.

The second prototype of the ETNA Information System evolves from the first prototype (D 1.6), which in turn wasn’t built from scratch but was created by extending and improving the existing EASTIN website.

Even if the overall graphical appearance of the EASTIN portal has been maintained, the ETNA prototype (Picture 1) and the EASTIN information systems (Picture 2) greatly differ in their domain model and search functionalities.

In the ETNA system, the domain model has been extended to encompass the new categories of resources identified by deliverables D3.2 “Synopsis of resources” and D4.2 “Taxonomy of resources”; likewise, the user interfaces have been improved to include the new datasets and search functionalities depicted by these deliverables.

Picture 1 - Homepage of the ETNA prototype
Like the current EASTIN website, the ETNA portal is designed to accommodate multiple language interfaces (31 language layers are currently available). In this second release, the prototype has been fully implemented in English. For all the other 30 European languages, several new “labels” introduced by ETNA are still in English and will be translated over time by the EASTIN partners and National Contacts.

In the following chapters, the various sections of the ETNA Information System are described, highlighting the new functionalities that have been added to the current EASTIN website.

**Assistive products**

**Standard search methods**

The *Assistive Product* section allows users to search for information on products using one of the following methods:

- **Search by ISO product classification code**: users can browse the classification of assistive products and select the most appropriate code;
- **Search by keyword**: users can select the appropriate keyword from an alphabetically-ordered keywords list;
- **Search by product name**: users can specify the commercial name of the product they are looking for;
- **Search by manufacturer name**: users can specify the name of the company that produces the products they are looking for (or the authors that make these products available to the public);
- **Search by insert date**: users can search for products recently added to any of the databases of the ETNA network.

Users can also enter search terms in the text box on the upper right corner and perform a
global search on all the different kinds of resources included in the ETNA portal. When a term is entered in the global search text box the following results are returned:

- The product groups matching the search terms entered;
- The products matching the search terms entered;
- The manufacturers containing the search term in their names;
- The service providers containing the search term in their names;
- The projects containing the search term in their names;
- Any associated info (articles, case descriptions, ideas, FAQs, forums, news, and regulations) related to the search terms entered.

This Global Search functionality – a successful heritage of the previous ICT-PSP EASTIN-CL project – is currently available for the following languages: English, Italian, German, Danish, Latvian, Lithuanian and Estonian.

The search facilities described so far were not built from scratch but were derived from the functionalities developed within the previous EASTIN and EASTIN-CL projects and currently available in the EASTIN system.

Advanced search

Conversely, substantial changes have been made in the advanced search facility, that has been improved to encompass the new taxonomy defined within the ETNA project and described in deliverables D4.2 “Taxonomy of resources” and D5.1 “Preparatory material for the design of the taxonomy management tool”.

The Advanced Search mode allows the user to perform specific searches by combining the search methods mentioned above and allowing to specify product features according to the ETNA taxonomy.

The Advanced Search method is made up of 3 steps:

- In the first step the user can navigate the ISO 9999 classification tree and select a code. In case the restriction to a specific ISO code is not needed he or she can simply click on “next” (Picture 3).
- In the second step the user can enter a product name, a manufacturer name and an product insertion date. In case no restriction is needed for those parameters he/she can simply click on “next” (Picture 4).
- In the third and last step the user has the possibility to specify one or more Features – corresponding to the items of the ETNA taxonomy – that the products he/she is searching should have. The system only presents the features that are more likely to be relevant for the specific ISO division that has been selected in the first step. In case a generic ISO code (i.e. a first or second level ISO code) or no ISO code was selected in the first step, this page is skipped and the search is automatically performed when clicking next in the second step (Picture 5).

![Picture 3- first step of the Advanced Search facility](image-url)
When clicking “Next” in the last step a search is performed in the ETNA system with all the parameters entered, using a “AND” logic.

**List of results**

When a search is performed using any of the search methods mentioned above, a list of result is presented. Using the *Modify visualization options* function the user can sort the list of results (by commercial name, manufacturer, insert date, last update, and source database in ascendant o descendant order), and may also decide to exclude the results coming from one or more databases connected to the ETNA system\(^1\). *(Picture 6)*

By clicking on *Refine Search* the user can also filter the results using the advanced search functionality described above.

\(^1\) In agreement with the EASTIN association, the information providers connected to the ETNA system have been divided into three groups: “National Databases” (providing information on the whole spectrum of assistive technology, covering the whole national market), “Thematic Databases” (specialized on a specific subset of assistive technology, at international level), and “Providers of the EASTIN central Database” (i.e. the National Contact organization providing data to the Central database). A fourth group of “non European databases” has been foreseen in case organizations from outside Europe will join the system in the future.
Product details

Substantial changes have been also made in the web-pages that display the detailed information of an assistive product (Picture 7 and Picture 8).
The information included in the product details page can be divided into four parts:

- **Basic information**: including commercial name, ISO classification codes, manufacturer name, insertion date, last update, image, source database, text description, and link to further product details (e.g. the link to the original document in the information provider website);

- **Manufacturer contact data**: including name, address, phone, email, website and social networks;

- **Technical details**: including all technical characteristics of the product, according to the taxonomy defined within WP 4 and WP 5 (deliverables D 4.2 and D 5.1);

- The cross links to other information resources included in the ETNA portal related to the same typology of products.

This last part allows the user to search for organizations and associated information related to the same ISO 9999 classification codes of the product that is displayed. For example, if I’m browsing the details of communication software product (ISO code 22.21.12), by clicking on the “Articles” link I can perform a search on all articles included in the databases of the ETNA network that deal with this subject.

**Products review and comments**

The product review and comments functionality is a ETNA / ATIS4all joint facility. While
the ATIS4all collaborative portal provides the user login tools, the data input form and reviews and comments storage, the ETNA information system displays the data stored in both aggregated and analytic manners, in such a way that readers are guided to correctly interpret the contents and the soundness of the other users’ reviews.

For this purpose, two links have been added in the product details page (see Picture 7) that allow 1) to read the existing reviews for the product and 2) to submit a new review.

By clicking on “Read the reviews for this product”, the user is taken to a set of pages where he/she can see the statistics of the product ratings and read the comments posted by all users. In the first page a summary is presented with the diagram of the overall statistics, the overall average rating, and the rating of each user, along with the name of the reviewer and the preview of the comments2 (Picture 9).

To avoid a misleading representation of the ratings, if the number of reviews is under a pre-defined threshold (currently set to 9), the diagram and the average ratings are not shown. In such case the user can still get into the details of each review.

By clicking on “see statistics in more details”, a webpage opens where the overall ratings are divided according to six categories (Picture 10): Actual users, Family members and primary caregivers, Professionals (in health care, social services or education), Manufacturers or suppliers, Researchers or developers, and Others.

2 At the time this deliverable has been written, the product review functionality has not been extensively used by the ATIS4all community. Therefore, in order to give an impression of what the user rating interface would look like, fictitious data were used in the screenshots depicted in this deliverable.
By clicking on the reviewer’s name (or on see all), one can expand the details of each user’s review, including the profile of the user (i.e. the category he/she belongs to, and how much time he/she has been using the product), the score related to each of the 8
items of the rating questionnaire (effectiveness, ease of use, ease in adjusting, dimensions, weight, safety and security, durability, comfort) and the free-text comment, if any (Picture 11).

By clicking “Review this product” on the upper right corner of the product details page (see again Picture 7), the user will be taken to the Product Review webpage on the ATIS4all collaborative portal where he/she will have the possibility to add his/her own ratings and comments.

Organizations

The Organizations section includes three categories of resources: Companies, Projects and Service Providers.

Companies include the manufacturers of products in strict sense.

Service providers include organizations offering services related to AT provision.

Projects include temporary organizations, such as research and development projects. Indeed there may be products considered in the Assistive Products section of the Portal – especially in the ICT domain – that don’t have a manufacturer in strict sense, but are made available by other kinds of organizations, such as service providers or projects.

The Organizations search interfaces allow to search: by ISO classification code, by ICF classification code, by Keyword, and by Name (Picture 12).
Similarly to what happens in the assistive product section, the **guided search by ISO classification code** allows the user to browse the ISO 9999 classification of assistive products and select the most appropriate code (**Picture 13**).

![ISO Code and Description](image)

**Picture 13 - Browsing the ISO 9999:2011 classification of assistive products**

The **search by ICF classification codes** allows users to select the fist-level ICF code along any of the four axes: **Body Function, Body structure, Activities and Participation,** and **Environmental factors.**

Through the **Keyword Search**, users can select the appropriate keyword from an alphabetically-ordered keywords list.

Finally the **Search by name** allows users to specify the name of the Organization to be searched.
**Picture 14** - Organization detail page (in this case a Company)

**ASSISTIVEWARE B.V.**

**English name:** ASSISTIVEWARE B.V.  
**Original name:** ASSISTIVEWARE B.V.  
**Insert date:** 24/02/2012  
**Latest update:** 24/02/2012  
**Source database:** Slive (IT)

**Subject (according to the ISO classification of assistive products):**  
- Face-to-face communication software (ISO 22.21.12)  
- Reading materials with audible output (ISO 22.30.03)  
- Input software (ISO 22.36.18)  
- Audible computer displays (ISO 22.39.07)  
- Special output software (ISO 22.39.12)

**Subject (according to the ICF classification of Functioning, Disability and Health):**  
- Mental functions (ICF b1)  
- Voice and speech functions (ICF b3)  
- Neuromusculoskeletal and movement-related functions (ICF b7)

**Contact data**  
**Contact body:** NIEMEIJER CONSULT  
**Town:** AMSTERDAM  
**Country:** NL  
**E-mail:** info@assistiveware.com  
**Website:** www.assistiveware.com/

**Link to further details:**  
**Original document:** Slive (IT)

**See if other related items are available:**  
<table>
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<th>Assistive Products</th>
<th>Organisations</th>
<th>Library</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Projects</td>
<td>Articles</td>
</tr>
<tr>
<td></td>
<td>Service Providers</td>
<td>Case Descriptions</td>
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<tr>
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<td></td>
<td>News</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Regulations</td>
</tr>
</tbody>
</table>

**Picture 14** depicts an example of a Company details page. Information includes the name of the company, the insertion and latest update dates, the source database (which is the external database, where this information comes from), the subject the company is involved in (in term of ISO 9999 categories of assistive products, and ICF categories of disability-related topics), a concise free-text description, the contact data, and any link to further details, such as e.g. the deep link to the original document in the information provider’s website.

Like the Assistive Product details page, there is also a section including cross links to other resources included in the ETNA portal related to the same typologies of products. For example if I’m browsing a company that produces input software (ISO code 22.36.18), by clicking on “Case descriptions” I can perform a search on all case descriptions included in the databases of the ETNA network, that deal with this subject.
The Library section - inherited from the already-existing Associated Information section in the EASTIN website - has been extended to include all resources defined by deliverables D 3.2 and D 5.1. The section now includes six categories of resources: Articles, Case Description, Ideas, FAQs, Forums, News, and Regulation.

For each category, the search interface allows to search by ISO classification code, by ICF classification code, by Keyword, by Title, and by Author (Picture 15).

A functionality to search on all documents has also been included.

The functionalities Guided search by ISO classification codes, Search by ICF classification code, and Keyword search work in the same way as described for the Organizations section. The functionalities Search by title and Search by author allow to specify the text to be searched in the “title” and “author” fields respectively.
Picture 16 - Details of a resource "article"

**Picture 16** depicts an example of an Article details page. Information include the *title* of the Article in *English* and in its *original language*, the *authors*, the *publishing details*, the *publication year*, the *insertion* and *last update* dates, the *source database* (which is the external database where this information comes from), the *subject* the article deals with (in terms of *ISO 9999* categories of assistive products, and *ICF categories* of disability-related topics), and links to further details such as e.g. the link to the original document in the information provider’s website.

Similarly to the Assistive Product details page, there is also a section including cross links to other resources included in the ETNA portal related to the same typologies of products. For example, if I’m browsing an article that deals with *Input software* (ISO code 22.36.18), by clicking on the “Assistive product” link I can perform a search for all the products, included in the databases of the ETNA network which belong to the typology *Input software*. 
The upload tool

In order to allow authorized users to upload new resources onto the Central Database of the ETNA web portal, an upload tool has been purposely developed. The upload tool is a web based interface that guides the user in entering (or editing) the data needed to describe each resource according to the ETNA taxonomy.

After logging-in, the authorized user should choose what kind of resource he/she wants to add or edit (Assistive products, or Organizations, or Associated Info) (Picture 17).

A list of the resources already entered by this user is presented in each of the three sections (products, organizations and associated info). The user may wish to select a resource from the list, modify its description, or delete it; or may enter a new resource.

![Screenshot of the upload tool homepage](Picture 17 - Screenshot of the upload tool homepage)

The upload tool includes automatic controls over the completeness of data for each mandatory field and the accuracy of the format for some particular types of fields (such as dates, integer and decimal, URLs, email addresses, etc.).

The validation of the entered data is performed each time the user clicks on the previous/next button in one of the wizard interfaces. If the validation fails, the user is forced to stay on the current page and is prompted with the appropriate error messages, indicating the specific fields of the form containing the errors. If the validation is successful the user is allowed to move to the previous/next step of the wizard.

All forms of the Upload Tool are designed to be fully compliant with the WCAG 2.0 level AA specifications for accessibility.

Assistive Products upload

When accessing the upload tool for the first time, before the user is enabled to insert a new product in the ETNA central database, he/she must enter at least one record in the Organizations section (i.e. a Company, a Project, or a Service provider). This is due to the fact that the information on the manufacturer of a product won’t be entered manually in the assistive products upload form, but will be extracted from the list of Organizations previously entered by the user.

By clicking on “New” in the Assistive Products section, a set of forms is presented to the user where he/she has the possibility of adding the details of the product he/she wants to enter.

In the first webpage (Picture 18) the user enters the basic information: product name, manufacturer (selected from the list of Organizations previously entered in the Organizations section), the primary ISO 9999 classification code which the products belongs to, a free text description in original language and in English, and the URLs
where additional information is available (image, thumbnail image, user manual, download webpage, multimedia material and further relevant information).

In the second webpage – accessible after the data entered in the first webpage have been saved and successfully validated – the user can browse the ISO 9999 classification to enter possible additional classification codes (in the case of multi-function products that fall within more ISO categories).

In the third webpage, a list of features – corresponding to the items of the ETNA taxonomy – is presented, so that the user can decide which of them to apply to the product he/she is entering. On the basis of the primary ISO code entered by the user, the system first presents the features that are more likely to be applicable to the specific type of product (Primary Features) (Picture 19).

In case the product description needs also other features that are not included among the Primary Features, by clicking on the “expand secondary features” button at the bottom of the page (Picture 20), the entire list of items of the ETNA taxonomy will be presented.

At the end of the process the user clicks on the “Save” button and the record is added to the ETNA central database.

![Picture 18 - Products upload tool: entering the basic information](image-url)
Organizations upload

In the Organization section the user can enter or edit information on Companies, Projects and Service providers. The interface is similar to the one described above for Assistive Products. When entering a new Organization, the user has to select the type of...
organization (Company, or Project, or Service provider) and fill in the basic information fields (Name, description, contact details, etc…).

When this is done, the user has to indicate what are the subjects the Organization is involved in, by selecting the appropriate ISO 9999 products classification codes (*Picture 21*) and the ICF disability-related domain codes (*Picture 22*).

**Selected ISO codes cart (click the Remove button to remove a code from the cart):**

- 22.36 - Input devices for computers

**Selected ICF codes cart (click the Remove button to remove a code from the cart):**

- b7 - Neuromusculoskeletal and movement-related functions

**Associated info (Library) upload**

In the *Associated information section* the user can enter or edit information on *Articles, Case descriptions, FAQs, Forums, Ideas, News,* and *Regulations.*

Again the interface is similar to those described above for Assistive products and Organizations.

When entering a new Associated Information the user has to select the type (Article, Case description, FAQ, Forum, etc…) and then fill in the *basic information* fields (Title, Authors, Abstract, Publishing details, Links to further info).

When this is done the user has to indicate what are the subjects of the Associated info by selecting the appropriate ISO 9999 products classification codes and the ICF disability-related domain codes.