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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This deliverable contains original unpublished work except where clearly indicated otherwise.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.

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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 both projects, as tangible results gradually took shape, technical considerations and thoughts related to future sustainability led to the decision of having two distinct but coexisting Portals, communicating with each other:

- an Information System – a search engine that aggregates information from various providers and repositories all over Europe and beyond – to be developed by the ETNA network and later taken up by the EASTIN Association (the European Assistive Technology Information Network);
- a Community – connecting all stakeholders through a collaborative portal – to be developed by the ATIS4All Network and later taken up by Technosite (the ATIS4all coordinator).

This deliverable describes the interfaces and functionalities of the Taxonomy management tool implemented within the final release of the ETNA Information System (published at http://test.etna-project.eu/).

This tool has been developed according to the specifications defined in D5.1 “Preparatory material for the design of the taxonomy management tool”.

The first chapter (Introduction) synthesises the objectives of the Taxonomy Management Tool.

The second chapter (Authorized users) describes the different roles of the authorized users of the tool.

The third chapter (Searching functionalities) explains the different methods available to search an item within the ETNA Taxonomy.

The fourth chapter (Relevance Ranking) describes the functionality that allows managing the relation between taxonomy items and product typologies (defined according to the ISO 9999 classification).

The fifth chapter (Localisation) describes the functionality that allows localising the items of the taxonomy into the different cultures of the ETNA portal.

Finally the sixth chapter (Taxonomy Editing) describes the functionality that allows managing the items of the taxonomy by adding new items, and deleting or editing existing items.
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Introduction

This deliverable describes the functionalities of the Taxonomy Management Tool (TMT), which has been implemented in the final release of the ETNA Information System (published at http://test.etna-project.eu – the web space devoted to the ETNA developments).

The TMT has been designed in compliance with the specifications defined in deliverable D5.1 “Preparatory material for the design of the taxonomy management tool”. As described in D 5.1, the purpose of the TMT is to provide a way for maintaining, and localising in all the languages of the ETNA portal, the detailed dataset for Assistive Products.

Contrary to the basic datasets, that are intended to be stable, the products detailed dataset is in fact evolutionary in itself and will be always in progress. This dataset describes the technical features of products, thus it needs to be continuously updated and enriched with new items (for instance, a new operating system appearing on the market requires that a new item is introduced under the category “operating systems” in order to describe products compliant with it).

As explained in annex 1 of deliverable D7.4 “Partners’ web services final release”, the ETNA detailed dataset is a vocabulary based on a two level hierarchy made up of Groups and Features. Homogeneous Features are grouped together in the same Group. For example the features “Windows”, “Mac OS”, “Linux”, “Chrome OS”, etc... are all clustered round the group “Operating System”, while the features “Printer”, “Visual display”, “Tactile display”, etc... are clustered round the group “Output devices”. Features can be of two types: Measures, that can have a numeric value or an interval specified (e.g. weight, length) and Attributes, that do not have a specified value (i.e. are Boolean features).

In compliance with the specifications given in D5.1, the functionalities provided by the TMT are the following:

- **Relevance ranking**: assigning a relevance score to a feature in relation to products belonging to a given ISO category;
- **Localisation**: translating a term of the “taxonomy master list” (i.e. the list of taxonomy items written in “international English”) into a specific culture;
- **Taxonomy Editing**: creating new items and modifying or deleting existing items.

The related interfaces have been implemented only in English language, as this functionality is intended only for specialists taking part in international discussions on these subjects.

Authorized users

The TMT, developed as a web based interface, can be accessed only by authorized users who log in the ETNA Portal. According to D5.1, three different roles have been introduced for these authorized users:

- **Taxonomy expert**: this user has a deep technical knowledge of the Assistive Product domain. He/she knows what are the technical features of the Assistive

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1 Within this deliverable the term culture is intended as the couple Country-Language. A country can in fact have more than one official language and a language can be the official language of more than one country (it is the case for example of French that is one of the official languages of Belgium and the only official language of France).
Products available on the market and is familiar with the ISO 9999 classification of Assistive Products;

- **National Contents Editor**: this role, already present for the content editing functionality of the ETNA portal, is reserved to those who are responsible for the different linguistic layers of the portal;
- **Taxonomy Administrator**: this is the role reserved to the administrators of the ETNA portal.

A single user may have more roles at the same time. Depending on the role(s) the user is assigned he/she can access different functionalities of the TMT:

- **Taxonomy experts** can use the **Relevance Ranking** functionality;
- **National Contents Editors** can access the **Localisation** functionality;
- **Taxonomy administrators** have access to all functionalities, including the **Taxonomy Editing** functionality, and can also edit data entered by other users.

### Searching functionalities

In the homepage of the TMT the user, independently of his/her role(s), can search existing taxonomy items by using one of the following two methods: search by name, and search by group (Picture 1).

![Picture 1 – Search functionalities of the Taxonomy Management Tool](image)

The **search by name** functionality returns all the items that contain the entered text string in their name. In the list of results, items are sorted in alphabetical order. Items representing a **group** (first level items) are included in angle brackets “< >”, while items representing a specific **feature** (second level items) are followed by name of the group they belong to, written in round and angle brackets “(< >)” (Picture 2).

The **search by group** functionality returns all the items belonging to a group, sorted in alphabetical order.

It is also possible to list all the items in the taxonomy using both methods, and therefore to sort them in alphabetical order by item (using search by name method) or in alphabetical order by group (using search by group).
Then the user can select an item in the list of results, click on the “modify” button and, depending on his/her role, use the functionalities described in the following chapters.

Relevance Ranking

In the Taxonomy Management Tool, after a feature has been selected, each Taxonomy Expert can indicate the ISO 9999 divisions that are, in his/her opinion, relevant for that feature. The expert may for example add the ISO division “22.12.24 - Word processing software” to list of product typologies relevant for the feature “<Functionalities> spell correction”.

As explained in deliverable D5.1, the need to assign a relevance ranking to each feature is related to a usability requirement of the ETNA Upload Tool, whose on-line forms are filled-in according to the ETNA taxonomy. In order to facilitate the filling-in task, the system should avoid asking for data that are irrelevant for a given products: this can be achieved by having the taxonomy items ranked according to their relevance for each ISO 3rd-level category.

The ranking procedure works as follows:

- Each expert ranks each item in terms of relevance for each ISO category; he/she can review his/her score at any time; however he/she won’t be able to see the other reviewers’ scores;
- Once a day a batch procedure will recalculate the average ranking of each item for each category, and store it in the central ETNA database;
- The average score is used by the Upload Tool to sort the items according to their relevance, when entering the characteristic of a product.

Each expert rates (from 0% to 100%) the level of relevance of each couple “ISO division – feature”. Looking at the above example, for instance the expert may rate 80% the relevance of the ISO division “22.12.24 Word processing software” for the feature “<Functionalities> spell correction”, and 20% the relevance of “22.36.18 – input software” for the same feature. When giving his/her preferred rate to a couple “ISO Division – feature”, the expert can see the average of the rates given by the all the other experts (Picture 3).
The expert can also add an ISO division to a feature, and then will be asked to enter the “rate” (i.e. the level of relevance) of such ISO division with respect to the selected feature. As shown in Picture 4, in the lower part of the page the user can see the other features associated with the selected ISO division.

Localisation

For National contents editors the TMT gives the possibility of translating / localising the items of the Taxonomy Master List in their own linguistic culture. Both the groups (first level items) and the features (second level items) can be localised. Of course, each National Contents editor can edit only the localisation items in his/her own culture.

After selecting a taxonomy item, the term in “International English” is shown in the upper part (along with the group it belongs to), while in the lower part the national
contents editor can enter the localisation in his/her own culture (Picture 5).

![Picture 5 – Localisation functionality. In this example a Slovenian national content editor is entering the translation for the term “alphabetic” belonging to the group “Linguistic representation”]

**Taxonomy Editing**

The taxonomy editing functionality is reserved to the users having the *Taxonomy Administrator* role. Such users, besides having the possibility of using the Relevance ranking and Localisation functionalities, can access, and edit, the data entered by all the other users of the TMT (Picture 6 and Picture 7).

![Picture 6 – relevance ranking view for a taxonomy administrator. The rates given by all the other users are shown and can be modified.]

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Picture 7- localisation view for a taxonomy administrator. The localisation in all the cultures supported by the ETNA portal is shown and can be edited

Taxonomy administrators are the only users that can modify the taxonomy master list, by adding new items, deleting or modifying existing items.

Before deleting an item, the system checks that the following conditions are verified:

- if the term is a group, no features are present within that group;
- if the term is a specific feature, no products in the central repository are linked to that feature.

If such conditions are not verified the system does not delete the item and gives a warning indicating the IDs of the features or the IDs of the products that are connected to the item.