

Voice-text integrated system for interpreters

User Guide

Contenido

MODULE I	3
1. COMPARABLE CORPUS MANAGEMENT	3
1.1. My corpora	3
1.2. Corpus query	4
1.3. Importing a corpus	7
1.4. Semi-automated corpus compilation	8
2. PARALLEL CORPUS MANAGEMENT	9
2.1 My corpora	9
2.2 Corpus query	9
2.3 Corpus importation	10
3. DICTIONARY AND GLOSSARY MANAGEMENT	11
3.1. My glossaries	11
3.2. Glossary management	12
4. NAMED ENTITY RECOGNITION SYSTEM	
4.1 Named Entity Recognition in text	
4.2 Named Entity Recognition in corpus	
5. TEXT SUMMARISATION SYSTEM	15
MODULE II	16
6. Note-taking	16
6.1 Automatic note-taking	16
7. MACHINE TRANSLATION	17
8. GLOSSARY QUERY	18
MODULE III	19
9. Exercises	19
9.1 Anticipation	
9.2 Numbers	20
9.3 Sight Translation	21
9.4 Glossaries	22
10. SYMBOLS	23
APPENDIX: MICROPHONE CONFIGURATION	24
APPENDIX: VERTICALIZED TEXT (.VRT)	26

Module I

This module is designed to carry out the preparatory tasks for an interpretation, such as the creation and query of corpora, glossaries, etc. The different parts of this module are described below.

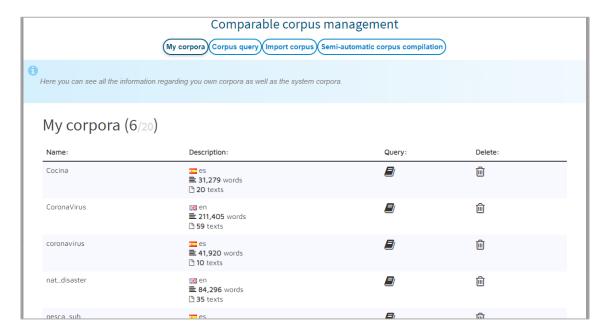
1. Comparable corpus management

This module offers different functionalities related to the corpora. You can create your own corpus, either using text files or from an Internet search. Different types of queries can also be performed on the created corpus.

1.1. My corpora

This section shows the basic information for the corpora that have been created: name, language, number of words and number of texts that comprise it. It also allows you to delete a corpus by clicking on the icon, or go to the corpus query by clicking on the icon.

In addition, you can see the information for the preloaded corpora on the system.



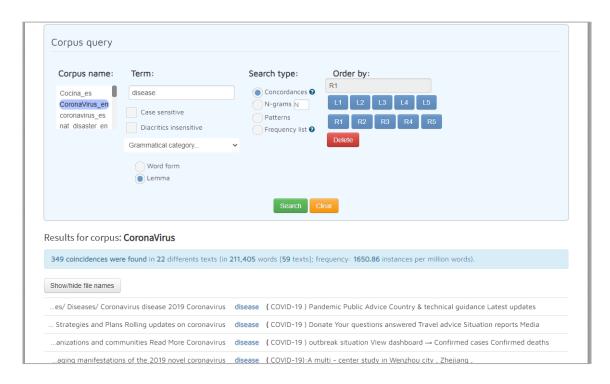
1.2. Corpus query

In this section, you can perform different queries over the corpora that you have created or imported. You just need to select one or several corpora from the list, type the search term and choose the type of query. To select several corpora, first select one and then press Ctrl+click on the next corpus that you would like to include in the selection.

In addition, several options can be set for the term, such as "Case sensitive" (makes the search case sensitive), "Diacritics insensitive" (ignore diacritics), "Grammatical category" (only terms matching the selected grammatical category will be shown). You can also choose if you want to perform the search by word form (as it appears in the corpus) or by lemma (lemmatized form of terms). The different types of queries that can be performed are described below.

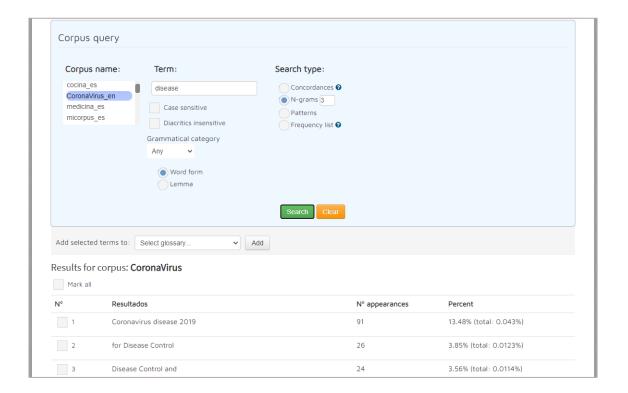
Concordances

Concordances are shown in a small context containing the given term in the selected corpora. The results can be sorted alphabetically according to the first word from the left (L1), the first word from the right (R1), the second word from the left (L2), the second word from the right (R2), and so on. In addition, several ordering levels can be set.



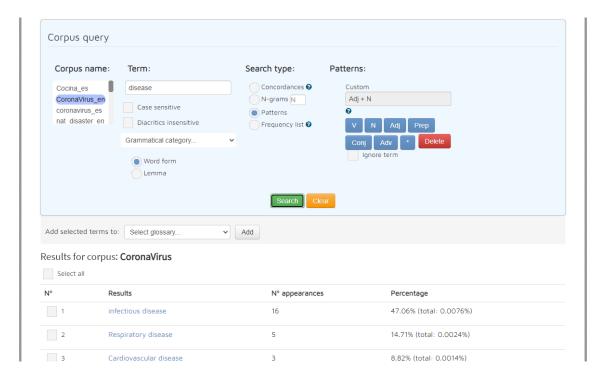
N-grams

In this case you must assign a value to N (2 for bigrams, 3 for trigrams, etc.). The N-grams containing the given term in the selected corpora are shown for the chosen N value.



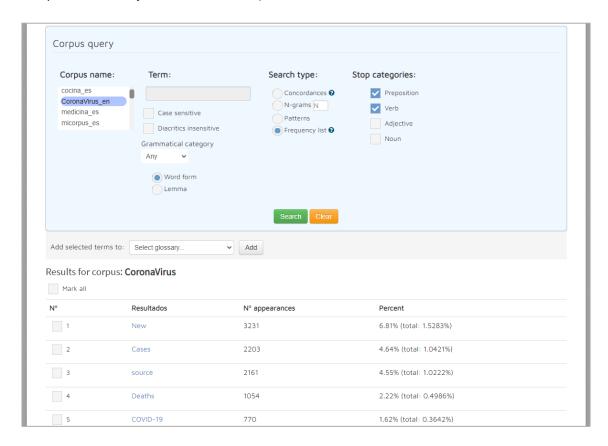
Patterns

The terms or collocations that match the chosen pattern and contain the given term in the selected corpus are displayed. Custom patterns can also be created. If the "Ignore term" option is checked, the term will not be considered.



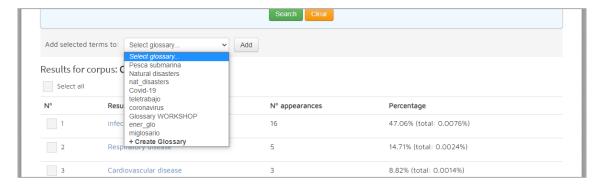
Frequency list

This functionality offers a list of the most frequent words that could be candidates for terms or phraseological units in the selected corpora. You do not need to enter any term, only the grammatical category you do not want to be shown ("Noun", "Adjective", "Verb", "Preposition", "Conjunction", "Adverb".)



After performing the query, you can select (by checking the checkbox) the resulting terms (except for *Concordances*) and add them to a glossary that you can later consult and edit (see section *Glossary query*). To do this, select a glossary from the drop-down menu or choose a name to create a new one and press the "Add" button. In order to quickly select several terms, you have two options:

- 1) Check "Select all" to select all terms.
- 2) Select a range. To do this, check an initial checkbox and, while pressing the SHIFT button, check an ending checkbox. All checkboxes in between will be automatically checked.



1.3. Importing a corpus

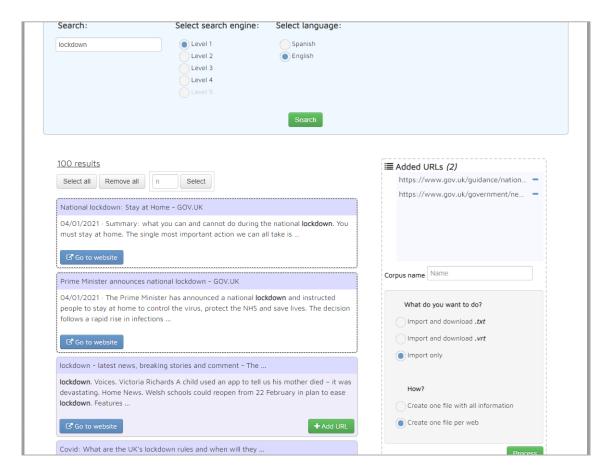
In this section you can create your own corpus from a set of texts. To do so, choose a name for the corpus and select the text files from your computer. These files can be in TXT, PDF or VRT¹ (VeRticalized Text) format. Select the language of the texts. After pressing the "Import" button, the corpus will be created, and you will be able to consult it in the section *Corpus query*.



¹ The columns order must be: token, part of speech, lemma. See *Appendix: Verticalized text*.

1.4. Semi-automated corpus compilation

In this section you will be able to create a corpus using texts from the Internet. You just need to type a search term or phrase (you can use the usual search techniques such as putting the phrase in quotation marks to search for an exact match or typing the "-" Boolean operator before a word to exclude it from the search), select a level (each one represents a different search engine) and select a language. After pressing the "Search" button, a list of related websites will be displayed, from which you will be able to choose as many as you consider appropriate to add to your corpus. Then you only have to choose a name for the corpus and select one of the three following options: "Import and download .txt" (the corpus will be downloaded in plain text format), "Import and download .vrt" (the corpus will be downloaded in vertical text format with morphological labelling, see *Appendix: Verticalized text*) or "Import only". In any case, a corpus which can be consulted in the section *Corpus query* will be created. You can also choose whether to combine all the obtained texts into a single file (by selecting "Create a file with all the information") or create a text file for each chosen web resource in addition to a metadata file (by selecting "Create a file for each web").

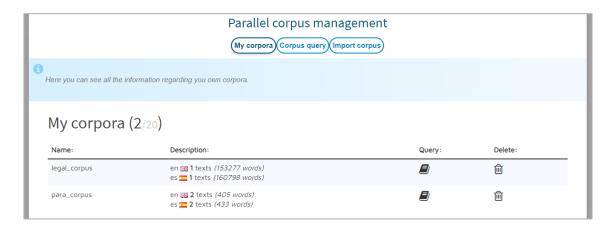


2. Parallel corpus management

In this module you can create your own parallel corpus using text files. Different types of queries can also be performed on the created corpus.

2.1 My corpora

This section shows the basic information for the parallel corpora that have been created: name, language, number of words and number of texts that comprise it. It also allows you to delete a corpus by clicking on the icon, or go to the corpus query by clicking on the icon.



2.2 Corpus query

In this section, you can perform different queries over the parallel corpora that you have created or imported. You just need to select one or several corpora from the list and type the search term. To select several corpora, first select one and then press Ctrl+click on the next corpus that you would like to include in the selection.

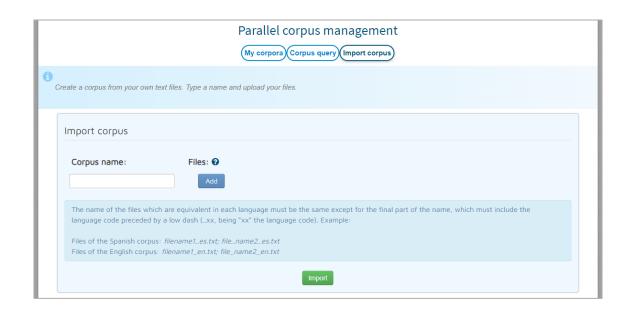
In addition, several options can be set for the term, such as "Case sensitive" (makes the search case sensitive), "Diacritics insensitive" (ignore diacritics), "Grammatical category" (only terms matching the selected grammatical category will be shown). You can also choose if you want to perform the search by word form (as it appears in the corpus) or by lemma (lemmatized form of terms).

After clicking "Search" button, fragments matching the typed text in selected corpus will be shown next to the equivalent in the other language corpus fragments.



2.3 Corpus importation

In this section, you can create your own parallel corpus from a set of text files. The name of these files must be in a specific format: the name of the files which are equivalent in each language must be the same except for the final part of the name, which must include the language code preceded by a low dash (_xx, being "xx" the language code. For example, the Spanish file filename1_es.txt corresponds to the English file filename1_en.txt, the Spanish file file_name2_es.txt corresponds to the English file file_name2_en.txt, etc.). Then, choose a name for the corpus and select the text files from your computer. These files can be in TXT or VRT (VeRticalized Text) format. After pressing the "Import" button, the corpus will be created, and you will be able to consult it in the section Corpus query.

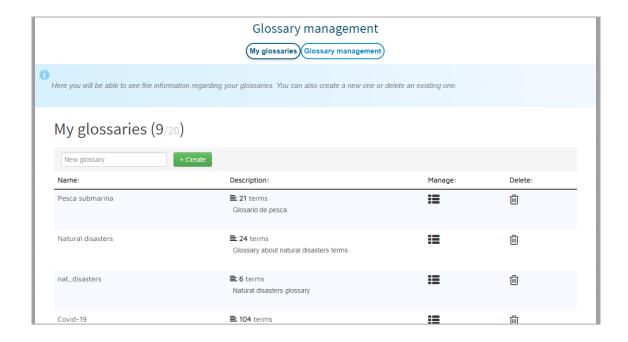


3. Dictionary and glossary management

In this section, you can see and manage the glossaries you have created.

3.1. My glossaries

Here you can see basic information about the glossaries you have created (name, description, number of terms) as well as create and delete glossaries. In order to create a new glossary, you just need to type a name and press the "Create" button. In doing so, an empty glossary will be created. You can change the description of any glossary by pressing on the edit icon which appears in the description when you hover your mouse over it. Then you can either confirm the change or discard it. To delete a glossary, press on the corresponding delete icon: In order to add terms to a certain glossary you must go to *Glossary management* section (instructions are in the next section). If you click on the icon, you will be automatically redirected to the management of the selected glossary.



3.2. Glossary management

In this section you can edit the created glossaries (modify, add, etc.). Just select a glossary from the list and click on "Show". To edit any term in the glossary, press on it or on the edit icon which appears when you hover the mouse cursor over it. Then you can either confirm the change (pressing or ENTER) or discard it (pressing or ESC). If you click on the external resources search icon on, a drop-down list with different resources (Google, Wikipedia, Linguee, etc.) will be displayed. When selecting any of these resources, a search for the selected term in that resource will be performed. You can also delete a glossary entry by pressing on the corresponding delete icon or add a new blank one by pressing the "Add" button.

Moreover, the tool allows both importing terms into glossaries and exporting those glossaries. To import terms to a glossary, press the "Import" button and select the desired file (the allowed formats are XLSX, XLS, CSV and ODS). This file must include the Spanish terms in the first column and their English equivalent in the second column. This way all the terms included in your file will be copied to the current glossary. To export a glossary to an XLS file, just click the "Export" button and the file will be automatically downloaded.

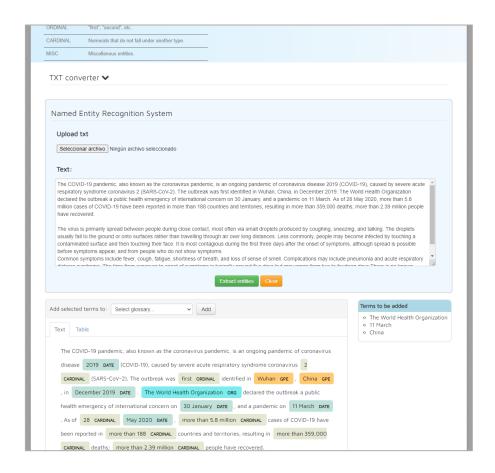


4. Named Entity Recognition system

In this section you can extract the named entities from any text.

4.1 Named Entity Recognition in text

In this section you can paste a text into the corresponding field, upload a text file (.txt) or use the text extraction tools to get the text from an URL or a PDF file. These tools will show the text in the corresponding field and allow the user to download the text in .txt format. Then, you just need to press the "Extract entities" button and the different types of named entities in the text will be highlighted (PER/PERSON: people, LOC: places, ORG: companies, institutions, etc.). The full list of recognised entity types can be found under the "Label Descriptions" drop-down menu.



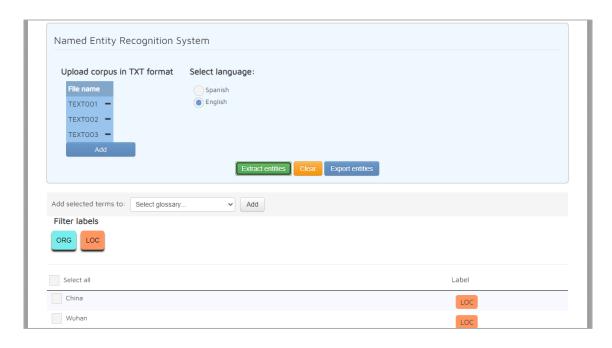
After processing the text, you can select the highlighted entities and add them to a glossary, together with a preliminary machine translation, that you can later consult and edit (see Glossary query section). To do this, click on any found entity or select it from the "Table" tab, where entities are shown in an ordered list. Then, select a glossary or type a name to create a new one and click on the "Add" button.

In order to quickly select several terms, you have two options:

- 1) Check "Select all" to select all terms.
- 2) Select a range. To do this, check an initial checkbox and, while pressing the SHIFT button, check an ending checkbox. All checkboxes in between will be automatically checked.

4.2 Named Entity Recognition in corpus

In this section you can upload several text files (.txt) by clicking "Add" button. Then, you just need to press the "Extract entities" button and a table of named entities in the text grouped by type that can be filtered will be shown (PER/PERSON: people, LOC: places, ORG: companies, institutions, etc.). The full list of recognised entity types can be found under the "Label Descriptions" drop-down menu.



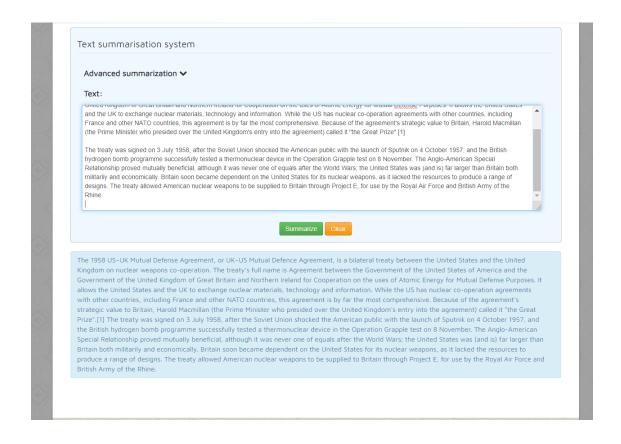
After processing the text, you can select the desired entities and add them to a glossary, together with a preliminary machine translation, that you can later consult and edit (see Glossary query section). To do this, click on any found entity, select a glossary (or type a name to create a new one) and click on the "Add" button.

In order to quickly select several terms, you have two options:

- 1) Check "Select all" to select all terms.
- 2) Select a range. To do this, check an initial checkbox and, while pressing the SHIFT button, check an ending checkbox. All checkboxes in between will be automatically checked.

5. Text Summarisation system

In this section you can summarize a text. For this purpose, you can either load one or several plain text files (.txt), paste the text directly into the corresponding field, or use the text extraction tools to get the text from an URL or a PDF file. These tools will show the text in the corresponding field and allow the user to download this text in .txt format. Then, choose the type of summary by selecting the number of words or the percentage of the original text that it will take up. After pressing the "Summarize" button, the result will be shown next to the original text.



Module II

This module is intended to be used during the interpretation process. The different sections are detailed below.

6. Note-taking

This section includes tools which can be useful during the note-taking process.

6.1 Automatic note-taking

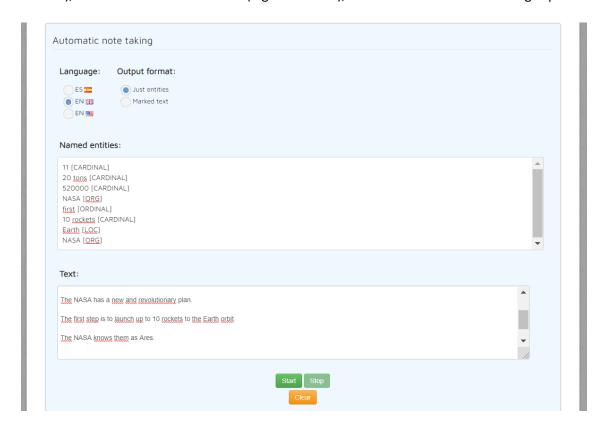


Before using the microphone, kindly grant the browser the necessary permission. You will see a crossed-out camera icon on the right-hand side of the address bar. Please click on the icon and follow the instructions. See *Appendix: Microphone Configuration*.

This section provides automatic note-taking. The system will generate a text from an oral speech and will detect automatically the named entities and numbers appearing in the speech. To do

so, you only have to select the language of the speech and the output format. If you want to get a list of named entities and detected numbers, select the 'Entities Only' option. If you prefer to get the full text highlighting the entities and numbers, select the "Marked text" option. By pressing the "Start" button, the system will start transcribing everything that is said through the microphone until the "Stop" button is pressed.

The numbers are not shown in isolation. They appear next to the noun to which they refer. In this way, you will be able to have important information, such as the physical magnitude (e.g. 20 tons), but also the common nouns (e.g. 10 rockets), as can be seen in the following capture:



7. Machine translation

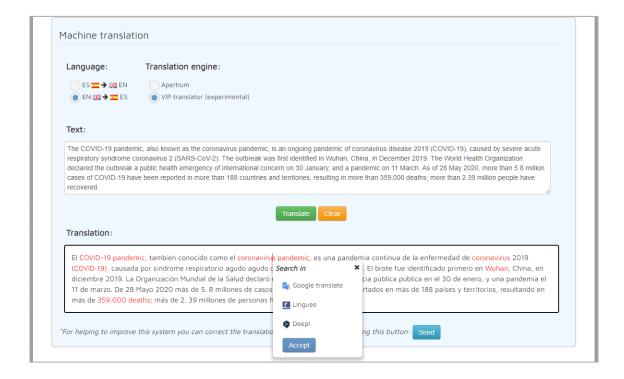
In this section you can make a translation from Spanish to English or from English to Spanish automatically, so it could be used for any of the stages of an interpretation. You just need to enter the text to be translated in the "Text" field, choose the language (ES->EN or EN->ES), the translation engine (*Apertium*² or the machine translation integrated VIP tool) and press the "Translate" button. The result will be shown in the "Translation" field. If you are using the machine translation integrated VIP tool, any word that cannot be translated will appear in red.

17

² https://apertium.org/

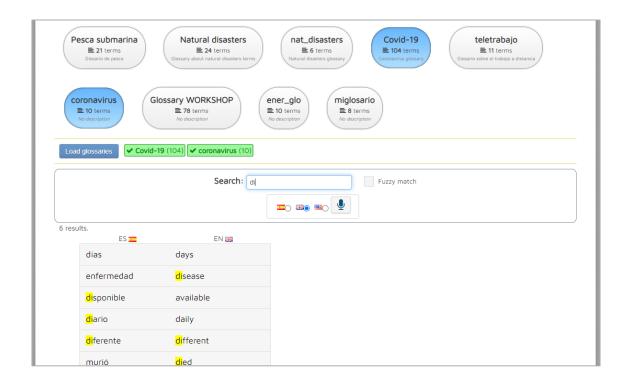
If you press on any of the words highlighted in red, a context menu will be shown and you will be able to choose either searching the term in an external searcher (*Linguee*, *Deepl.*, *Google translate*) or confirming the term as correct.

If you detect that the translation is not completely correct, you can modify the result and send it to the system by pressing the "Send" button (this button appears when modifying the resulting text); in this way you can help us to improve the machine translation integrated VIP tool.



8. Glossary query

In this section you can use the glossaries previously created in Module I. You just have to select the desired glossaries, press on "Load Glossaries" and a search field will appear. When typing a term, the results will start appearing automatically in a quick and convenient way. If you check the "Fuzzy match" option, results with partial coincidences will be shown too. In addition, you can perform the search using your voice, by clicking the \P icon or pressing the "s" key.



Module III

This module aims to take advantage of the information used in the previous modules to create several types of exercises in order to practice and improve the different skills of the interpreter. Moreover, it can also be used to prepare an interpreting assignment.

9. Exercises

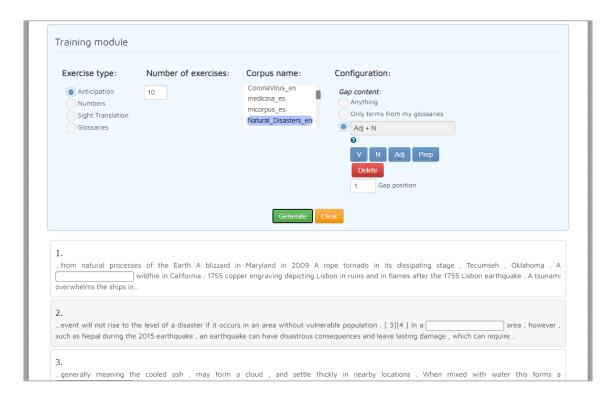


Before using the microphone, kindly grant the browser the necessary permission. You will see a crossed-out camera icon on the right-hand side of the address bar. Please click on the icon and follow the instructions. See Appendix: Microphone Configuration.

This system offers four different types of exercises. To generate the exercises automatically, you only have to choose the type of exercise, the number of exercises and the configuration, which is different for each type of exercise:

9.1 Anticipation

In this type of exercise, you choose the corpus you would like to use and the gap content, where you can choose either "Anything" (random terms from the selected corpus), "Only terms from my glossaries" (terms from the selected corpus that can be found in any of your glossaries if possible) or use a custom pattern (Adj+N, V+N, etc.). By clicking on the "Generate" button, you will obtain a list of small texts, which have been extracted from the selected corpus, in which one of the terms has been omitted according to the selected option in "Gap content". If you choose the "Pattern" option, the omitted term will be the one indicated by the number in "Gap position". For instance, if you create a pattern such as N + Prep + N and set 2 for the "Gap position", the omitted term will be a preposition. To complete the exercise, you must find out which term is missing and type it in the corresponding field.



9.2 Numbers

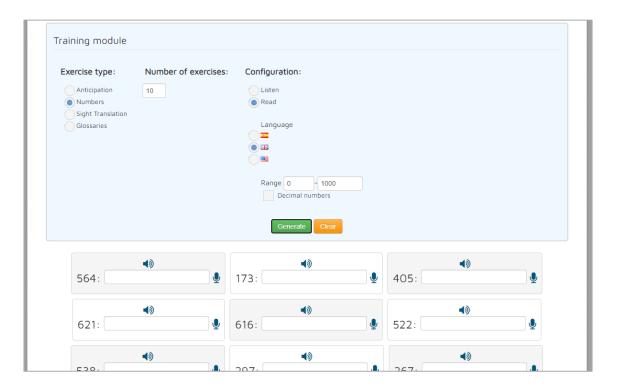
For this type of exercise, you need to choose the language³, the range of numbers and whether you would like to "Listen" to or "Read" the numbers. By pressing the "Generate" button, random numbers will be created and used for the exercises.

In the "Listen" mode, you must press the \triangleleft icon and enter the number that you hear into the text fields (the number is reproduced in the selected language). You can also say the number aloud after clicking the \triangleleft icon.

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There are two variants for the English language: British English and American English.

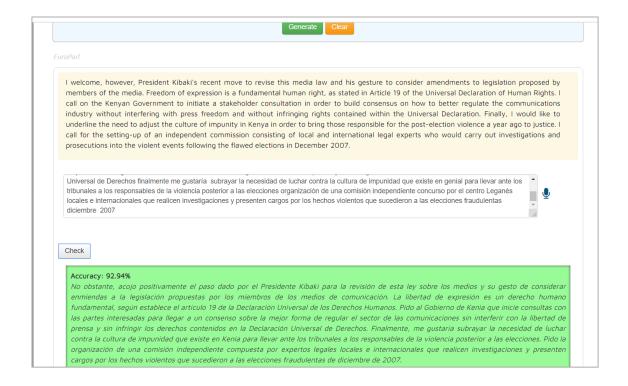
In the "Read" mode, written numbers will appear next to text fields that must be filled in by reading the number (in the selected language) aloud after pressing the \P icon. If you would like to listen how the number is pronounced in the selected language, you can press the \P icon which is above the text field.



9.3 Sight Translation

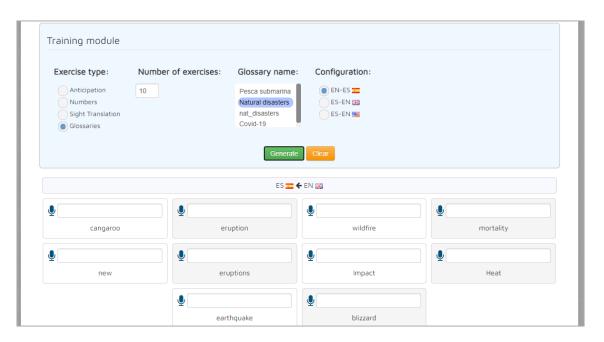
In this type of exercise, select the language⁴ and the parallel corpus that will be used to generate the exercises. By clicking on the "Generate" button, two fields will appear for each exercise. When the \P icon is pressed, the text (in the source language) will appear in the first field and the voice detection will be activated. Everything you say will be recorded (in the target language) and will be written in the second field. When you have finished, press the licon to end the voice detection. Press the "Check" button and you will obtain the parallel text together with a percentage that measures how similar the resulting text is to the output of the sight translation.

⁴ British English and American English are available for the English language.



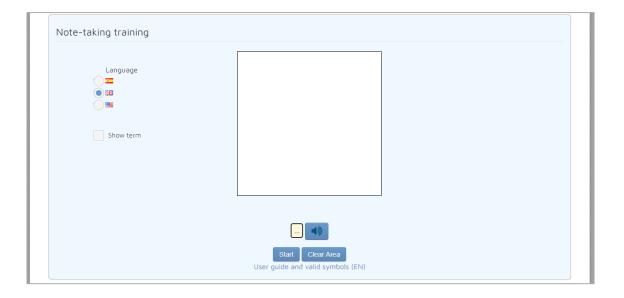
9.4 Glossaries

For this type of exercise, you need to choose a glossary (previously created in Module I) and the language (ES->EN or EN->ES). By pressing the "Generate" button, a list of pairs of terms will be shown where one of them is blank. It can be filled in by typing directly in the field or by pressing the \P icon and saying the answer out loud.



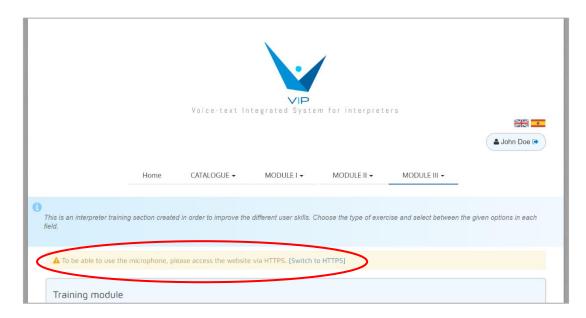
10. Symbols

In this section you can practise the symbols used during an interpretation. If you click on "List of symbols", a list of available concepts will be displayed. After clicking the "Start" button, you will listen to one of the concepts from the list. In addition, by checking the "Show term" checkbox, the written concept will appear. You must draw the corresponding symbol to the given concept and, in case you do it correctly, another concept will be offered. Under the drawing area, a bar indicating the accuracy degree of the drawn symbol will be shown (the longer, the more similar to the correct symbol). If you draw it incorrectly several times, the system will show you the solution.

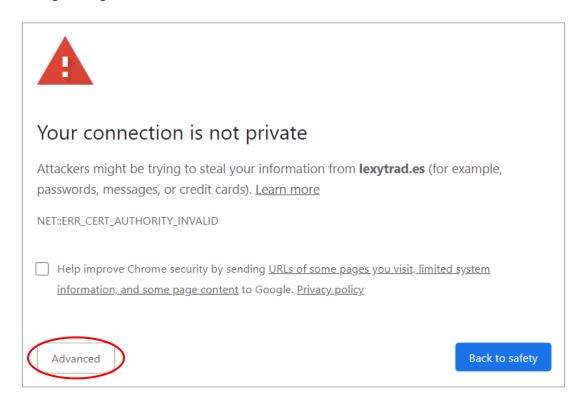


Appendix: Microphone configuration

In order to use the microphone in the system, you must access the platform via the secure HTTPS protocol. Otherwise, if you are accessing via HTTP, the following warning message will appear in the sections where the use of the microphone is required:



To access via HTTPS, click on "Switch to HTTPS" and the browser will display the following warning message:



To continue, press the "Advanced" button and the following message will be displayed:

This server could not prove that it is **lexytrad.es**; its security certificate is not trusted by your computer's operating system. This may be caused by a misconfiguration or an attacker intercepting your connection.

Proceed to lexytrad.es (unsafe)

Finally, click on "Access lexytrad.es (non-secure site)" and you will return to the system, where you will be able to use the microphone.

Appendix: Verticalized text (.vrt)

Verticalized text (.vrt), also known as one-word-per-line, is a format in which each token is in a different line. It can contain additional information related to each token, as the grammatical category or lemma (separated by tabulations). Structures such as sentences or paragraphs can be set too using XML tags.

If we take this text as example:

This is the first sentence. This is the second.

Verticalized text would be:

This is

the

first

sentence

. This

1111

is

the

second

.

We can include additional information (such as grammatical category or lemma) next to each token, leaving one tabulation separation:

This DET this VER is be DET the the first ADJ first NOU sentence sentence PUN this This DET is VER be the DET the ADJ second second PUN

26

In addition, we can set structures such as sentences (<s>) or paragraphs () by using XML tags:

<s></s>		
This	DET	this
is	VER	be
the	DET	the
first	ADJ	first
sentence	NOU	sentence
•	PUN	•
<s></s>		
This	DET	this
is	VER	be
the	DET	the
second	ADJ	second
•	PUN	•