



D5.3: A STAND-ALONE EDITOR FOR DISCOURSE REPRESENTATION DIAGRAMS

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Abstract	This is a cover document for the code delivered as D5.3. It presents a feature recap of the implemented prototype with screenshots, and a link to its source code.
Keywords	Graphical editor, discourse representation diagrams, AZVD, AZee.



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v0.1	9/09/2022	Initial description of user interface	Thomas von Ascheberg, Michael Filhol
v0.2	4/10/2022	Deliverable type, section on creating menu entries, clarified §1 (task situation, editing not bidirectional)	Michael Filhol
v0.3	5/10/2022	Prospects and integration	Michael Filhol

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CO	Confidential to EASIER project and Commission Services	

* R: Document, report (excluding the periodic and final reports)

DEM: Demonstrator, pilot, prototype, plan designs

DEC: Websites, patents filing, press & media actions, videos, etc.

OTHER: Software, technical diagram, etc.



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1 INTRODUCTION

WP5 addresses human post-editing of machine translated output. Tasks 5.2 & 5.3 focus on post-editing after translating from a spoken language to Sign Language, in other words the direction of translation with signed content as the target output. Instead of manually providing signed substitutions (T5.2), the purpose of task 5.3, to which this deliverable is specifically related, is to provide the corrections as **graphical diagrams** following a system also defined in the task. Those diagrams are meant to be interpretable by software to the extent that an animation can be produced by an avatar. Then, such animation can be used as the replacement for the erroneous portions of the MT output.

The design of the graphical system followed the suggestions published in recent research [1], [2], subsequently named “AZee verbalising diagrams” (AZVD). It was done through the collection of an additional corpus of spontaneous diagrams to study, and later studying their internal and cross-diagram regularities. The resulting AZVD system is such that every diagram drawn following the system can be turned into an AZee expression, which is known to be a valid input format for animation by the Paula avatar used in the project.

After specifying the AZVD graphical system, a subsequent sub-task of T5.3 was also to develop a software editor to draw them, the editor program itself constituting this deliverable (D5.3). This cover document summarises the features of the delivered prototype, and a few step-by-step screenshots to illustrate their use. The main content however is the code currently available as a commit tagged “EASIER-D5.3” in the development GitHub repository [3], for which a snapshot archive is also made available for download [4].



2 LAUNCHING

As per the “README”, provided the required dependencies (Java>8 and Apache Maven) are installed, the editor can be run as a web service (command given) and connected to through <http://localhost:9000> using a regular browser.



3 EDITOR FEATURE RECAP

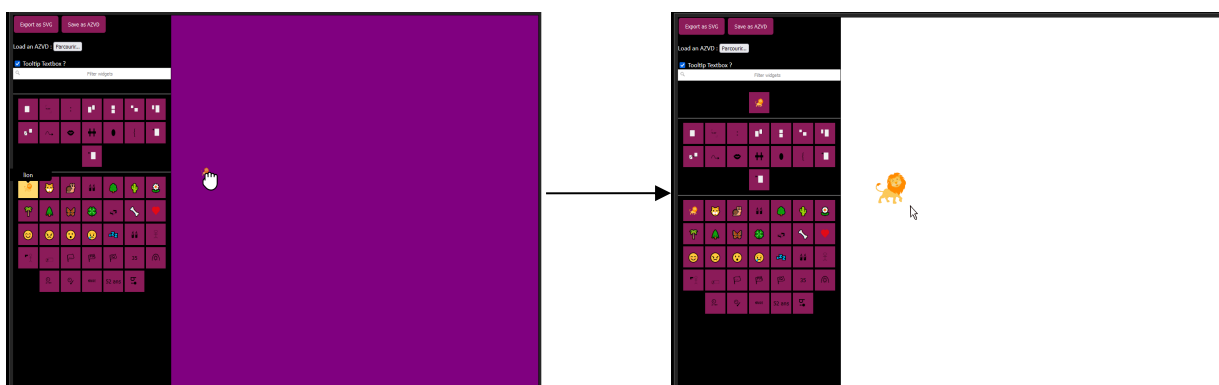
On connection, here is the initial screen displayed:



It is split in 3 main areas:

- ➡ the **main canvas** (middle), where the user creates and edits the diagrams;
- ➡ the **layout menu** (left) from where to drag the graphical layouts into the diagrams;
- ➡ the **AZee output panel** (right), generating the AZee code for the diagrams on the main canvas, that will allow the later animation of the avatar.

To **draw a layout** from the left menu, drag and drop an element from the layout menu to the main canvas. Note that a background becoming purple is indicating you that this is a valid place to drop an element. The example below shows the drop of a zero-argument layout:



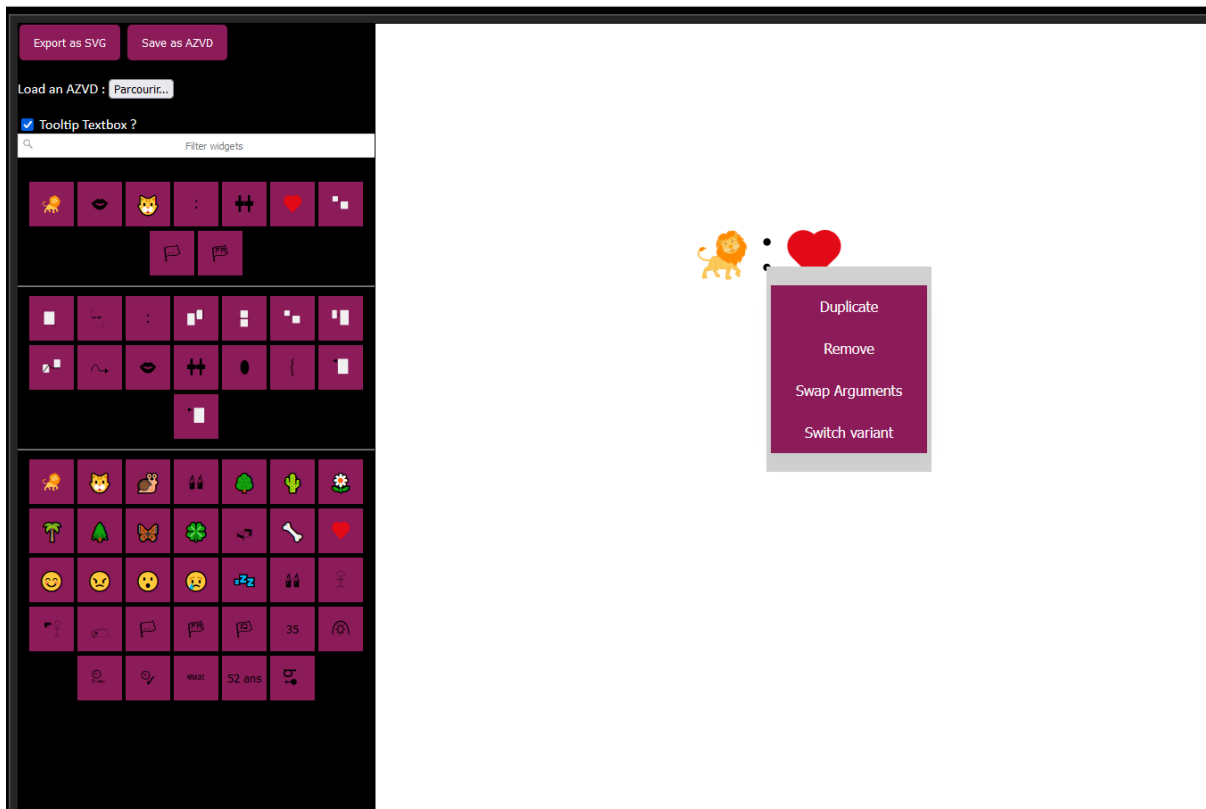
Combining layouts (those with arguments) will present “drop zones”, displayed as grey rectangles until filled with more content to complete the diagram. For example, the layout capturing the “info-about” relationship has two arguments and is drawn as a colon/equal symbol between those two arguments. Then, content can be dragged into them and the same purple cue will inform the user that the drop is valid.



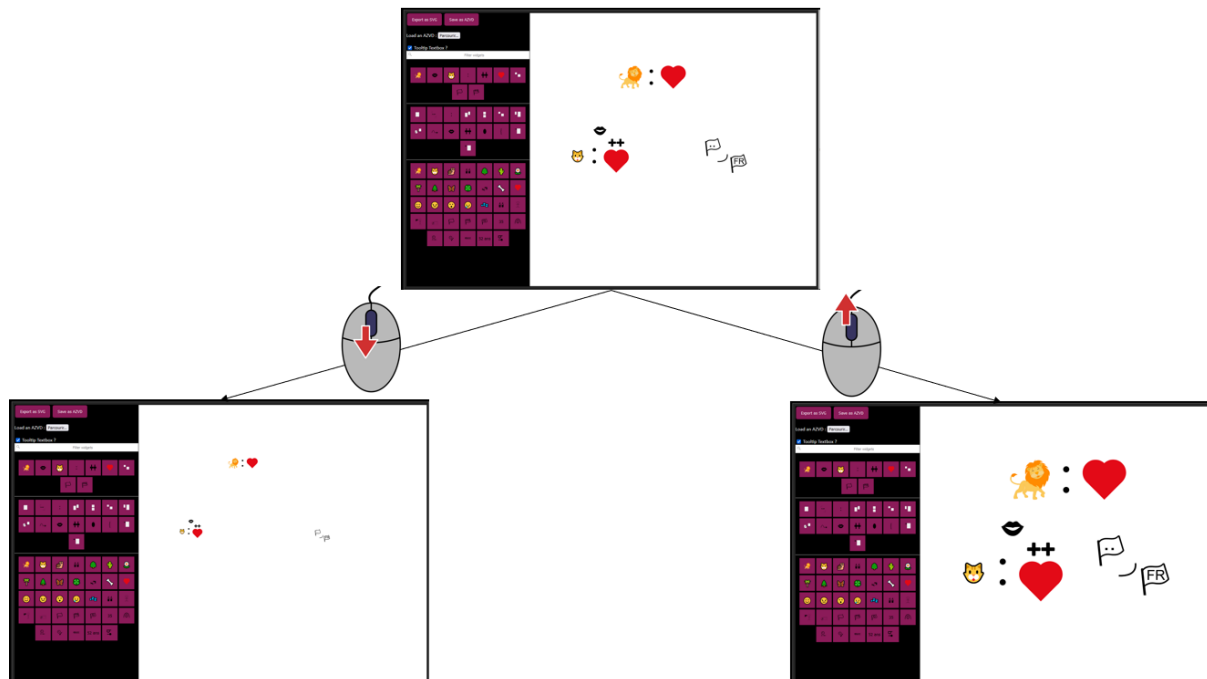
AZVD allows several graphical layouts (called **variants**) to generate the same AZee output. To select a variant, click on an icon in the layout menu to display the list of available variants and drag the one to draw in the diagram:



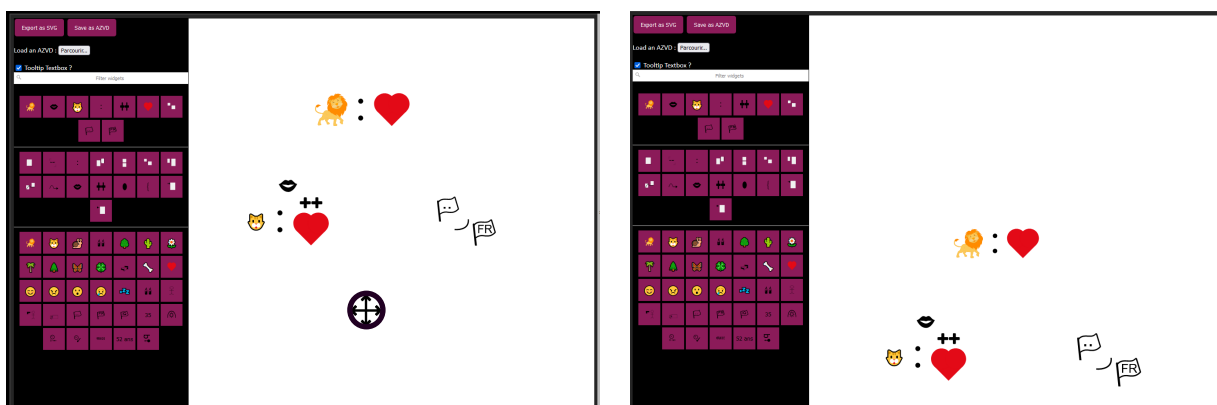
Right-clicking on an element drawn in the canvas displays a **context action menu** whose contents depends on the nature/type/arity of that element:



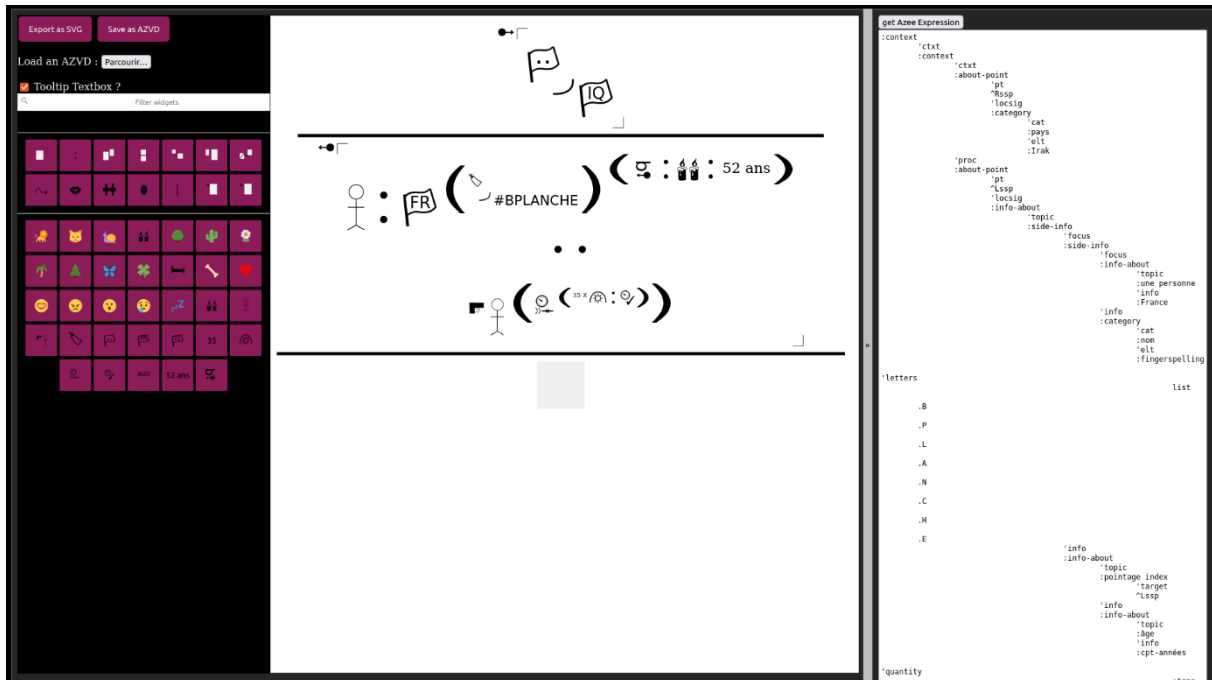
The mouse wheel can be used to **zoom** in (wheel upwards) or out (wheel downwards) the canvas drawing:



Clicking and dragging with the middle button **moves the diagram in the viewport**:



To **generate the AZee expression** encoded by the diagram on the canvas, click on the “get AZee expression” button in the AZee output panel for it to appear.



Note on customising the layout menu entries

The set of layouts populating the left-hand menu shown here is sufficient to demonstrate the capabilities of the system, both for diagram creation and for AZee generation. But for a better coverage and to adjust to different AZee production sets (each set being language-specific), it is necessary to extend it.

The menu is dynamically built at start (loading page) from a set of editable JSON files on the server side, describing the contained layouts and their respective AZee templates. The way to do this is fully described in the “doc/JSONGuide/readme.md” markdown file on the repository.

4 PROSPECTS

This delivers a standalone editor for AZVD, with AZee generation capability. The plans for the future are to extend this software, in essentially three directions:

1. improve AZVD and AZee coverage still, some aspects like references to signing space points still needing to be expressed in native AZee code within the diagrams, whereas regularities are observed in spontaneous productions on this aspect as well;
2. invoke this editor from the project's translation pipeline, allowing the translators to identify the substitutions to carry out with the produced diagrams (e.g. time tags, etc.);
3. recent developments in T4.4 are now opening the prospect of obtaining some AZee-formatted output from the MT processes upstream. If this proves true, we will investigate the reverse conversion of AZee to AZVD so that a diagram can directly be produced from the MT, and submitted to the human for a post-editing step more properly integrated to the pipeline



REFERENCES

- [1] Michael Filhol (2020). “Elicitation and corpus of spontaneous Sign Language discourse representation diagrams”, in *Proceedings of the 9th workshop on the Representation and Processing of Sign Languages*, Marseille, France.
- [2] Michael Filhol (2020). “A human-editable Sign Language representation inspired by spontaneous productions... and a writing system?”, in *Sign Language Studies*, Gallaudet University Press.
- [3] <https://github.com/michael-filhol/AZVD>
- [4] <https://cirrus.universite-paris-saclay.fr/s/Fk5z89sDpZwfn93>

