Board Builder and AsTeRICS Grid Concept for Integration

Introduction

The aim of this document is to provide a concept for integrating two exisiting services:

- **AsTeRICS Grid (AG):** web-based tool for raster based AAC, communication via symbol boards, keyboards and text-to-speech, developed at UAS Technikum Wien, currently further developed via a funding by netidee.
https://grid.asterics.eu/
https://www.netidee.at/asterics-grid

- **Board Builder (BB):** web-based tool for creating, managing and sharing symbol based boards, not intended for being used for actual communication, developed by Global Symbols.
https://globalsymbols.com/
https://app.globalsymbols.com/de/

AsTeRICS Grid has many actual AAC users from all around the world, however currently there is no (easy) possibility for cooperation between users. So the overall goals of the integration between AsTeRICS Grid and Board Builder are:

- create an **easy possibility to share board configurations** created in AsTeRICS Grid via Board Builder's infrastructure

- make it **easy to use and build upon existing user-contributed configurations** by being able to easily search and import public board sets from Board Builder within AsTeRICS Grid

- Make **existing configurations within Board Builder easily and quickly usable** for actual communication by switching from Board Builder to AsTeRICS Grid and use a specific configuration there

- Create an infrastructure which not only facilitates the use of the collected boards within AsTeRICS Grid, but also within other tools, making **Board Builder a generic and open platform for exchanging communication boards**.

Open board format

In order to be able to share boards between AsTeRICS Grid and Board Builder, it's necessary to use a common data format. It makes sense to use the Open Board Format (OBF) for this, see
https://www.openboardformat.org/

AsTeRICS Grid currently only supports importing OBF, Board Builder both import and export. So the first step will be to close the gap in the data format, meaning adding the OBF export functionality to AG and checking that the import of the result in BB works correctly.

Covering features not existing in the OBF specification

AsTeRICS Grid has features, which aren't covered by the OBF specification:

- special elements like: word prediction elements, YouTube player

- data regarding dictionaries, see https://www.asterics.eu/manuals/asterics-grid/07_dictionaries.html#dictionaries

- special actions like: controlling web radios, YouTube playback, environmental control and many more, see all action types https://www.asterics.eu/manuals/asterics-grid/05_actions.html

- any data regarding grammar and word forms, see https://www.asterics.eu/manuals/asterics-grid/10_word_forms.html

- global grids (elements that are always visible), see https://www.asterics.eu/manuals/asterics-grid/02_navigation.html#global-grid

While the OBF specification encourages to add missing non-specified parameters with prefix „_ext" if needed, I assume that the easiest approach for exporting from AsTeRICS Grid to OBF would be to:

1. converting everything specified in OBF to a standard .obz file

2. including a native export of AG (file extension .grd) to the .obz and link it in manifest.json of the .obz file in a property like:
   _ext_asterics_grid_config_file=<path to .grd file in .obz archive>

3. If the .obz file is imported in AG, the original .grd file is used, if imported somewhere else the files complying with OBF are used.

I've asked the creators of OBF what they think about this approach: https://github.com/open-aac/openboardformat/issues/15
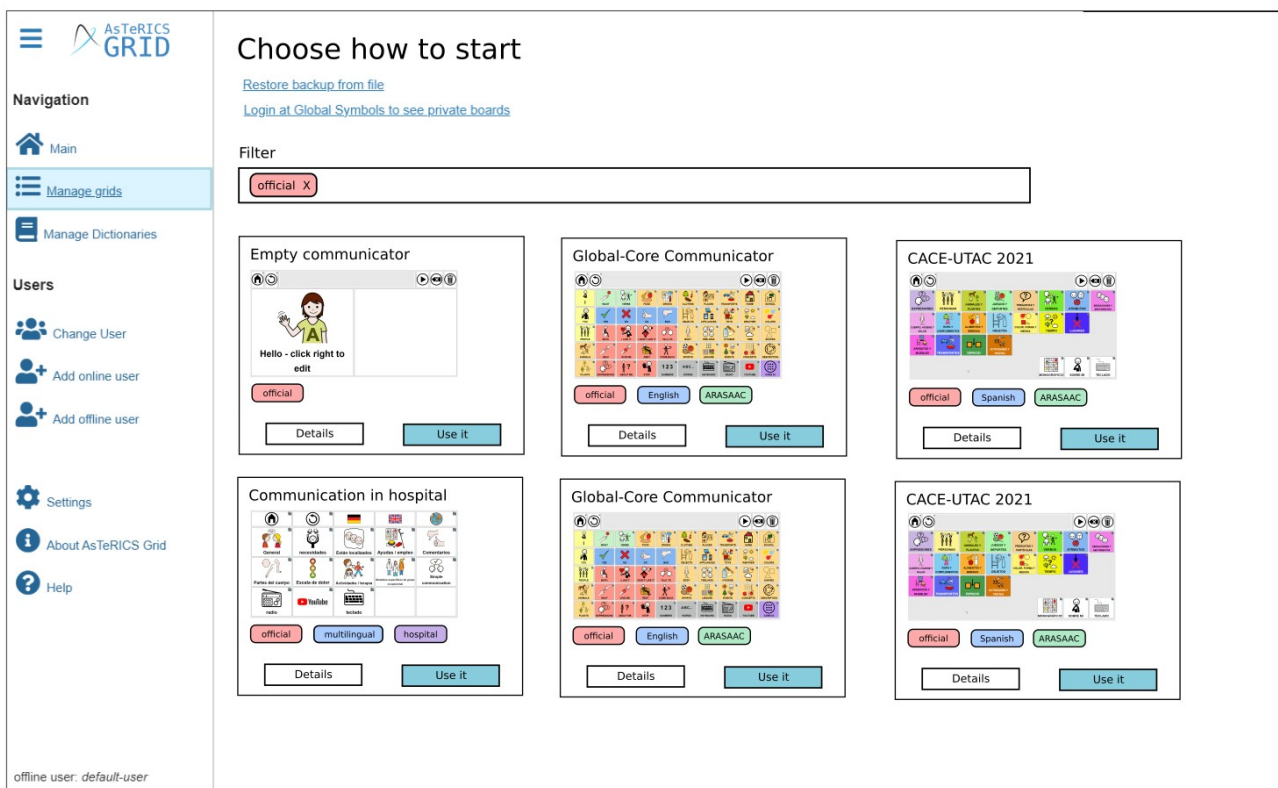
Features to implement

These are the features which should be implemented in both Board Builder (BB) and AsTeRICS Grid (AG). The priority and order of implementation will be the same as this list:

- AG1: Implement export to OBF format

- BB1: verify import and export of OBF works correctly, re-exporting configurations which came from AG previously, should still contain the original AG backup file (see above).

- AG2: implement possibility to list and import **public** board configurations from Global Symbols. This includes:

  - create open API endpoint at Global Symbols, which makes it possible to fetch / search for public board sets

- add a view in AsTeRICS Grid that creates a UI for searching for data coming from the public boards endpoint, found public boards can be imported and used within AG

- AG3: implement possibility to list and import **private** board configurations from Global Symbols. This includes:

  - add AG as a new Oauth client to the existing Global Symbols resource server in order to be able to access private board configurations directly within AG (same procedure that is already used for Board Builder now)

  - Show private boards on the same UI view in AG as the public ones, but only if logged in via Global Symbols

- BB2: add possibility to open board configurations opened in BB in external AAC tool (in the first step in AG, but at some time in the future maybe also in other AAC tools).

- AG4: add possibility to share configurations from AG to Board Builder – upload private or public configurations directly within AG. This probably will be integrated within the existing "Manage grids" view in AG, where it's currently possible to export the configuration to file. Then it will also possible to upload it to BB there.
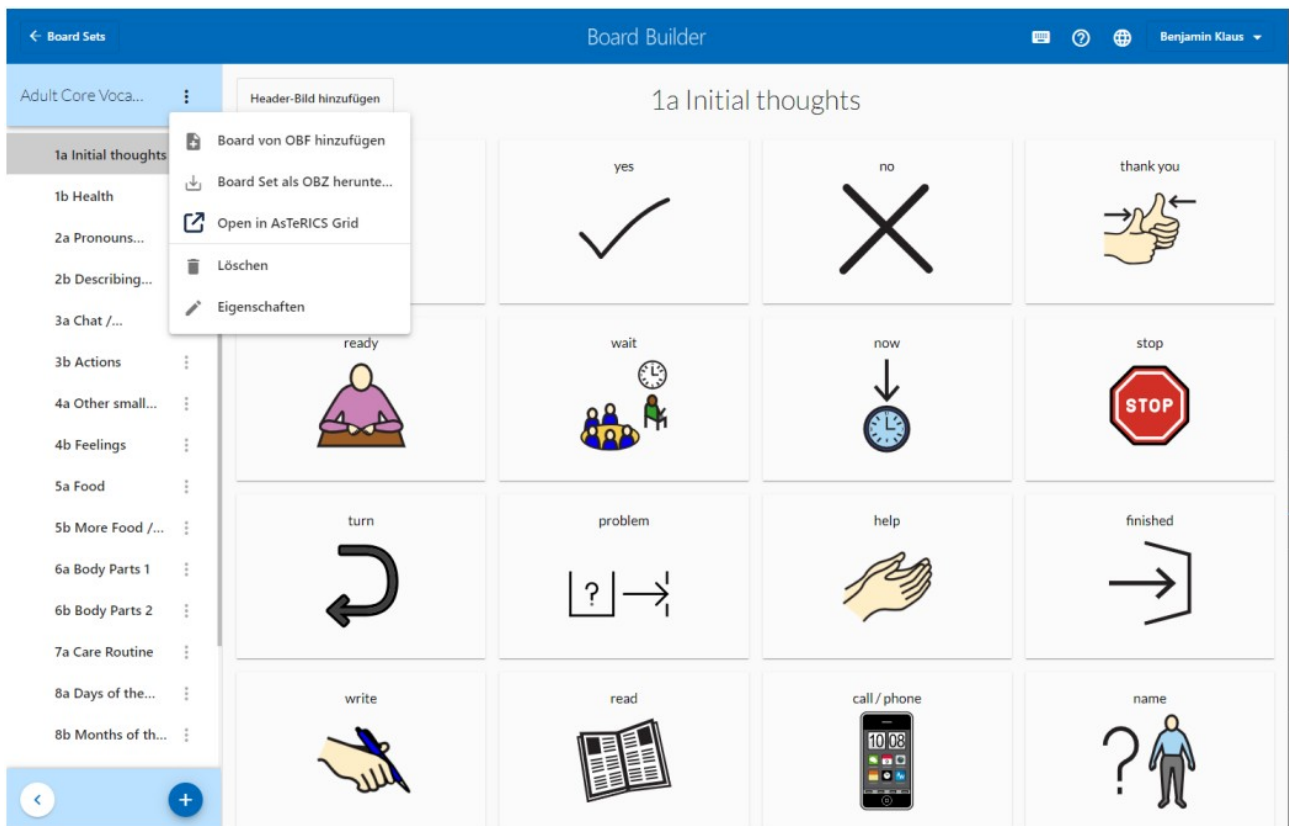
UI Drafts

AG2 + AG3: import boards in AG

This is how the new UI view for importing boards in AG could look like. Each configuration has tags indicating it's properties. This could be the author (e.g. ARASAAC), the language (e.g. English, Spanish, …), the context of use or information if it's an „official" (recommended) configuration, a configuration shared by another user or a private configuration. Private

configurations can only be displayed, if the user is logged in at Global Symbols and had allowed AG to access the private boards using Oauth before.

BB2: open boards in AG from BB

In BB there will be an additional menu item to directly open a board set in AG. In the future there could also be more options in a submenu „Open in..." where it's then possible to open the board set in AG or an other tool like Cboard or PiCom (which would need adaptions within these programs in order to make it work).