



MATRIX AAC

COMMUNICATION SOFTWARE

User Guide

October 2025

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1 Copyright information

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- Any dispute arising from or related to this Agreement or its execution shall fall under the exclusive jurisdiction of the Court of Oristano.
- In the case of a contract entered into by a Consumer, jurisdiction shall lie with the court of the Consumer's place of residence or domicile.
- This Agreement is governed by Italian law, without prejudice to any applicable European or international conventions currently in force.

2 Welcome to “Matrix AAC Communication software”

Matrix AAC Communication Software is an innovative software solution that offers a true development environment (intuitive, simple, and functional) for the creation of grids, structures, and communication books designed for individuals with verbal language difficulties, a characteristic for example of Autism Spectrum Disorders (ASD). The objective of the Matrix AAC system is to improve the quality of life of people affected by these conditions, who often experience frustration from the inability to understand or make themselves understood, which in turn can lead to problematic behaviors.

A concrete solution is offered by Matrix AAC Communication Software, which fully integrates and makes optimal use of Augmentative and Alternative Communication (AAC), a system that uses writing, symbols, images, tools, or gestures to compensate for communication difficulties.

The software includes pictogram libraries such as Arasaac and Symbolstix.

In addition, thanks to its completeness and ease of customization, Matrix AAC Communication Software is an outstanding tool designed for people affected by neurodegenerative diseases that temporarily or permanently limit expressive language and/or mobility (ALS, SMA, etc.), through the use of accessibility interfaces such as sensors, eye-tracking systems, and touch screens.

With Matrix AAC Communication Software, it is possible to fully personalize the final application with which the user will communicate, play, study, and interact with the people around them.

Core functionalities:

- Creation of fully customizable layouts: you can choose the number of rows and columns, the background, the layout and number of cells, and the actions that the grid will perform when displayed.
- Personalization of each cell: you can define its shape, style, content, and the actions that the cell will execute (selectable from over 50 available commands) once selected by the user. You can choose an image from local storage, or use the Arasaac, or Symbolstix pictogram libraries. Text can be added separately from the image or overlaid on it, with complete control over its position, size, font, color, and orientation.
- Workbenches: these allow the user to write documents (with or without images), perform mathematical calculations, listen to music, watch videos, and much more.
- The user can interact with the app in various ways, depending on the type of condition and as defined during the design phase: they can use touch selection in single-tap or two-step mode, or interact through any sensor connected to the device via scanning (sequential, block, or row-and-column scanning), in either manual or automatic mode. Eye-tracking selection is also available if the appropriate hardware is in place.
- Structure sharing: you can create structures on one device, export them, and import them on another. This allows the user to work with a device running Matrix AAC Communication Software while the designer or therapist continues working on a separate system.

Matrix AAC Communication Software is constantly being updated: in addition to the features listed above, we are continuously working to offer more functionality to users and to improve overall performance

Contact Details

Manufacturer

<p>Dialog Ausili s.r.l. Via Praga 20, Zona P.I.P. Marrubiu 09094 (OR) Italy Phone: 0783 19 25 658 E-mail: info@dialogausili.com Website: www.dialogausili.com</p>

3 System requirements

- Operating system: Microsoft Windows 10, version 10.0.18362.0 (64 bit) or higher
- Processor: Intel i5, 10th generation
- RAM: 8 GB
- Hard Disk: 5 GB of free space
- Internet connection

4 User side and Editor side

“Matrix AAC” is a communication software designed for users with communication impairments. These users will interact with the component of the software dedicated to communication, referred to as the “User Side”.

The “User Side” must be configured according to the needs of the end user. The person responsible for managing this configuration will need to access the “Editor Side”.

To switch from the “User Side” to the “Editor Side”, you need to enable the top bar, which contains the main navigation controls.

There are several ways to display it:

- From the “main screen” grid, click the indicated button to open the “settings” grid, then select Show/Hide Top Bar
- Double-click the top edge of the window
- On devices with a keyboard, press F4.



Figure 1 Main screen

Straight afterwards, press on "Show the top bar" on the left bottom (see n.1).

A bar will appear at the top of the screen (see n.2).

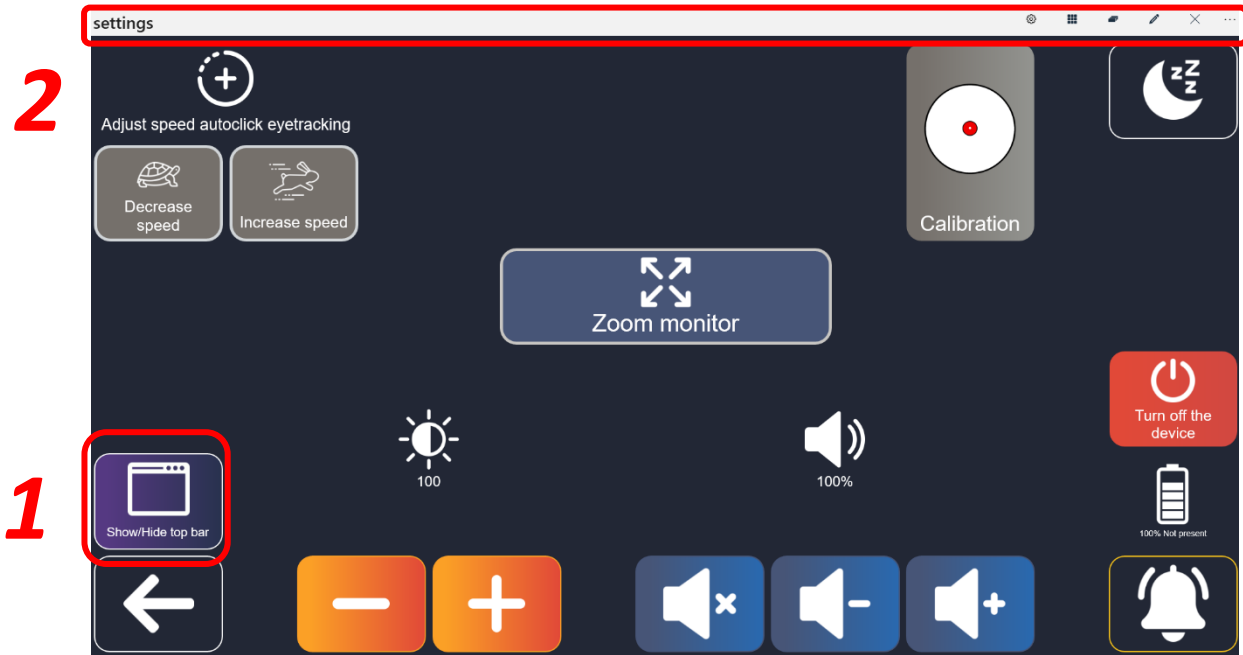


Figure 2 Show/hide top bar in "settings"

5 Toolbar

Once the top bar is visible, the following commands will appear in the upper-right corner:

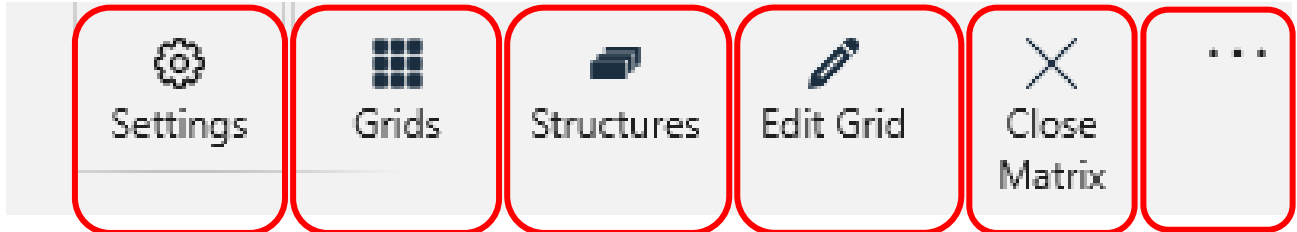


Figure 3 Top bar tools

- **Settings:** displays the list of grids
- **Grids:** displays the grid settings
- **Structures:** displays the list of all structures
- **Edit Grid:** opens the section to edit the grid
- **Close Matrix:** closes the software
- **...:** expand or collapse the bar

6 Creating new user

When the software is launched for the first time, the following window will appear, allowing you to create a new user.

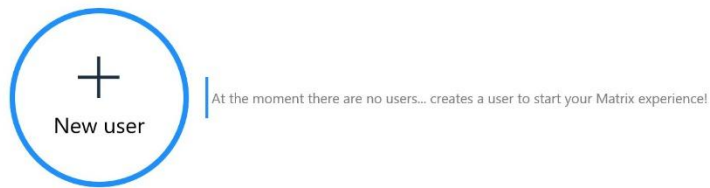


Figure 4 Welcome screen in Matrix AAC

Once the “New user” button is pressed, a window will appear, allowing you to:

- Enter the user’s name
- Set the user’s image.

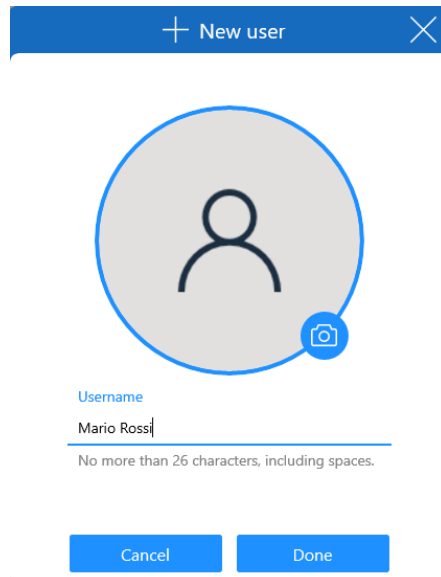


Figure 5 User creation screen

There are four available methods for selecting an image to associate with the user:

- Symbols: the software includes several built-in image libraries ready for use
- Upload Image: select and import images stored locally
- Search the Web: search for an image online and apply it automatically
- Camera: take a photo using the device's camera or webcam.

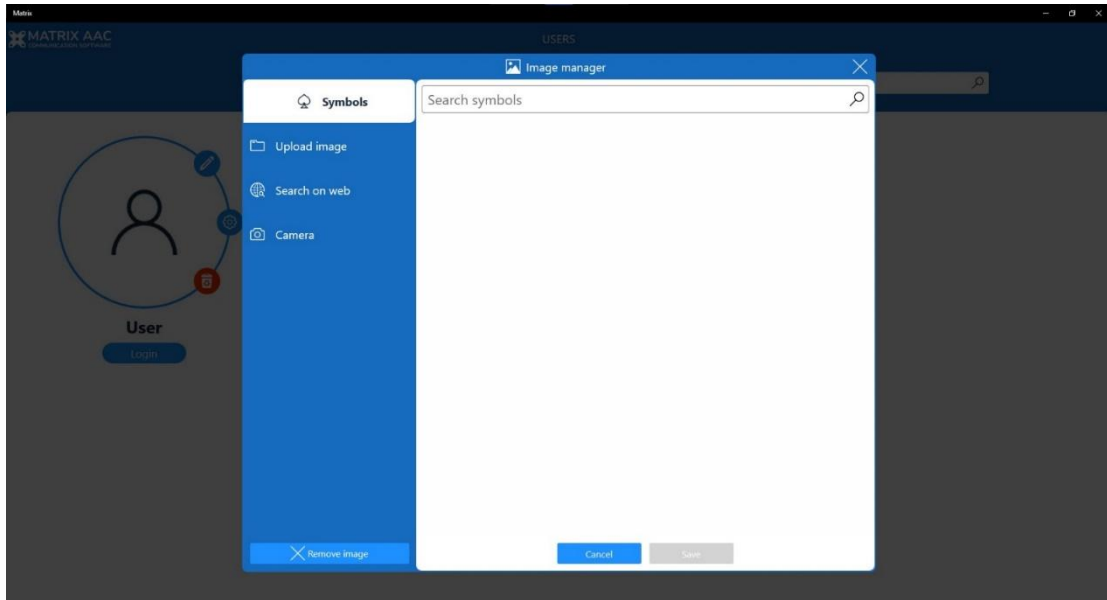


Figure 6 Symbol image selection

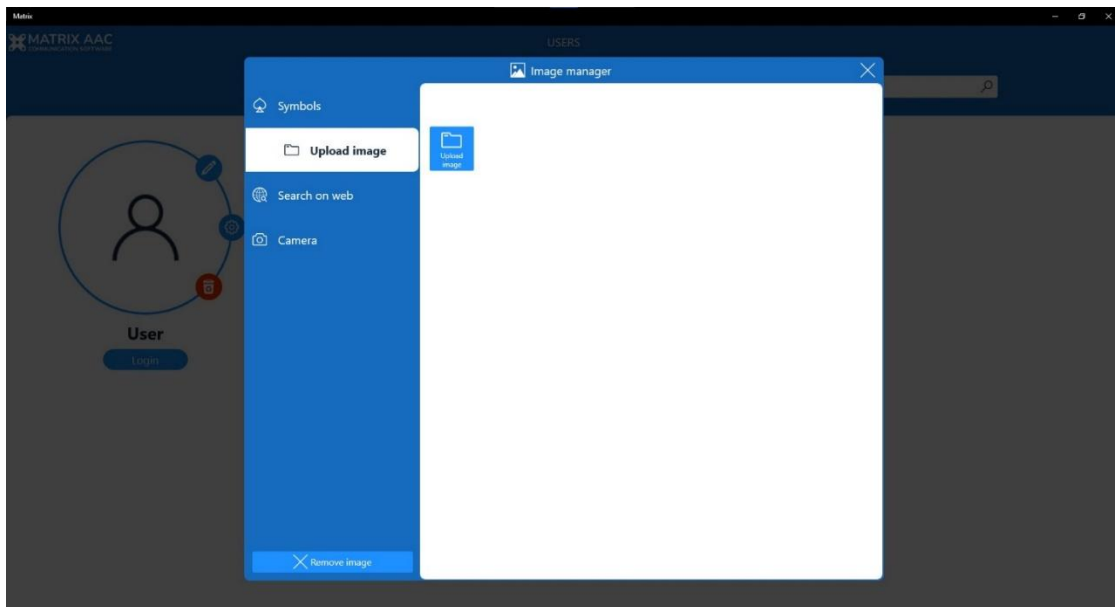


Figure 7 Image selection from local disk

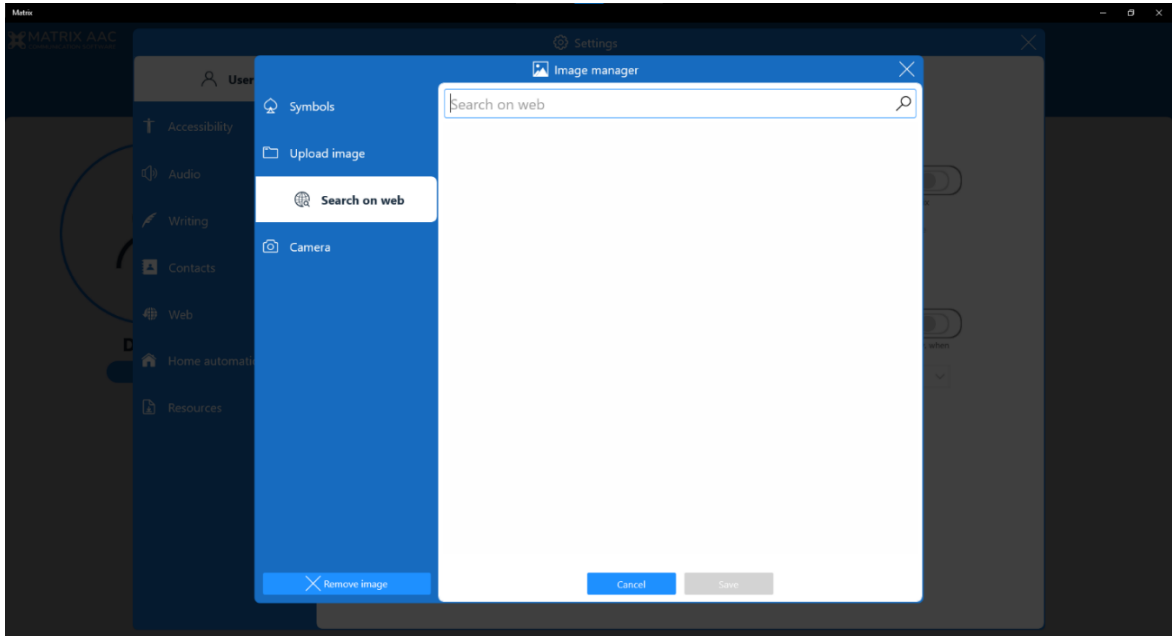


Figure 8 Image selection from the web

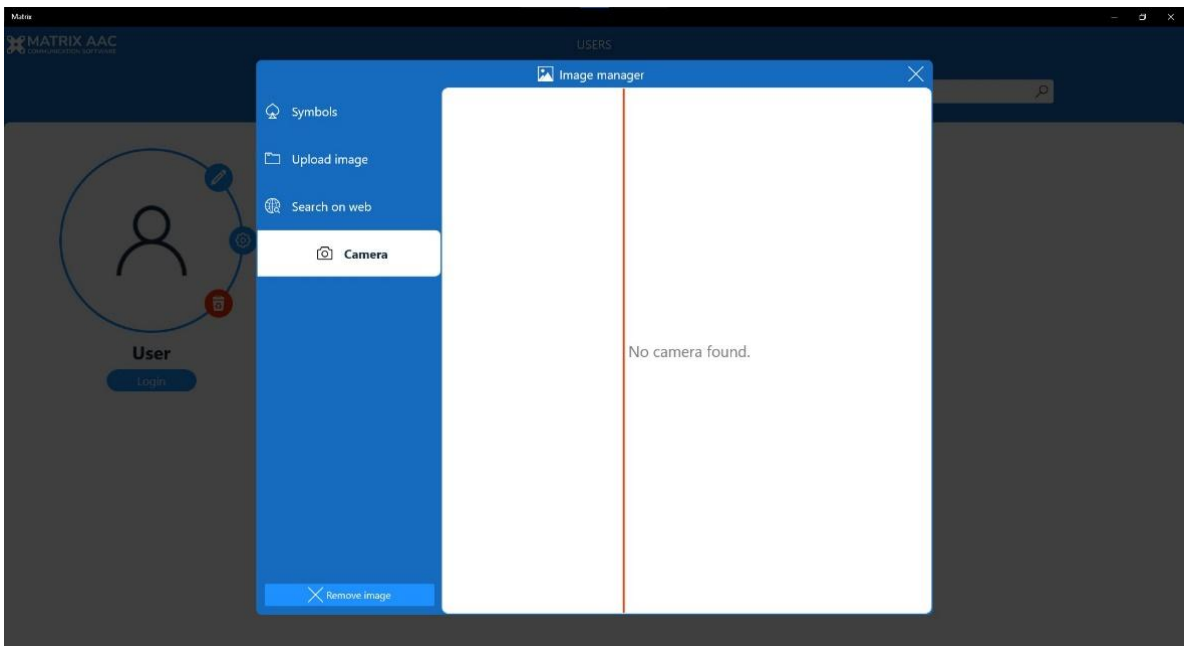


Figure 9 Take photos using the webcam

After selecting the image, the following window will appear, displaying the following information:

- The user's name
- The image just selected.

Click the "Done" button to complete the user creation process.

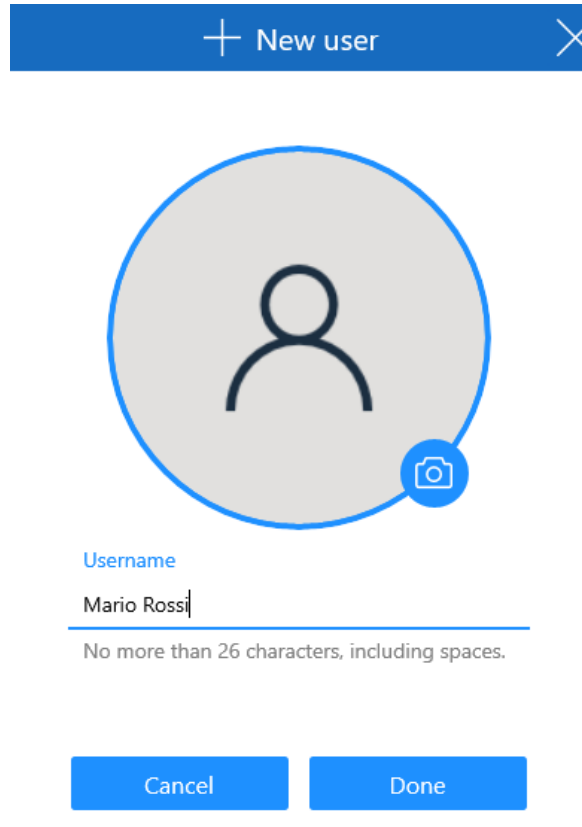


Figure 10 Basic new user settings: image and username

Finally, a window will appear showing all users currently available in the software.

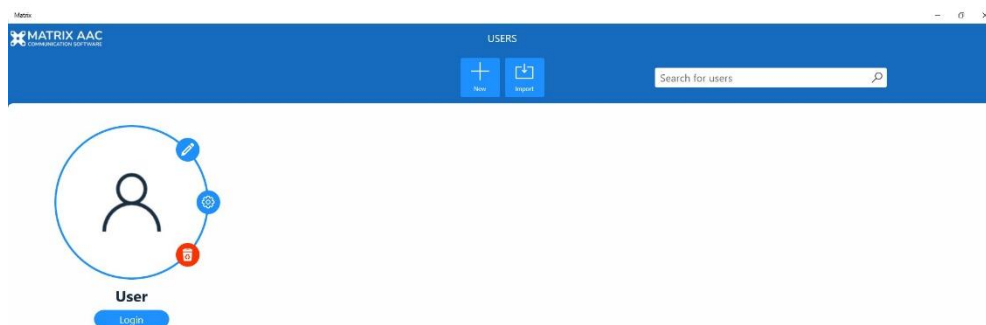


Figure 11 List of users available in the software

In this area it is possible to:

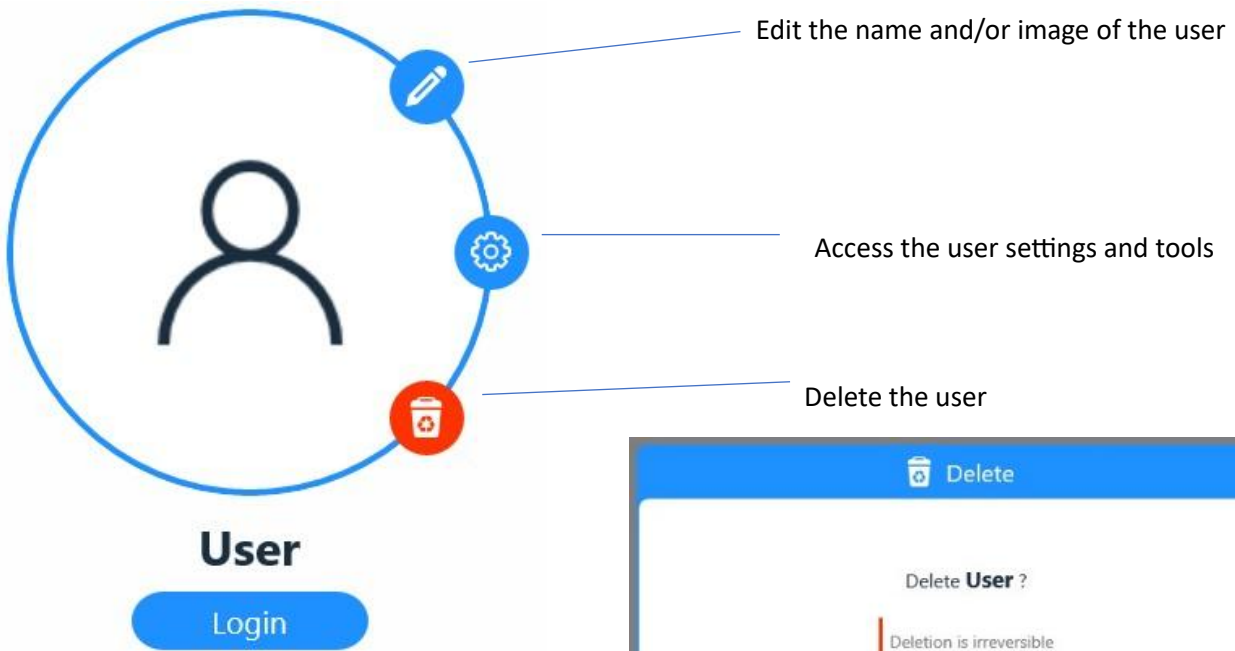


Figure 12 Preview of the user menu

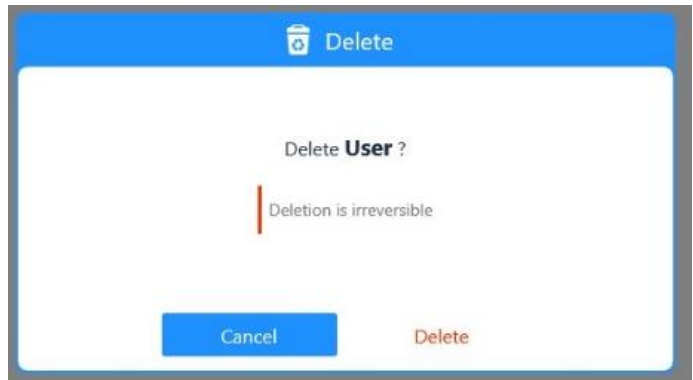


Figure 13 Delete user window

7 Settings menu

Each user can be customized according to their intended use. Below is a list of customizable settings. These will be examined in detail in the dedicated chapters that follow.

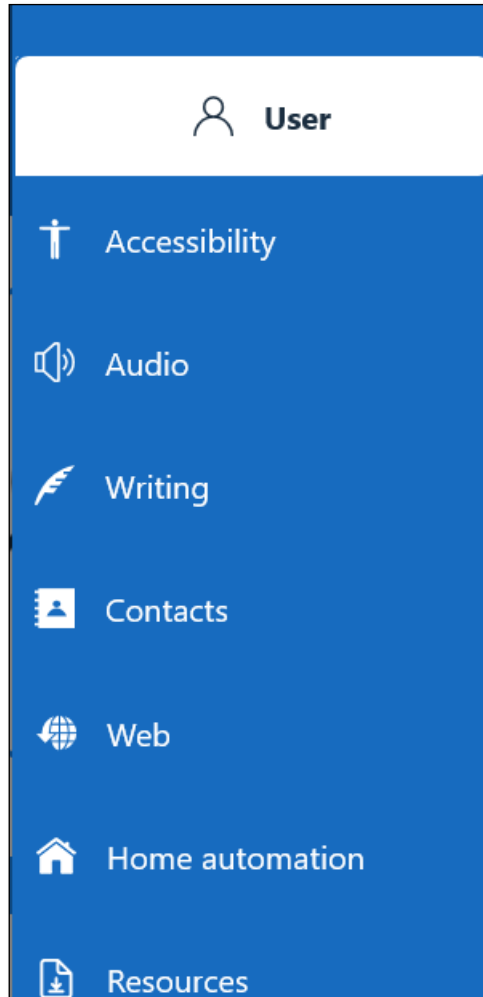


Figure 14 Settings menu

7.1 Settings – User

In this section, it is possible to:

- Set a “Favourite User”: when this option is enabled, Matrix AAC will automatically log in to the selected user upon startup
- Configure an “Automatic boot”: to do this, enable this option and then select the structure to launch automatically from the dropdown menu
- “Link account”: Set the user’s email address (a detailed procedure will be explained below)
- “Phone”: allows the user to activate the connection to a smartphone
- “Bypass microphone”: enables routing the speaker output directly to the microphone (useful when the user speaks using the text-to-speech function).

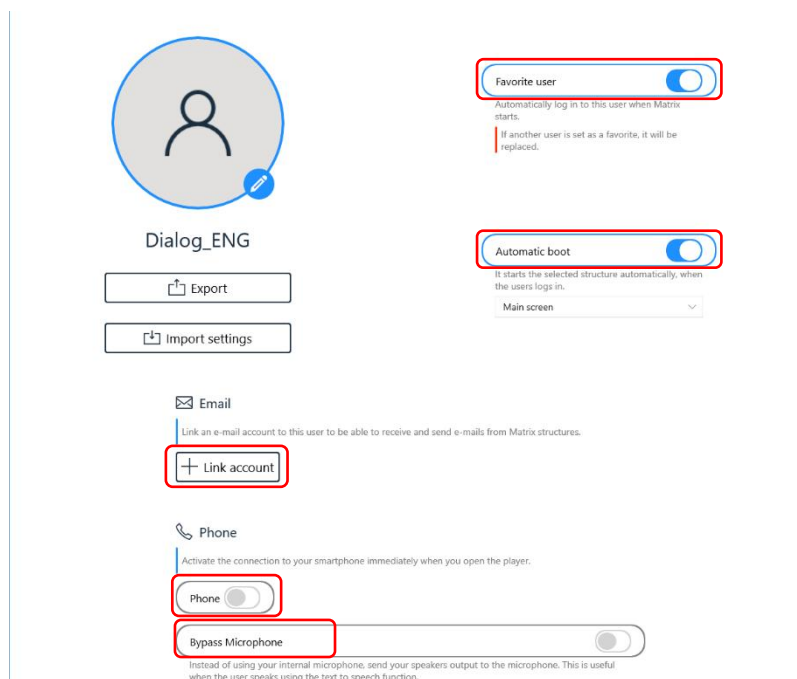
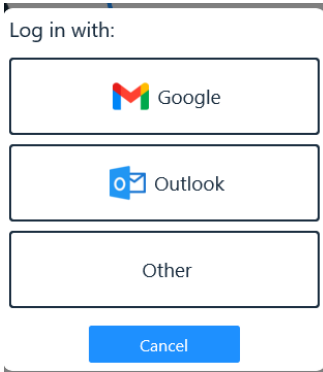


Figure 15 User settings

The user's email address can be set through a simplified procedure:



- GMAIL
- OUTLOOK
- Or an email with a private domain

Figure 16 E-mail access menu

Below, we present the three possible usage windows and provide an advanced description of the available features.

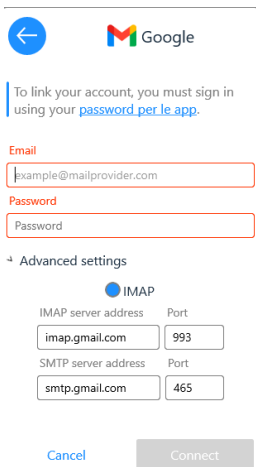


Figure 17 Gmail

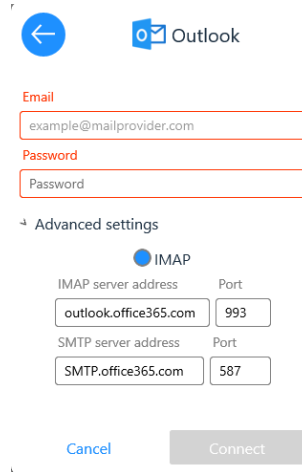


Figure 18 Outlook

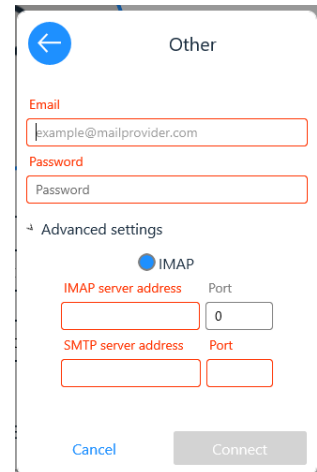


Figure 19 Private domain e-mail

It is possible to configure the email either through a simplified method or using an advanced setup, depending on your needs.

7.2 Settings – Accessibility

Matrix AAC software is fully accessible as it allows configuration of input methods through which the user can interact with the software. The default input method is Touch and Mouse. Four types of input methods can be selected:

- Touch and mouse
- Manual scanning
- Automatic scanning
- Eye-tracker.

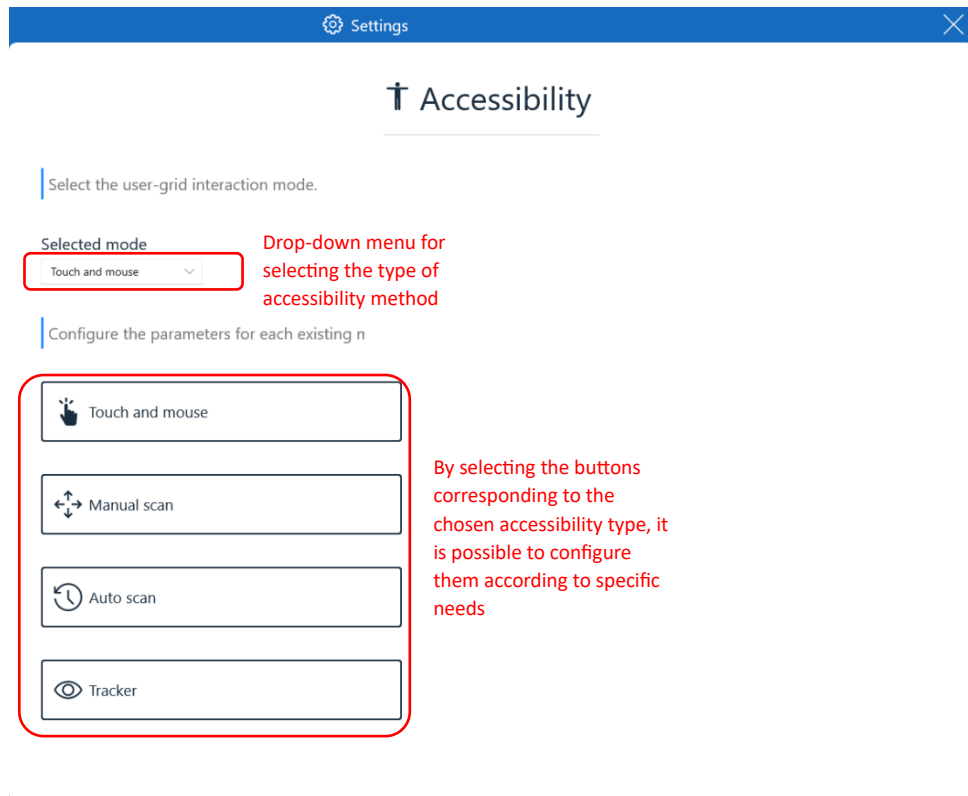


Figure 18 Settings – Accessibility

The following advanced features are also available:

- Consecutive click blocking: prevents multiple unintentional activations
- Visual magnification of the selected cell: facilitates identification of the active cell
- Audio feedback on selection: provides an audible signal for each selection
- Auditory scanning: enables operation via audio sensors or switches
- Customizable border in the symbol grid: allows highlighting the selection with customizable colored borders on text, image, or both.

7.2.1 Settings – Accessibility – Touch and mouse

The “Touch and mouse” accessibility method, allows user-side operation via touchscreen or mouse input.

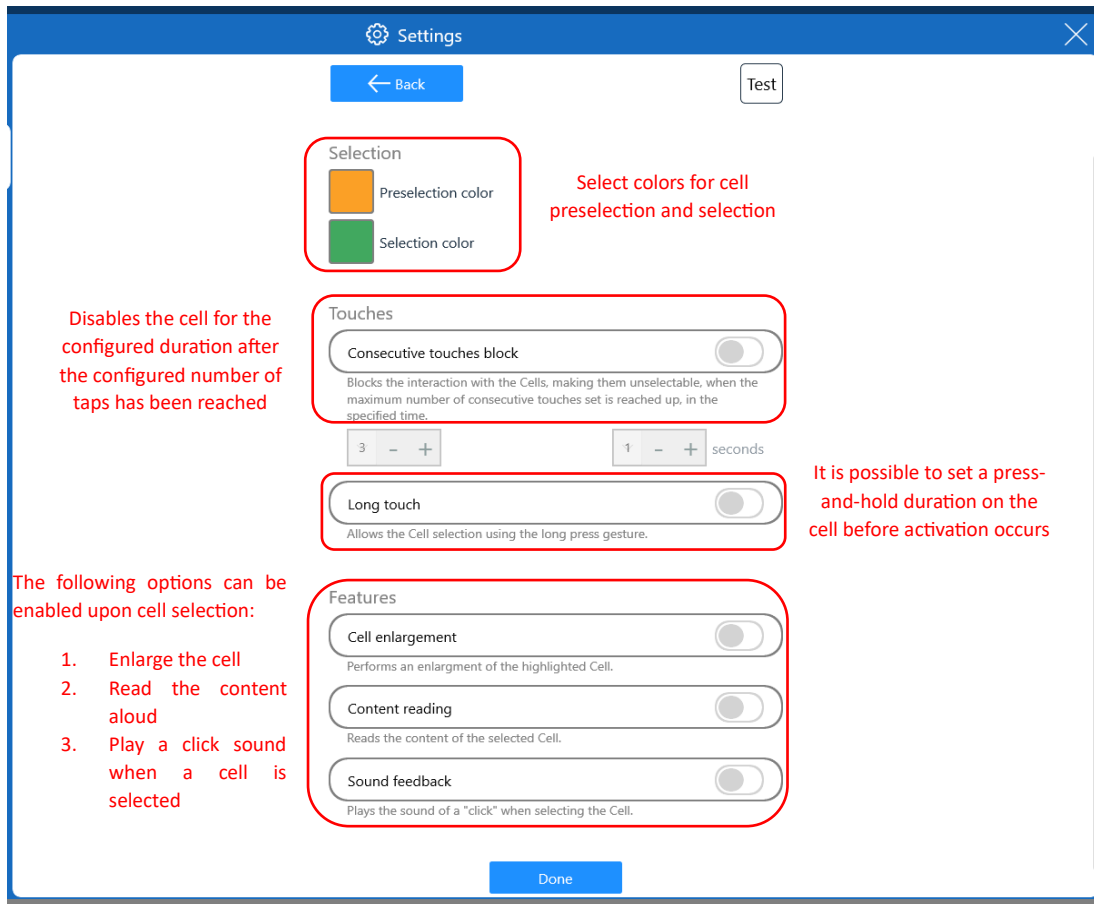


Figure 19 Settings – Accessibility – Touch and mouse

7.2.2 Settings – Accessibility- Manual scanning

The “Manual Scanning” accessibility setting allows manual scanning of one or more cells, a row, or a column. To use this input method, a switch sensor must be connected to the device or computer.

Three types of manual scanning are available:

- Sequential
- Rows – Columns
- Columns – Rows.

To configure a sensor, select the desired one.

Selection

Preselection color

Selection color

Select colors for cell preselection and selection

Scanning mode

Row - column

Set the mode in which scanning is performed, valid for both manual and automatic scanning.

Three types of scanning are available:

1. Sequential
2. Row/Column
3. Column/Row

Sensors

Use sensors to interact with the grid.

Select the sensor you want to configure.

W

A

Enter

D

S

Up to five sensors/switches can be used to scan the cells

Features

Cell enlargement

Performs an enlargement of the highlighted Cell.

Content reading

Reads the content of the selected Cell.

Sound feedback

Plays the sound of a "click" when selecting the Cell.

The following options can be enabled upon cell selection:

1. Enlarge the cell
2. Read the content aloud
3. Play a click sound upon selection

Done

Figure 20 Settings – Accessibility – Manual scanning

7.2.3 Settings – Accessibility – Automatic scanning

The “Auto Scan” accessibility setting automatically scans one or more cells, a row, or a column at a specified time interval. To use this input method, a switch sensor must be connected to the device.

Three types of automatic scanning are available:

- Sequential
- Row – Column
- Column–Row.

To configure a sensor, select the desired one.

Selection

Preselection color
Selection color

Select colors for cell preselection and selection

Scanning mode

Row - column

Set the mode in which scanning is performed, valid for both manual and automatic scanning.

Three types of scanning are available:

- Sequential
- Row/Column
- Column/Row

Time

1 - + seconds

Set the waiting time between the preselection of a row, or column, or cell and the next during automatic scanning.

A time interval can be set for switching between highlighted blocks

AutoPlay

Automatic scan start can be enabled

Sensors

Use sensors to interact with the grid.
Select the sensor you want to configure.

Enter

Select the sensor/switch to be used

Features

Cell enlargement
Performs an enlargement of the highlighted Cell.

Content reading
Reads the content of the selected Cell.

Sound feedback
Plays the sound of a “click” when selecting the Cell.

The following options can be enabled upon cell selection:

- Enlarge the cell
- Read the content aloud
- Play a click sound upon selection

Done

Figure 21 Settings – Accessibility – Auto Scan

7.2.4 Settings – Accessibility – Eye-tracker

The “tracker” accessibility setting allows to configure the eye-trackers such as the proprietary eye tracker Dialog Deye to track the left eye, the right eye, or both.



Selection

Preselection color

Selection color

Select the color for preselecting and selecting the cell

Device

DeyeV3 Restart

Eyetracker code

Tracking

Both eyes ▼

Sets which eyes must be tracked by the eye tracking device.

Tracking can be configured for the left eye, right eye, or both

Selection mode

Autoclick ▼

Sets the Cell selection mode when is used an eye tracking device.

Repeat

Repeats in loop the execution of the autoclick on a Cell. Each execution is repeated after the specified amount of time.

1 - + seconds

Three selection methods are available:

- Eye-blink
- Pressure of a sensor
- Auto-click

Selection animation

Circle completion ▼

Filling 50 %

- +

Sets the displayed animation when selecting a Cell using an eye tracking device.

Zoom levels can be configured. The following options can be set upon cell selection

- Enlarge the cell
- Read the content

Time

1.5 - + seconds

Sets the animation duration, after which the Cell will be selected.

Duration of the animation before the cell is selected

Smoothness

28 ▼

Correction factor applied to pointer movement on the screen to make it smoother and easier to control.

Adjusts pointer movement for smoother control

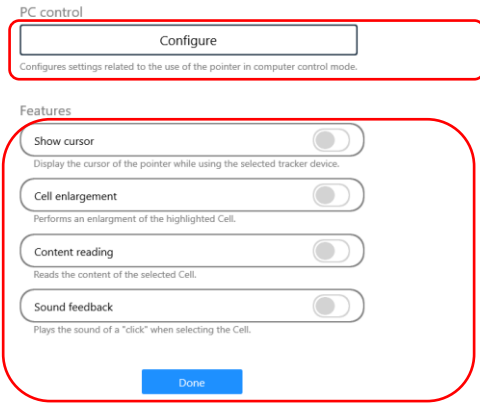
Calibration

Configure

Calibrate

The following settings can be configured:

- Number of targets (5, 9, or 16)
- Background color
- Outer target color
- Target center color



Setup for using the device outside Matrix with eye tracking

The following option can be set upon cell selection:

- Show the pointer cursor while using the tracking device
- Enlarge the cell
- Read the cell content
- Plays a click sound when a cell is selected

Figure 22 Settings – Accessibility – Eye tracker

This window appears after pressing the "Configure" button in the Calibration section. You can set the following options:

- Number of targets used during calibration (5, 9, or 16)
- Calibration background color (customizable)
- Outer target color (customizable)
- Target center color (customizable)

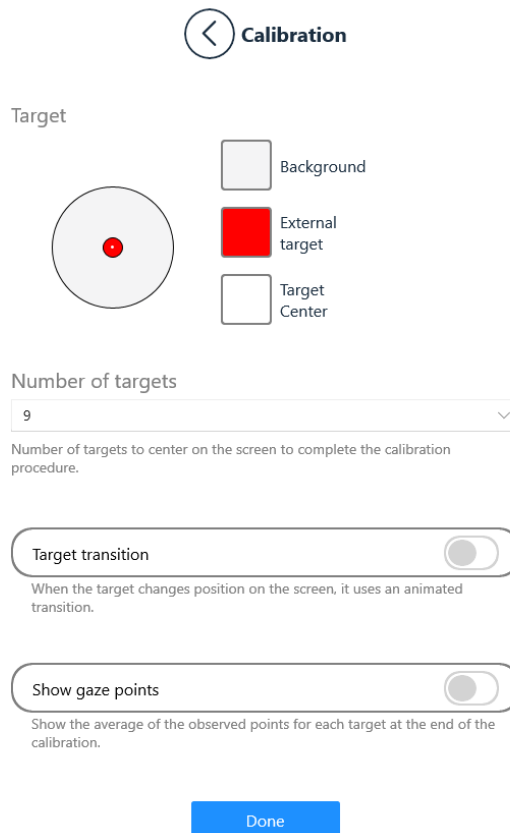


Figure 23 Calibration tools

7.3 Settings – Matrix AI

Matrix AI is the integrated artificial intelligence module within the software, designed to provide language support, prediction, and advanced correction tools.

Designed to support augmentative and alternative communication (AAC) with advanced tools, this module significantly extends the capabilities of the software, offering intelligent features for language assistance, prediction, and communication customization.

Matrix AI is enabled by default within the system and can be configured according to the user's preferences. All features can be activated or deactivated directly from the settings menu.

One of the key features of Matrix AI is its ability to operate even without an Internet connection. Unlike other similar software, the module runs both online and offline, ensuring fast response times, service continuity, data privacy, and security.

The module is available in three different complexity levels, adaptable to the resources of the device in use:

- Lite: designed to run on older or resource-limited hardware;
- Standard: suitable for most commercially available devices;
- Pro: recommended for next-generation devices or communication aids equipped with at least 8 GB of RAM.

Each level is designed to be upgradable over time, keeping pace with the evolution of AI models integrated into the system.

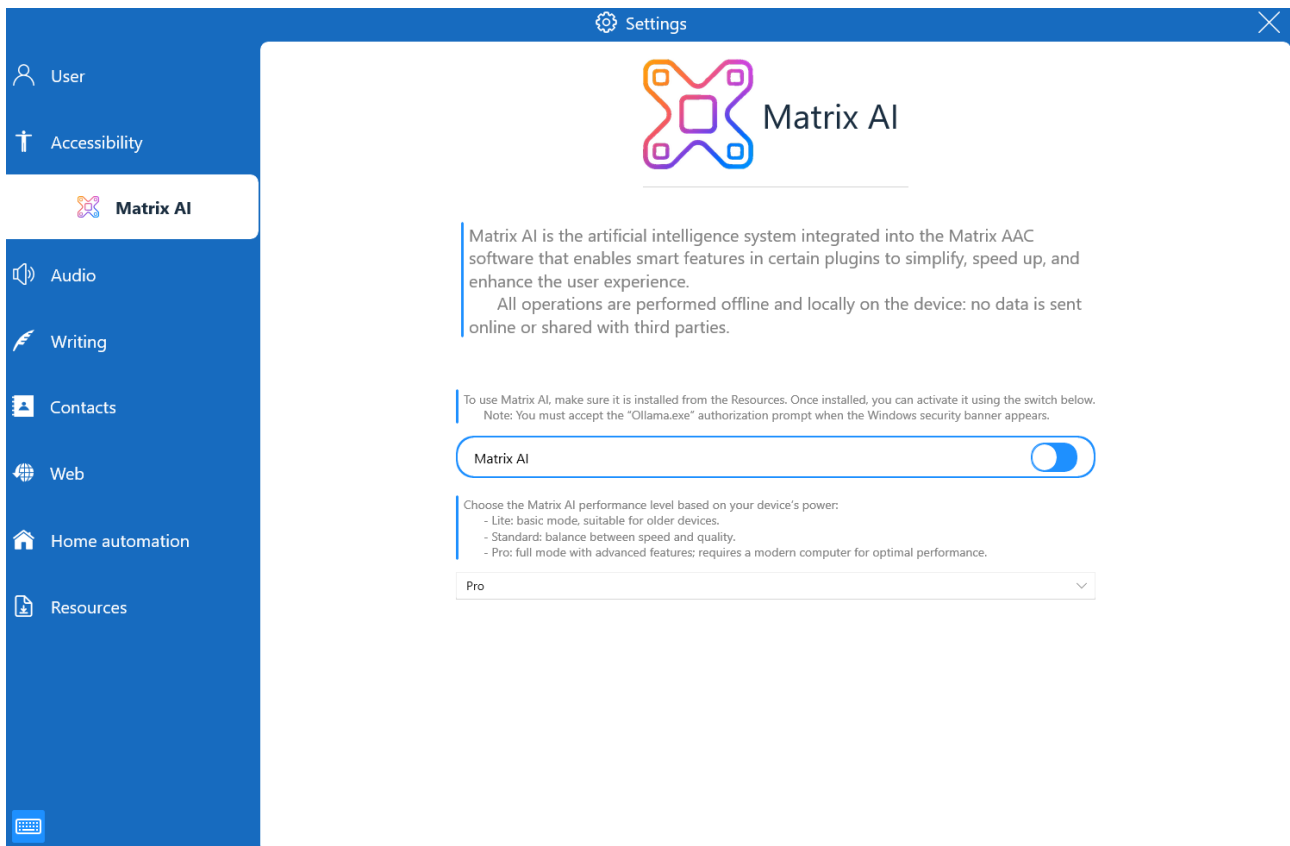


Figure 24 Settings – Matrix AI

7.4 Settings – Audio

Synthesized voice selection is available in the Audio settings.

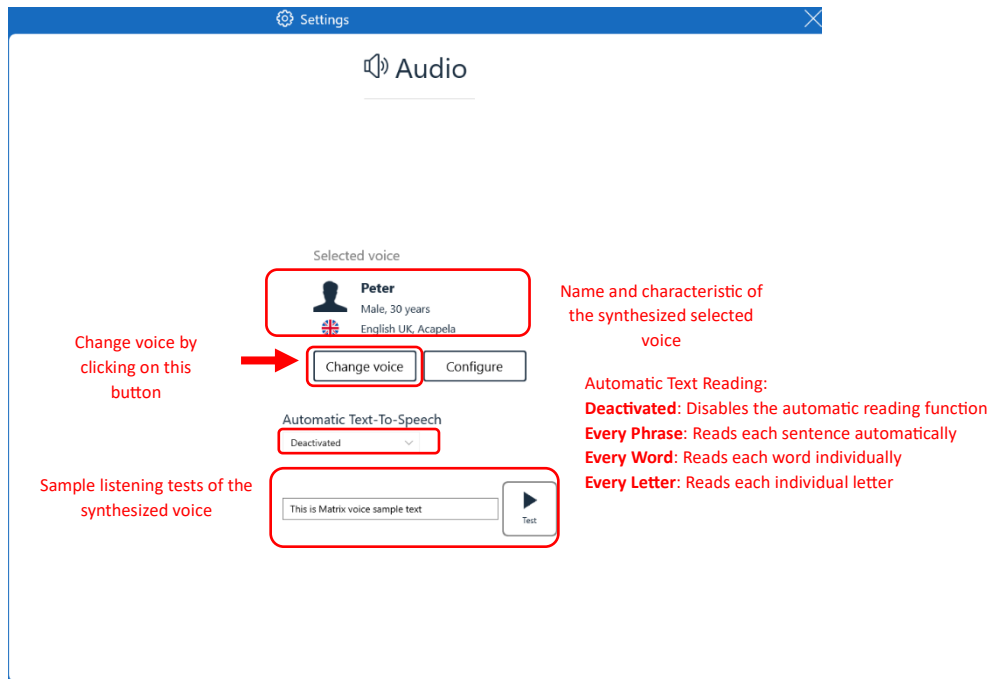


Figure 25 Settings - Audio

7.5 Settings – Writing

In the “Writing” section you can find, select and edit:

- **Dictionary Language Selection:** Choose the dictionary language (English, Italian, German, Spanish, Russian). Prediction cell suggestions will be displayed in the selected language.
- **Search Word:** Allows you to check whether a word exists in the dictionary. If the word is not found, it can be added using the next function.
- **Custom Words:** Displays the words manually added by the user. The same applies to the **Custom Symbols** function.
- **Phrase history:** See and manage the sentences saved by the user
- **Symbols:** Shows a menu of the pictograms libraries available, which will be shown in the cells contents.

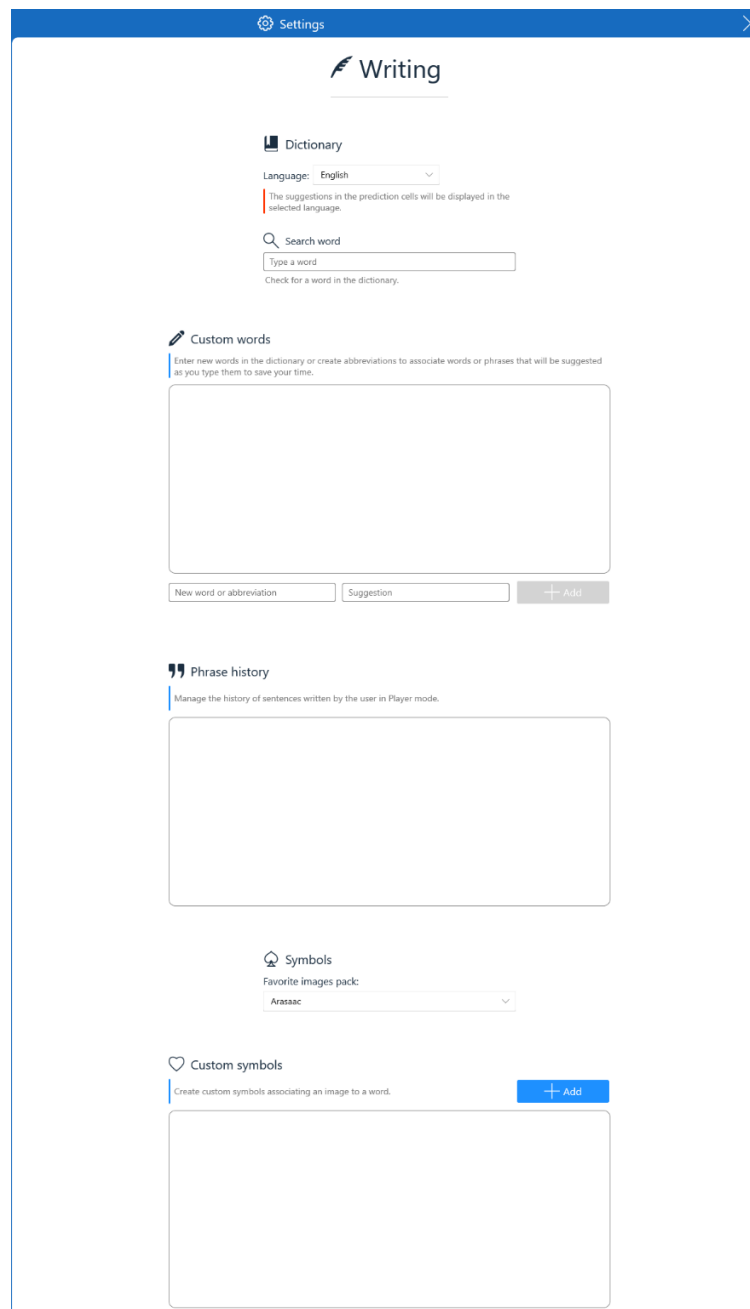


Figure 26 Settings - Writing

7.6 Settings – Contacts

A contact list can be managed to simplify email handling. To add a new contact, click on “Add Contact”.

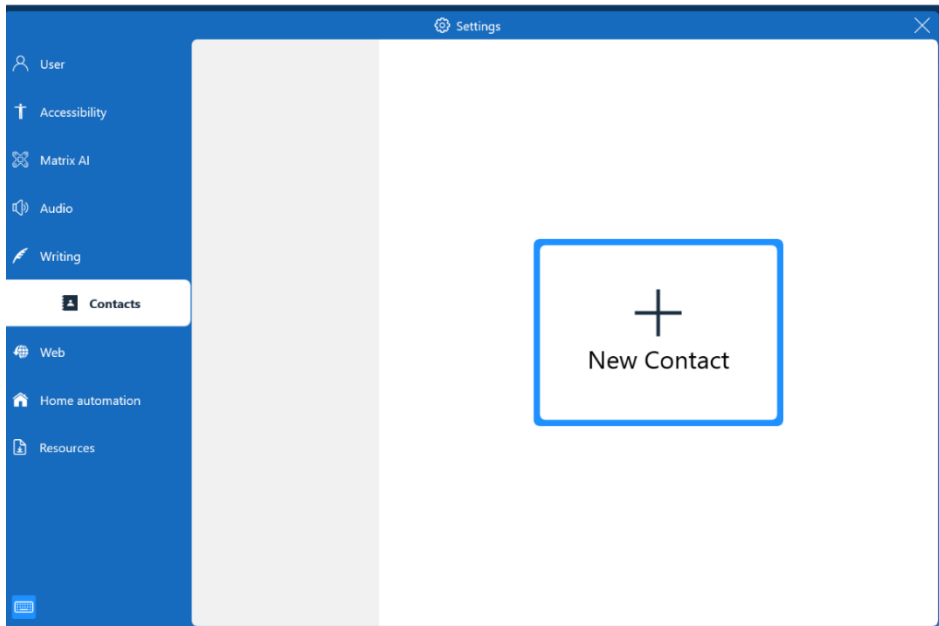


Figure 27 Settings - Contacts

A window will appear for entering all contacts details:

- Profile image
- Full name
- E-mail address
- Phone number.

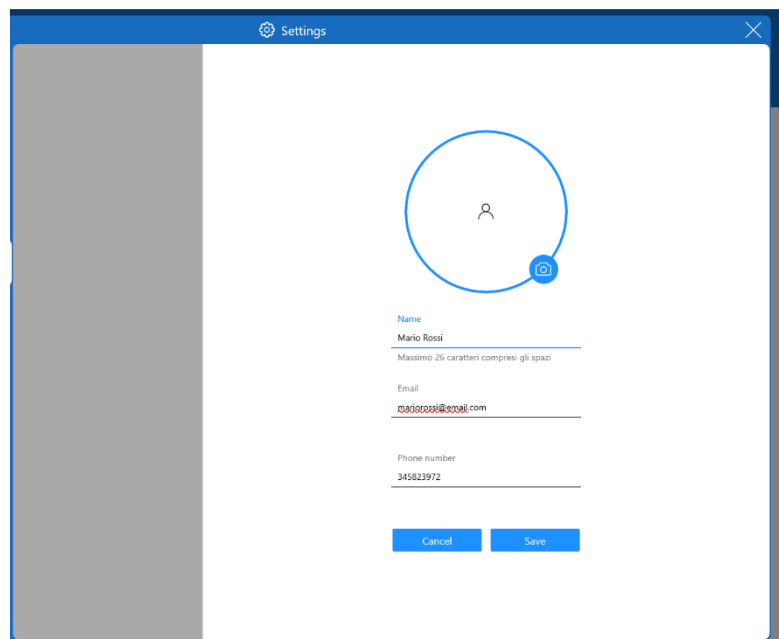


Figure 28 Settings - Add all contact details

A summary window will then display all contacts stored in the address book.

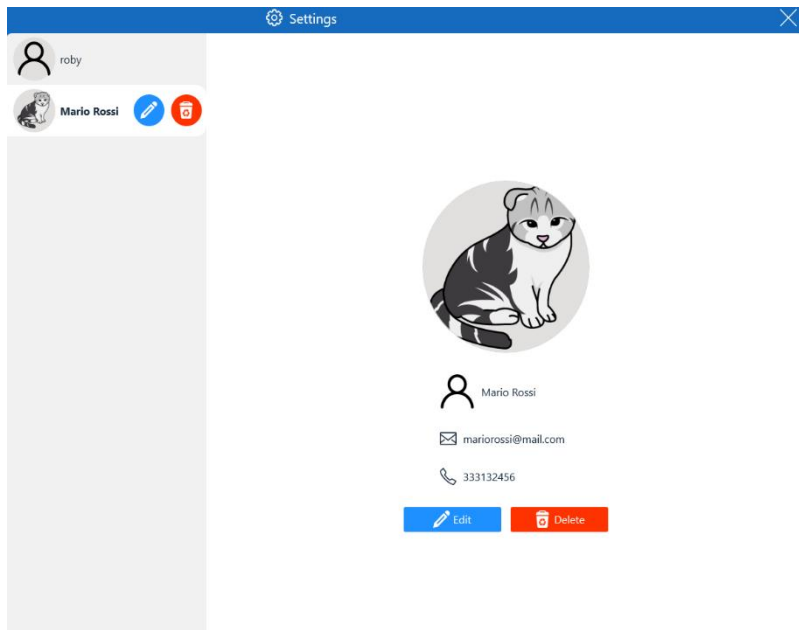


Figure 29 Settings - Contact details summary

7.7 Settings – Web

Regarding web navigation settings, the following options are available:

- Configure the preferred search engine
- Set the homepage for the internal browser
- Manage a list of favorite websites
- Create a website filter to block access to specific sites
- Manage a list of websites optimized for mobile viewing.

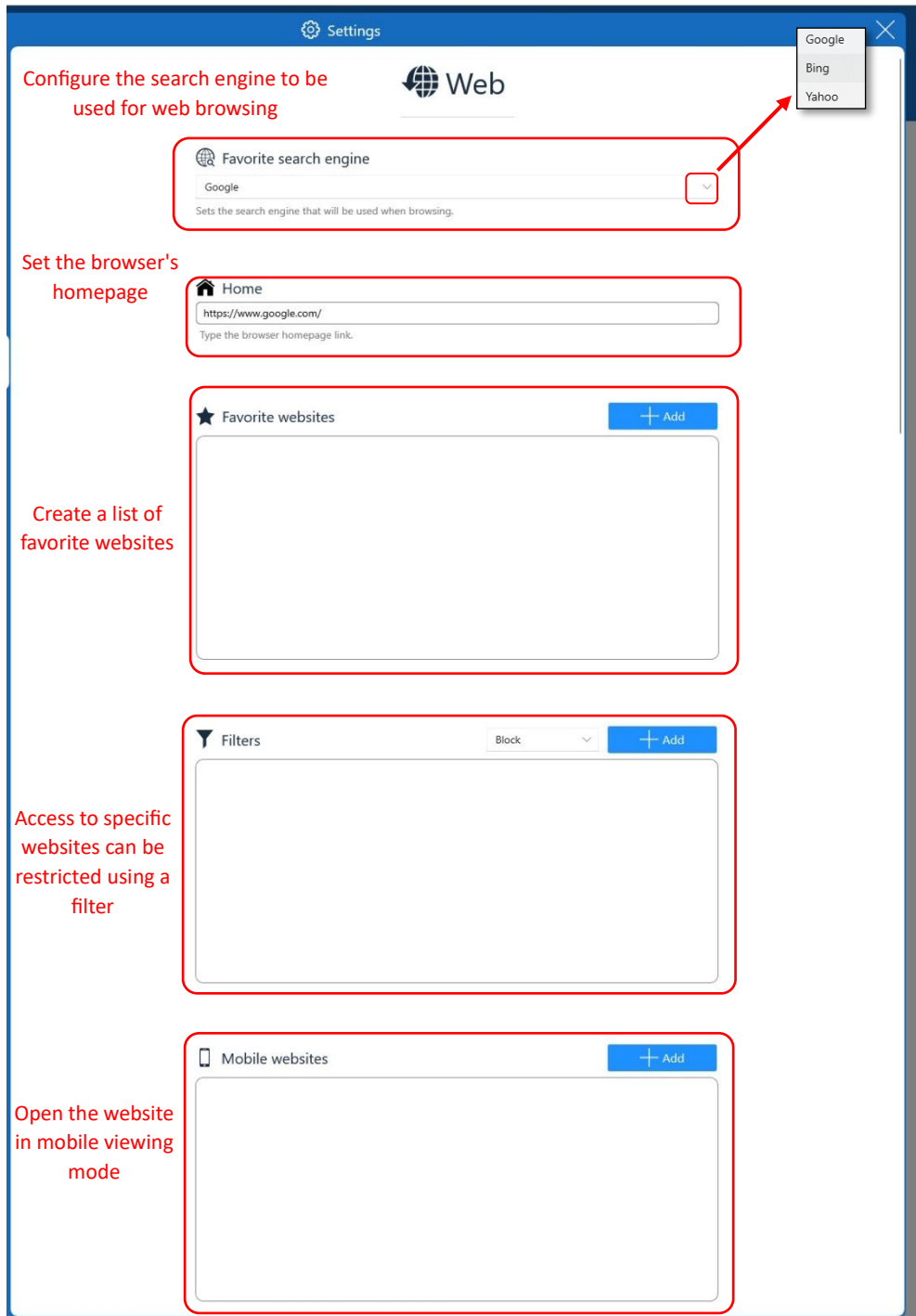


Figure 30 Settings - Web

7.8 Settings – Home automation

In the settings section dedicated to home automation, the software can be configured to function as a remote control. To do so, two essential components are required:

- A home automation interface
- An IR (infrared) remote control.

The following is a step-by-step procedure to synchronize the software with the remote control:

1. Select the device category to use
2. Tap the “Add” button

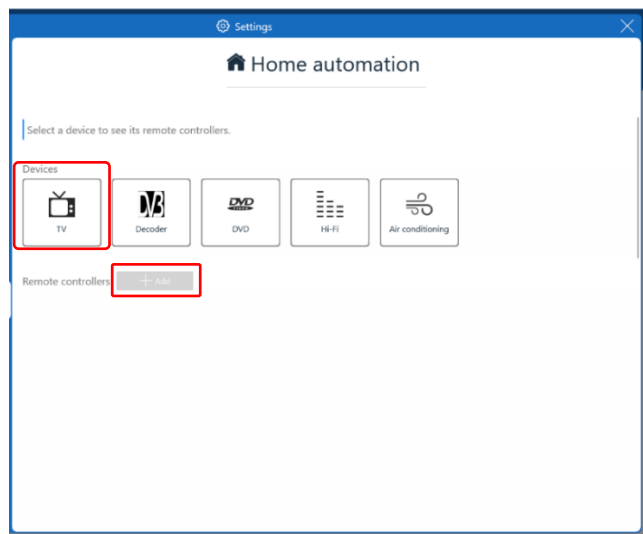


Figure 31 Settings – Home automation

3. If desired, you can rename the remote control to make it easier to identify
4. Select the button you want to synchronize

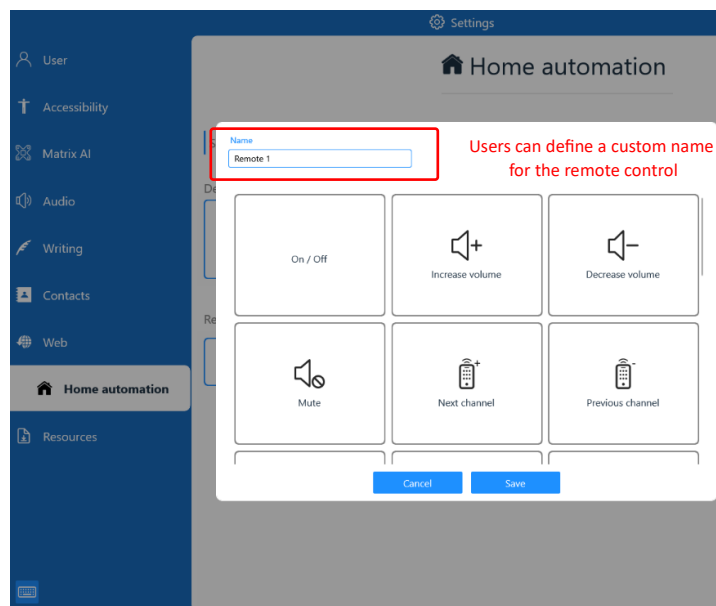


Figure 32 Custom name remote control

5. Click on “Configure”

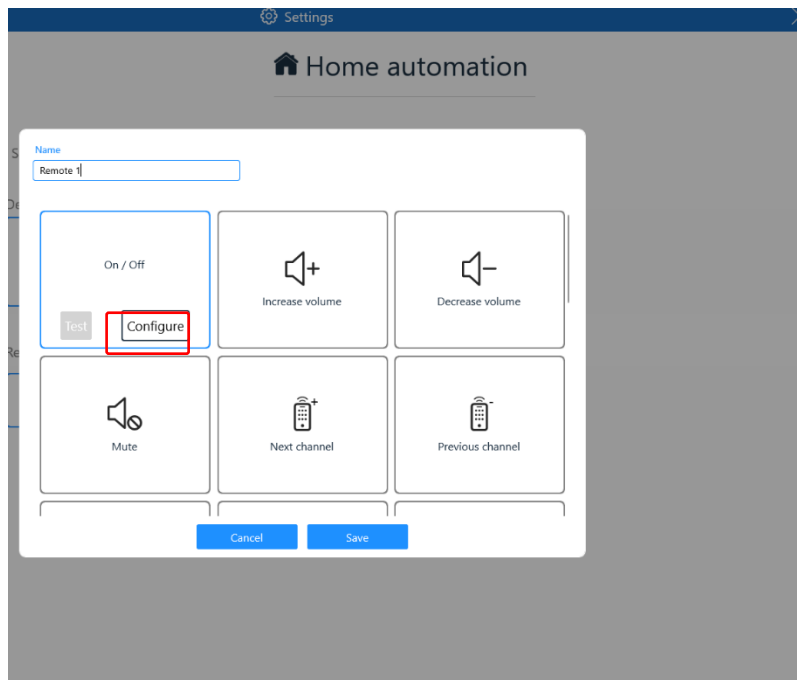


Figure 33 Remote control configuration

6. Take the remote control and point it at the home automation module (at a distance of 3 cm or less)

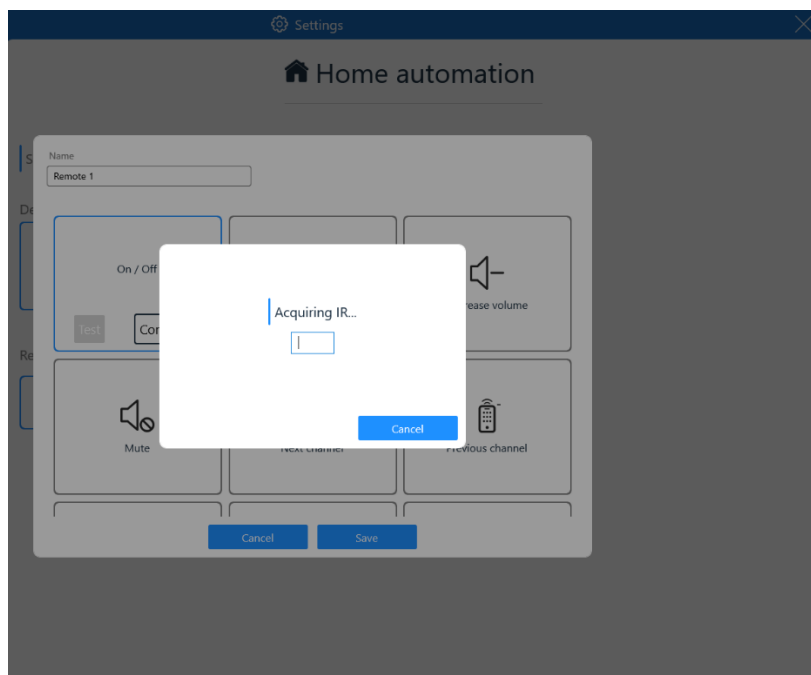


Figure 34 Acquiring IR

7. Finally, wait for the remote control to be registered, then save the settings
8. Repeat for each button.

7.9 Settings – Resources

To optimize the use of the Matrix AAC Communication Software, additional resources can be downloaded to extend the software's functionalities. The following resources are available for download:

1. Synthesized TTS voices
2. Alarm sounds
3. Pictogram libraries
4. Dictionaries.

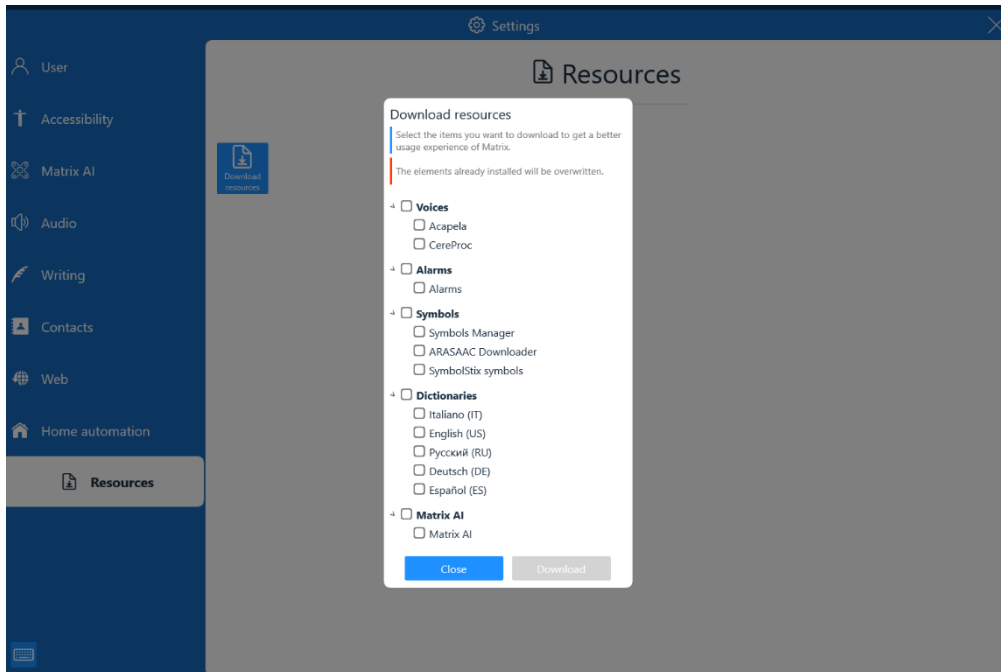


Figure 35 Settings – Resources

8 Structures list

In this section, the following actions are available:

1. Create a new structure: a structure can be created from scratch (see the next paragraph for details);
2. Import a structure: a structure previously exported on your device may be imported by clicking the "Import" button located in the upper center of the window.

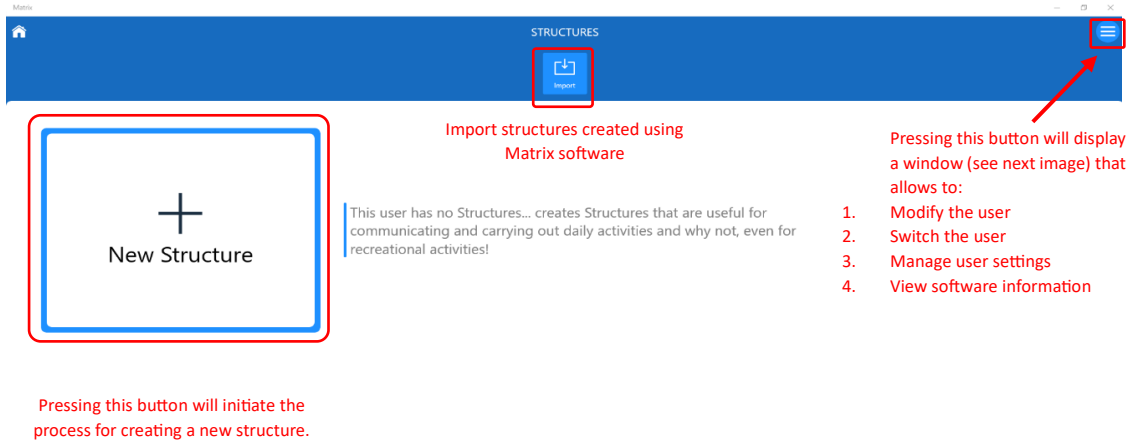


Figure 36 Structures

Manage settings such as:

1. Modify user data
2. Switch to another user
3. Change user settings
4. Direct link to assistance
5. View software version.

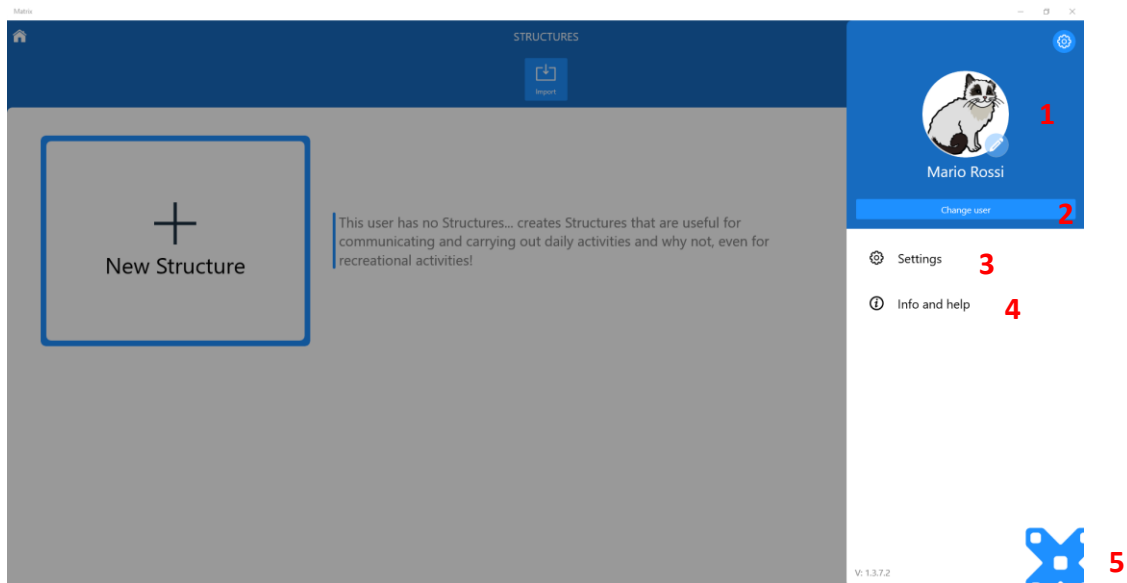


Figure 37 Manage settings

9 Creating a new structure

To create the first structure, navigate to the user's structure list and press the “New Structure” button.

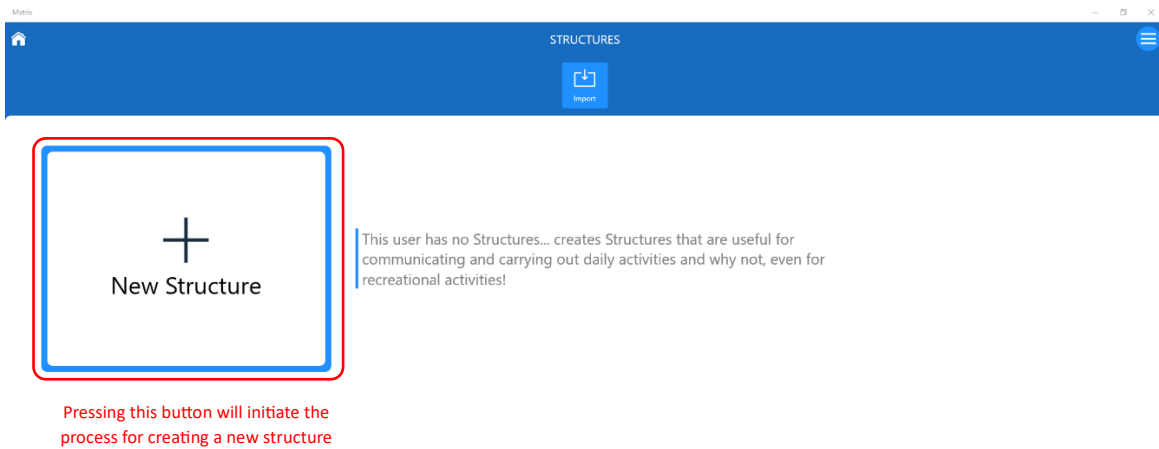


Figure 38 Creation of a new structure

A window will appear where the structure name must be entered.

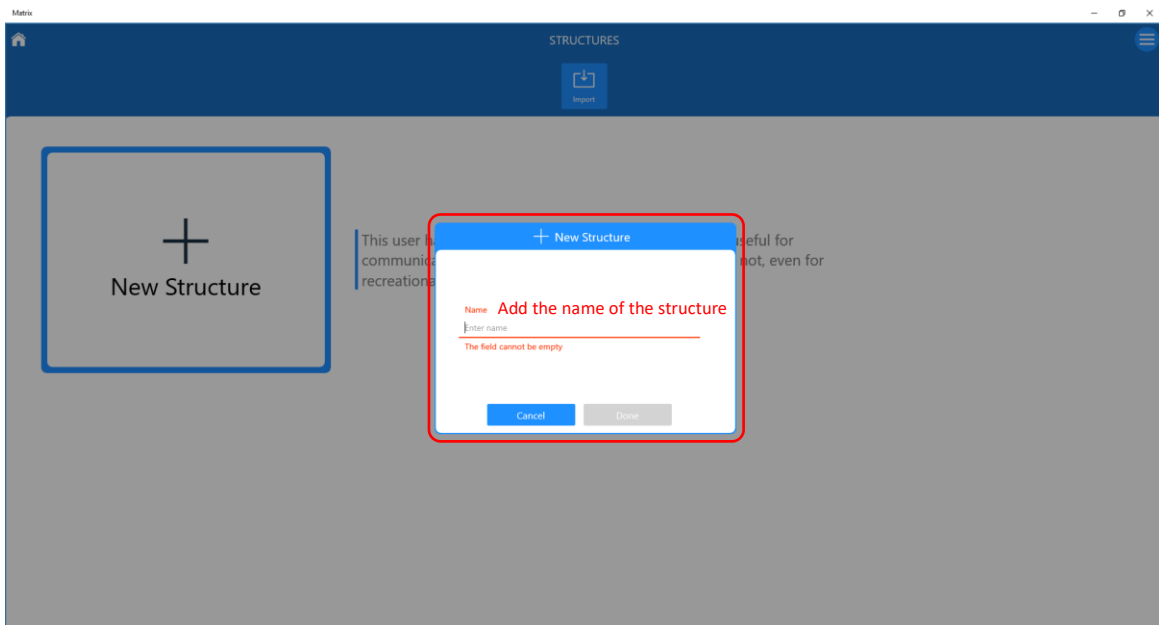


Figure 39 Input structure name

Once the structure is selected, the set of grids composing the structure will be displayed at the bottom of the screen.

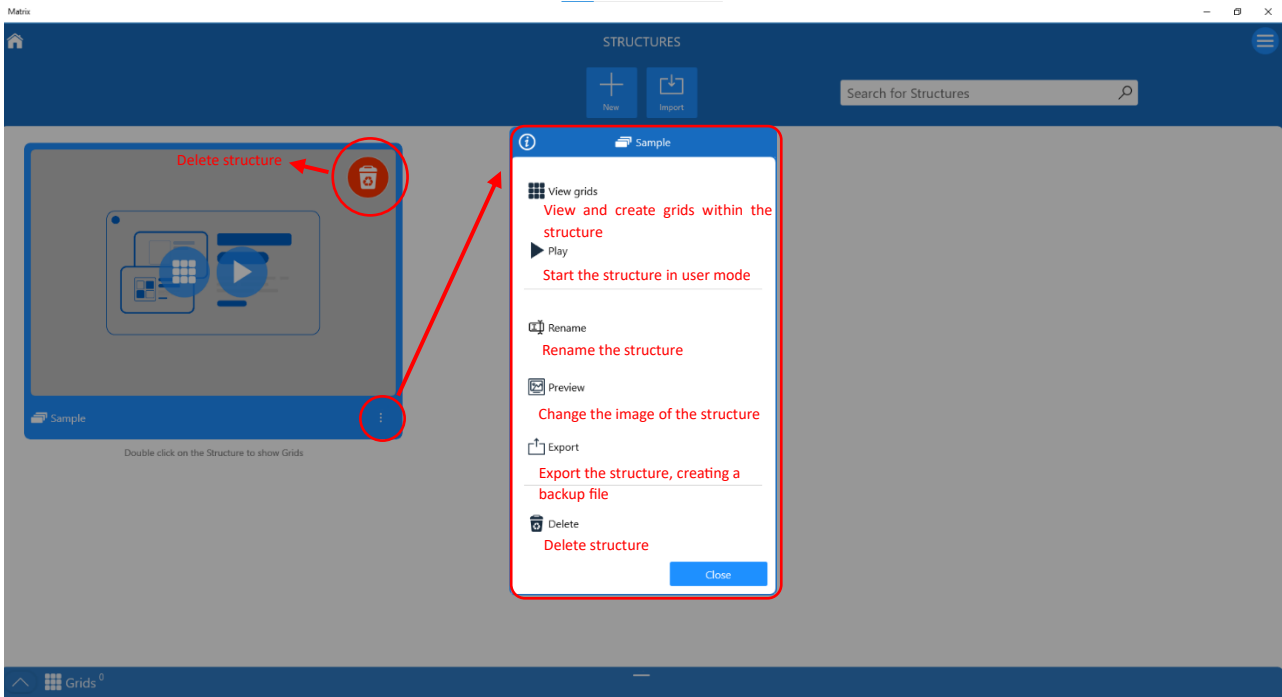


Figure 40 Structure's menu

After creating the structure, you will need to configure the grids. To access the grid section, either double-click the structure preview or click "Show Grids" in the structure's menu (see the previous image). To edit a grid, click "Edit" in the grid's menu or double-click the grid directly.

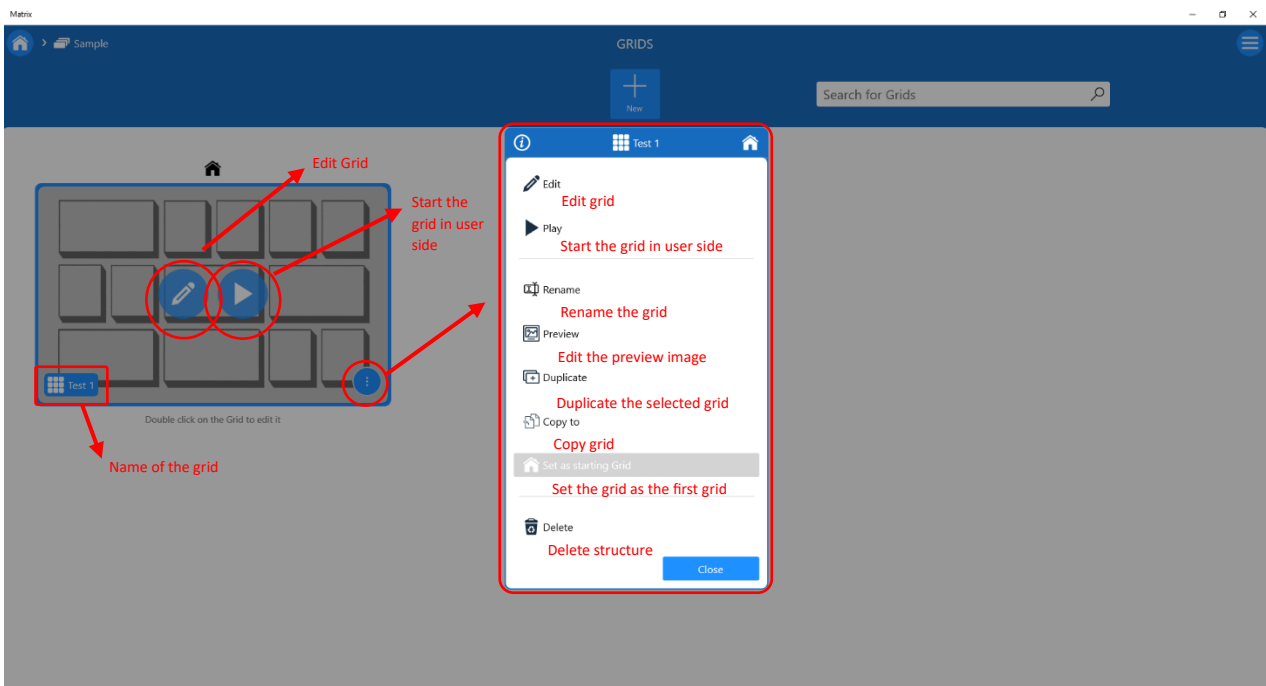


Figure 41 Grid's menu and commands

10 Manage grid

In the image below you can find all the functions available within the grid's editor side:

1. The path of the currently displayed grid is shown
2. This section allows changes to be saved, undone, or redone
3. **Cell Management Section:** In this section, the following actions are available:
 - Create a new cell (by double-clicking on the grid)
 - Manage the content of the selected cell
 - Copy the selected cell
 - Select multiple cell
 - Paste the selected cell
 - Delete the selected cell.
4. **Grid Management Section:** In this section, it is possible to:
 - Add or remove rows and columns
 - Manage the grid position, grid type (standard or computer control), and cell spacing.
5. **Cell Content:** Text and image content displayed within the cell, with quick commands for reading and writing text content
6. **Properties Section:** This section allows for the customization of the cell's graphic style
7. **Workspace Section:** This area displays the matrix of cells that make up the grid
8. **Plugin Section:** This area contains all commands inserted into the selected grid or cell
9. **Cell Folder Section:** This area displays all cells included in the selected Cell Folder.

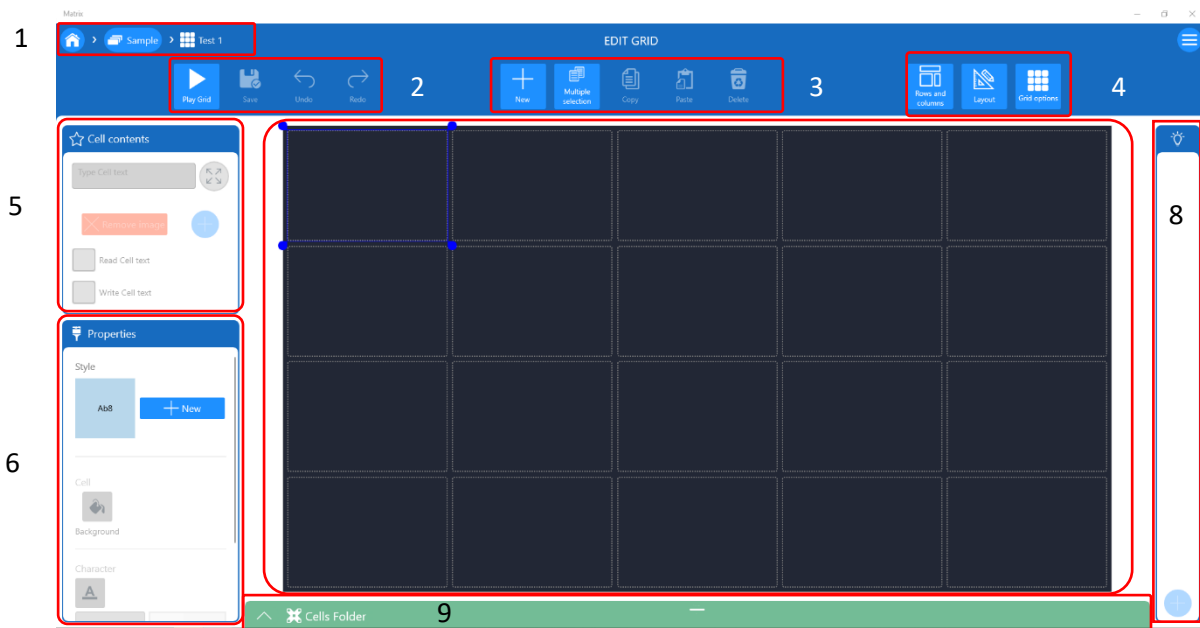


Figure 42 Grids editor

10.1 Manage grid – Cell contents

A cell can contain text and image. From the “Cell contents” window on the left you can insert the contents shown in the user’s side.

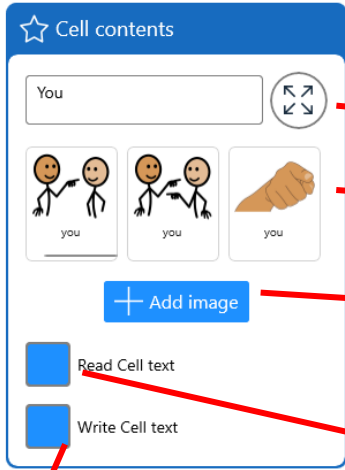


Figure 43 Cell contents

Enable quick insertion of the “Write cell text” command

The writing area can be displayed in a larger size compared to the menu on the left

Context-aware image suggestions generated from input text

Option to add a custom image

Enable quick insertion of the “Read cell text” command

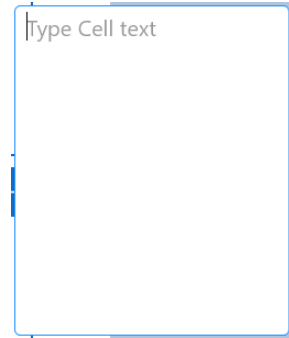


Figure 44 Cell text

10.2 Grid manager- Properties

Properties

Style

Ab8 + New

Cell

Shape Background Border

Character

A B I U S

Arial 24 - +

Text position

Left

Overlay on the image

Image filling 100 %

- +

AspectFit

Accessibility

Block interactions

A custom graphic style for cells can be created and applied easily

The following customizations are available:

- Apply a specific shape to the cell
- Change the cell background color
- Change the cell border color

The following options are available:

- Change the font color
- Change the font style
- Select the font
- Modify the font size

Text placement relative to the image within the cell:










- Left
- Top
- Right
- Bottom
- Center









Adjust the image size proportionally to the cell dimensions









Disables selection of the cell to avoid unintentional interaction









Figure 45 Properties





10.3 Grid manager – Cell contents

Icon	Description
 Text and image	Set the cell to display both text and image
 Audio track preview	Enable audio preview within the cell for the selected file
 Battery	Configure the cell to indicate the current battery status
 Browser	Enable browser-like functionality within the cell
 Browser search area	Set the cell to allow text entry inside the browser search area
 Call contact hint	Enable the cell to start a phone call
 Call info	Set the cell to show call details
 Camera	Configure the cell to display the streaming feed from any connected webcam
 Clock	Set the cell to show the time

Icon	Description
 <p>Contact editor</p>	<p>Set the cell to allow editing of contacts in the contact list</p>
 <p>Contact preview</p>	<p>Enable the cell to provide an in-cell preview of the selected contact</p>
 <p>Date</p>	<p>Enable the cell to display the current date</p>
 <p>Documents</p>	<p>Set the cell to show the list of documents stored in the software</p>
 <p>E-mail preview</p>	<p>Enable the cell to display email previews</p>
 <p>E-mail reading area</p>	<p>Set the cell to serve as an email viewing area</p>
 <p>E-mail recipients area</p>	<p>Set the cell to insert recipient's e-mail address</p>
 <p>E-mail writing area</p>	<p>Enable the cell as a text editor for email composition</p>

Icon	Description
 <p>Favorite website preview</p>	<p>Set the cell to display a preview of the preferred website</p>
 <p>Gaze monitor</p>	<p>Set the cell to show the eye-tracking display</p>
 <p>Logged call details</p>	<p>Set the cell to show all call details</p>
 <p>Logged call preview</p>	<p>Set the cell to show last calls' details</p>
 <p>Music player</p>	<p>Configure the cell so that it acts as an audio player</p>
 <p>Numeric keypad</p>	<p>Set the cell to show the typed numbers</p>
 <p>PDF document preview</p>	<p>Configure the cell to display a preview of the PDF document</p>
 <p>PDF viewer</p>	<p>Enable PDF viewing within the cell</p>

Icon	Description
 Photo slideshow	<p>Enable presentation mode for the cell</p>
 Phrase preview	<p>Set the cell to show a saved sentence</p>
 Picture preview	<p>Set the cell to show pictures' preview</p>
 Picture viewer	<p>Set the cell to show the selected picture</p>
 Prediction cell	<p>Configure the cell to function as a prediction cell</p>
 Symbol area	<p>Set the cell to show pictograms</p>
 System brightness	<p>Set the cell to control the system brightness</p>
 System volume	<p>Configure the cell to adjust the volume</p>

Icon	Description
 <p>Text document preview</p>	<p>Configure the cell to display a preview of the selected document</p>
 <p>Video player</p>	<p>Set the cell to function as a video player</p>
 <p>Video preview</p>	<p>Configure the cell to display a preview of the selected video</p>
 <p>Writing area</p>	<p>Set the cell to allow text entry</p>

10.4 Grid manager – Rows and columns

Using the 'Rows and Columns' button, you can add or remove rows and columns within the grid.

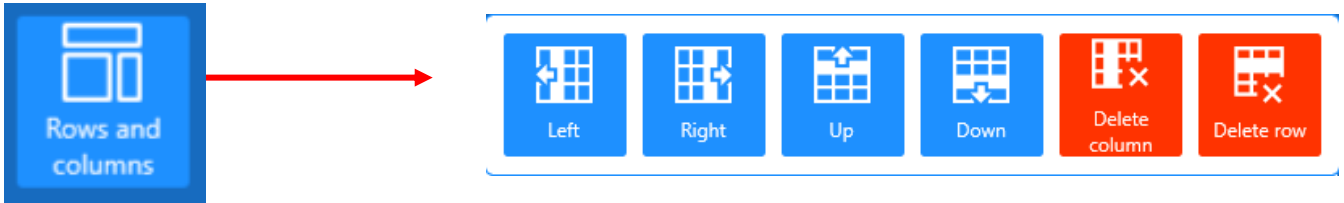


Figure 46 Rows and columns

10.5 Grid Manager – Layout

Options available for managing:

- Spacing between cells;
- Grid mode:
 - Standard;
 - PC control:
 - Grid position;
 - Grid zoom.

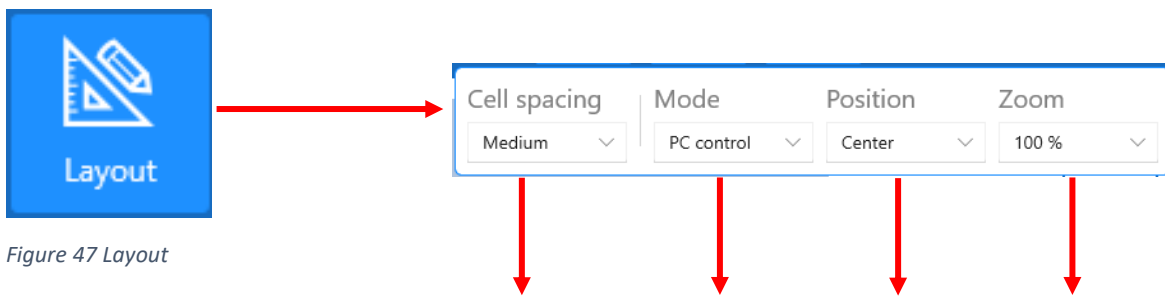


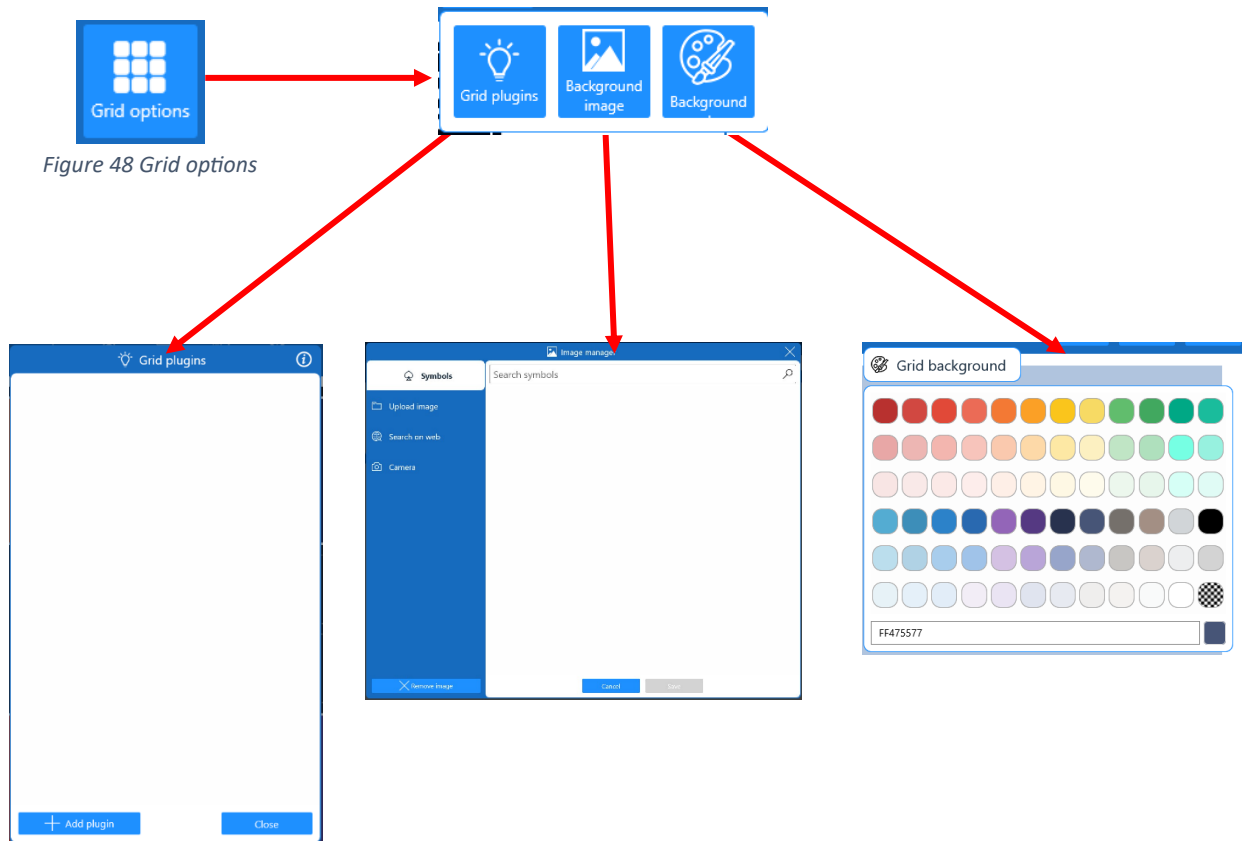
Figure 47 Layout

Extra small	Standard	Top left	25 %
Small	PC control	Top center	50 %
medium		Top right	60 %
Large		Left	70 %
Extra large		Center	75 %
Maxi		Right	80 %
		Bottom left	90 %
		Bottom center	100 %
		Bottom right	125 %
			150 %
			175 %
			200 %

10.6 Grid manager – Grid Options

The following options are available:

- Add, view and edit a grid *plugin*
- Add a background image
- Set a background color.



10.7 Grid manager – Cell commands

Each cell can be assigned a set of commands. By clicking the button “+” shown in the figure below, a window will appear displaying a wide range of commands organized by category:

- Writing
- Reading
- Photo and Media
- Contacts
- E-Mail
- Jumps
- Navigation
- PC Control
- Phone
- Matrix settings
- Alarms
- Home Automation.

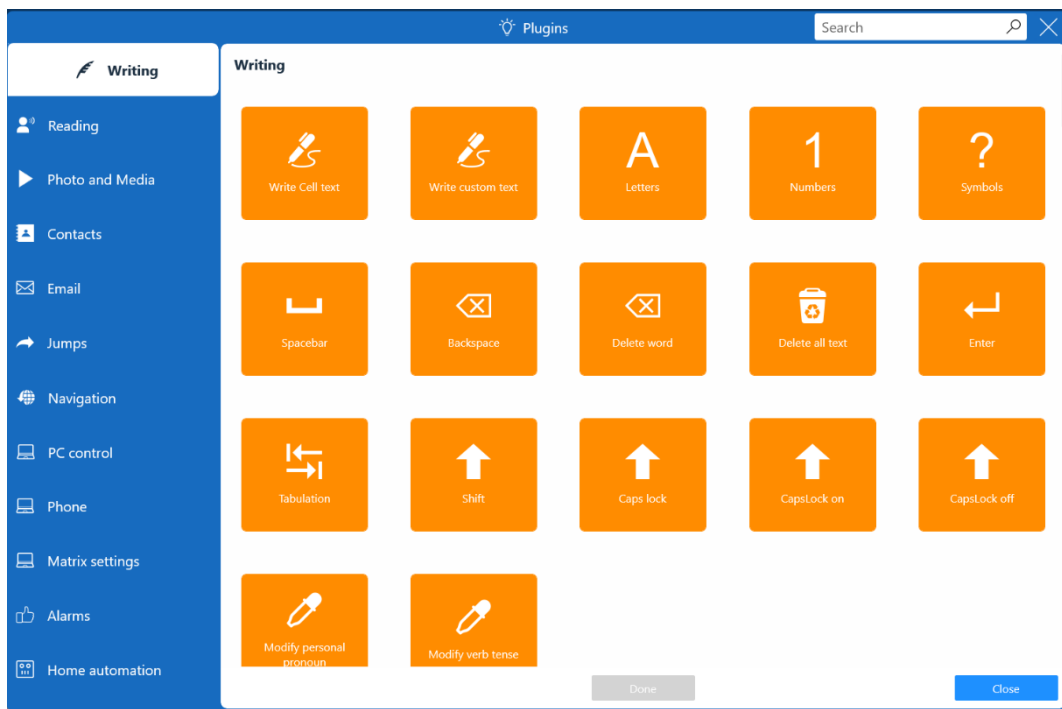


Figure 49 Cell commands

10.8 Grid manager – Grammar module

The grammatical module enables the automatic construction of grammatically correct sentences, adapted to the communicative context.

It provides advanced tools for managing verb person, tense, and gender, allowing verbs to be dynamically conjugated based on elements selected by the user (such as personal pronouns or explicit subjects).

Key features include the ability to:

- Set a reference verb tense
- The selected verb tense can be used just once for the next verb, or remain active for all verbs until changed by selecting another tense plugin
- Force feminine conjugation in compound tenses
- Set a cell to suggest appropriate, dynamic conjugations based on an infinitive verb while writing



Figure 50 Grammar commands

- Set personal pronoun: allows you to assign a specific personal pronoun to the text of a cell.

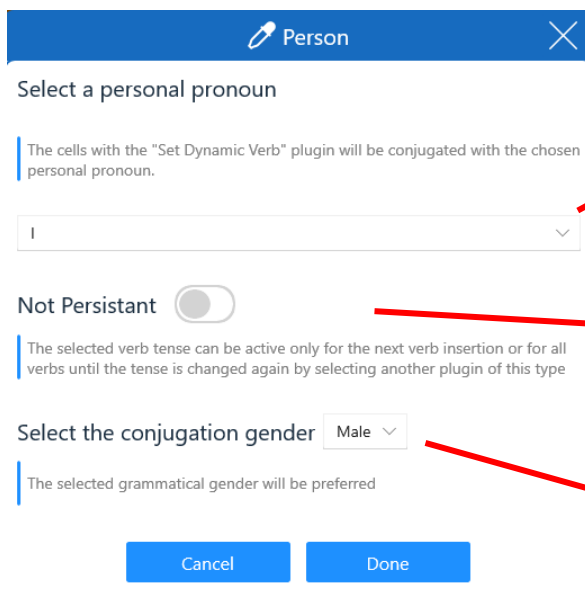


Figure 51 Set personal pronouns

Personal pronoun selection

If enabled, the selected personal pronoun will be applied only to the first verb inserted afterward

When enabled, allows conjugation of verbs in the feminine form in compound tenses

- Set verb tense: allows you to define the reference tense for conjugating verbs used subsequently

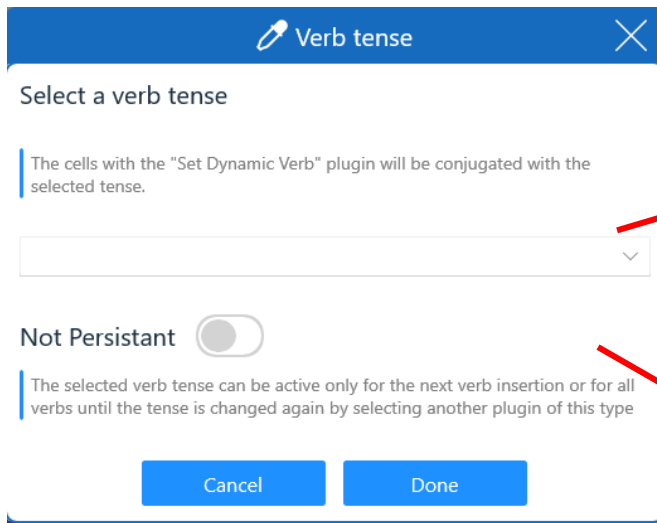


Figure 52 Verb tense

Verb tense selection

If enabled, the selected verb tense will be applied exclusively to the next verb chosen

- Set dynamic verb: configures a cell with an infinitive verb that is conjugated dynamically based on the selected tense and person

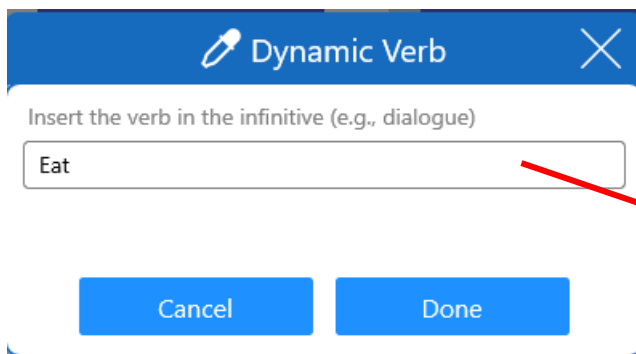


Figure 53 Dynamic verb

Verb in the infinitive form to be conjugated

- Suggest verb conjugations: associates the conjugations of a verb entered in the symbols or text area with one or more prediction cells. Each cell can be configured by selecting one or more persons and verb tenses.

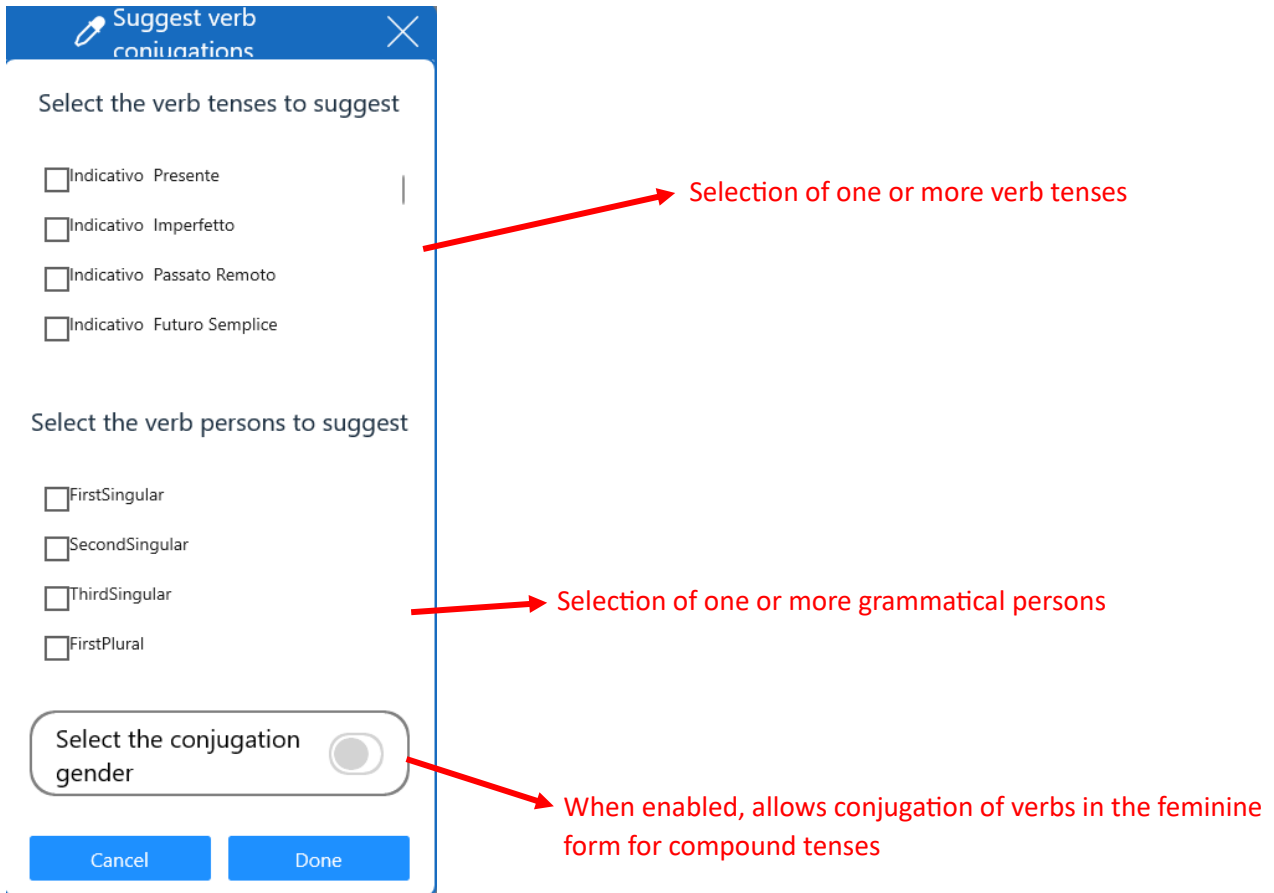


Figure 54 Verb conjugations

11 Advanced Symbolic Communication

The software integrates advanced tools for the management and symbolic representation of language, featuring functionalities that enhance accuracy, speed, and customization in communication.

11.1 Dynamic symbol updating in the symbols area based on typed text

Each word typed via the keyboard in the symbols area is automatically and instantly associated with its corresponding pictogram or image.

The symbol dynamically updates as the user types, enabling immediate visual construction of the sentence.

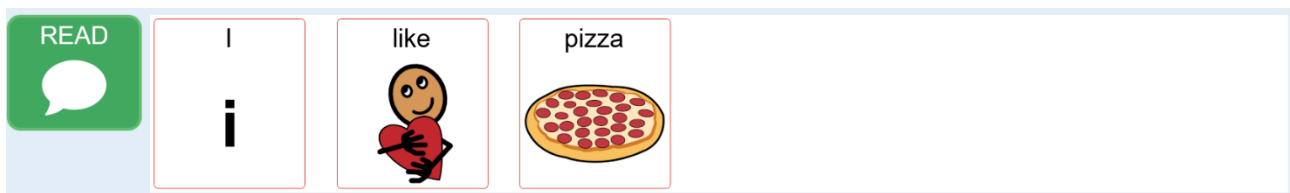


Figure 55 Dynamic symbol updating

11.2 Automatic suggestion of images and pictograms during typing via prediction

While typing in the symbols area, the system automatically provides a series of suggestions composed of text and images, updated in real time.

For example, when typing RIGH, the software displays suggestions such as right (with the corresponding pictogram), rights, righteous, and more in the prediction cells, enabling quick and contextually relevant selection.

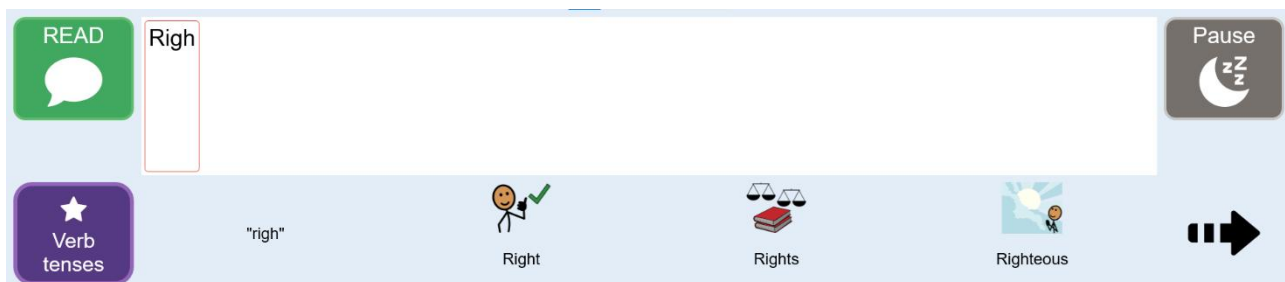


Figure 56 Automatic suggestions when typing

11.3 Intelligent dynamic symbol adaptation based on semantic context

The software analyzes the semantic context of typed words in real time and automatically adjusts the associated symbols accordingly.

For example, typing RACE displays a pictogram of people running. If you continue with CAR, the system shows the generic symbol of a car, but these are then dynamically replaced with a single pictogram representing the full expression RACE CAR, such as a Formula 1 vehicle.

This feature enables more accurate and natural symbolic representation, even for complex expressions or compound phrases.

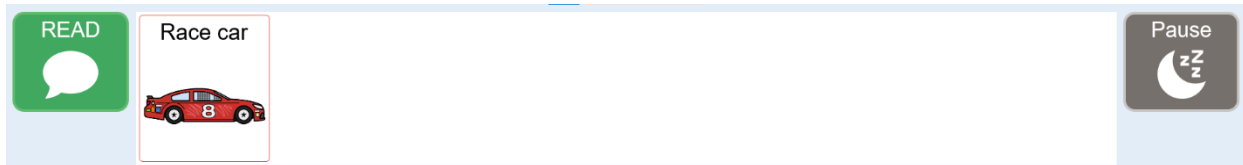


Figure 57 Dynamic symbol adaptation

11.4 Creating/customizing text-to-symbol associations

Users can freely modify or create associations between text and images, using either pictograms or real photos.

This feature allows you to replace a standard symbol with a personal photo (e.g., associating cat with an actual photo of the user's cat), or to create custom symbols for compound expressions (e.g., Walt Disney World Resort with a photo of that specific location). In this way, communication can be personalized and more easily recognizable for the user.

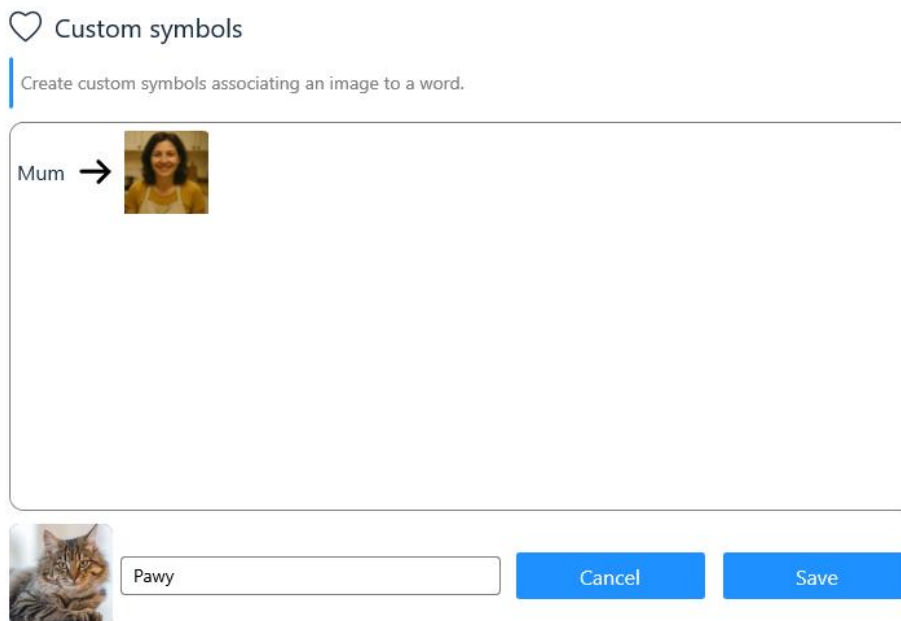


Figure 58 Custom symbols

12 Matrix AI

Matrix AI is the new artificial intelligence module integrated into MATRIX AAC.

The following sections describe in detail all the features offered by Matrix AI. The Matrix AI module offers the following functions:

- Fix Text;
- Fix AAC Symbols;
- Respond;
- Translate;
- Personalized Instruction.

12.1 Fix text

This feature enables automatic correction of the text entered in the Text Area.

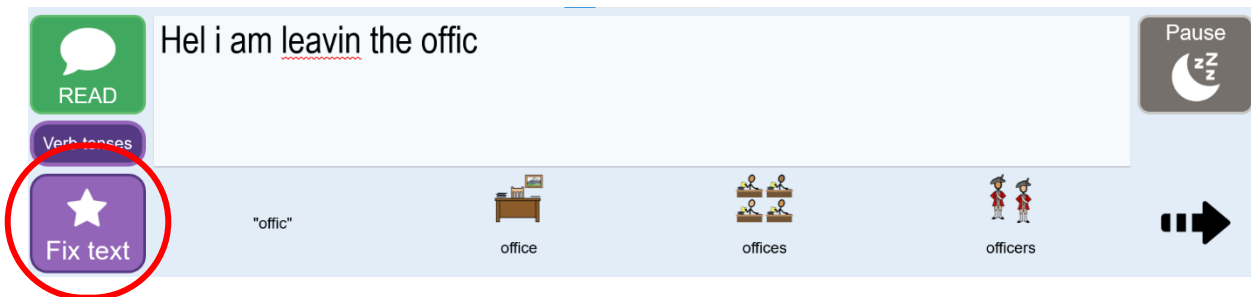


Figure 59 Example of typos in the text area

Matrix AI analyzes the written content and reformulates it by correcting spelling, grammar, and syntax errors, making communication clearer and more accurate.

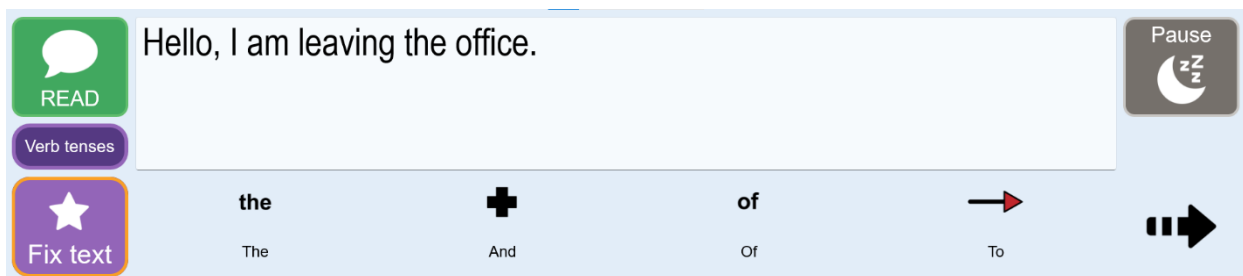


Figure 60 Fix text feature

The feature can be activated from any cell for text and image content.

The Fix Text function helps reduce uncertainty, prevent errors, and support more confident and effective communication.

12.2 Fix AAC Symbols

The Fix AAC Symbols function operates within the Symbols Area, refining and correcting the phrase generated through the use of symbols.

The system analyzes the entire sequence of selected symbols and reformulates them to create a coherent and grammatically correct sentence.

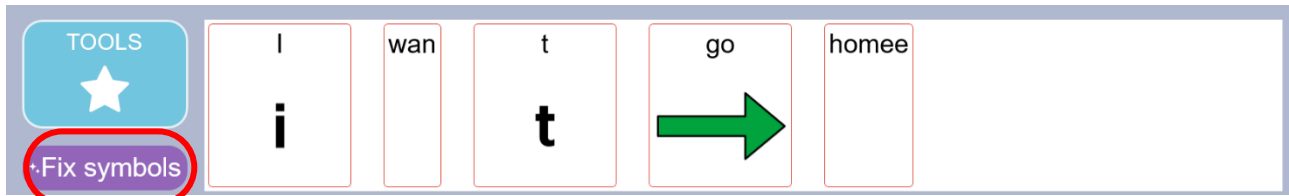


Figure 61 Example of typos in the symbol area

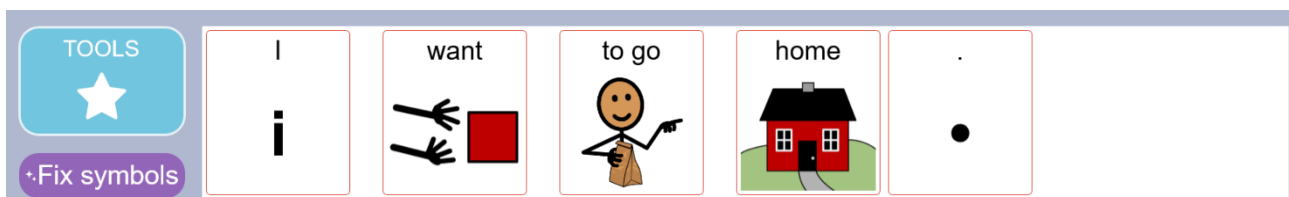


Figure 62 Fix AAC symbols feature

It also adapts the symbols based on the overall meaning of the sentence.

The Fix AAC Symbols function is designed for non-verbal users who primarily communicate through symbols and require advanced linguistic support.

It enables them to build clearer and more accurate sentences, making interaction with communication partners easier and more effective.

12.3 Answer

This feature allows users to ask questions in natural language and receive concise, relevant answers.

The system interprets the meaning of the question, whether written in the Text Area or composed with symbols, and provides a direct and understandable response, even on complex topics.

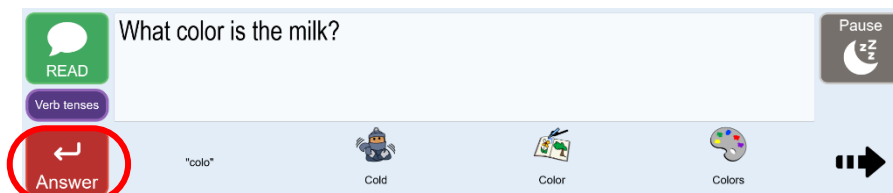


Figure 63 Example of question in the text area

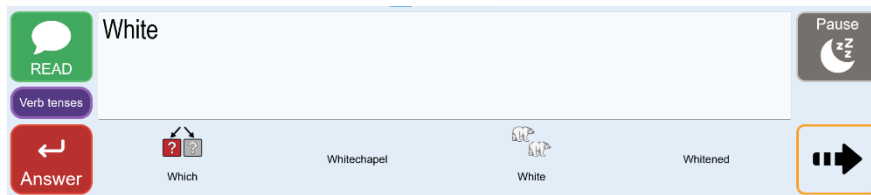


Figure 64 Answer feature

Questions are supported on topics such as:

- science, culture, history, and current events
- general knowledge and curiosity-based information

Recommended for: children and adults with or without complex communication needs who wish to express spontaneous questions beyond preconfigured structures.

The Respond to general questions feature provides a tool for autonomous dialogue, encouraging curiosity and reinforcing self-determination.

12.4 Translate

This feature allows for the immediate translation of selected text or symbols into one of the available languages. It can be used in both the Text Area and the Symbols Area.

Supported languages:

- Italian
- English
- Spanish
- French
- German
- Russian.

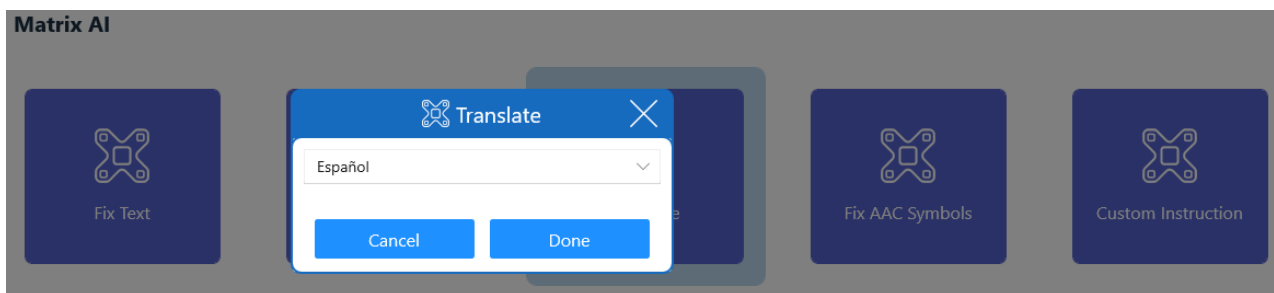


Figure 65 Translate

This feature is designed for multilingual users, inclusive educational environments, travel situations, and intercultural communication. It expands communication possibilities even in international or multilingual contexts.

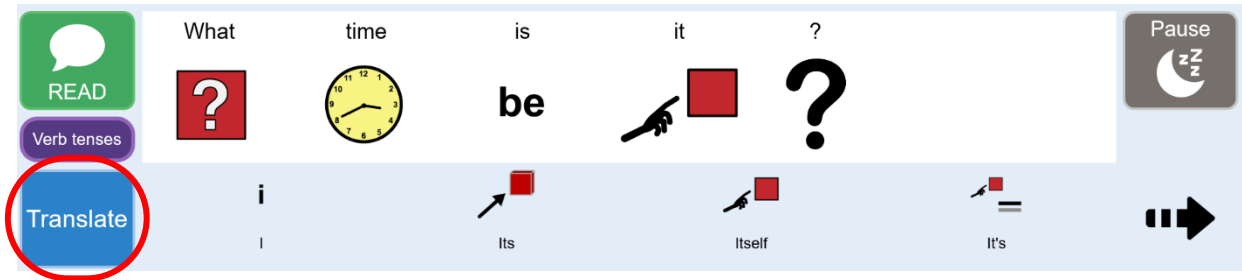


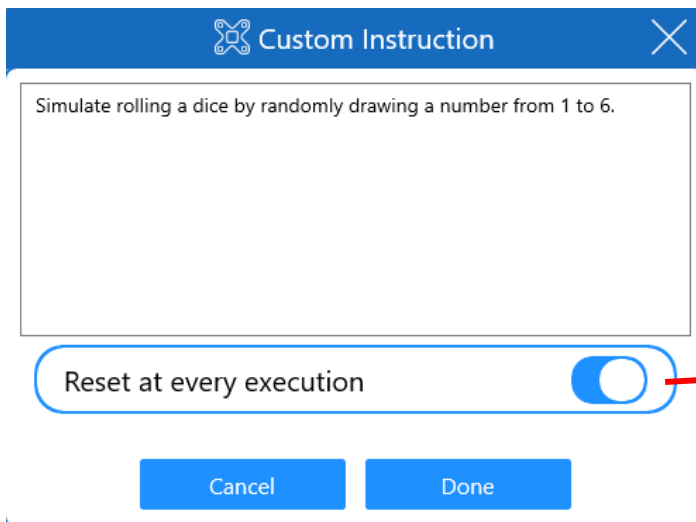
Figure 66 Example of question written in English



Figure 67 Translate feature in Spanish

12.5 Custom Instruction

This feature is designed for multilingual users, inclusive educational environments, travel situations, and intercultural communication. It expands communication possibilities even in international or multilingual contexts.



Each personalized prompt can be reset at every execution, so that the AI module does not take previous results into account

Figure 68 Custom instruction

Through a prompt, it allows the creation of personalized instructions for:

- Education: exercises, quizzes, school activities
- Personal communication: recurring phrases, specific requests
- Autonomy: management of daily routines
- Work: technical phrases or repetitive tasks
- Entertainment: games, interactions, recreational activities



Figure 69 Example of custom instruction

This feature is especially designed for therapists, teachers, caregivers, and family members who wish to create tailored content for individual users, providing a truly personalized experience adaptable to any educational, support, or relational context.

13 Available users

The MATRIX AAC platform includes three main communication structures; each tailored to different user needs and communication abilities:

- **PictoVoice:** an advanced symbolic structure for users with strong cognitive and language skills;
- **Needs:** a simple yet comprehensive structure for effective symbolic communication, designed for children and individuals with Autism Spectrum Disorders;
- **Dialog_ENG:** designed for adults with limited mobility who use eye-tracking as a primary access method;
- **PODD ENG:** a basic symbolic structure suitable for non-verbal users communicating through simple concepts.

13.1 PictoVoice

PictoVoice is a comprehensive symbolic communication structure within the MATRIX AAC platform. It is designed for non-verbal patients with strong cognitive abilities, such as individuals with high-functioning autism or speech disorders, who seek an advanced and flexible symbolic communication system. The structure supports the creation of articulate, grammatically correct, and complete sentences through the use of symbols. Key features include:

- Supports the construction of complex sentences using a combination of symbols and text;
- Includes advanced grammatical functions, such as:
 - Automatic verb conjugation o Feminine gender adaptation;
 - Management of subject and verb tense;
- Integrates artificial intelligence functionalities, such as symbol correction.

PicToVoice uses the SymbolStix image library, widely recognized for its visual clarity and ease of recognition, which enhances comprehension even in more demanding communication scenarios. For more experienced users, a text-based keyboard is also available and can be used alone or in combination with symbols, allowing for even greater communication flexibility.

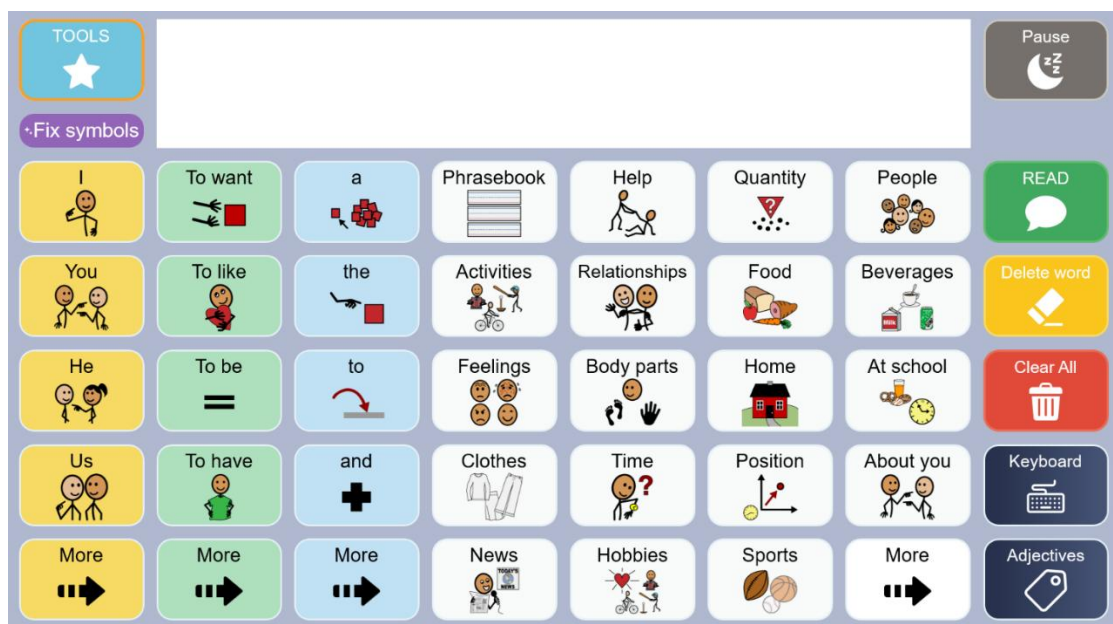


Figure 70 Pictovoice

13.2 Needs

Needs is a symbolic structure designed to enable the user to express primary needs, emotions, preferences, and intentions related to daily life in a clear, immediate, and functional way.

The structure is organized into concrete categories directly connected to everyday experience. Through the selection of symbols, the user can communicate:

- what they would like to eat (first courses, main courses, side dishes, vegetables, desserts);
- where they feel pain or whether they are experiencing heat, cold, or other physical sensations;
- what they need (medication, eye drops, personal care items);
- what they would like to do (for example, go to the park or look at themselves in the mirror);
- how they feel (happy, sad, angry, tired, etc.).

Needs is a flexible and expandable structure, designed to support the development of communication skills from early childhood through adulthood.

It is particularly suitable for nonverbal children or individuals with language difficulties, including users with Autism Spectrum Disorder, as it allows communication through basic, clear, and easily recognizable concepts.

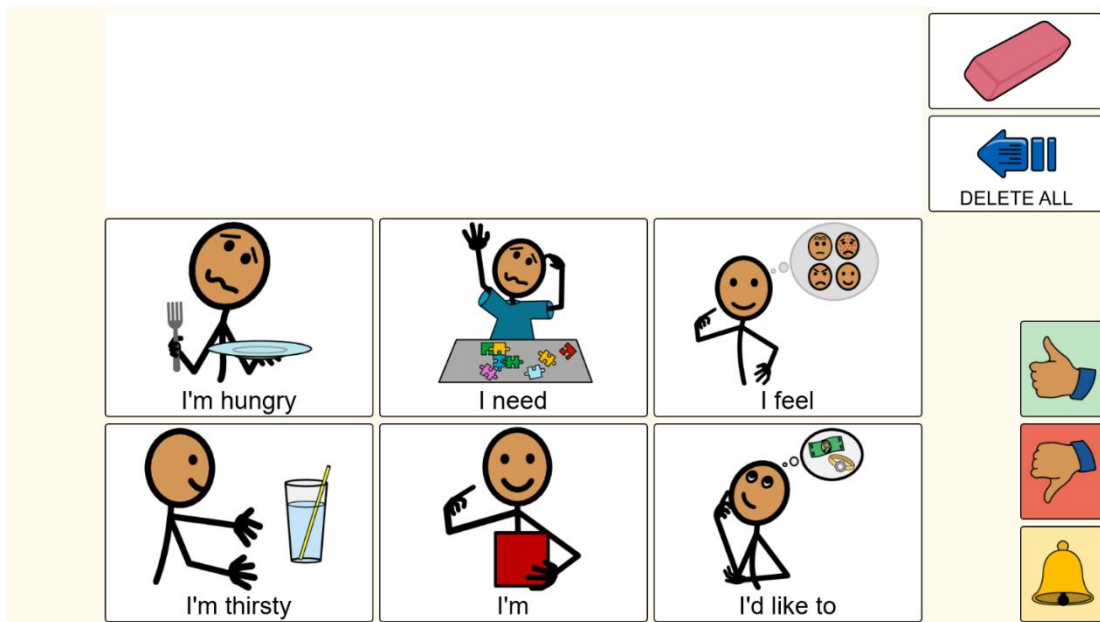


Figure 71 Needs

13.3 Dialog_ENG

Dialog_ENG is a set of interfaces designed for adult patients with limited or no limb mobility, who communicate using an eye-tracking device. These structures provide simplified versions of essential digital tools, enabling the user to interact more easily with their surroundings. Specifically, the following features are available:

- Virtual Keyboards
 - Alphabetical keyboard (available in simplified and advanced versions)
 - QWERTY keyboard (available in simplified and advanced versions)
 - Enlarged alphabetical keyboard
- Internet Access
 - Simplified web browsing using Matrix commands
 - Advanced browsing through the device’s native browser with enhanced controls
- Simplified access to social media platforms (Facebook, Instagram, TikTok, X), YouTube, and WhatsApp
- Home Automation
 - Control of infrared-enabled devices (e.g., TVs)
- Advanced device control via Matrix commands
- Multimedia and Documents
 - Viewing of video, image, and audio content
 - Reading and creation of .docx documents
 - Reading of .pdf files
- Communication
 - Simplified access to email (reading, composing, sending, and viewing attachments)
 - Facilitated smartphone use for making and receiving calls

This system provides patients with all the essential tools they need to communicate and engage with their environment, through user-friendly interfaces designed for everyday use.



Figure 72 Dialog_ENG

13.4 PODD ENG

PODD ENG is a basic symbolic structure designed to provide immediate access to core concepts for expressing thoughts, needs, and intentions. It operates through a folder-based cell system that allows the user to easily navigate topics and select the most relevant options.

By using the outer frame of the interface, the user selects a topic. The central area then displays related symbols and concepts, supporting clear and functional communication.

This structure is suited for non-verbal individuals or those with speech and language difficulties, particularly users on the autism spectrum who rely on basic concepts to communicate. PODD ENG is designed as a highly flexible and scalable tool that can grow with the user. It is suitable from early childhood through adulthood, offering a practical and intuitive approach that supports everyday functional communication.

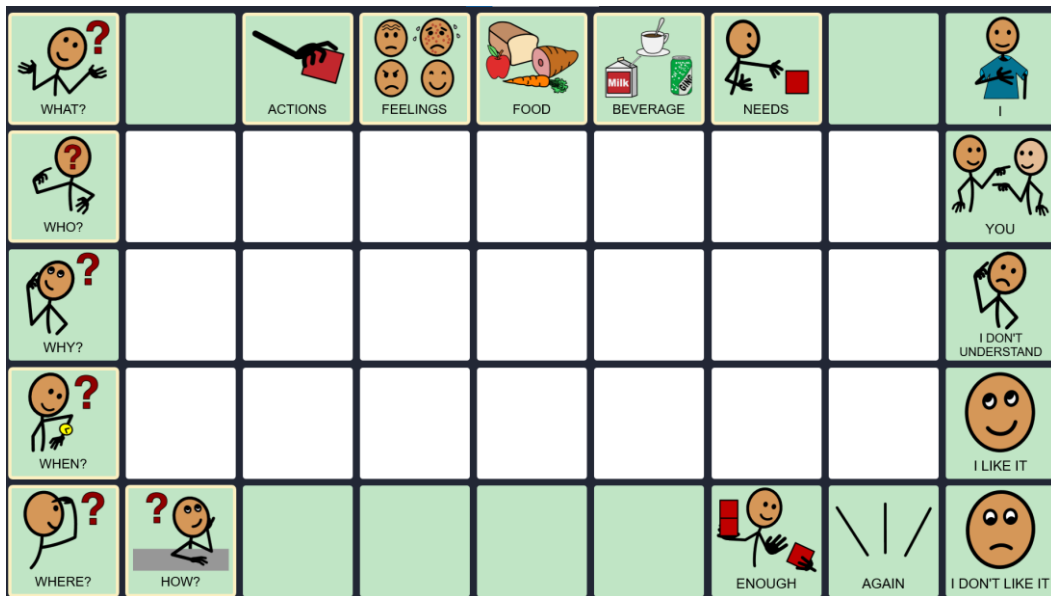


Figure 73 PODD ENG



MATRIX AAC
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