ASPREX Fact Sheet

Keyboard emulation software

Software application to be installed on a computing device designed to be operated by means of a keyboard and a mouse; all functions of the hardware keyboard are emulated by a virtual keyboard displayed on the computer screen, whose keys are controlled by a mouse or an alternate pointing device requiring different motor abilities.

Possible variants include the keyboard layout (which may be fixed – based on a given standard such as QWERTY or alphabetical – or also configurable), the keys appearance (which may be fixed or also configurable in relation to size or shape or font or color), the input method (which may also be based on row-column scanning, or block scanning, or arrow movement i.e. keys are selected by means of a cursor that can be moved along fixed directions), the presence of auditory cues (to help understand whether the selected key has performed the intended action), and the embedding of mouse emulation capabilities.

Different versions may be available for installation on different devices, operating systems, and operating system versions. Each product item on the market may have a different range of capabilities and functions, as well as different hardware and software requirements to ensure proper installation and operation.

- Product Classification
  - APL (WHO Assistive Product Priority List): 20 (Keyboard and mouse emulation software)
  - ISO 9999:2022: 241324 (Software for operating electrical devices)
- Possible configuration variants

  None specified.
- Possible accessories or optional components

  None specified.
- Product goals

  Activities or functions the product is mainly intended to support, according to WHO ICF Classification:
  - Using communication devices and techniques [d360].
- Indicated impairments

  Difficulties the product is mainly intended to address, according to the WHO ICF Classification:
  - Hand and arm use [d445].
- Contraindicated impairments

  Difficulties for which the product may be inappropriate:
  - Lack of communication intention.
  - Insufficient consciousness level to enable association of keystrokes with resulting actions.
- Indicated environments

  Specific environments in which the product should be used:
  - Compatible computer operating systems (like any software application, it only works with the devices and related operating system versions indicated by the manufacturer for each product item).
- Contraindicated environments

  Environments in which the product may be inappropriate:
  - Places where electricity is not available to maintain battery charge.
- Other indicated factors

  Other factors or situations the product is intended to address:

- Controlling keyboard functions (in relation to the computer operating system and all installed applications).

- Other contraindicated factors

  Other factors or situations in which the product may be inappropriate:
  None specified.

- Points to be considered in product selection
  - Check the compatibility of the product with the computing device on which it will be installed, and make sure it really performs all the functions that the keyboard that normally comes with the device would do.
  - If the product requires internet connection for installation and regular updates, make sure that such connection exists and has sufficient bandwidth in the place where the user lives.
  - List the tasks the user needs to do with the product, make sure to install all the applications needed for those tasks, and check that the user can actually sustain them.
  - Find out – through careful assessment – the user's body function that are best suited to comfortably operate the product.
  - Identify the proper physical interface (mouse, touch screen, joystick, control switches, alternate user interfaces such as eye-gaze, etc. and input method (direct selection, arrows, row-column scanning, block scanning etc.).
  - This software will only provide ease of access but will not compensate for the lack of communication intention or a low consciousness level

- Points to be considered in product fitting
  - Install the product on the computing device, along with all related components and other possible assistive products needed such as input interfaces.
  - Position the device (height, distance, tilting, orientation in relation to environmental light conditions etc.) in such a way that the user can operate it.
  - If applicable, set up the software to the person's profile (layout adjusted to visual capabilities and needs, included word-prediction capability to make typing faster, etc in such a way that the user can operate it).
  - Training may be needed for the user, to ensure that he or she is able to master all product functionalities in relation to the intended tasks; if applicable, this training should also be extended to the user's assistants.

- Points to be considered in product use
  - The product as such does not require specific precautions; however, all precautions should be taken to keep safe the device on which the product is installed.

- Points to be considered in product maintenance / follow-up
  - Download and install product updates every time is required.
  - Make sure to have a reliable contact person or company in case of any technical problem.

- Examples of products available on the market
  - Live product search in the EASTIN website https://www.eastin.eu/en/searches/products/list?iso=241324

Source

This Fact Sheet was compiled in 2021 by an international team of experts, to provide the initial knowledge base for a project ("An online system to assist the selection of assistive product") supported by the World Health Organization in 2020-2021 within the GATE Initiative (Global collaboration on Assistive Product). Fact Sheets were compiled for each of the 50 types of products included in the WHO APL (Assistive Product Priority List).

The team was composed of Renzo Andrich (Italy, group leader), Natasha Layton (Australia), Stefan von Prondzinski (Italy), Jerry Weisman (USA), Silvana Contepomi (Argentina) and Hasan Minto (Pakistan).

The project led to a prototype online tool called ASPREX (ASsistive PRoduct EXplorer). At the end of the project, it was transferred to a WHO collaborating center (the Global Disability Hub in the UK), in view of possible future developments.