

DESCRIPTION OF THE OBJECT

AUCTION:

University of Latvia (UL) is launching an official auction of intellectual property's "VISION SCREENING AND TRAINING DEVICE."

STATEMENT OF THE INVENTION:

Auction object - intellectual property object set for licensing:

- 1) Latvian patent application No. LVP2022000026 for the invention of "A system for visual screening and visual training";
- 2) *know-how*:
Methodology for identifying visual dysfunction and selecting a visual training programme;
- 3) copyright:
Operating software for visual screening and training equipment.

More detailed information on the invention and the original commercialisation strategy can be provided

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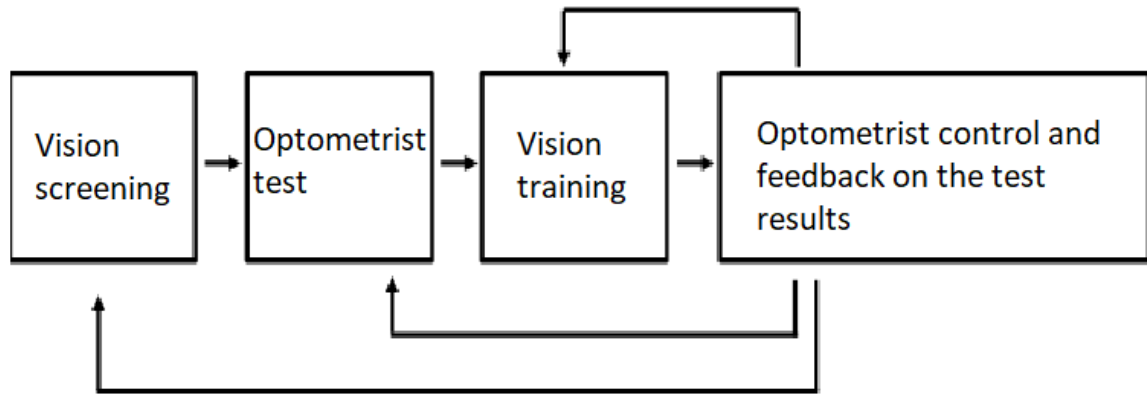
"VISION SCREENING AND TRAINING DEVICE"

(hereinafter - invention) brief description of the technology

PRODUCT OF THE INVENTION: proprietary technology, methodology and software for the production and use of **a vision screening and vision training devices**.

SUMMARY: Technology is designed to provide visual screening and training. Head-bending is designed to ensure that lenses and filters are placed automatically in front of the patient's eyes during visual screening and visual training. A patent application has been approved for the design of the device, while the methodology for correctly combining lenses and filters with visual incentive tasks on the computer screen has been safeguarded in the form of *know-how*.

Operating a visual screening and training device



INDUSTRY: The invention refers to the optometric equipment industry.

PURPOSE AND NATURE OF THE INVENTION:

Description of the operating principles of the device

The device is designed to ensure automatic positioning of lenses or filters, lenses and filters in front of the patient's eyes during visual screening and visual training. The device contains two discs, each with four openings designed to insert lenses and filters. On each of the disks, one position is left blank to allow experiments without lenses and filters, and to enable each of the 6 lenses or filters to be placed in front of the patient individually, or to demonstrate one of the 9 lens and filter combinations. The drive drive of the machine drives is supported by alternating one drive or both drives with one servo engine. The device mechanism contains technical solutions that ensure that the lenses and filters are placed accurately in front of the patient's eyes, as well as their fixation.

The current technical marketing of the device makes it possible to carry out the acomodation lightness procedure, i.e. a procedure in which the ability of the acomodation system to change the strength of the optical system is assessed. The technical solution of the device allows two procedures of this type with different pairs of lenses (while providing a visual screening procedure with the required lenses and filters), enabling the visual screening procedure to perform an acomodation lightness procedure with a standard set of lenses and a set of lenses with a lower dioptric strength in cases where the patient does not the task with the standard set of lenses can be executed.

The function is also referred to in visual training. The distance sensor integrated into the device provides distance control between the display on which the test stimuli are displayed and the patient to ensure correct conduct of the examination or visual training, i.e. test incentives and lens strengths are intended for a specified distance. The gyro and accelerometer integrated into the device allows you to control the patient's head position, i.e. the angle of the patient's head bending corresponds to the distance at which the study is conducted. A wireless connection is provided to perform tests on various remote devices for communication with a system that supports the generation of test incentives and analysis of patient/participant responses.

Electronics control scheme

The electronics control system consists of a microcontroller, servo engines, distance sensor, accelerometer/gyros, electronic circuits for battery charging, infrared diodes and sensor.

The device-integrated microcontroller software performs an analysis of sensor-recorded information without using computer or other smart device computing resources. This option makes it possible to separate the generation and demonstration of incentives from the control and control system of the device, which ensures that the two procedures mentioned above are better performed and disposed of.

PROTECTION OF INTELLECTUAL PROPERTY:

- 1) Latvian patent application No. LVP2022000026 for the invention of “A system for vision screening and vision training”;
- 2) know-how:
Methodology for identifying visual dysfunction and selecting a visual training programme;
- 3) copyright:
Operating software for visual screening and training equipment.

OTHER INFORMATION:

- The visual screening methodology has been tested on ~ 11 thousand children. The visual training methodology has not been tested as part of a research project but is based on other studies and publications.

INTELLECTUAL PROPERTY DOCUMENTATION, which includes:

1. A patent application;
2. A description of the methodology;
3. Software code for operating the equipment.