Report on tasks' completion within output one in

EDUTRONIX – interactive educational module designed for teaching mechatronics

Project number: 2015-1-PL01-KA202-016561

Key Action 2: Cooperation for innovation and the exchange of good practices, action: strategic partnerships, sector: Strategic Partnerships in the field of Education and Vocational Training

Project's duration: October 2015 - September 2017

1. Project's leader, CKZ, along with the help from other partners: Perfect Project, AIJU and CIS was responsible for fulfillment of tasks in output one

2. The aim of output one was the creation of a model for teaching mechatronics (with current online access)

3. A short description of the field of mechatronics, an educational area at which the project aims.
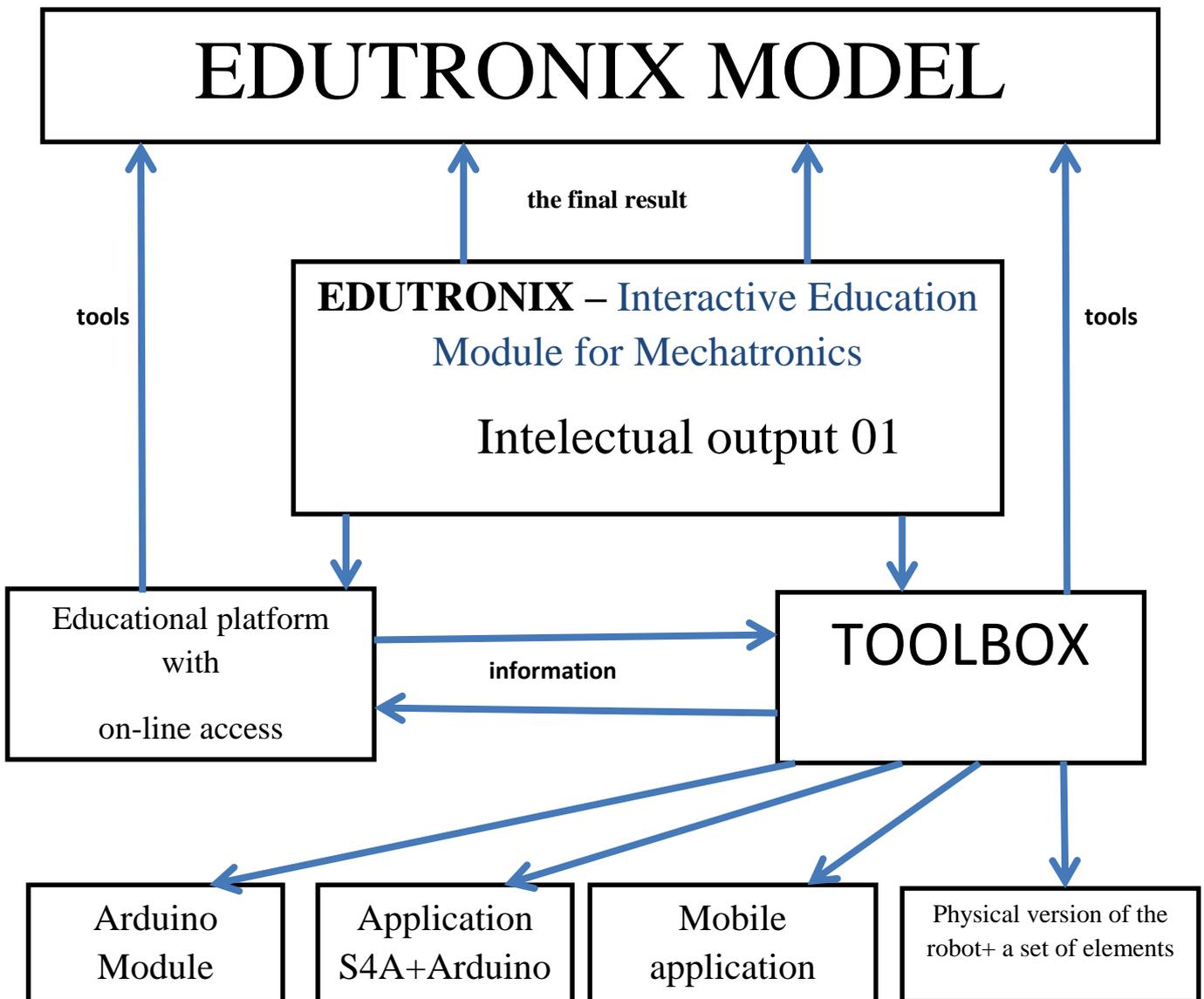
Mechatronics is a branch of science that combines areas such as electrotechnics, electronics, mechanics, pneumatics, hydraulics, sensor technology, automatics. Mechatronics is currently the fastest growing area of science and all indications are that its importance will continue to grow. This is due to the fact that modern technologies and production lines are becoming increasingly complex and automated. They operate according to the control program. Therefore, the labor market needs more specialists who will be able to design control and measurement systems, submit and program them as well as return to operation.

Mechatronics devices and systems can be found where automated manufacturing processes occur .

- industry

- services

- farming

- security

- heath service

- administration

4. The general schematic representation of the model for teaching mechatronics

EDUTRONIX MODEL

EDUTRONIX – Interactive Education Module for Mechatronics

Intelectual output 01

the final result

tools

tools

Educational platform with

on-line access

information

TOOLBOX

Arduino Module

Application S4A+Arduino

Mobile application

Physical version of the robot+ a set of elements

Edutronix model is the final result of output one. It will consist of educational platform as well as toolbox, which combined will enable its users to acquire a set of competences making it easier to enter the job market.

Educational platform will be the first tool directly creating Edutronix model. It will include theory from the respective branches of mechatronics, tests to check the knowledge, exercises and different self-study documents. Theoretical knowledge placed on the platform will be presented in various forms such as PDF/Word documents , presentations, videos, instructions.

Another element directly creating Edutronix model will be toolbox.   It will enable the practical usage of the knowledge gained through learning platform. It will be done through the construction of various forms of the robot, control and measurement systems. The toolbox will include tools such as:

a) arduino module, the heart of the robot or other control system

b) programming environment: S4A and Arduino, which will allow the programming of physical models based on the exercises derived from the educational platform or one's own ideas.

c) mobile application through which one will be able to program and control the robot or any other device created by the user. Such control may be conducted from anywhere.

d) a set of physical components needed for construction of the robot, manipulator or any other system of measurement or control. These two instruments will be connected with each other by the exchange of information. On the one hand the construction of the physical model based on the theoretical information placed on the learning platform, on the other hand a good understanding of the theoretical knowledge on the basis of practical exercises and tasks (construction of the robot, manipulator or any other system of measurement or control). Edutronix will be a model which through the correlation of various aspects is expected to provide desirable skills to its users and therefore satisfy potential employees.

5. Tasks completed within output one:

Upon cooperation with all the Project Partners the following tasks have been completed:

a) The design of the whole interactive model for teaching mechatronics

b) Website www.edutronix.eu with the access to the learning platform and online access to the model for teaching mechatronics

c) Project's logo, selected in the competition for CKZ's students (logo is located on the project's website twww.edutronix.eu)

d) Draft of the leaflet for project's dissemination

e) A draft version of the course on theoretical knowledge, it will be located on the educational platform

f) The description of the field of mechatronics along with the description of the employee sought by this industry.

g) The document on utility of the model in enterprises.

h) Completion of BOX equipment, these tools will be used for acquiring practical skills

i) Draft list of components for construction of the robot and other control and measurement systems

j) The first training module for Arduino which aims at familiarizing with the module itself as well as the programming environment. These training modules will also allow to practice the creation and programming of first systems and the robot.

k) Construction of the educational platform began (moodle platform to which access will be via www.edutronix.eu)

l) The document with anticipated results within Edutronix-model for teaching mechatronics

m) The document with all the issues to be met in order to achieve the highest standard of the created model.

n) A document with a sample training unit

6. List of attachments related to fulfilled activities:

Attention !

In order to successfully open each link you need to first visit www.edutronix.eu and then log in into the educational platform.

The space to log in is situated in the right top corner of the webpage.

Attachments:

- AIJU – Architecture (Attachment 01);

  AIJU - Architecture.docx

- AIJU - Arduino Geekout_ Brian Huang of Sparkfun on Scratch 4 Arduino(bajaryoutube.com) (Attachment 02);

  AIJU - Arduino Geekout_ Brian Huang of Sparkfun on Scratch 4 Arduino

- AIJU - EDUTRONIX BOX -component list based on architecture(Attachment 03);

  AIJU - EDUTRONIX BOX -component list based on architecture.xlsx

- AIJU - EDUTRONIX MODULE- plan of exercices(Attachment 04);

  AIJU - EDUTRONIX MODULE- plan of exercices.xlsx

- AIJU - elearning platform and content structure(Attachment 05);

[AIJU - elearning platform and content structure.pdf](#)

- AIJU - ELEARNING PLATFORM AND CONTENT(Attachment 06);

  [AIJU - ELEARNING PLATFORM AND CONTENT.pdf](#)

- AIJU - elearning trainning estructure(Attachment 07);

  [AIJU - elearning trainning estructure.pdf](#)

- AIJU - Youtube Control_Arduino_S4A_Scratch_Arduino(Attachment 08);

  [AIJU - Youtube Control_Arduino_S4A_Scratch_Arduino](#)

- AIJU – Youtube Controlling_a_robot_ wirelessly_with_ Scratch_for_Arduino(Attachment 09);

  [AIJU - Youtube Controlling_a_robot_wirelessly_with_Scratch_for_Arduino](#)

- AIJU - Youtube Demo_de_Scratch_for_Arduino_S4A(Attachment 10);

  [AIJU - Youtube Demo_de_Scratch_for_Arduino_S4A](#)

- AIJU - Youtube Fritzing_simulation_tutorial(Attachment 11);

  [AIJU - Youtube Fritzing_simulation_tutorial](#)

- AIJU - Youtube Programs_S4A(Attachment 12);

  [AIJU - Youtube Programs_S4A](#)

- AIJU - Youtube sample S4A_Doodle_Bot(Attachment 13);

  [AIJU - Youtube sample S4A_Doodle_Bot](#)

- CIS - Competence approach(Attachment 14);

  [CIS - Competence aproach.pptx](#)

- CIS - Example of training unit(Attachment 15);

  [CIS - Example of training unit.doc](#)

- CIS - List of enterprises that belong to mechatronic Club Identified by CIS(Attachment 16);

  CIS - List of enterprises that belong to mechatronic Club.xml

- CKZ - the plan of the course(Attachment 17);

  CKZ - the plan of the course.doc

- CKZ - Draft modules with theoretical knowledge on the e-learning platform(Attachment 18);

  CKZ-draft modules with theoretical knowledge on the e-learning platform.pdf

- CKZ - Final logo in PNG format(Attachment 19);

  CKZ-final logo in PNG format.png

- CKZ - Flyer project in editable format DOC in English(Attachment 20);

  CKZ-flyer project in editable format DOC in English.docx

- CKZ - Flyer project in editable format DOC in Polish(Attachment 21);

  CKZ-flyer project in editable format DOC in Polish.docx

- CKZ - Flyer project in PDF format(Attachment 22);

  CKZ-flyer project in PDF format.pdf

- CKZ - Report on logo contest(Attachment 23);

  CKZ-report on logo contest.docx

- CKZ - Schematics of Edutronix Model in PDF format(Attachment 24);

  CKZ-schematics of Edutronix Model in PDF format.pdf

- CKZ - The first project module for teaching mechatronics(Attachment 25);

  CKZ-the first project module for teaching mechatronics.ppt

- PP - Descritpion of mechatronics and mechatronic technician needed on the labour market(Attachment 26);

[PP - Descritpion of mechatronics and mechatronic technician needed on the labour market.docx](#)

- PP - The draft of the model usefulness for enterprises(Attachment 27);

[PP - The draft of the model usefulness for enterprises.docx](#)

- PP - The structure of the project report of interactive educational module for teaching mechatronics(Attachment 28);

[PP - The structure of the project report of interactive educational module for teaching   mechatronics.docx](#)

The database relating to outcome one, the report and attachments are available on the www.edutronix.eu .