

<https://erasmus-plus.ec.europa.eu/2022-1-HR01-KA220-VET-000086983>

# Smart Home Models in VET Newsletter

## A Smart Home Webinar Organised by ELPROS

The first webinar of the kind in the project was held in Osijek last month. More on the event can be found on the next page.

Each partner prepares and delivers a webinar on their smart home model developed during the project and technologies applied in it. The audience consists of VET professionals who obtain first hand information about the building of the model and widen their knowledge regarding its use in the educational process. The project website offers further ready made resources to all interested parties intending to make a model of their own or just learn something about smart homes and benefits they provide.



Co-funded by  
the European Union

### Disclaimer

Funded by the European Union. Views and opinions expressed are however those of the author(s) only and do not necessarily reflect those of the European Union or the European Education and Culture Executive Agency (EACEA). Neither the European Union nor EACEA can be held responsible for them.

May 2024

Volume 2, Issue 3

### Editorial Board

---

Branka Petrović, Božo Ilić, Branko Savić - VTSNS

Alen Hmelina, Mato Filaković - ELPROS

Justina Čivilytė - PMC

Marina Hämäläinen - IVVEC

Tamás Pap, Péter Szabó - BMSC

### Editor and Prepress

---

Branka Petrović

### From the Content

---

- Two Smart Home Open Days held on 11 May 2024
- Teaching materials promoting smart home technologies created for several subjects
- Dissemination of project results at a conference
- Smart Home Club activities with pupils
- Short study programme on smart environments presented in VTSNS 2024 Information Booklet
- Webinars for VET teachers outside the partnership announced

## Courses of the Programme

This short study programme was approved by the National Council for Higher Education of Serbia on 30 January 2024. When completed, the participants are awarded a certificate and its supplement stating their competences and the list of courses carrying 30 ECTS altogether:

1. Electrical installations and lighting;
2. Automation of processes;
3. Smart environments;
4. Smart homes; and
5. Professional practice.

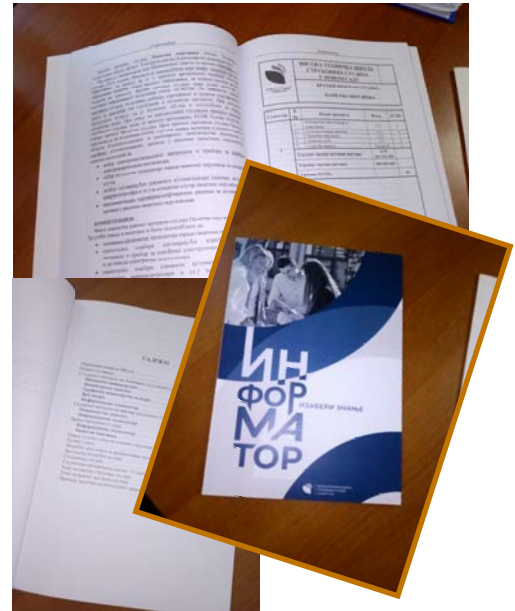
The final course is a work placement in a company active in the field of study.

## Smart Environments

VTSNS has officially presented in its Information Booklet for the next academic year the new short study programme “Smart Environments”. It has been created within the project activity 3.2 as part of Work Package 3: Smart home VET programmes. Aimed at those who would like to learn about automation of homes and other buildings based on smart technologies, the programme offers tailored courses that provide knowledge and skills for careers in this growing industry.

Candidates who have completed secondary education have the right to enroll. The programme lasts one semester.

More details can be found on its web page at <https://vtsns.edu.rs/kratki-program-studija-pametna-okruzenja/>



*Conferences and webinars are important for presenting project results and for networking with organisations and individuals interested in smart home technologies.*

## The layout of the apartment

The numbers in the drawing mark the automated elements in the smart home model executed in ELPROS. By working on the model the following can be controlled: lighting, common appliances, heating, cooling and blinds.



2

## The Webinar Content

The webinar that took place in Croatia on 5 April 2024 in the premises of ELPROS was aimed at VET teachers from other schools but it also served as an in house training for local teachers. As part of the project dissemination activities, the webinar was delivered to the VET professionals in Croatia over the Microsoft Teams channel and in person to the local teachers.

It was hosted by Alen Hmelina, a project team member, who presented the Erasmus+ funding scheme, the purpose of the project, basics of the smart home technologies, and the specific technologies used in the ELPROS smart home model. Teachers saw the ELPROS model and got a demonstration of its functionalities and technologies used. The model developed by ELPROS staff and students integrates a two way approach, wired and wireless. The model is mostly developed with components supported by and compatible with the KNX standards, but there is also a part that shows wireless possibilities with Shelly Cloud.

The model is an apartment consisting of six rooms — each represented with a separate box.



## Smart Home Open Day in Pécs

The Smart Home Classroom in the BMSC Zipernowsky Károly Technical School was officially inaugurated on 11 May 2024. The opening ceremony was attended by Director György Amrein and the engineering teachers working on the project.

Traditionally, every year, on the Saturday after graduation, the school, which has a 112-year history, organises the Iparista Majális alumni meeting and always welcomes back a large number of former students. Since the inaugural ceremony was open to all, not only to former students, a lot of other visitors attended the event.

Among the guests there was also the head and strategic coordinator of the Human Resources Development Project Office of the Pécs-Baranya Chamber of Commerce and Industry.

Visitors could try out all the functions of the building automation and were able to control the devices and monitor their operation remotely. They were given presentations on smart home systems, and specifically on the smart home network in the school.



### Pannon TV coverage

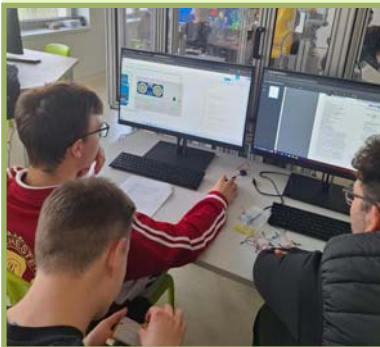
It can be seen on the Facebook account of the Pannon TV and at the YouTube channel: <https://www.youtube.com/watch?v=smWLhtYzZfg>



Participants in the Smart Home Classroom

## Arduino

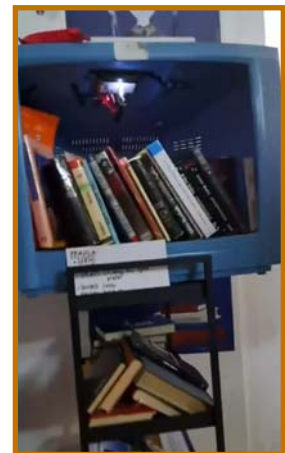
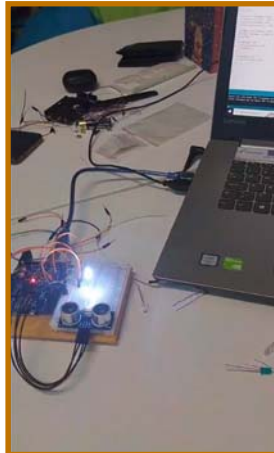
As a versatile and open source platform, which is widely available, affordable and easy to begin with, Arduino is used to introduce pupils to programming in the process of automation.



## Smart Home Club Projects

In order to get more familiar with the possibilities of smart technology application, ELPROS students have been involved in several different projects. Within the Smart Home Club activity, future mechatronics and electronics technicians have developed a small scale model, smart parking lot and smart installation of a little free library with their teacher Kristijan Čvek. To gain a better insight into programming of smart homes they have used Arduino components.

The necessary tools and equipment for making the library are pictured below, as well as the testing of its functionality. The box contains a motion sensor which, when activated by the user's hand, turns the light on.



The little free library is a community book exchange box, so it belongs to everyone, and everyone is free to use it. The motto of such libraries is "take a book – leave a book." The one in ELPROS is located in the big school library where all users can see how its smart elements work.

## Subjects Updated with New Topics

All courses in the sector Electrical engineering and ICT in ELPROS have been involved in updating existing curricula with smart home content, integrated in several different ways.

IT technicians implement their skills of developing the animated video "Home Smart Home" with incorporated VR elements. Additionally, they build a mobile application for controlling sensors and actuators of a smart home model, which enables them to apply their skills and learn previously unfamiliar content traditionally not available in their course.

Mechatronics technician have new smart home content integrated through vocational subjects such as: PLCs and microcontrollers, Sensorics, Electrical installation, and Vocational practice. Also, electrical technicians have new content

introduced into subjects Electrical installations and Vocational practice. Besides, they have been offered a new subject called Intelligent installation.

Electronics technicians have got innovated content as a segment of their regular courses Vocational practice and Introduction to automation.

Several teachers are included in this part of the project as it is vital to make smart technology and related topics a part of their courses. They are: Alen Hmelina, Milan Sabljic, Danijela Ivanović-Ižaković, Anica Leventić, Kristijan Čvek and Maid Tupaja. Teachers are providing students with information and support during the learning process because most of the tasks are project and research oriented.

### Courses Updated in BMSC

Courses in Electrical engineering basics, and PLC controls introduction have been added suitable smart technology content.



*Smart home technology content and activities incorporated in curriculum enhance digital literacy and programming skills of pupils.*

## Smart VET Net Formation

On 21 March 2024 in Riga, Latvia, a conference took place focusing on the development and evaluation of Vocational Education and Training (VET) curricula. This event became a starting point for VET net formation within the project Smart Home Models in VET.

During the conference, comprehensive presentation was made by Ida-Viru Vocational Education Centre (IVVEC) about the activities completed and the curriculum developed under the Erasmus+ KA2 project. The presentation was targeted at VET staff from Latvia, Norway, Spain, and Greece, showcasing the collaborative efforts and shared knowledge that drive the project's success. One of the highlights of the conference was a video presentation illustrating the step-by-step process of constructing a smart home model. This video served as an educational tool, providing participants with a clear and practical understanding of the implementation process. It exemplified how smart home technology can be integrated into VET curricula, enhancing the practical skills and knowledge of students.

There were 13 representatives from several VET schools that learned about the possibilities of involving various smart home models and contents in courses or extra curricular activities as

applied in our project. The conference presentation was prepared by Marina Hämäläinen from IVVEC

The conference not only disseminated information about the project's achievements but also fostered the formation of a robust VET network. This network aims to promote the successful implementation of smart home models across various educational institutions in European countries.



*The video on the IVVEC model was shown*

11 May 2024

This Open Day in VTSNS was the fourth in a row dedicated to secondary school pupils interested in enrolling undergraduate studies in the school. After they were greeted by prof. Saša Spaić, Assistant director, prof. Tanja Krnić presented the electrical engineering and IT programmes including the application of smart home technologies in the current project. A video on the making of the smart home model was presented and commented. The guests were then taken to the smart classroom to learn about its functions. They also met a group of the final year students included in the Smart VET project working as technical support in tasks related to programming and multimedia.

## Smart Home Open Day in Novi Sad



Smart Home Models in VET  
Newsletter

Contact person:

Branka Petrović  
petrovic.b@vtsns.edu.rs

To learn more about the project,  
visit its website at:

<https://smarthomemodels.eu/>



Smart home models in VET



Erasmus+  
Enriching lives, opening minds.