Co-funded by the
Erasmus+ Programme
of the European Union

Solar sun tracker

Countries:	Slovenia	Poland
Suitable for grade:		2 - 3
Specialization:		Mechatronics
Project teacher:		Marek Olsza

Project description:

Construction of a model containing a solar panel mounted on a system that moves it in the vertical and horizontal axis, enabling optimal setting of the panel to the sunlight. The team's tasks is to design a light sensor which in combination with the microprocessor microcircuit controlling the engines, will automatically and precisely set the panel towards the sunlight. The control system can be executed in analogue, digital or microprocessor technology.

Project tasks:

Student #1 (PL):

- cooperation with the SLO student (determination of construction details – e.g. selection of engines)
- designing the mechanical elements of the model
- construction elements execution (technology: 3D / CNC printing)
- building the model together with the solar panel
- adjustment of the mechanism
- model operation test
- preparation of documentation in Polish and English

Student #2 (SLO):

- cooperation with the PL student (determination of construction details)
- design of the electronic circuit and the light sensor
- making a printed circuit
- control electronics activation
- model testing
- preparation of documentation in Polish and English

Success criteria:
Project will be successful after construction of working model. The model should respond to the angle of sunlight and adjust the mechanism so that the solar panel always founds in the optimal setting.

Developed hard skills: Programming, debugging, soldering, drilling, PCB designing and making, electronics, mechanical treatment of materials, choosing materials, computer graphics, CAD systems.
Developed soft skills: Cooperation, working with computer, planning, teamwork, tracking progress, communication in foreign language, responsibility, compliance with agreements, respect deadlines, problem solving, finding and processing information, design thinking, following safety and ergonomic rules.