



Project funded by the EU Lifelong Learning Programme
Project Reference No. 527877-LLP-1-2012-1-UK-ERASMUS-ENW

SALEIE Student Project in Assistive Technology Project 13

Project Supervisor:	Prof. Dan Mandru	SALEIE partner:	Technical University of Cluj-Napoca
Project Title: Wheelchair control through head movements			
Project duration:	2 semesters	Project level:	Final year (year 4) undergraduate project
ECTS credits (if applicable):	12 (2, 6 credit modules)	Prerequisite requirements:	Completion of year 3 of study programme
Course Suitability:	Bachelor of Engineering in Electrical Engineering/Biomedical Engineering		
Project Description: <p>This project aims to design a new control system of a mobility aid (e.g. wheelchair) for people with lower limb disabilities or those who have difficulties in long lasting displacements. The operating principle is based on the flexion - extension and abduction-adduction movements of the head, which are transmitted forward to the electrical actuators of the wheelchair. A set of four unidirectional resistive sensors are positioned strategically above the collar level of a garment, each in one of the main moving directions (forward, backward, right and left). An Arduino Mega 2560 data acquisition board reads the sensors data and sends commands for the adaptation circuitry. The operating principle is experimentally tested on a remotely controlled car.</p> <p>This project links into the active <i>EU Lifelong Learning Programme "SALEIE"</i> (Strategic Alignment of Electrical and Information Engineering in European Higher Education Institutions) and the work will be aligned to the area of assistive technologies to support students with disabilities.</p>			

The project descriptions are provided and also the contact details of the project proposer for more information or to discuss potential collaboration. These project descriptions are provided as ideas for other institutions to develop projects in assistive technology. If you want to refer to these project ideas, we would ask that you acknowledge the SALEIE project as follows:

"This project idea was developed as one of the project proposals provided under the EU Lifelong Learning Programme "SALEIE" (Strategic Alignment of Electrical and Information Engineering in European Higher Education Institutions). Project Reference No. 527877-LLP-1-2012-1-UK-ERASMUS-ENW Project funded by the EU Lifelong Learning Programme"