### Grant for Educational System for Teaching Electrical Engineering and Electronics

Gymnazium a Stredni prumyslova skola elektrotechniky a informatiky, Frenstat pod Radhostem, prispevkova organizace

(Grammar School and Secondary School of Electrical Engineering and Computer Science, Frenstat pod Radhostem)

### Cooperation of the school with the company and universities

- Long-term cooperation with On Semiconductor Czech Republic, s. r. o.
  - Delivering professional lectures
  - Excursions to the company
  - Material assistance in teaching practical Electronics

#### Cooperation with universities

Brno University of Technology (Faculty of Electrical Engineering and Information Technology) a VSB -Technical University of Ostrava (Faculty of Electrical Engineering and Computer Science) are important partners of the school

- Providing professional lectures for pupils
- Visits to specialized workplaces
- Promotion of studies at vocational schools

Gymnazium a Stredni prumyslova skola elektrotechniky a informatiky, Frenstat pod Radhostem, p. o.

- High school where young people aged 11 to 19 are educated
- This year 720 pupils are educated at the school
- On average, 60% of graduates continue their studies at university each year
- The aim of the project is to make the teaching of Electrical Engineering more attractive and thus to increase interest in its further study

## Comparison of teaching methods

#### **Teaching without technology**

#### **Experiment with computer**



### What do we want to achieve?

So far, there must be more than one pupil at each workplace



#### We would like each pupil to work individually



## Aims of the project

- To teach lessons based on real experiments using a computer
- To involve as many pupils as possible in the implementation of the experiment
- To increase the number of workplaces so that each pupil can work individually or in pairs
- To use a high precision learning system ensuring that experiment results match theoretical learning and which is interactive and easy to use
- We have chosen the rc2000-μLAB by company RC spolecnost s r. o. pristroje pro vedu a vzdelavani
- This system is already in use to a limited extent at the school and there has been excellent experience with it

## rc2000-µLAB

### by company <u>RC spolecnost s r. o. pristroje pro vedu a vzdelavani</u>



designed for teaching electronics, electrotechnics and

complete harmony between theoretical computations

high-quality, precise and highly stable components

# rc2000-µLAB

#### by company <u>RC spolecnost s r. o. pristroje pro vedu a vzdelavani</u>



# Costing

Name	pcs	Price without VAT CZK	
Measuring unit - ADDU	1	33000	
Software rc2000	1	13500	
Component board	1	4470	
Switching board	1	4470	
Resistor decade 2 (1-999 kOhm)	3	17160	
Resistor decade 1 (20-1019 Ohm)	1	4920	
Capacitor decade (1 - 999 nF)	1	5110	
Capacitor set (1 - 10 μF)	1	4030	
Component set (60 pcs)	1	5207	
Set of connection and double cables (55 pcs)	1	4905	
Buffer	1	5880	
Transformer	1	4130	
Socket module 1x16	1	3540	
Operational amplifier	2	10480	
Power Supply +5V	1	1960	
Module board 1	1	5920	
Module board 2	1	3850	
Total for one workplace		132532	
Required number of worklaces		7 pc	cs
Price with VAT in CZK		1122546,04 CZ	ΖK
Price with VAT in \$ (exchange rate on 2 Apr 2020 - 25,00	CZK/\$)	44901,84\$	

## Grant evaluation

- Number of pupils who have completed teaching with new devices in one year
- Number of other activities done with new devices
  - Group activities of people interested in electronics
  - Lectures
  - Participation of talented students
- Number of graduates admitted to technical universities