

ABB® Robotics Training Centre in Trnava

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Abstract — In the last 20 years robotics all over the world experienced “boom” in applicability and in installations - the amount of robots in Slovakia increased by 2500 robots in the last 10 years. There were only few customers who ventured at investing into robotization before the year 2000, but the robots became common production device in the last decade. The quick lining up of robotics called forth the education also in this area of automatization. Seeing that ABB is always aiming to be close to the customer therefore the division of robotics established a robotics training centre in 2004.

Keywords - robot; industrial robot; training; course

I. TRAINING CENTRE

The training centre upraised from the need of the production factory PSA in Trnava to train its operators, maintenance technicians and programers. We trained more than 400 people since the beginning from all over Slovakia. We have started with 4 types of training and today we have training for almost all products supplied by us. The most requested training are basic programming and retraining for the new robots generations. In the basic training we teach the majority of operators and line users to get familiar with robots. The most important part of training is to get to know the robot and not to be afraid of it. The industrial robot is a machine just like any other and it does only what we teach it and what we ask it for. It often is needed to dismantle the fear or imaginings that the robot can decide for itself as can be seen in science fiction movies.

The second very important task of a trainer is to motivate the students. We experienced quite a few times that trainees did not even know why they were attending the training and when would they be actually working with robots. It is the trainers' job to engage everybody into the course in a way that is interesting, practical and even funny.

The length of the basic training - programming - is 5 days and we do not like to cut it down although it appears to

be long to the customers (mostly managers, not the real trainees ☺). We know from our own experience that when a people do not get familiar with a robot in our centre, they have problems with using it in practice and they either keep calling us all over or they come back for retraining. We act up to the principle: “It is better to experience once than to hear twice.”



The practice and hands-on training are necessary. To try and try it over. We make efforts that every student has a robot assigned to him to spend a maximum time with it. The students get several tasks daily to try some basic functions and to get ready also for the more complicated tasks later on. We choose tasks that they can often meet in real practice and as similar as possible to the application of that special customer. Sometimes the consumer brings a program he uses with him and we go through it with him and explain particular functions. This way they return to their workplace trained directly for their application. And because it is known that one learns best from his own mistakes, we try to simulate the most common errors within the course so that the students remember them and do not repeat them.

At the end of the training there is a test for the students to check up their knowledge. We allow them to use all accessible resources which motivates them to take notes during the course which they can use then while testing.

One of the tools of the training is Robot Studio. It is a simulating software of the ABB robots in which all the robot functions are fully simulated. It is possible to choose a type of a robot, to insert 3D models of the robotic cell and to simulate the movements, communication, cycle time. We offer Robot Studio for free for schools, that is how ABB supports robotic knowledge in students.



The trainers are the members of our team who are not only trainers - they are real service men who take turns to train the customers from time to time. That is how we keep the training and the service together and how we can take through the practical experiences from the service and projects to the training - which makes the best contribution for the customer.

The trainees can also try how the remote service works. This function can be activated in a robot and then it is possible to revise the robot status from any place in the world. The Remote Service transmits the data about the system and the system functionality and malfunction through GPRS network.

Next to the training centre is Pilot Site where robotic links are being assembled, started up and tested before delivering and the final start up at customers'. While testing the links we also train our costumers for these links which is the best training they can get. During the tuning of the robotic link many problems appear which enables to get to know the link as good as it gets.

Considering the number of trainees and the variety of training portfolio ABB is happy for taking a big part in increasing robotics literacy in Slovakia.

II. CHARACTERISTICS OF TRAINING CENTRE

Sample of training:

- Basic operators training
- Basic programming
- Advance programming
- Electrical maintenance
- Mechanical maintenance
- Robot Studio - offline programming
- Application software

Robots in training centre:

- IRB 2000 M93
- IRB 2400L M2000
- IRB 6600-2.55/175 M2000
Automotive version
- IRB 6620 M2004
- IRB 140 M2004

Applications in training centre:

- Manipulation
- Flex Finishing
- Arc Welding
- Spot Welding
- Pick Master 3 - robot with camera

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