

## OPPONENT'S ASSESSMENT ON DIPLOMA THESIS

**Student's name and surname:** Vignesh Babu Kuduva Gopinath

**Name of the diploma thesis:** Design of manufacturing cell in the company BOS Klášterec nad Ohří

**Supervisor of the thesis:** Ing. František Koblasa, Ph.D.

**Opponent:** Ing. Vítězslav Ernest, General Manager BOS Automotive Products CZ, s.r.o.

### 1. Diploma thesis evaluation

Evaluation	excellent	excellent minus	very good	very good minus	good	failed
Meeting the goal and fulfilling task of the thesis			x			
Quality of conducted survey		x				
Methodology of solutions			x			
Expert level of the thesis		x				
Merit of the thesis and its potential applicability of results			x			
Formal and graphic level of the thesis	x					
Student's personal approach		x				

*Mark x in the corresponding box.*

*Supervisor's final evaluation is based on his/her overall subjective evaluation.*

*Grading is stated literally in the article no. 5, neither by a number, nor by a letter.*

### 2. Comments and remarks on diploma thesis:

The work presented in this thesis is the design of a manufacturing cell for the company BOS Automotive Products CZ s.r.o. in Klášterec nad Ohří. The main goal of this thesis is to design new universal manufacturing production cell for the company.

In the theoretical part, the graduate describes exhaustively the rules of lean production. In his research student focused on lean manufacturing methods and their use. It also mentions the requirements of the automotive industry.

The practical part reflects the studied theory. The student follows the principles of project management and industrial engineering.

In the practical part the student deals with the creation of universal layout and using of production automation. Production automation and Industry 4.0 is the topic with a huge potential for science and research. Especially its practical application is a frequently discussed topic. The student describes benefits and limits on page 62. I am missing a more detailed description of benefits that would describe the reasons, or quantification, comparison with the acquisition costs or return of investment.

### 3. Questions about diploma thesis:

- a) In terms of lean production, overproduction is a kind of waste that generates additional area consumption and capital consumed in WIP. Designed conveyors need a production area. Could you please describe a deeper and more detailed description of benefits and limits of using conveyors?
- b) Have you found something about maintenance of co-robot in the literature? Could you please explain us you opinion about the maintenance time specification, frequency of maintenance, limitation to the production capacity and estimate the number of maintenance staff?
- c) Could you please describe us more details of benefits and limits from page 62.

### 4. Opponent's statement whether the diploma thesis meets the academic title requirements and whether it is recommended for defense:


The results and conclusions of the thesis meet the requirements of the assigned task. Student used the available project management, production planning and production organization documentation. It is evident that he has consistently become familiar with the issue.

The diploma thesis is formally processed correctly. The study shows evaluation of layouts and describes benefits. I recommend the thesis for defense.

### 5. Opponent's grading:

VERY GOOD

Date 10.15.2019, in Liberec

  
.....  
*Opponent's signature*

