Supervisor's statement of a final thesis

Czech Technical University in Prague　　　　　　　　　　　　**Faculty of Information Technology**

Student:	Bc. Jan Beran
Supervisor:	Ing. Martin Nemčík, Ph.D.
Thesis title:	Car-to-Infrastructure Communication in the Context of Intelligent Traffic Intersections
Branch of the study:	Computer Security

Date: 3. 1. 2017

Evaluation criterion:	The evaluation scale: 1 to 5.
1. Difficulty and other comments on the assignment	1 = extremely challenging assignment, **_2 = rather difficult assignment,_** 3 = assignment of average difficulty, 4 = easier, but still sufficient assignment, 5 = insufficient assignment
Criteria description: *Characterize this final thesis in detail and its relationships to previous or current projects. Comment what is difficult about this thesis (in case of a more difficult thesis, you may overlook some shortcomings that you would not in case of an easy assignment, and on the contrary, with an easy assignment those shortcomings should be evaluated more strictly.)*	
Comments: C2I communication is a complex topic and it requires not only understanding of security of communication technologies dedicated for C2I, but also communication within the car (CAN buses, MirrorLink technologies, Bluetooth). Main challenge of this diploma thesis is to provide effective information about speed recommendation for the driver/car with the accordance to driver distraction rules.	

Evaluation criterion:	The evaluation scale: 1 to 4.
2. Fulfilment of the assignment	**_1 = assignment fulfilled,_** 2 = assignment fulfilled with minor objections, 3 = assignment fulfilled with major objections, 4 = assignment not fulfilled
Criteria description: Assess whether the thesis meets the assignment statement. In Comments indicate parts of the assignment that have not been fulfilled, completely or partially, or extensions of the thesis beyond the original assignment. If the assignment was not completely fulfilled, try to assess the importance, impact, and possibly also the reason of the insufficiencies.	
Comments: I confirm hereby that all the goals set out in Introduction section were fulfilled in full range.	

Evaluation criterion:	The evaluation scale: 1 to 4.
3. Size of the main written part	**_1 = meets the criteria,_** 2 = meets the criteria with minor objections, 3 = meets the criteria with major objections, 4 = does not meet the criteria
Criteria description: Evaluate the adequacy of the extent of the final thesis, considering its content and the size of the written part, i.e. that all parts of the thesis are rich on information and the text does not contain unnecessary parts.	
Comments: The content of the diploma thesis is logically divided to the six main chapters and all of them contain balanced amount of text and information and does not contain unnecessary parts.	

Evaluation criterion:	The evaluation scale: 0 to 100 points (grade A to F).
4. Factual and logical level of the thesis	85 (B)
Criteria description: Assess whether the thesis is correct as to the facts or if there are factual errors and inaccuracies. Evaluate further the logical structure of the thesis, links among the chapters, and the comprehensibility of the text for a reader.	
Comments: Factual and logical level of the thesis is high, but nevertheless the chapter Conclusion of this thesis should be written more effectively and structuring.	

Evaluation criterion:	The evaluation scale: 0 to 100 points (grade A to F).
5. Formal level of the thesis	99 (A)
Criteria description: Assess the correctness of formalisms used in the thesis, the typographical and linguistic aspect s, see Dean's Directive No. 12/2014, Article 3.	
Comments: The formal level of the thesis is very high.	

Evaluation criterion:	The evaluation scale: 0 to 100 points (grade A to F).
6. Bibliography	86 (B)

Criteria description:
Evaluate the student's activity in acquisition and use of studying materials in his thesis. Characterize the choice of the sources. Discuss whether the student used all relevant sources, or whether he tried to solve problems that were already solved. Verify that all elements taken from other sources are properly differentiated from his own results and contributions. Comment if there was a possible violation of the citation ethics and if the bibliographical references are complete and in compliance with citation standards.

Comments:
I confirm hereby that the student's activity in acquisition and use of studying materials was slightly above the average and he tried to solve problems individually in advance.

Evaluation criterion:	*The evaluation scale: 0 to 100 points (grade A to F).*
7. Evaluation of results, publication outputs and awards	*92 (A)*

Criteria description:
Comment on the achieved level of major results of the thesis and indicate whether the main results of the thesis extend published state-of-the-art results and/or bring completely new findings. Assess the quality and functionality of hardware or software solutions. Alternatively, evaluate whether the software or source code that was not created by the student himself was used in accordance with the license terms and copyright. Comment on possible publication output or awards related to the thesis.

Comments:
The results from the thesis has high benefit not only for implementation for the driver/car but also for the traffic optimization and reducing fuel consumption and decreasing CO_2 emission. Future implementation of the technology in real traffic needs several steps to reach the goal - full Intelligent traffic intersections control and autonomous driving. The aspect of security of implementation C2I-based GLOSA systems is one of most important for wide spread acceptance (and willing to pay) of the technology by the customers.

Evaluation criterion:	*No evaluation scale.*
8. Applicability of the results	

Criteria description:
Indicate the potential of using the results of the thesis in practice.

Comments:
The application it self should be use for future internal development and optimization how and when to show propriety information for the driver/car.

Evaluation criterion:	*The evaluation scale: 1 to 5.*
9. Activity and self-reliance of the student	*9a:* *1 = excellent activity,* ***2 = very good activity,*** *3 = average activity,* *4 = weaker, but still sufficient activity,* *5 = insufficient activity* *9b:* ***1 = excellent self-reliance,*** *2 = very good self-reliance,* *3 = average self-reliance,* *4 = weaker, but still sufficient self-reliance,* *5 = insufficient self-reliance.*

Criteria description:
Review student's activity while working on this final thesis, student's punctuality when meeting the deadlines and consulting continuously and also, student's preparedness for these consultations. Furthermore, review student's independency.

Comments:
I confirm hereby that student Jan Beran worked on this final thesis very actively and independently. He attended the meetings on time and his approach to particular tasks was responsible and conscientious.

Evaluation criterion:	*The evaluation scale: 0 to 100 points (grade A to F).*
10. The overall evaluation	*93 (A)*

Criteria description:
Summarize the parts of the thesis that had major impact on your evaluation. The overall evaluation **does not** have to be the arithmetic mean or any other formula with the values from the previous evaluation criteria 1 to 9.

Comments:
This diploma thesis met my expectation in content and quality and I kindly recommend it with the grade A.

Signature of the supervisor: