

# Supervisor's statement of a final thesis

Czech Technical University in Prague

Faculty of Information Technology

**Student:** Bc. Stanislav Zubal  
**Supervisor:** doc. Ing. Carlos Humberto Granja, Ph.D.  
**Thesis title:** Informační systém pro ukládání a zpracování dat z přístroje SATRAM na družici ESA Proba-V  
**Branch of the study:** Web and Software Engineering

**Date:** 30. 1. 2017

<p><i>Evaluation criterion:</i></p> <p><b>1. Difficulty and other comments on the assignment</b></p> <p><i>Criteria description:</i> 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.)</p> <p><i>Comments:</i> The student had to study and comprehend the rather complex data schema and architecture of the device (an advanced scientific instrument (for high-resolution measurement of radiation in space/LEO orbit). This included the large amount and complexity of the file and registry format of the generated data. Also the sequence of the data stream starting at the satellite, down to the transmission downlink station, relay server and to the storage server at the UTEF CVUT.</p>	<p><i>The evaluation scale: 1 to 5.</i></p> <p><i>1 = extremely challenging assignment, 2 = rather difficult assignment, 3 = assignment of average difficulty, 4 = easier, but still sufficient assignment, 5 = insufficient assignment</i></p>
<p><i>Evaluation criterion:</i></p> <p><b>2. Fulfilment of the assignment</b></p> <p><i>Criteria description:</i> 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.</p> <p><i>Comments:</i> The student fulfilled the main task of designing and constructing the prototype system. Tasks regarding testing and full implementation at the server in UTEF could not be completed. Similarly the documentation and communication with the extensive database system at UTEF remains to be completed. The thesis is rather complete and exhaustive. Also the application SW/CD-ROM was prepared and is provided included as part of the thesis delivered.</p>	<p><i>The evaluation scale: 1 to 4.</i></p> <p><i>1 = assignment fulfilled, 2 = assignment fulfilled with minor objections, 3 = assignment fulfilled with major objections, 4 = assignment not fulfilled</i></p>
<p><i>Evaluation criterion:</i></p> <p><b>3. Size of the main written part</b></p> <p><i>Criteria description:</i> 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.</p> <p><i>Comments:</i> The description of the system architecture and data stream were achieved. The prototype system database was designed and built. These were the main tasks and goals of the thesis. The programming part and building of the application were done including preparation of the CD-ROM.</p>	<p><i>The evaluation scale: 1 to 4.</i></p> <p><i>1 = meets the criteria, 2 = meets the criteria with minor objections, 3 = meets the criteria with major objections, 4 = does not meet the criteria</i></p>
<p><i>Evaluation criterion:</i></p> <p><b>4. Factual and logical level of the thesis</b></p> <p><i>Criteria description:</i> 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.</p> <p><i>Comments:</i> The prototype fulfills the main criteria. However it needs further refining and tuning. Also optimization (the processing efficiency limited). The testing and implementation into the laboratory server were not completed.</p>	<p><i>The evaluation scale: 0 to 100 points (grade A to F).</i></p> <p><i>70 (C)</i></p>
<p><i>Evaluation criterion:</i></p> <p><b>5. Formal level of the thesis</b></p> <p><i>Criteria description:</i> Assess the correctness of formalisms used in the thesis, the typographical and linguistic aspects, see Dean's Directive No. 14/2015, Article 3.</p>	<p><i>The evaluation scale: 0 to 100 points (grade A to F).</i></p> <p><i>75 (C)</i></p>

*Comments:*

The introductory, conceptual and analysis parts are quite complete and logically reviewed and presented. The main parts namely the design and realization contain the principal elements but need additional commenting and greater logical sequence. The testing and implementation parts contain the basic elements and should be completed. Overall the thesis is acceptably written however with several remarks and needed improvements.

*Evaluation criterion:* *The evaluation scale: 0 to 100 points (grade A to F).*  
**6. Bibliography** **90 (A)**

*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:*  
The student carried out rather extensive research and studied the material made available.

*Evaluation criterion:* *The evaluation scale: 0 to 100 points (grade A to F).*  
**7. Evaluation of results, publication outputs and awards** **70 (C)**

*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 developed prototype SW/database application is the main output of the thesis. This however needs completion, remarking and revision including full implementation into the laboratory data server. Completion and realization of these tasks are needed before this work can be published.

*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 developed application when fully tested and implemented will be a valuable tool for the team at UTEF namely for the tasks of processing and evaluating the large data stream of the spacecraft instrument. It will also allow to perform refined analysis of the data.

*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:*  
The student demonstrated independence, high activity and initiative skills. He was also able to understand the rather elaborated data architecture of the instrument data and down-link stream. He made use of many consultations and collaborated with several members and other PhD students in the SATRAM project team at UTEF. He elaborated the thesis independently.

*Evaluation criterion:* *The evaluation scale: 0 to 100 points (grade A to F).*  
**10. The overall evaluation** **70 (C)**

*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:*  
The large part of the thesis goals and tasks were achieved. Remaining tasks underway consist namely of the testing and implementation parts. The thesis stands as an acceptable material for the whole system.

Signature of the supervisor: