

## Review of Bachelor's Thesis

**Student:** Lázaro Roberto  
**Title:** Augmented Reality Based on Optical See-Through Device (id 19033)  
**Reviewer:** Materna Zdeněk, Ing., UPGM FIT VUT

- 1. Assignment complexity** **more demanding assignment**  
The topic should be considered as rather complicated as it requires to get familiar with the uncommon device, various SDKs and to overcome complications as a lack of documentation.
- 2. Completeness of assignment requirements** **acceptable under reservation**  
The outcome of the thesis is an analysis of applicable solutions and mainly working demonstration application. However, the final solution has some important limitations. Moreover, there is no poster and video.
- 3. Length of technical report** **in usual extent**
- 4. Presentation level of technical report** **79 p. (C)**  
The thesis is structured logically however I would prefer to give more space to the registration and actual solution than i.e. to motivation (section 2.3 "application areas" has six pages).
- 5. Formal aspects of technical report** **65 p. (D)**  
Reading of the thesis is complicated by a high number of language mistakes, grammar issues and typos (e.g. using "his" instead of "its", missing subjects, missing space in front of opening bracket etc). The work also uses informal language (contractions) and narrative style of writing (e.g. "I did this and then that").
- 6. Literature usage** **75 p. (C)**  
The work correctly cites relevant sources where most of them are scientific articles. The last item of the bibliography should have direct URL (not URL from Google search).
- 7. Implementation results** **70 p. (C)**  
The thesis gives overview of existing technologies and shares author's experience with different approaches (Vuzix SDK and Unity+ARToolkit). The outcome of the thesis - demonstration application has some important limitations: missing registration (also alignment / calibration, discussed only in one short paragraph) and visible video layer in glasses (only artificial objects should be shown to create AR, not the camera image). Despite those limitations, the application works and work of Mr. Lázaro can be used as a basis for future thesis focused on AR and using the same hardware.
- 8. Utilizability of results**  
The outcome of the thesis (practical experience and demo application) can be used as a basis for a future work with Vuzix glasses and Unity.
- 9. Questions for defence**
  - What are existing methods for registration in AR? How you solved registration in your approach? Why it is not working correctly?
  - Have you used Vuzix Tracker? Could it be used in conjunction with marker or marker-less tracking?
- 10. Total assessment** **70 p. good (C)**  
The main outcome of the work is functional application. The application demonstrates augmented reality principles by visualizing detected objects in user's field of view. The application has some important issues limiting its usability however it should be considered that the topic was relatively complicated.

In Brno 3. June 2016

.....  
signature