

Zagreb, December 19<sup>th</sup> 2013.

Study visit report

## Study visit to IVC team IRCyN Laboratory Nanates

Period of the visit: Thursday, Oct. 24<sup>th</sup>.- Saturday, Oct.26<sup>th</sup>.2013

Project team: two project members from Faculty of Graphic Arts (GRF) and two project members from Faculty of engineering and computing (FER) University of Zagreb.

In order to deepen our knowledge of QoE methods applicable for AAC communication we visited the IVC team, one of the IRCyN (<http://www.irccyn.ec-nantes.fr/spip.php?article491&lang=en>) research group. In the presentation, a wide range of research areas are covered around three main lines of work, namely perception, communication and representation. The Image and Video-Communication focuses on digital multimedia processing and analysis. The three axes of the research are: human vision modeling, discrete information, pattern recognition. Most of the processes of digital multimedia processing are studied in IVC group, from the data acquisition to its visualization, including data transmission coding or storage. The lab has two psycho-visual test rooms in accordance with the international recommendations (ITU-R BT 500-11 for example). These recommendations allow to reproduce the tests all around the world like it have been done in Multi Media Test Plan of the Video Quality Expert Group (VQEG). In these test rooms, they realize some psycho-visual measurements experiment like quality evaluation on still images or on videos with different formats and resolutions. These evaluations can be done by expert or non-expert people. The rooms are used in a multimedia platform which have: Multi protocol, Multi displays technology, Multi player, Multi resolution (from mobile resolution like QCIF to Full HD) and Multi analysis method.

A multi protocol platform allows to measure different feedbacks about the contents under test. Some of them can be complementary to verify the results or to have another point of view. Some methodologies allow to measure the absolute or relative quality. Other methodologies allow to evaluate the perceptibility of an impairment. In pair images, they can evaluate which one is the preferred image/video in term of quality, naturalness, luminosity

point of view and so on. The power of the preference can also be evaluated. After each test, an analysis is done. This analysis is composed by the general computation like the Mean Opinion Score, the Confidence Interval and the outlier. The analysis are completed by some statistical analysis to know if there is difference between two processings or to transform the scale of the result to allow the comparison with other methods and so on.

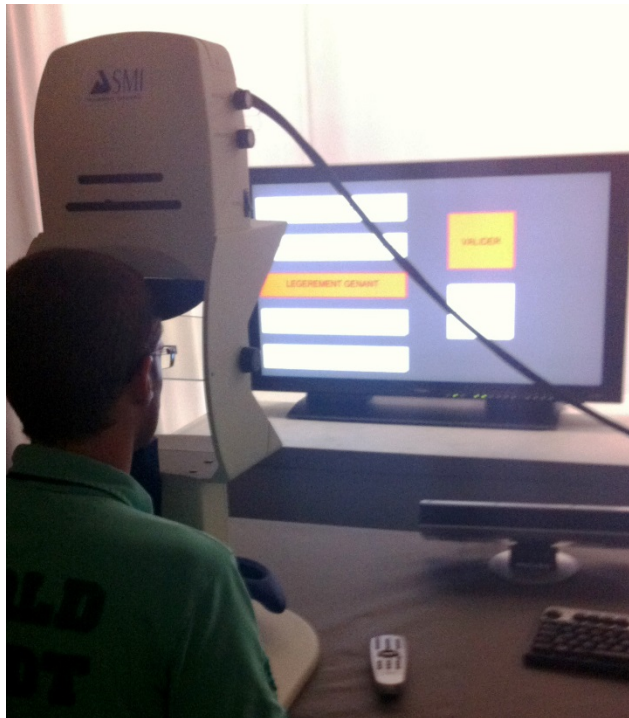
Currently, the team is composed of 3 full professors, 6 associate professors, 5 research engineers, 3 postdoctoral fellows, 8 PhD students, 5 masters' internship students. Over 5 past year, the IVC team has run or is running more than 30 research projects and raised more than 3 000 000 €.

*prof. dr. sc. Jesenka Pibernik*

*/member GRF team/*



**Eye tracker glasses**



Eye tracker gaze input



Neurosky emotiv