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Estbalishment of a common 3D image format, highly efficient 3D image compression and experimental 3D image transmission

Project summary

The amount of information handled within IT systems is enlarging explicitly as a result of continuous development. With the growing amount of information creates need for more efficient human-device interfaces. The most effective way to transmit information can be executed via visualization. This statement is underpinned by all the systems that surround us. More and more proportion of the data we handle are appear in the form of pictures or graphics. That's where development is the most striking. System generations are being named about their capability of the executed number of calculation, speed of data transmission or band with.
Most of the today's IT systems posses over 3D data. Even though conventional 2D displays are disable to visualize this 3D content with the belonging special correspondences, thus 3D information gets lost at the and of the visualization chain, at the displaying. A 3D image, which contains spatial correspondences visualized on a 3D display, contains significantly more information than a conventional 2D or a stereoscopic quasi-3D image. At the field of displaying technologies next step is inevitable. Holographic 3D. This opto-electronic technology is already exists today. To enable 3D systems to work together with practical application they should be compatible with the existing standards and communication protocols. To make this feature possible the development of a standard 3D format would be essential. The increased volume of information requires higher band with and increased speed, though current channels can not handle 3D data. The high cost of band with makes the need for 3D compression obvious, while the up/down compatibility with the existing 2D/3D formats is crucial for the technical viability. Beside the various twofold stereo 3D data protocols, which are somehow optimal in some aspects, there is not yet exists a common 3D format. The aim of the project is to develop a 3D data format, based on a highly efficient compression technology, that posses over all the attributions that can be expected from a future industry standard. According to our expectations this format will base a ground for the 3D hardware and software application for system integration, interoperability, and of course will be compatible with the existing data formats and will be easy to be further extended.

Within the framework of the project we will develop 3D compression technologies based on a number of different approaches like MPEXx, Divx Z-map, VRML. Based on the chosen method we will make an open 3D protocol thus creating the base for compatibility with platforms, formats and channels for the existing 2D and for stereoscopic 3D as well. For the demonstration of this technology, we will carry out the first 3D broadcast experiment ever made. As a result of the development project we will formulate recommendations about future 3D standards.