1. Public Executive Summary

The task '3D Image Capture' combines a unified tri-focal stereovision, spatio-temporal structured light capture system with a video-and-depth recording solution. Therefore the capture system will consist of a central cinematographic camera with Z-channel, two or four small satellite cameras mounted to the left and to the right hand side of the central camera and a beamer for projecting structured light, mounted on top or below the central camera. The recording solution is based on a handy solid state storage that is able to record all camera data.

Figure 1[1] describes an acquisition system of three to five moving image capture devices that is enhanced by on-set processing engines and one handy field recorder (B). Data transfer to the post production is done by handing over the field recorder (B) and quickly down load all captured data. Therefore the field recorder (B) is characterized in recording several real-time streams in parallel, while downloading each recorded stream afterwards to a post production system. So target of this paper is to find an appropriate in-field recorder solution for the need of this project respectively for a general proposed future 3D acquisition approach.

After a market and technology survey to judge competing recorder solutions available and promising storage technologies to be used, this paper gives a specification in terms of requirements, architectural design and implementation. In the first project phase the recording device is heading high bandwidth processing to fulfil the requirements of uncompressed high resolution recording with high video frame rates. This, in the same time, is a precondition to target recording of multiple camera streams in parallel (multi-focal image capture) and a later download of streams to post storage centres in a speed faster than real-time. Both last mentioned topics will be covered in the second project phase.

With respect to the proposed 10G Ethernet interface technology as well as the FLASH storage technology, the results of a 'precursor' EU funded project (FP6 IP-RACINE) are taken as a basis and will be modified/enhanced by e.g. multiple stream capability and fast download speed.

The interface of the recording device is compatible with standard Ethernet protocols with certain enhancements in the top layers. Image input and output sequences will use DPX format with support of depth map and different kind of metadata.

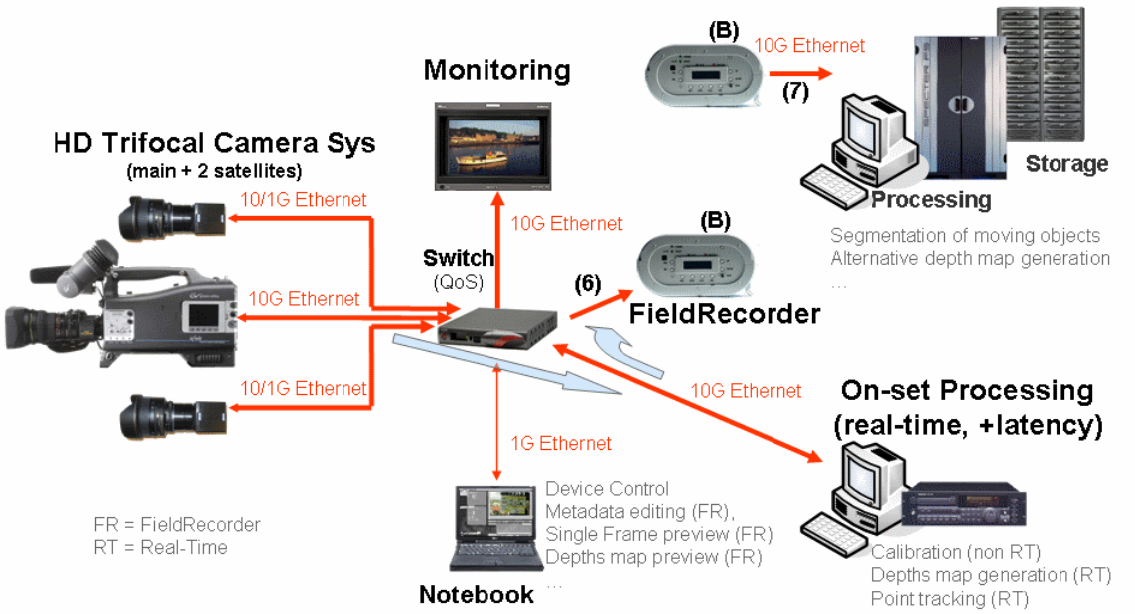

Figure 1 Trifocal image & metadata capture

[1] That picture is derived from Figure 1 in D4.3. Therefore referencing does not start with '(1)' and '(A)'