

# E.V.A. - Electronic Visual Analysis: High-Performance Computing in a Heterogeneous Environment

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**Abstract.** Criminal investigators dealing with matters of child pornography are facing steadily increasing numbers of multimedia files to be examined. In Austria, the overall number of files per year has already exceeded 25 million. Seizure with several hundreds of thousand pictures and videos per case are no longer unusual but have become normal. All those files not only have to be forensically classified, but have to be linked to each other in order to convict serial perpetrators by extracting cross-case evidence. Project E.V.A. aims at developing a computer aided methodology that simplifies the actual work of criminal investigators and provides support for complex cross-case investigations. Taking the huge actual number of media files under investigation into account, it becomes obvious that computing time and energy consumption will become a serious bottleneck for a computer aided investigative methodology. Hence, the key research issues of our project not only cope with algorithms of computer vision and machine learning but also with their high performance implementation on various computing platforms like multi-core CPUs, GPUs, and FPGAs.