Control of file exchange of illicit materials in peer-to-peer environments

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ABSTRACT

The development of computer technology and communication provided new means for the diffusion of illegal material, such as child pornographic images and videos. The legal framework to contrast that diffusion lies, at the European level, in EU Directive 2006/24/EC, after the Budapest Convention on Cybercrime, 2001, and in the various transposition laws by the member states (e. g. Law 48 in 2008 in Italy); it deals with: common and shared definition of crimes, definition of enforcement powers, implementation of international cooperation, encouragement to the adoption of best practices sound from the juridical point of view and based on the state-of-art technological and scientific methods.

In particular we examine the situation of child pornography related crimes: Internet users more and more have been using peer-to-peer networks and tools to exchange illicit material due to the ease to avoid interception by police and law enforcement investigations.

When it becomes necessary to investigate a crime of this type, there are two main issues: difficulty to identify the crime, such as the exchange of illegal material on peer-to-peer network; and difficulty to analyze data: when a person, starting from an Internet address, is supposed guilty of a crime, quite often investigators have to manage a huge quantity of seized materials.
Therefore investigators needs new strategies and software tools to support their tasks.

We present *Emulforensic*, developed in Bologna, a tool to analyze the activities performed through eMule files, and make comparisons with other products that work in the same area such as *EspiaMule*, developed by Brazilian Federal Police, a software tool capable of monitoring the child pornographic file exchanges in peer-to-peer networks, and *FIVES*, developed by a European consortium led by Karlstadt University, a flexible software tool-set which allows law enforcement organizations to handle efficiently large amounts of image and video material related to child sexual abuse.

We give, finally, an evaluation and some comments about the trends of diffusion, at European level, of the exchange of materials about child pornography.