## C6 Tool Testing and Comparison: Recovery of Snapchat™ Pictures From Mobile Device Unallocated Space

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After attending this presentation, attendees will expand their general understanding of the value of utilizing multiple forensic tools and techniques to recover deleted graphical content from mobile devices, specifically those utilizing the Snapchat™ application, which is designed to clear transmitted content from the receiver's mobile device after a designated time frame.

This presentation will impact the forensic science community by providing a comparison of the abilities of various software packages in recovering deleted Snapchat™ content from mobile device unallocated space.

Forensic analysis of mobile devices is one of the most quickly evolving areas of Digital and Multimedia Sciences (DMS). With the development and release of mobile devices occurring at a very rapid pace, Digital Forensic Examiners (DFEs) and mobile forensic software companies are faced with the task of determining how to extract and interpret data from the constantly evolving hardware and software of mobile devices. As each new iteration of mobile device and/or mobile device Operating System (OS) is released, it must be determined how to not only extract data from the device, but how to convert the raw data into a format that makes sense to the end user. The use of mobile device applications, or apps, further complicates data analysis of mobile devices. Not only is the base OS of mobile devices under constant development, but individual application developers release and update apps at a surprising pace.

Snapchat™ is a mobile device application that allows users to send and receive multimedia content, such as pictures and video, between specified individual contacts. The transferred multimedia is termed a "Snap." Settings within the sender's Snapchat™ application determine how long the sent content will be viewable on the receiver's mobile device, from one to ten seconds. After the time limit has expired on the receiver's device, an attempt is made by the Snapchat™ software to delete the data. Security features of the Snapchat™ application are also designed to prevent users from taking screen captures of received content through other mobile device applications.

A previous presentation on this topic provided an overview of the examination of an Android-based mobile device submitted for examination to the United States Army Criminal Investigation Laboratory (USACIL) in a case involving the Snapchat™ application. Upon completion of this case, it was determined that at that, time, traditional mobile device forensic software packages were unable to extract any deleted Snapchat™ pictures from the mobile device; however, traditional computer forensic software was successful at recovering the pertinent content. This presentation will provide the results of a research study developed as a result of this case, comparing various (computer and mobile device) forensic software packages and their ability (or lack thereof) to recover deleted Snapchat™ content.

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**Snapchat™, Data Recovery, Digital Evidence**