Success Story
COMET

SBA-K1
SBA Research gGmbH
Programme: COMET – Competence Centers for Excellent Technologies
Programme line: K1-Centres
Project 3.1 – Digital Forensics, duration and type of project:
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SmartForensics: LEAP

More and more criminal activities are coordinated or partially carried out via smartphones. Smartphones are becoming cheaper and cheaper, and storage capacities are increasing. However, complete forensic analyses of smartphones are time-consuming, cost-intensive and the corresponding departments of the investigating authorities are often booked for weeks. This makes it necessary to provide the on-site investigators with a tool that facilitates, within a short period of time, an initial meaningful assessment of the case-specific contents of a confiscated smartphone.

Initial situation: Automation required

Investigators in various areas of crime control, such as the fight against trafficking, are often faced with a difficult decision during an operation: Should a confiscated smartphone be send to the respective colleagues for a forensic analysis, obtaining a detailed report a few weeks later, or is this too much effort too high in the given situation?

It is possible to develop a tool that offers a solution if a complete forensic analysis is not feasible or would take too much time. How can we carry out a "quick check" of a confiscated device, while taking into account the case-specific characteristics and requirements of the investigators?

The two company partners T3K Forensics and Kibosec received more and more requests in this regard by international law enforcement authorities, and together with SBA Research they are working on a solution since April 2017.

Approach: LEAP Law Enforcement Analytical Product

The partners T3K Forensics, Kibosec and SBA Research are developing a framework that will meet the diverse needs of investigative authorities as well as regulatory and legal requirements; it can furthermore quickly and specifically provide an initial assessment in the form of an easily understandable, but meaningful report. The most modern methods of machine learning, deep learning and latent space virtualization are used to complete a fundamental and comprehensive initial analysis within 60 minutes.

Such a tool should help investigators to quickly assess whether a complete forensic investigation is appropriate and, if necessary, to make the findings collected during the "quick check" available to the respective forensic department as a starting point for further detailed analyses.

Federal Ministry for Digital, Business and Enterprise
bmvit Austrian Ministry for Transport, Innovation and Technology

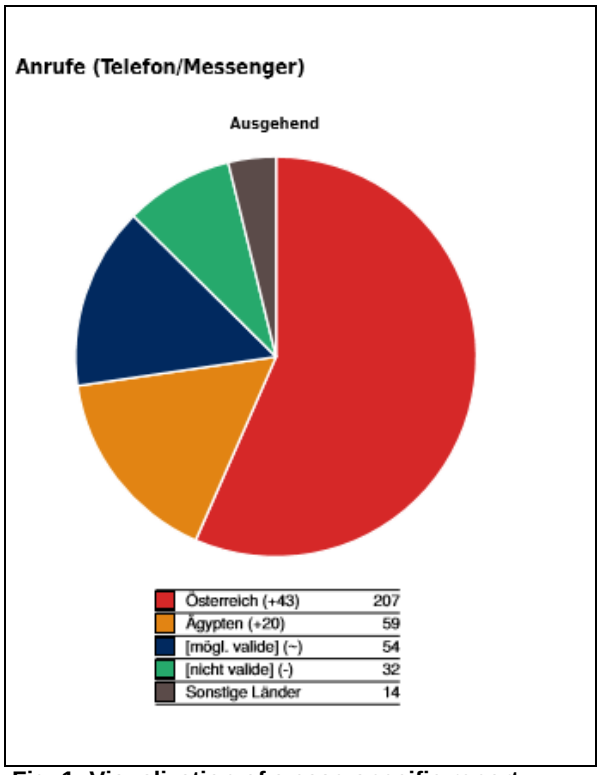

Fig. 1: Visualization of a case-specific report component of LEAP

Impact and effects

Our partner T3K, which specializes in forensic training courses for security authorities, has been testing LEAP's first early prototypes with foreign authorities in actual field use.

This shows that such a tool is an enormous added value for local officials, especially in large-scale investigations in which a vast number of devices has to be evaluated in a relatively short time.
Although numerous technical aspects and specifics still need further analyzing, expansion and improvement, already at this early stage the benefits are clearly visible. This toolkit also gives forensically less experienced civil servants the opportunity to relatively quickly assess whether a more in-depth analysis might be necessary and is thus unique, also in an internationally level. It will close a gap that is becoming rather larger than smaller in the future.

In the upcoming months and years, the methods of analysis will be continuously refined and further improved by comparing LEAP reports with the findings of complete forensic analyses; furthermore, specific forensic cases (e.g., combating human trafficking) are to be implemented in the LEAP framework in the course of further projects. In addition, LEAP's analysis time will be continuously reduced.

In the medium term, this COMET cooperation will allow two small, highly specialized Austrian companies to gain a strong reputation and considerable advantage in this international, highly competitive environment.

Contact and information
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