Second Laureate Applied Research

Research Work Title

Mobile Networks Security Assessment System

Executive Organization

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Abstract

Today, almost all people are connected to mobile networks through smartphones and use these networks as their main and trusted medium in all kinds of personal or professional communications. In such a situation, the existence of any security deficits in mobile networks will have far-reaching social or political consequences. Interruptions in subscribers' communication services over a wide geographical area, sending fake text messages to individuals from government agency censuses, and eavesdropping on communications are among the attacks that have been carried out and reported by exploiting the security shortcomings of the mobile networks in various countries. In order to deal with these threats, it is essential that mobile networks be periodically evaluated for security vulnerabilities and that identified security deficiencies be addressed as soon as possible. In this regard, foreign companies or products are not trustworthy because there is no guarantee that the information collected or the security holes identified by them are not exploited by foreign institutions. In this project, a native system called BOOF is proposed to evaluate the security of mobile networks. The BOOF system has been completely designed and implemented in the country. It provides a network discovery enabling to automatically identify and report the security level and the vulnerabilities of the networks. In addition, this system provides the necessary solutions to secure the network against the detected holes. For the last two years, BOOF has been used to evaluate the security of the mobile networks of the main operators of the country (Hamrahe Aval, Irancell and RyTel). The results obtained from these evaluations show that the BOOF is an efficient and effective tool for identifying the security vulnerabilities of the country's mobile networks.