Research Work Title

An Innovative Process for Monitoring Frequency Interference and Estimating the Location of External Sources in the Mobile Phone Network

Representative | Abbas Azari

Collaborating Organization | Naghshe Aval -e- Keyfiyat Company

Abstract

"Kashef" is an intelligent web-based software tool designed to locate frequency interference sources on a map, using quality indicators of the mobile network without imposing any hardware on it. By continuously monitoring the network, Kashef speeds up the discovery of interference factors and enables targeted detection of the range of disturbing sources of frequency interference in less time. Using Kashef software is economical in terms of human resources. It enables the shortest and fastest possible way to discover and approximate the location of the frequency interference factor, making it an efficient tool for mobile phone service providers. The software uses location-based data mining to monitor the frequency spectrum in cellular networks. This involves combining data related to frequency spectrum extracted from OSS mobile network operation support systems with physical information of telecommunication sites within a short time. This information is displayed on a map continuously and in a user-friendly manner. The purpose of this method is to detect the causes of frequency disturbances in mobile networks. Kashef has several achievements, including reducing damages caused by interference factors in the network, reducing the consumption of equipment and side costs, regulating the quality of coverage at a standard level based on spatial data mining, rapid identification of illegal sources and interference, and automatic daily anomaly detection.