

## XINTEC SIM Box Detector

As a Communication Service Provider (CSP), you are vulnerable to many different types of fraud such as subscription fraud, PRS fraud, prepaid fraud, call selling, m-commerce fraud, technical fraud, internal fraud, SIM cloning and SIM boxes. These fraud types may have very different characteristics and the introduction of next-generation wireless IP services will certainly create new types of fraud. Hybrid systems are needed to meet this challenge.

XINTEC's *FMSlite™* operates at call event level (domestic and roaming) by extracting information used for fraud detection and revenue optimization purposes. The analytics and data manipulation technology of *FMSlite™* includes a module tailored to detect SIM boxes.

### What is SIM box fraud?

In this fraud scenario, fraudsters bypass the mobile network interconnection to direct incoming calls towards the mobile network to on-network calls made by a range of SIM cards. From your point of view, on-network calls are generated instead of interconnection mobile terminated calls. The revenue loss is directly related to the difference between the interconnect termination price and the retail price of mobile on-network calls.

### Indirect damage

In addition to the revenue loss, SIM boxes also cause indirect damage.

SIM boxes do not allow the delivery of the Calling Line Identity (CLI). Therefore legitimate customers, being called via SIM boxes, may complain about the unavailability of services they would otherwise expect to be able to use, such as not answering unwanted calls, returning a missed call or sending an SMS to the calling party.

Because of the missing CLI, you may experience problems fulfilling obligations towards law enforcement authorities to reveal the identity of calling parties and allow the monitoring of mobile traffic.

The quality of service also suffers due to network congestion on the cell, the bad quality due to traffic and the excessive number of dropped calls.

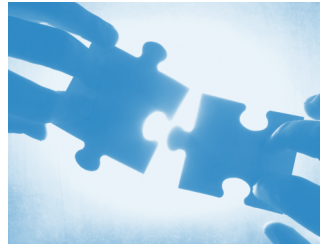
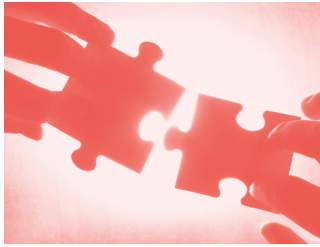
### How to detect SIM boxes

**Customer profiling** - Profile-based analysis can be used to detect SIM boxes. Customer profiles are sketched according to the habitual usage of SIM boxes and subscribers matching these patterns are immediately flagged.

Exception lists are used to exclude private or corporate gateways that are legal and within the contractual terms of the CSP.

**Call generation** - Call generation platforms generate test calls from many countries to identify SIM boxes by verifying correct CLI delivery.

With this approach the SIM boxes are detected in real-time and with no false positives. However, the solution is limited in coverage as it must generate test calls from all possible routes, including VoIP and calling cards.



## FMS*lite*™ for SIM box detection

XINTEC's SIM Box Detector is a versatile tool for detecting fraudulent SIM boxes in telecommunications networks. Equipped with a powerful rules-based SIM box profiler, it is able to analyse a large number of call records and report suspicious behaviour. The XINTEC solution includes a comprehensive set of built-in functions for calculating statistical values and a configuration interface to combine these functions to define SIM box profiles.

Some simple examples of SIM box profiles are:

- High volumes of calls, mobile-to-mobile only, with many distinct B-numbers.
- Less than 1% international calls, less than 4% incoming calls, less than 5 distinct locations, more than 95% mobile-to-mobile calls.

XINTEC's SIM Box Detector is provided with a set of SIM box profiles to get you started and which you can then adapt or build on. This means the system can start detecting SIM boxes as soon as it is installed. FMS*lite*™ uses a data archive allowing you to apply and try newly defined profiles to historical usage records.

XINTEC also uses the call generation detection method with a specific algorithm based on your own and roaming partner call records. This method provides you evidence of bypassed calls.

Thanks to integration with FMS*lite*™, XINTEC's fraud management system, the SIM box detector tool also provides the following features to improve operation efficiency:

- Case management
- Automatic alarming
- Profile-based analysis
- Web-based user interface
- Hotlisting of handsets, IMSI and called numbers
- CDR search

XINTEC's SIM Box Detector allows you to neutralise SIM boxes and drastically reduce lost income and potential damages, and thus strengthening your competitive advantage.

## Licensing models

XINTEC offers a full range of licensed, leased, managed and support models for our product portfolio. The lease model allows you to pay-as-you-use the software and benefit from maintenance and support services without the need for an up-front license fee.

Thanks to the FMS*lite*™ architecture, there are no 3rd party software license fees to add to the cost of the solution.

If you would like further information please contact us:

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