

## c.-InterConnection Fraud Detection

**Cedros c.-ICFD** implements a modular system that automatically generates a huge number of test calls and provides detailed reporting. It is used to detect interconnection fraud in a very efficient way without having to analyze high usage reports.

Telephony Service Providers (Call-by-Call, Calling Card, VoIP etc.) are able to bypass termination charges by using GSM Gateways (so called SIM Boxes). SIM Boxes use GSM radio modules to create a voice connection and act as media gateways between fixed and mobile networks. As Mobile operators charge these connections as on-net calls, no termination fee apply. The result is lost revenue for the operator.

**c.-ICFD** helps you to continuously monitor public Telephony or Voice-over-IP Service Providers delivering calls to your network.

### Key Benefits

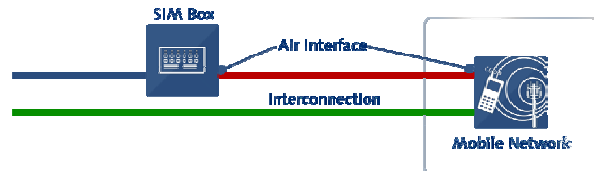
- Safely detects SIM Boxing
- Call-by-Call and Voice-over-IP (VoIP)
- Detailed reports for prosecution
- Reduces human interaction
- Increase Interconnection Revenue

The system generates a high number of voice calls from various nodes to a list of GSM reference numbers within your network. This allows continuously tracking of all configured providers. Each test call establishes a voice connection from an ISDN line to a shuffled GSM reference number.

When implementing the test procedure we take care on obscuring testing as much as possible. **c.-ICFD** uses standard voice facilities. Using ISDN enables the Node to shuffle the originating MSISDN to multiple GSM endpoints (SIMs). The system runs a schedule allowing providers different priorities or excluding periods of time from testing. Combinations of these parameters make detection by the tested operator nearly impossible.

Suspicious calls matching fraud criteria optionally get connected and a unique ID will be transmitted. This creates a CDR within all networks and allows a match with the report data.

Detailed reporting on all systems involved supplies all necessary information required for locking the suspicious SIM and legal prosecution of the fraudster. All report data and connection details are saved to a SQL database for later processing.



Compared to other offerings Cedros ICFD gives you the maximum flexibility to customize the system according your specific needs and ongoing developments in the telephony market. It supports a wide range of connection types and an unlimited number of provider entries.

Supporting direct calls to specific numbers easily allows you to monitor inbound roaming partners just by using a SIM with call forwarding (CFU) to your network.

**Cedros c.-ICFD** supports you in detecting Interconnection Fraud in a very efficient way and helps you to increase Interconnection Revenue.

Running the solution from your premises gives you total control over the detection. Controllable costs allow continuous long term monitoring processes to avoid SIM Boxes coming up again!

### Highlights

- Distributed system: Master, decentralized Nodes
- Test procedure is based on native voice calls (no detection by SIM Box)
- ISDN / VoIP / GSM / Modem
- Detailed reporting on all systems
- Result data is saved into a SQL database for statistical analysis
- Report customization (PDF/XLS/XML)
- Web based administration
- Customizable events per message

## InterConnection Fraud Detection by Cedros

### Testing

- ICF Nodes generate a huge number of calls
- Provider delivers the call through a SIM Box
- HLR forces CLI delivery (CLIR override)
- ICF Responder receives the call and reports CLI
- ICF Master verifies CLI and processes the call

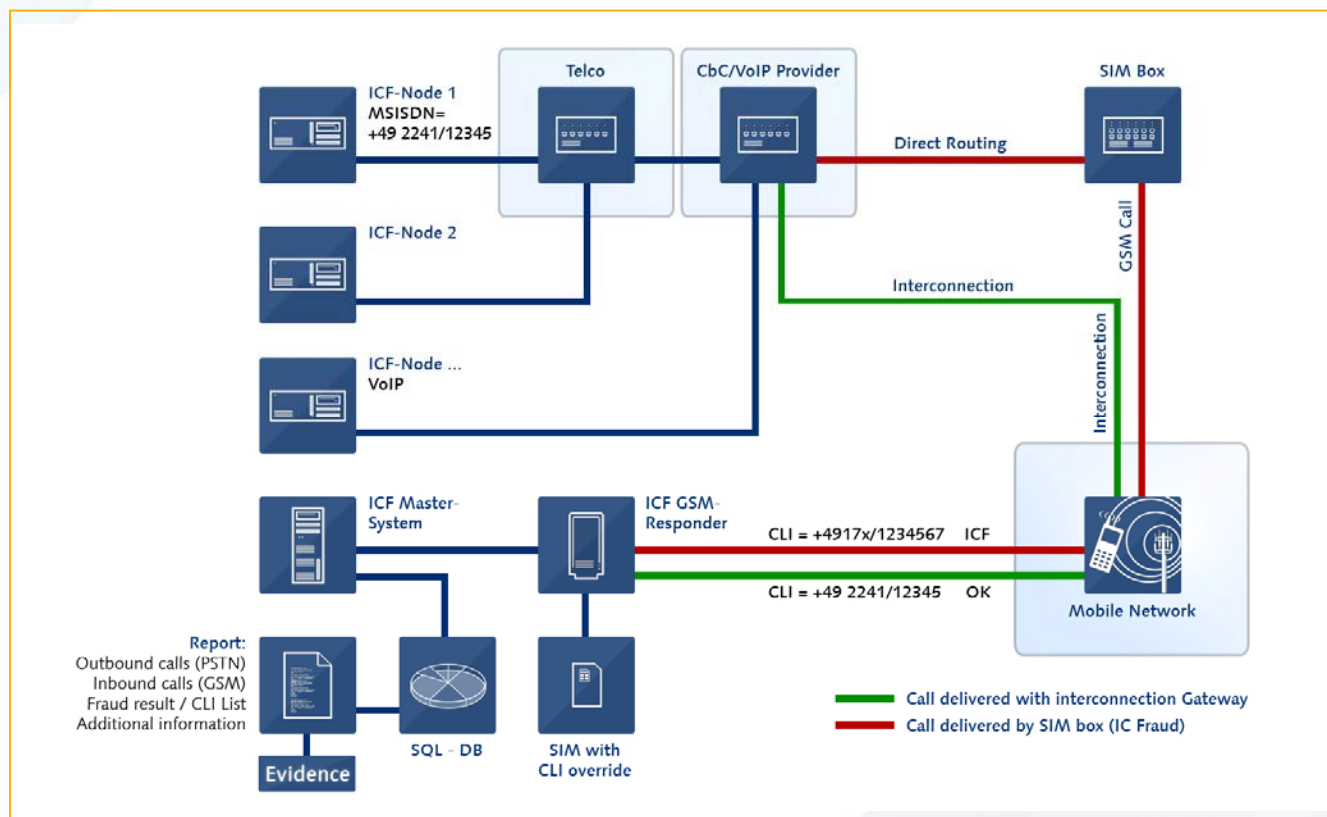
### Reporting

- Detailed logging on all systems
- Detailed report for each call
- Call overview
- Statistics
- Daily / weekly / monthly reports
- SQL data store

### Prosecution

- Call report
- Statistical data
- Identified connection
- Call detail record (CDR)
- SS7 trace
- Provider's invoice
- Expertise of an independent evaluator

### Detection scenario



### Cedros

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### System Requirements:

- Microsoft Windows Server 2003 / XP
- Oracle 10g SQL Database
- Microsoft IIS Server, .Net Framework 1.1,2.0
- GSM-Module+SIM for Responder
- ISDN Card/VOIP/GSM/Modem for each Node
- P4 2.4 GHz+, 2GB RAM, 200 MB HD