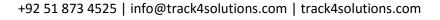


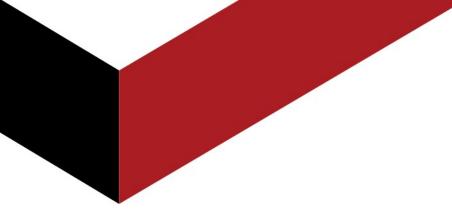


### **Course Outline**

# Comprehensive Training on Bypass/SIM Box Fraud Detection and Termination

**Duration: 3 Days** 







## Title: Comprehensive Training on Bypass/SIM Box Fraud: Detection and Termination

**Duration: 3** day

Course Code: NSE-RA-704

#### **Course Description:**

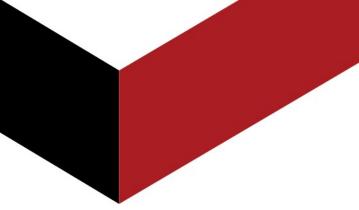
This training course is designed to explain the mobile and fixed communications bypass fraud in-depth and present effective solutions for detection and termination of bypass fraud. This course examines key subjects including: Definition of fraud and its types along with defining interconnection operations in order to help attendees better understand how bypass fraud works. The course also examines additional key subjects including: SIM box Interconnect configuration scenarios, and most importantly presenting and examining the fraud detection tools utilized. This is a must-attend course for revenue assurance and fraud management professionals.

#### **Course Objectives:**

- Understand what is Fraud and its Types
- Understand the Interconnect Principles
- Define Bypass Fraud and Understand its Characteristics
- Comprehend SIM Box Interconnect Configuration Scenarios
- Learn the Bypass Fraud Detection and Elimination tools
- Comprehend the Deficiencies of Traditional Behavioral Detection tools
- Learn the Non-Passive Push Calls Methodology

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#### **Pre Requisite**

Basic understanding of Fraud, Basic understanding of Networks and Interconnection

#### Who Should Attend?

Revenue Assurance and Fraud Managers/ Analysts /Consultants/ Implementation and Deployment Technicians/ Project Team Members/Researchers

#### **Course Outline:**

#### I. Telecommunications Fraud Overview

- A. Telecommunication Fraud Overview
  - 1. What is Fraud
  - 2. Motivation of Fraud
  - 3. Operators Risk Exposure
  - 4. New Access Methods
  - 5. Billing Systems and Processes
- B. Interconnection Overview
  - 1. Fundamentals of Interconnect Operations
  - 2. Interconnect Network Design and Constraints
  - 3. Interconnect Controls
  - 4. Forms of Interconnections

#### C. Types of Fraud

- 1. Illegal SIM Boxes
  - a. Motivation and Scale
  - b. Associated Risks
- 2. Subscription Fraud
  - a. Motivation of Subscription Fraud
  - b. Associated Risks
- 3. Roaming Fraud
  - a. Motivation and Scale
  - b. Associated Risks



- 4. Premium Service Fraud
  - a. Projected Revenue Unearned
  - b. Associated Risk
- 5. Internal Fraud
  - a. Motivation of Internal Fraud
  - b. Impact and Scale of Internal Fraud
- 6. Partnership Fraud
  - a. Types of Partnership Fraud
  - b. Interconnect Fraud Recognition
- 7. Pre-Paid Services Fraud Methods
  - a. Risk Associated with Recharge Methods
  - b. Methods to Curb Pre-paid Fraud

#### II. SIM Box and Bypass Fraud

- A. What is Bypass Fraud
  - 1. By Pass Fraud Direct Effect
    - a. Huge Revenue Loss
    - b. Poor Voice Quality
    - c. Increase in Post Dial Delay
  - 2. By Pass Fraud Indirect Effect
    - a. Inability to Call Back
    - b. Short Duration Calls
    - c. Increase in Call Drops
- B. GSM VOIP Gateways/SIM Boxes
  - 1. What are SIM Boxes
  - 2. SIM Box Functionality
  - 3. Advanced SIM Box Features and Functionalities
    - a. SIM-Rotation
    - b. Remote Pre-Paid Recharging
    - c. SIM-Card off-site Storage



- C. Use of SIM Cloning for SIMBox/ByPass Fraud
- D. Use of International Roaming for SIMBox/Bypass Fraud
- E. Re-filing Numbers within SIMBox Fraud
- F. Effect of Special Rates between International Interconnects
- G. SIM Box Interconnect Configuration
  - 3. SIM Box Location: Adjacent Operator's Network
    - a. Adjacent Network Inbound Mobile Originated Calls Delivery
    - b. Scenario Identification and Details
    - c. Scenario Treatment Difficulty
    - d. Soft Loss
    - e. Cases and Examples
  - 4. SIM Box Location: In the Home Operator's Network
    - a. Adjacent Operator Outbound Mobile Originated Calls Delivery
    - b. Scenario Identification and Details
    - c. Outbound Termination Access Fees Payment
    - d. Soft and Hard Loss Cases
    - e. Cases and Examples
  - 5. SIM Box Location: Within the Home Operator's Network
    - a. SIM Box Delivers and Terminated Calls On-Net
    - b. Network Concerns
    - c. Quality of Service
    - d. Congestion
    - e. Spectrum Management
    - f. Network Utilization
- H. By-Pass Fraud Detection and Elimination
  - 1. Traditional Behavioral Detection Examples
    - a. Incoming to Outgoing Calls Ratio and Comparison
      - i. "Voice Call Accepting" GSM Gateway Configuration
      - ii. "Duration of Call" Comparison Counter Measure



- iii. "Pre-Recorded Messaged or Dial Tones"
- b. No or Low Mobility
  - i. "Take SIMs for a Ride" Counter Measure
  - ii. Voice Call Making Location
- c. Distinct Numbers High Number of Calls
- d. High Number of One Cell Subscribers
- e. High Number of Night Calls
  - i. Placing GSM Gateways in Large Cells
  - ii. Disabling Not-in-Use SIM Cards
  - iii. Automatic SIM Mapping
- 2. Signaling-Based Monitoring
  - a. Behavior Dependent
  - b. Near-Real time Monitoring
  - c. Media Dependent
  - d. High Deployment Cost
- 3. Non-Passive By-Pass Fraud Detection and Elimination
  - a. Solution Methodology
  - b. Real-time Individual Calls Monitoring and Blocking
  - c. Media Independent
- 4. Trunk Data
  - a. Trunk Analysis
  - b. Method of Trunk Analysis
  - c. Advantage of Trunk Analysis
- 5. Detection and Elimination Tool Comparison
- 6. Case Studies and Exercises