



# VoIP Type Approval Lab.

## An overview of VoIP Projects



## VoIP Type Approval Laboratory

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- VoIP Related Projects:
  - Design and Implementation of Security Test Suite
  - VoIP DOS and DDOS detection system
  - Anti-SPIT Software
  - SIP Proxy server overload management system
  - Implementation of a national IP-PBX system



- ***Design and Implementation of Security Test Suite***

- Confidentiality, Integrity, Availability Tests
- The system tests the ability of a server in confronting:
  - Flooding
  - Fuzzing
  - Signaling Manipulation
  - Forced Call Teardown
  - Registration (Call) Hijacking
  - Media Hijacking
  - Call-ID Spoofing
  - Media Injection
  - Eavesdropping the media
  - Configuration Disclosure
- A customization of BackTrack 5



- ***VoIP DOS and DDOS detection system***
  - Detects INVITE, BYE, Composite DOS Attacks
  - Based on Anomaly detection
  - Based on Entropy Calculation compared between normal training period and suspicious test period
  - Tested and Evaluated by Spirent Abacus 5000, with 100% detection accuracy



- ***Anti-SPIT software***

- Spam over Internet Telephony detection and prevention system
- Implemented as an open source module on Asterisk
- Effectively differentiates normal as suspicious calls and redirects the suspicious user to Voice CAPTCHA



- ***SIP Proxy server overload management system***
  - Overload detection (CPU, Buffer, Memory Inspection)
  - Load Balancing
  - Customized to be run as an open source module on Asterisk
  - Tested and Evaluated under real condition with Spirent Abacus 5000



# Research Positions



- ***Further Research areas:***

- SIP Authentication promotion with a PKI mechanism
- An integration of New VoIP functional needs into current IP-Phone firmware
- An empirical study of VoIP Performance metrics evaluated by Voice Recognition Systems
- How VoIP utilizes Network Coding
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