2017
PRIVIS
REPORT

SPEAKER:

TIME: 2017.12.01
Overview

**Founded** in 1965, a key member of CETC (China Electronics Technology Group Cooperation) endeavoring in cyber security:

- A strategic participator of **Defense Communications of China**
- Leading supplier for **information security products and services** in China
- Active presence in the field of **counter-terrorism & public safety**
- Worldwide forerunner in the booming **cyber security**
Introduction of Privis

Privis in China

* 3 Bases
* 5 Marketing Centres
* Nationwide Offices

Base & Marketing in Beijing
Base & Marketing in Taiyuan
Marketing in Shanghai
Marketing in Xiamen
Marketing in Guangzhou
HQ in Chengdu

Base & Marketing Centre
Local Office

Privis Technology Co., Ltd
Established cooperation relationship with more than 30 countries as their reliable partner in security.
Introduction of Privis

Professional Teams

Talents Cultivation

I. Post-doctoral Research Station;
II. Offers Communication Engineering PhD program;

• About 7700 employees, average age at 33
• 64.3% are technicians
• PhD at 1.1%, Master at 30%, Bachelor at 43.6%

• 2 national-level outstanding achievement experts
• 3 chief experts
• Over 20 special government allowance experts
• More than 60 research scientists
Introduction of Privis

Remarkable Milestones

1950
- 1st analog radio encryption system
- 1st digital trunk line encryptor

1960
- Encrypted telephone communication system for summit hot-line

1970
- 1st digital HF strategic encrypted communication system

1980
- 1st programmable digital switch
- 1st PSDN
- 1st auto & online key distribution management system

1990
- New generation of strategic network and upgrade
- 1st digital HF strategic encrypted communication system

2000
- 1st programmable digital switch
- 1st PSBN
- 1st auto & online key distribution management system

2010
- 1st WPDN
- New generation of strategic network and upgrade
- New generation of tactical communication network

2017
- 1st programable digital switch
- 1st PSBN
- 1st auto & online key distribution management system

- IP/ATM/SDH technology breakthrough G rate
- National info-security base

- Cybersecurity
- Wireless security

Privis Technology Co., Ltd
### Qualification

#### Confidentiality
- First level of secrecy qualification
- First level of secret system integration
- Consultation service qualification of MIL secret system

#### Equipment
- R&D and production permission of weapons and military supplies
- Military equipment contractor

#### Cipher
- R&D and production permission of general cipher for party, government and military
- R&D, production and sale permission for commercial cryptographic products

#### Info Security
- First level of service qualification of information security
- First level of design, construction, maintenance for security technology precaution system

#### Others
- Quality Management GB/T 19001/ISO 9001, ISO/TS16949, GJB9001
- Environment Management GB/T 24001/ISO 14001
- CNAS, DILAC, Permission Software evaluation lab, ITSS (IT operation standard)
Introduction of Privis

Life-cycle Service

- **Pre-sales**
  - Request analysis
  - Site survey
  - Technical consultation
  - Lab & Field trial

- **After-sale**
  - Installation and commissioning
  - Practical operation training
  - Technical support
Information Security

• **No.1 brand** in information security industry in China;
• Extensive overseas experience;
• Full range of information security products;
• Around-the-clock technical support;
• Professional technical training.
Relying on 50 years of research experiences and design abilities in the cryptography field, we can provide a full range of security products and its market shares in China ranks No.1.

Encryptor Series

- Tel/Fax Encryptor
- Link Encryptor
- Secure Cellphone
- Secure Walkie-Talkie
- SDH Encryptor
- IP Encryptor
- Military SSD
- Secure IP Phone
- HF Radio Encryptor
- V/UHF Radio Encryptor
- VoIP Encryptor
- USB Encryptor

Security/Key Management Center
Our security products can be used to provide security protection for all kinds of communication channels, such as HF/VHF communication, satellite communication, mobile communication network, as well as PSTN, E1, IP, optical fiber and so on.
Security mobile communication system is composed of smartphone with security applications installed, TF crypto card, key management system, SIP server and IM server. The system provides end-to-end encrypted voice and instant message services as well as network based operation and management functions.

- Secure Voice and Secure IM
- End-to-end encryption
- One-session-one-key
- Integrated key management
- Secure access control and secure storage mechanism
- Algorithm implementation, key generation, storage and usage are within TF encryption card
SIP-based VoIP Security System provides end-to-end encryption services to SIP-based VoIP system. Attaching it to soft switch / IMS network without any changes to network topology and communications infrastructure, it provides users with media stream encryption services (voice, video and fax), and seamlessly integrates with 3G, 4G IP mobile terminals.

- Provide SIP-based VoIP voice, fax and video encryption protection;
- Support normal SIP terminals and secure SIP terminals interoperation;
- Support secure intercommunication between mobile terminal and fixed terminal;
- Support on-line key negotiation;
- Support off-line distribution of device certificate and keys;
- Key are generated via standard white noise source;
- Key length: 128, 192, 256 selectable, maximum strength: $10^{77}$;
- One-session-one-key, and keys are automatically destroyed when the session ends
Adopts “cloud –network- end” security defense architecture, provides comprehensive security protection for special communication networks.

- **Information encryption**
  Prevent tampering and wiretapping

- **Terminal protection**
  Prevent malicious attack, illegal operation and access

- **Network protection**
  Prevent all kinds of attacks and access violations to LAN or core network

- **Unified management**
  Unified management of security equipment, encryption devices and unified presentation of security situation
➢ A know-how transfer of Privis’ 50 years of experience and expertise in cryptography area
➢ Strategically important for a country which seeks to master communication encryption technologies

- **ADIL Lab**: How to program and implement cryptographic algorithms
- **SSEL Lab**: How to evaluate security strength of encryption algorithms/devices
- **Security Standards**: How to set up National Standard for cryptography algorithm & equipment
- **Professional Training**: Provide abundant training to transfer the complete crypto capabilities
Communication System

• *Strategic participator* in designing Chinese military communication system that emphasizes mobility and command echelon.

• Specialized in satisfying the dedicated communication demands of public security departments and enterprises.

• Offers a wide range of solutions ranging from the high-performance components and equipment, to the turnkey supply of complete systems.
An infrastructure of communication network covering battlefield completely for tactical users.

- Reconstruct network based on specific operation requirement and operation status.
- Redundant link improves survivability.
- Multiple means of wide band device extends coverage.
- Inter-net controller (INC) ensures seamless information transfer.
- Centralized network planning and management.
- Integrate information security and encryption seamlessly with communication system.
Communication System

**Communication Devices**
- Inter-net Controller
- HF radio
- Military Router
- V/UHF radio
- Military Switch

**Carrier Platforms**
- Comprehensive Comm. Vehicle
- System M.g.m.t Vehicle
- Light-size Comm. Vehicle
• **Widely use** for disaster relief, important events protection, counter-terrorism, etc.
• **Integrated channel control** provides reliable and effective communication capability; choose proper wireless communication resources automatically or manually.
• **Supports various services**, including text, voice, fax, video and instant message. First-hand audio/video information facilitating the decision-making.
• **Provides voice/video communication on disposal site**, using the vehicle-borne and portable wireless transmitters.
• **All-around protection** with encryption technology and authentication technology.
Cybersecurity

- **The technology leader** in the cyber security field in China
- An active cyberspace trailblazer delivering up-to-date solutions to global customers
- A full range of product family covering
  - Network security
  - Application security
  - Industrial control system (ICS) security
Cyberspace Security Technology Roadmap

1. Cyberspace Information security
   - C: Confidentiality
   - I: Integrity
   - A: Availability

   1. Intranet security enhancement project
      - Security situation awareness
      - APT detection and protection
   2. Information system protection project (B/S structure)

2. Cyberspace Surveying and Mapping
   - Cyberspace information
     Sensor and key infrastructure Protection

   3. LI project
     - IP traffic
     - Voice
   4. Cyberspace situation awareness project
     - Sensor
     - IT/OT

3. Cyberspace Countermeasure
   - Cyber warfare
   - CERT

4. Cyberspace situation awareness project
   - Sensor
   - IT/OT

5. Cyber security joint lab project
   - A&D Platform
   - R&D Platform
   - Training

6. CERT project
   - National cyberspace defense Integration platform
Security Situation Awareness System
Intranet Security Enhancement Project

Security Situation Awareness System

Advanced Threat Detection & Analysis System
Based on big data technology and cloud computing

**B/S structured defense platform**

- Attack Defense
- Prevent DDoS Attack
- Permanent Online
- Attack Tracing
- Secure Login
Cyberspace Situation Awareness Project

Management command → Situation display → Alarming library → Assisted protection

Attack detection strategy → Data integration → Big data analysis → Vulnerability analysis → Alarming information

Cyber Radar

Cyber Radar (ICS)

Web soc
Cyber Security Joint Lab Project

Cyber warfare platform

- Basic environment
- Experiment network
- Experiment support services
- Experiment function system
Cyber Security Joint Lab Project

**Industrial Control System (ICS) Research Lab**

- To conduct the research on industrial control information security technology
- To train security professionals for the industrial control system
Cyber Security Joint Lab Project

Training Plan

- R&D and Innovation (Level 3 – Project/TOT)
- Network Defense Training (Level 2-Network Defense Lab)
- Traditional Information and Network Security (Level 1-Operation and Maintenance)
Wireless Security

- World class interception and RF jamming solutions based on relevant threats and field constraints;
- Full range of interception and RF jamming product series;
- Excellent vehicle-borne operation platform refitting and integration ability.
The active monitoring locating system is designed for criminal police investigation, terrorist monitoring and tracking which provides the function to monitor and locate the target mobile phone.

**Main functions**
- Records voice sessions, SMS messages
- Real time A5.1, A5.2 decryption
- Selective jamming for registered mobile phones
- IMSI/IMEI identities capture and collection
- Fake call/SMS to each registered mobile phone
- Target mobile phones locating within the working area

**Working Theory**
- The **Active System** creates a fake BTS;
- Provides best operation parameters for communication;
- The **clone unit** transfers the communication to the real BTS;
The passive monitoring system is designed for intelligence collecting and border monitoring which provides the function to monitor the real time voice calls and SMS of GSM communication.

**Main functions**
- Calls and SMS interception
- Real time A5.1 and A5.2 Decryption
- Random and target operation modes
- Direction finding
- Operates Secretly at large distance

**Working Theory**
- The passive system receives the downlink (BTS) and the uplink data (mobile phone) from the air interface
- Fully passive, no transmission, will not affect any setting of the telecom network
- Working secretly, completely undetectable
Monitoring Product Overview

Wireless Security

- Active Case Type
- Passive Fixed Type
- Passive Portable Locator
- Passive Vehicular Type
- A5/1 Decryptor
- Active Vehicular Type
- Monitoring Vehicle
As the primary threat, Road-side Remote Improvised Explosive Device (RCIED) has caused serious casualties each year in many countries and immensely endangered their law enforcement agencies including counter-terrorism unit and bomb disposal squad. According to statistics, 85% of the world's RICEDS was exploded by signals of mobile phone, other detonating tools includes remote control car keys, walkie-talkie, etc…
This high power outdoor cell phone/UAV jamming system is ideal for using in prisons, penal institutions and detention centers, as well as military facilities, governmental compounds, Oil and Gas Storage fields.
This DDS jamming series product is designed to block the wireless signals of band 20-6000Mhz.

Application Scenarios: Conference, VIP Protection, examination venues, governmental compounds.
Public Security

- **Leading** role in public security industry of China;
- Extensive relevant experience domestic and oversea;
- State-of-the-art technology & products;
- Complete solution to various scenarios
City Comprehensive Safety Command & Control System

Panoramic Command Platform

Dispatching & Communication
- Secure communication
- Secure LTE trunking
- Panoramic video surveillance
- Intelligent Transportation System
- Situational Awareness & Control
- Panoramic Command Center
- Key Site Protection
- Situation Awareness & Control
- Data center
- C4I center
- Information Collecting
- Digital forensic center
- Wi-Fi/cellphone fence
- 2D/3D face recognition
- Signal control
- Intrusion detection
- Area monitoring
Integrated Security System for Important Area

- Panoramic CCTV
- Access Control
- Face recognition
- Perimeter Protection
- Secure Communication
- Security Check
- Wireless Signal Control

Privis Technology Co., Ltd
Integrated with digital geometry technology, information visualization, video fusion and large scale data concurrent processing, the system will construct a creative 3D-based video rendering platform, to provide intelligent visualization tool for command/control and decision-making.

**Highlight**

- Panoramic situation display to help decision-maker master the whole picture
- Full cooperation with cameras to free roam
- Support outdoor+indoor hybrid mode
- Support functional modules or subsystem integration to construct unified command platform
Secure Video Surveillance System

System Topology

- Support new system construction
- Support existing system transformation to protect user’s legacy

Diagram showing components of the system topology including:
- Streaming media server
- Access server
- Storage system
- Key mnt. server
- Anti-virus server
- IDS
- Audit server
- Video monitoring terminal

Existing system transformation and New System construction are indicated.
3D-based Face Recognition

How to find target with face recognition technology precisely? The answer of USA team, including top expert Anil K. Jain, is that: adopting 3D face recognition technology and establishing 3D face database.

- 3D facial data is much more reliable than 2D facial data, since it is less affected by posture, illumination, or makeup by collecting more stable & mode essential features, e.g. depth, geometrical characteristic.

- 3D facial data includes not only the texture information of the face, but also the space information of the face, which makes it contain more abundant information.

- Stable face feature in order to realize standardized 3D model with any posture.

- First-selection success rate reaches over 99%
- Time of recognition/authentication less than 0.5 second
- Face recognition based on 3D data will increase by 30-40 percent than 2D face recognition technology.
Integrated VIP Convoy Protection System

Security Team Car  Jamming Vehicle  Accompanying Communication Vehicle (ACV)  Device Carrier

VIP Vehicle  VIP Vehicle

VIP Passenger Car

Integrated VIP Fleet Protection System

Privis Technology Co., Ltd
Airport Information System

- Flight information display system
- Flight information broadcast system
- Check in system
- Boarding system
- Security check system
- Air Traffic control system
- Tower simulator system
- Arrival/departure system
- Airport Surface Movement Surveillance

Privis Technology Co., Ltd
IP-based Multi-media Command/Dispatching System
Digital forensics, refers to carry on the acquisition, identification, preservation, analysis and archiving to the digital evidence materials, and make it as a basis which can prove the fact. Digital forensics laboratory (DFL) is where forensic personnel work on the medium acceptance and preview, evidence fixed, remote survey, data recovery, password cracking, forensic analysis, evidence storage, process recording and file archiving management. Digital forensics must follow the well-defined, clear, flexible and elastic method and process, performing computer data collection, analysis and display. The final purpose is to achieve judicial forensics related data. The other important function of the Lab is that forensics talents can be cultivated here through tailored training program.

**Computer Forensic**
CDF (Computer Digital Forensics) is a forensic data recovery tool which can help user acquire and recover data from both good and damaged storage medium simply and easily, which supports various medium, including HDD, flash.

**Mobile Forensics**
MDF (Mobile Digital Forensics) is a forensically sound system for acquiring, recovering, analyzing and classifying data from mobile devices such as Android phone, tablet, iPhone & iPad.

**Video Forensics**
VDF (Video Digital Forensics) is a forensically sound system for video extraction, recovery and analysis from CCTV DVRs of video surveillance system during investigation.

**Forensic Platform**
The forensic platform provides user with an easy-to-operate platform based on advanced ergonomics, which integrates all necessary forensic tools, and various high-speed interfaces to connect with different medium.
THANK YOU