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The Voice over Internet Protocol (VoIP) last challenge: Security and Data Protection

Workshop

Network and Information security: political and
technical challenges

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Agenda

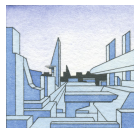
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- Why Voice over Internet Protocol
- Security tasks: preserve C.I.A.
- Emergency calls issues
- VoIP Security State-of-the-Art
- VoIP Security next challenges



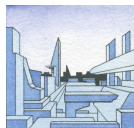
- Total Cost of Ownership (TCO)
 - VoIP based solutions provide an attractive TCO compared to a traditional PBX based one
- IP convergence: towards next generation *IP based* networks
 - Network convergence: IP Multimedia Subsystem (IMS)
 - Service convergence: MoIP – Multimedia (Text, Voice, Video, Data, Applications, Fax, etc.) over IP
 - Application convergence: Universal Multimedia Access (UMA)



Security tasks: preserve C.I.A.

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- Data network risks
 - Viruses, Worms, Trojan horses
- Confidentiality
 - VoIP sniffers (*eavesdropping*)
 - Phishing (*CLI spoofing, Enum poisoning*)
- Integrity
 - Man-in-the-middle attack
 - Voice alteration (*hijacking*)
- Availability
 - Denial of Service threats
 - VoIP Spam



- 100% guarantee?
 - Call connection in case of loss of power or poor QoS level
- Call location
 - ALI (Automatic Location Identifier)
 - Address provisioning at service registration
 - Communications Time Latency (NSA patent)



- IP encryption on network infrastructure
 - VoIP VPN Routers

- Encrypted IP soft-phone
 - Skype encryption
 - Zimmerman's zFone



- IP encrypted smartphone
 - Less environmental threats
 - Computational power required
- VoWLAN security
 - Re-authentication in handover lowers QoS
- How to Secure VoIP traffic
 - Standard security model for VoIP systems
 - Secure the infrastructure



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Thank you

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