



International Telecommunication Union

Next Generation Network Security

(Direction and Status of FG NGN Work)

Igor Faynberg, Bell Labs/Lucent
Technologies,
Leader of FGNGN Security Capability (WG 5)

Outline

- o The ITU-T Focus Group on Next Generation Networks (FGNGN): Reason for existence, goals, deliverables, structure
- o Relation to work of other SDOs
- o Immediate needs
- o Back-up materials

ITU-T NGN Focus Group



ITU-T

- ITU-T created NGN Focus Group to address Telecommunication industry's urgent need for specifications for NGN in May, 2004. First results of NGN FG (NGN Release 1) are expected in May, 2005
- *"Through this initiative ITU-T is bringing all players together in an environment where they can create truly global specifications for the service-aware network of the future, to deliver dynamic, customized services on a massive scale."*
Herb Bertine, ITU-T SG 17 Chairman
- ITU-T recognizes that the need for global standards is critical as most operators expect to move to an IP infrastructure



ITU-T

Major Goals

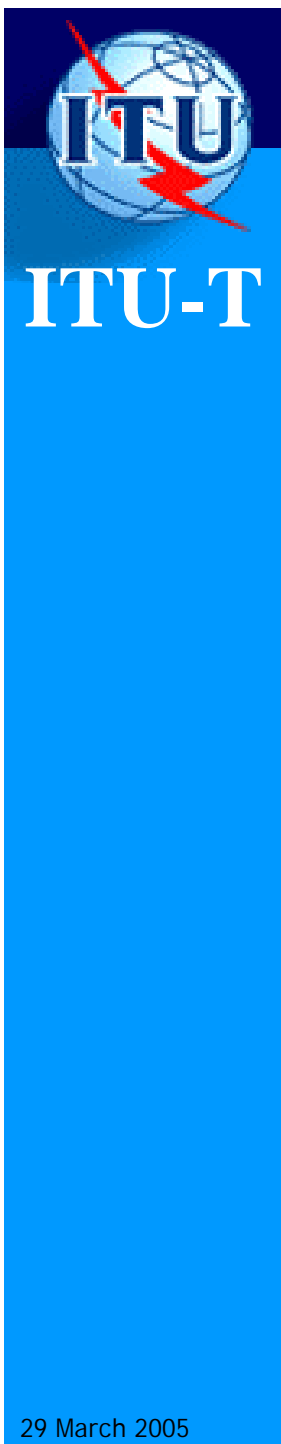
- *Nomadcity*—seamless communications in a multi-service, multi-protocol, and multi-vendor environment
- Rich set of applications (unified messaging, home networking, etc.)
- International Standards that unify the regional and topical work on services, network and systems architectures for the next generation of IP-enabled communication systems

Structure of the NGN FG

Chairman: Chae-sub Lee, KT, Korea

Vice-Chairmen: Dick Knight, BT, UK and **Ronald Ryan**, Nortel Networks, USA

WG	Area	Leaders	Affiliation
WG 1	SR (Service Requirements) Group	M. Carugi	Nortel Networks S.A., France
		B. Hirshman	Sprint Corporation, USA
WG 2	FAM (Functional Architecture and Mobility) Group	K. Knightson	Industry Canada
		T. Towle	Lucent Technologies, USA
		N. Morita	NTT Corporation, Japan
WG 3	QoS (Quality of Service) Group	H. Lu	Lucent Technologies, USA
		K. Mainwaring	Cisco Systems, Sweden
		H. Kim	KT, Korea

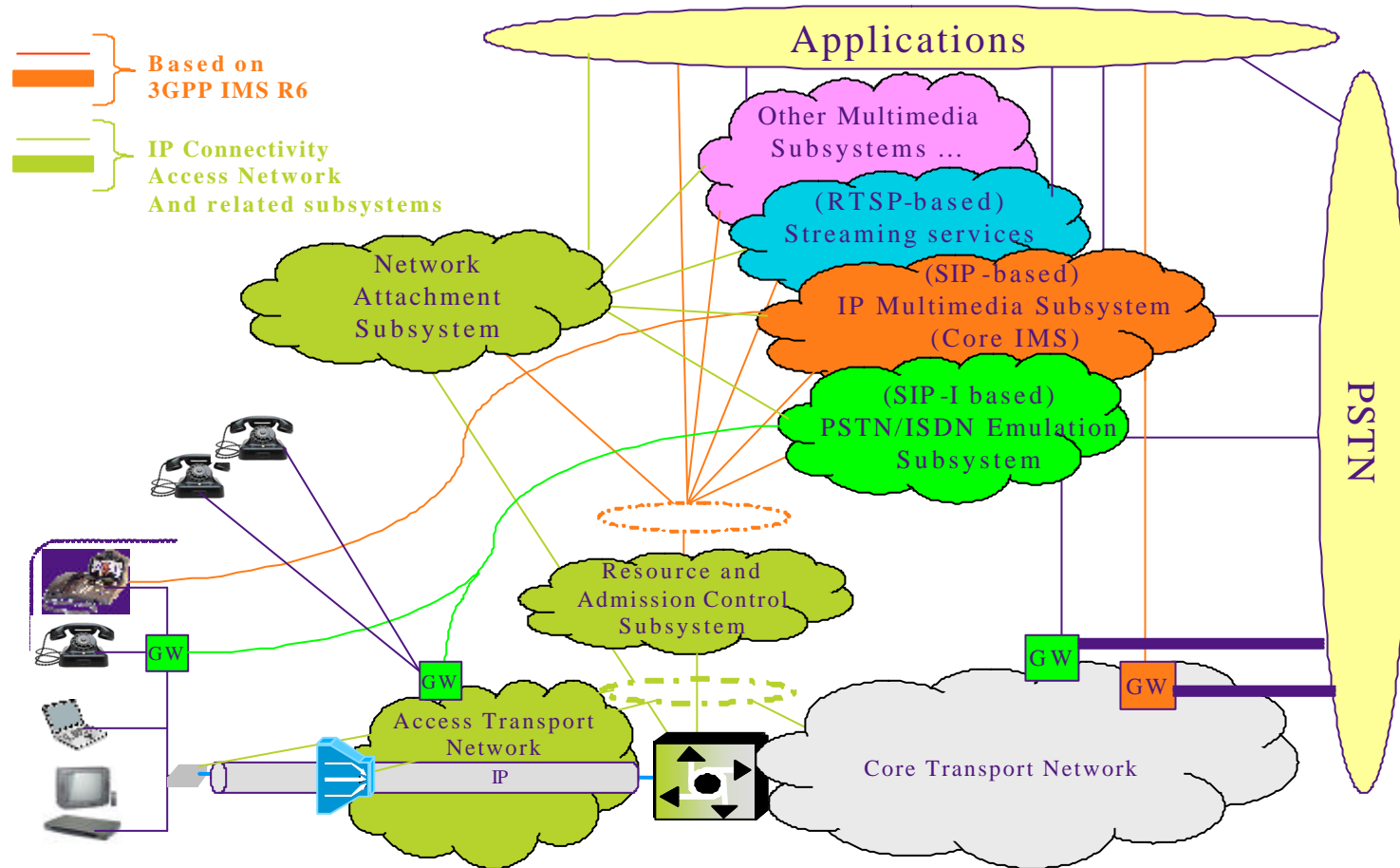


Structure of the NGN FG (cont.)

WG	Area	Leaders	Affiliation
WG 4	CSC (Control and Signalling Capability) Group	R. Muench	Alcatel SEL AG, Germany
		C. Buyukkoc	ZTE Corporation, USA
		W. Feng	Huawei Technologies, China
WG 5	SeC (Security Capability) Group	I. Faynberg	Lucent Technologies, USA
WG 6	Evo (Evolution) Group	G. Koleyni	Nortel Networks, Canada
		D. Fan	SCNB Telecom. Standards, China
WG 7	FPBN (Future Packet-based Bearer Networks) Group	J. Lintao	MII of China
		D. Meyer	Cisco Systems, USA
		K. Dickerson	BT, UK

ITU-T Cybersecurity II Symposium
29 March 2005, Moscow, Russian Federation

NGN Subsystem Architecture Overview



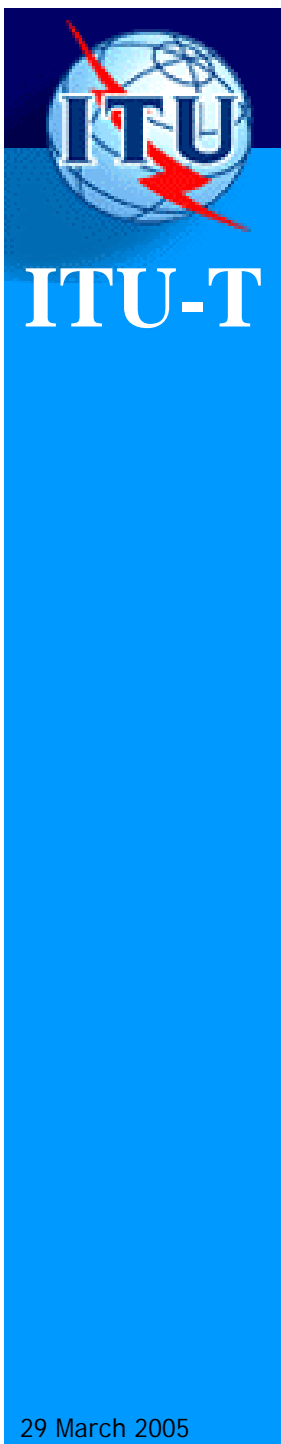
ITU-T Cybersecurity II Symposium
29 March 2005, Moscow, Russian Federation



ITU-T

Highlights of the working document *Guidelines for NGN security*

- Overview of relevant global security standards
- **Security in NGN**
 - NGN threat model (based on ITU-T X.800 and X.805 Recommendations)
 - Security risks in NGN
 - Selection of OSI layers for security provisions
 - Granularity of protection
- **Security Dimensions and Mechanisms (based on ITU-T X.805)**
 - Access control
 - Authentication
 - Non-repudiation
 - Data confidentiality
 - Communication security
 - Data integrity
 - Availability
 - Privacy
- **Elements of security framework for NGN**
 - *Access security: Authentication, Authorization, and Accounting* framework for NGN
 - Security framework for Mobility in NGN
 - Link-layer security for NGN



Highlights of the working document *Guidelines for NGN security (cont.)*

- Security framework for home networks
- Security framework for end-to-end data communication
- Security framework for intrusion-tolerant NGN
- Reference Security Model for NGN
- Components of the NGN security
 - IP-CAN security
 - Network domain security
 - IMS access security
 - Application security
 - Security of Open Service/application Framework in NGN
- IMS security mechanisms based on the use of *Universal Integrated Circuit Card (UICC)*

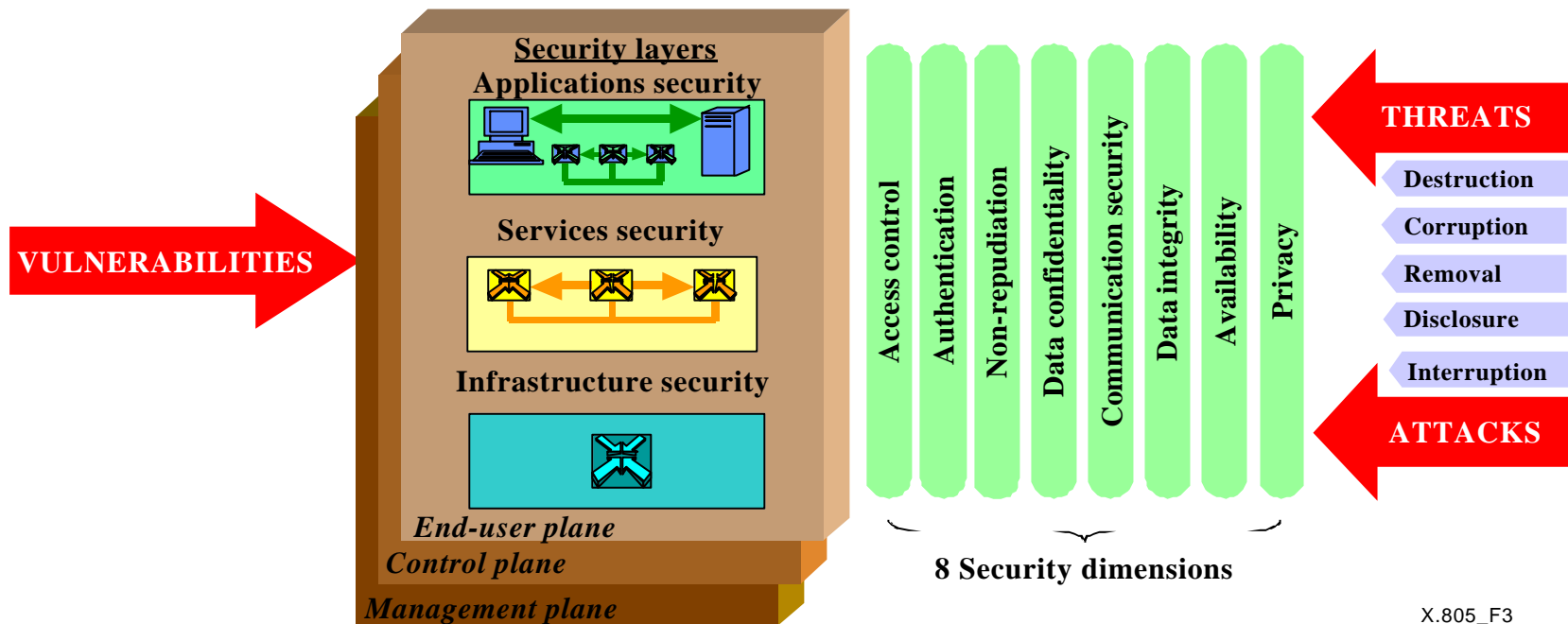


ITU-T

Highlights of the working document *NGN security requirements for Release 1*

- Security requirements (general considerations based on the concepts of X.805)
- Security requirements for Transport Stratum
 - Home Network domain
 - Home Network to IP-CAN domain interface
 - The IP-CAN
 - IP-CAN to Core Network interface
 - Core Network
- Security requirements for Service Stratum
 - IMS domain
 - Transport stratum to IMS domain
 - IMS to Application domain security
 - Application domain security
 - Home Network to Application domain security
 - Home Network-to-IMS domain security
 - Open service platform to valued-added service provider security

ITU-T Recommendation X.805 Security Architecture—the foundation of NGN Security studies

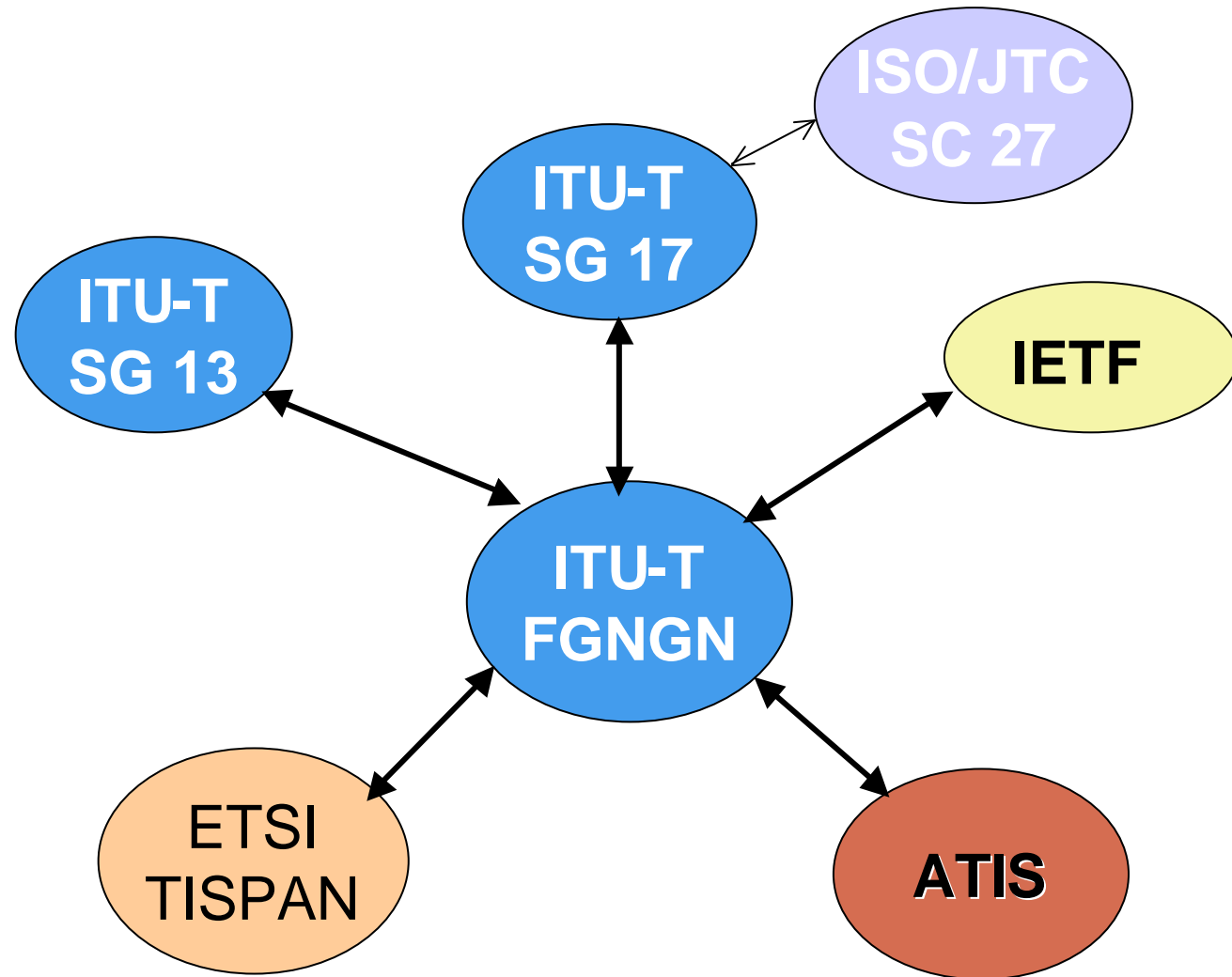


Key Tasks

Key Work Items:

- **Resolve how IMS is to handle 3GPP vs. 3GPP2 Differences**
- **Key distribution (for end-users and network elements)**
- **AAA for DSL access and QoS authorization**
- **Hop-by-hop SIP security vs. end-to-end**
- **Establish standard for VoIP Firewall traversal**
- **Identity management**
- **SPAM control (voice messaging)**
- **Convergence with IT security (firewall traversal for VoIP)**

Relation to work of other SDOs



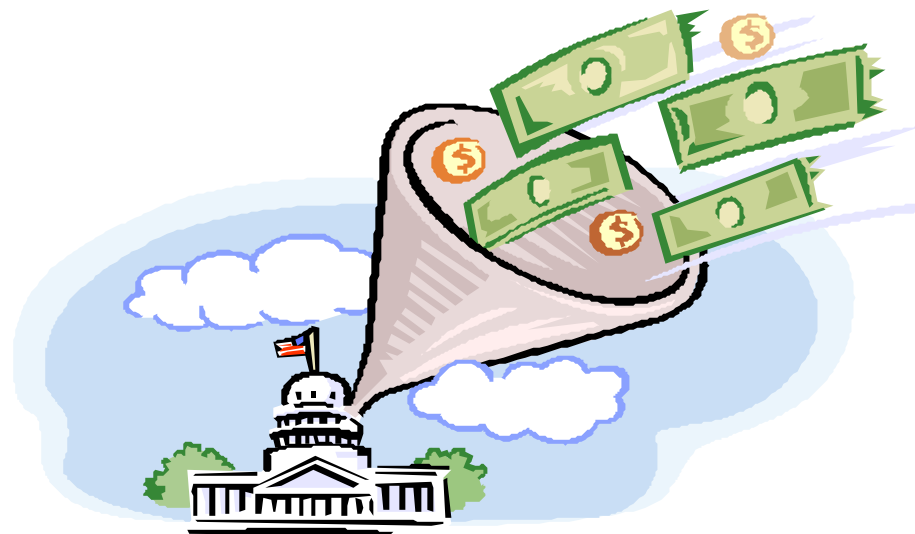
ITU-T Cybersecurity II Symposium
29 March 2005, Moscow, Russian Federation



ITU-T

Immediate Needs

CONTRIBUTIONS!



ITU-T Cybersecurity II Symposium
29 March 2005, Moscow, Russian Federation