



# Indo-European dialogue on ICT standards & Emerging Technologies

*(Growth, Profitability & Nation Building)*

13-14th March 2014 • New Delhi, INDIA

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## Indian Issues & Challenges on ICT Security



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# ***SECURITY***



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# India & Cyber Security

- **India is facing cyber threats from**
  - **cyber terrorism**
  - **cyber warfare**
  - **cyber espionage**
  
- **These threats are a matter of concern for the National Security of India for the Financial, Economic, Social and Political environment of India**
  
- **Critical Infrastructure**
  - **India is also facing continuous and serious cyber threats that have been endangering the critical infrastructures of India.**
  - **There is an urgent need to strengthen critical infrastructure protection in India.**
  
- **Urgent need for skills development for enhancing cyber security in India**



# National Cyber Security Policy – July, 2013

## *Strategies*

- Creating a secure cyber eco-system
- Creating an assurance framework
- Encouraging open standards
- Strengthening the Regulatory framework
- Creating mechanisms for security threat early warning, vulnerability management and response to security threats
- Securing E-Governance services
- Protection and Resilience of Critical Information Infrastructure
- Promotion of Research & Development in Cyber Security
- Reducing supply-chain risks
- Human-resource development
- Creating cyber security awareness
- Developing effective Public Private Partnerships
- Information Sharing and Co-operation
- Prioritized approach for Implementation



# Testing & Certification

## *the update*

- Indian Government has mandated testing of telecom network equipment against relevant contemporary standards like ISO/IEC 15408, ISO 27000 series standards, 3GPP and 3GPP2 security standards, Common Criteria Labs testing in case of ISO/IEC 15408 standards.
- CCRA: India approved as CCRA in September, 2013. STQC conducted two workshops. Work on cPPs to be done.
- 3GPP: Indian Government officials attended the 3GPP (SECAM) meeting in October, 2013. They are satisfied with the approach being taken in this forum.
- From July 2014 onwards, the testing is to be done by authorized and certified labs in India. Industry is in talks with vendors to set up these labs in India.



# Testing & Certification

## *the update*

- **Government : Telecom Engineering Centre (TEC) considering setting up Telecom Test Lab, and STQC accrediting CCTLs.**
  
- **Various Government initiatives:**
  - **NCIIPC : **mandates** - audit, certification, secure applications/software development process from design to retirement.**
  - **Telecom Security Board**
  - **Telecom Security Network Audits**
  - **Telecom Security Council of India (TSCI) : ?**
  
- **Telecom Equipment/Devices Certification : Based on SECAM (3GPP). How does the equipment stand up in the environment in the Telecom NW ?**
- **Cloud and Applications: Security jurisdictions and regulatory issues.**



# Proposed Telecom Test Lab (TTL)

## Estimated Timelines:

**Phase 1 = Networks Lab : T0 + 180 days**  
**Device Test Lab : T0 + 150 days**

## Definitions:

- **Telecom Test Lab = Networks Lab + Device Test Lab**
- **T0 = Business Case Approval + GO from DoT/NSA**



# List of STQC Certified Products

In India - Following products have been certified by STQC Certification Services under IC3S.

<b>Product Name</b>	<b>Network Operating System Software(NOS), Comware Ver 5.2 Release 1002(CC), running on MSR20, MSR 30, MSR 50, SR 66 and SR 88 series routers</b>
<b>Sponsor</b>	Hewlett Packard India Ltd.
<b>Developer</b>	H3C Technologies Co. Ltd
<b>Assurance Level</b>	EAL 2
<b>Certificate No</b>	<a href="#">STQC/CC/0708/05/1101</a>
<b>Certification Report</b>	STQC/CC/0708/05/CR Version 1.3 dated 31 December 2010
<b>ST Ref</b>	<a href="#">HP Routers EAL2 Security Target, Version 1.07, Prepared on August 2010, by Hewlett-Packard</a>
<b>CCTL</b>	STQC IT Services, ERTL(EAST), Kolkata





# List of STQC Certified Products – Contd.

<b>Product Name</b>	<b>Fort Fox Hardware Data Diode (FFHDD), Version: FFHDD2</b>
<b>Sponsor</b>	FOX-IT BV
<b>Developer</b>	FOX-IT BV
<b>Assurance Level</b>	EAL 4+ (augmented with AVA_VAN.4 and ALC_DVS.2)
<b>Certificate No</b>	<a href="#">STQC/CC/11-12/06/1202</a>
<b>Certification Report</b>	<a href="#">STQC/CC/11-12/06/CR Version 1 dated 18 December 2012</a>
<b>ST Ref</b>	<a href="#">Fort Fox Hardware Data Diode Security Target Common Criteria FFHDD - EAL4+ Ver 2.06 Dated 23 September 2011</a>
<b>CCTL</b>	STQC IT Services, ERTL(EAST), Kolkata



# List of STQC Certified Products – Contd.

- The following products are currently undergoing evaluation within the Indian Common Criteria Evaluation and Certification Scheme.

Product	Vendor	EAL	CCTL
BOSS GNU/Linux Version 3.xx	CDAC	EAL 2	STQC-IT, Kolkata
SEOS Version 11.1	Ericsson	EAL 3+	STQC-IT, Kolkata



# List of Telecom & ICT Products Risk Rating

S No	Asset Class	Types of Assets	Asset Criticality Value/ Applicable security certification
1	BTS / Node B	BTS, Node B	Medium
2	BSC/ RNC	BSC,RNC	Low
3	E-node B	E-nodeB	Medium
4	Voice Core	MSC/MSS & CS MGW, GMSC,TSC,STP(signalling transfer point) , SSP,ewsd class 5 switches (TDM),ewsd class4 switches( TDM),ILD TDM switches(class 4 switches) or PABX,EPABX	Low
5	Packet Core	SGSN,SASN,GGSN,Firewall,DNS,W AP GW, MME, Serv GW,PDN GW	High
6	Subscriber DB	HSS / HLR & AUC,EIR , SDP , DWS/CRS, CBP,PCRF,CAS	High
7	VAS	IVR, MOD, CRBT, DP6/ DP8, ECDS, MCA/Voice Call, Mobile TV, MOD, Roaming, Single IVR, SMSC, USSD Gateway,VS,UVC,IPCC,URP	Medium
8	VoIP/ Converged Network	Next generation network / IMS	Medium
9	OSS ( provisioning )	Service Provisioning & activation systems (for example: EMA(ericson multi activation) ,metasolv, MINSAT (Administrative System - Mobile IN Service Administration , Roamware, BMP)	High
10	OSS (n/w management)	Network management tools & systems	Low



# List of Telecom & ICT Products Risk Rating

11	Business Applications	Mediation(like EMM) & Billing , CRM , AIR, GFEF	High
12	AAA	AAA servers , LDAP Servers	Medium
13	Hub (Headend ) / Teleport	HSP, Modulators, Receivers, CSU/DSU, multiplexers, Apps and broadcast (DSLAM ,etc),CMTS	Medium
14	HUB (antenna )	Antenna (Tx/Rx), Uplinking system, Receiving antenna system, Converter, Amplifiers, distribution system	Low
15	ODU	Antenna (Tx/Rx), Receiving antenna, Amplifier, Splitter	Low
16	IDU	MODEMs & STB, Modulators at customer premises	Medium
17	Customer Access Equipment	ADSL, DSLAM, MSAN,DLU,DLC,ADSL,Green Tag,TAG,GPON	High
18	Transport(TDM)	SDH/SONET/PDH,DWDM,CWDM, 40GT, All Transmission equipments( also includes submarine cable station elements), DXC (digital cross connect)	Low
19	Transport(IP)	MPLS & Metro Ethernet (P, PE. CE) ,CEN,BRAS,backbone,Metro core, routers	Medium
20	Access Core Equipment	DSL switches, Microwave , firewall, Internet DNS,IP switches,,routers,enterprise switches	Medium



# List of Telecom & ICT Products Risk Rating

S No	Asset Class	Types of Assets	Asset Criticality Value/ Applicable security certification
21	Service & Charging Control Point	CCN , SCP & USAU	Low
22	LI	All LI equipments	Low
23	Sim Card / Personalisation	All Prepaid & Post paid SIM Cards issued to a customer	High
24	Mobile/Handheld terminals: Mobile devices and terminals (M2M devices, data dongles)	All devices using baseband/communication processors for voice and/or voice+data	High/ 3GPP/3GPP2 or as applicable
	Security Devices	All UTM / encryption devices	High
	Access control devices	BSC, Access managers, authentication systems , Network access Control	High/ CC-EAL2-EAL 4
	Boundary protection devices and systems	Firewall, VPN appliances, email and web gateway, routers, switches, Peripheral switch	High/ CC-EAL2-EAL 4
	Data Protection	DLP suites, Policy managers, encryption software,	Medium/ CC-EAL2-EAL 4
	Databases / Application Infrastructure	DBMS, App Server, Web server, SSLs	High/ CC-EAL2-EAL 4



# List of Telecom & ICT Products Risk Rating

Detection Devices and Systems	End point protection systems, HIPS, VA /PT systems, IDS/IPS, Antivirus	High/ CC-EAL2-EAL 4
ICs, Smart Cards and Smart Card-Related Devices and Systems including Biometric	Smart card solutions, PKI/KMI	Medium/ CC-EAL2-EAL 4
Key Management Systems	Certificate management	Medium/ CC-EAL2-EAL 4
Multi-Function Devices	Copier/Printer/scanner, PBX	Low/ CC-EAL2-EAL 4
Network and Network-Related Devices and Systems	Network devices, Ethernet Solutions, Traffic Manager, MM-BSC Network Switches & Routers, IPSec Routers and switches, Secure messaging	High/ CC-EAL2-EAL 4
Operating Systems	Operating system	TBD/ CC-EAL2-EAL 4





**Thank You !**

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