Improving cPP Development with Users Participation

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Overview

- History
- Statistics
- Benefits
- Cryptography
- Conclusion

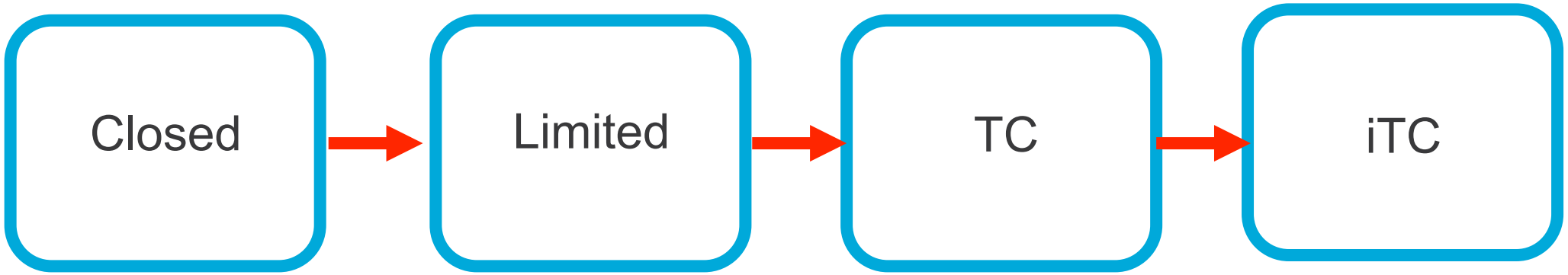
History

Remember the old BRPP and MRPP?

- Created in a vacuum (Really no inputs or feedbacks from industry)
- No public invitation for collaboration (My way or the highway?)
- Hard to maintain and keep up with the changing technology
- Conflicting requirements between PPs
  - For example, MRPP Router vs MRPP Firewall vs VPN MRPP

Disclaimer: Based on personal experience. Show progress.

PP Development Progression



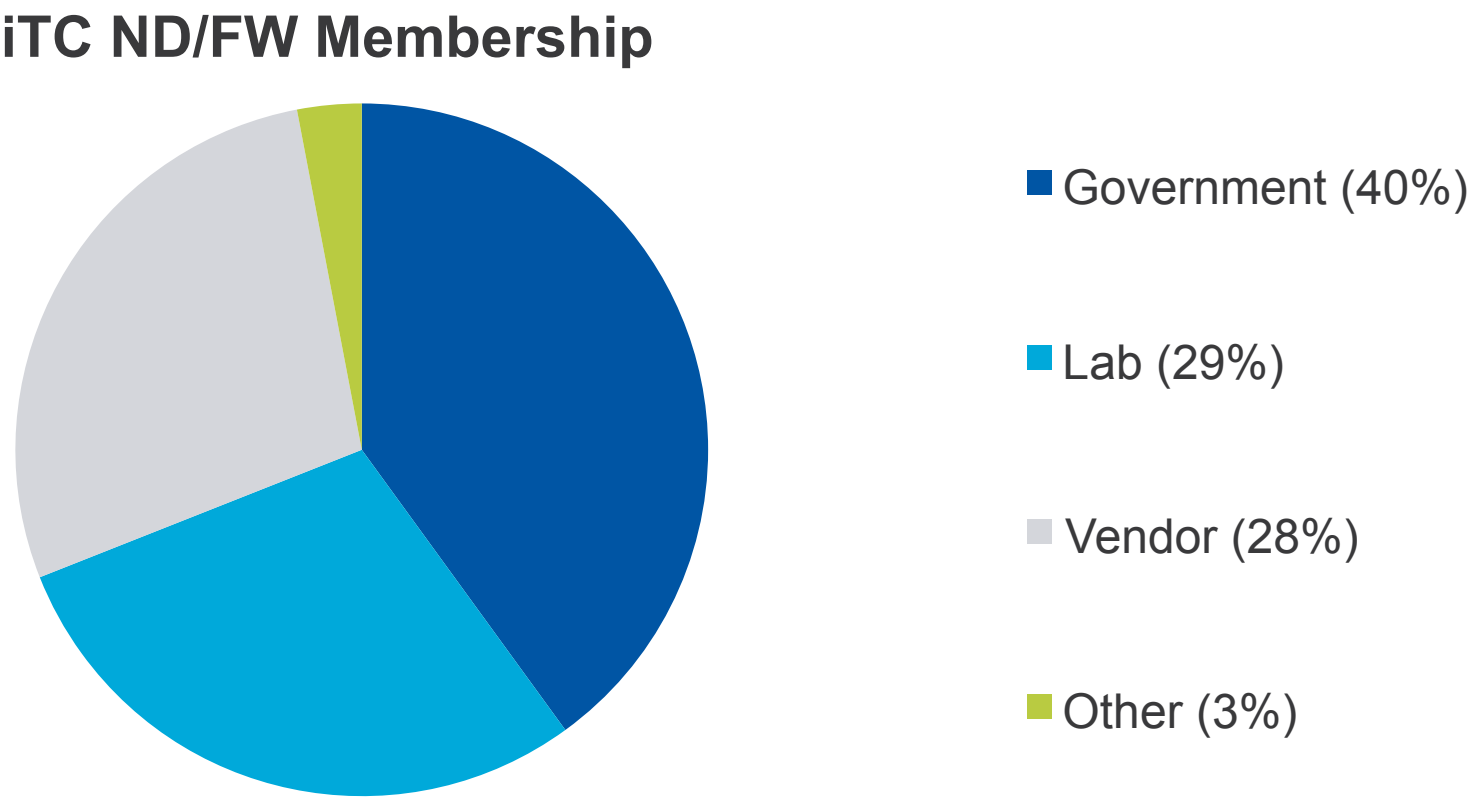
International Technical Community

- International Technical Communities (iTCs) → collaborative protection profiles (cPPs)

"Membership of an iTC brings together many skills and backgrounds needed for the creation of an effective cPP and its Supporting Documents[2]."

2. https://www.commoncriteriaportal.org/communities/technical_communities.cfm

Network iTC Statistics



More WORK!

What are the benefits?

What do individuals get from iTCs?

- Regular discussions with colleagues outside their own organisation
- Sharing of knowledge
- Learning about technical and procedural aspects of cPPs and evaluation/certification
- Satisfaction from contributing to something bigger than the ‘home team’

What do organizations get from iTCs?

- Direct contact and discussion with requirement authors and risk owners
- Greater understanding of cPP requirements and how they are to be evaluated
- Understanding of emerging requirement areas
- Opportunities to challenge and review requirements before they are adopted

Cryptography

Cryptography Requirements (from NDcPP)

Cryptographic Key Management

- FCS_CKM.1 – Generation
- FCS_CKM.2 – Establishment
- FCS_CKM.4 – Destruction

Cryptographic Operations

- FCS_COP.1 – Encryption/ Decryption, Signature Generation/Verification, Hashing, HMAC.

Random Bit Generation

- FCS_RBG_EXT.1 – Approved DRBG and entropy source

Cryptographic Protocols

- FCS_HTTPS
- FCS_TLS
- FCS_SSH
- FCS_IPSEC

Improvement Examples (part 1)

- Reference international standards to make cPP more internationally accepted

  For example

  - FIPS PUB 197 → ISO 18033-3
  - FIPS PUB 180-3 → ISO/IEC 10118-3:2004 and ISO/IEC 9797-2:2011
  - NIST SP 800-90 → ISO/IEC 18031:2011
- Adding AES CTR mode and not making CBC mandatory

Improvement Examples (part 2)

- Addition of FCS_CKM.2 which was not in NDPP
  - Specify the Approved key establishment algorithms
- Clarify zeroization requirements
  - No read-verify
  - Allow for other bits (non-zero) to be used
- Approved DRBG
  - Remove ANSI X9.31 Apendix 2.4 using AES
  - Remove Dual_EC_DRBG (any)

Future Improvement or Challenge?

- FFC domain parameters and RFC precomputed
- FCS_CKM.4 – beyond documentation, testing, when destroy
- Inclusion of non-NIST ECC Curves
- Additional algorithms for cryptographic key generation
- TLS tests clarification
- Addition of TLSv1.3
- NTP requirement

Conclusion

We believe with more users providing feedbacks in the cPP development processes, they can improve and influence the security requirements and assurance activities greatly.

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