STUDY GROUP 17

TD 1164

TELECOMMUNICATION STANDARDIZATION SECTOR

STUDY PERIOD 2009-2012

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TEMPORARY DOCUMENT

Source: Co-convenors, CG-CYBEX

Title: Report of the correspondence group on the coordination of the cybersecurity

information exchange framework (CG-CYBEX), Apr – Nov 2010

At the SG 17 meeting, Geneva, Sep 2009, this correspondence group (CG) was created for "a) development of the overall X.cybex Framework, and b) coordination of the array of related framework work items." See TD 0565R1. The CYBEX CG was a successor to the CG on Trusted Exchange of Network Digital Forensics (TXNDF). See TD410. The CG is required to provide a report of its activities to each Q.4/17 meeting during 2009 and 2010. An initial report was provided to the April, 2010, meeting. See TD798R2. This report covers the subsequent interim period from Apr-Nov 2010.

Activity

Participants. The 66 Group participants on 6 Nov 2010 in domain order are:

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Correspondence. As indicated in its Terms of Reference, the CG interactions included email exchange via the email list and teleconference meetings. The email list archive between Apr-Nov 2010 contains 94 messages, listed chronologically, below.

- **booting up the list**, Tony Rutkowski, 05/19/2010
 - O RE: booting up the list, Dick Brackney, 05/19/2010
 - O Re: booting up the list, Youki Kadobayashi, 05/19/2010
- Q4 interim meetings, Tony Rutkowski, 05/19/2010
 - O RE: Q4 interim meetings, abbie barbir, 05/19/2010
- cybex telecon on Thursday, Tony Rutkowski, 05/25/2010
 - O CYBEX presentation slides, Takeshi Takahashi, 05/27/2010
- RE: CYBEX presentation slides, Mike Hird, 05/28/2010
 - O <Possible follow-up(s)>
 - O Re: FW: CYBEX presentation slides, takeshi_takahashi, 05/31/2010
- Re: CYBEX presentation slides, Damir Rajnovic, 06/01/2010
 - O Re: CYBEX presentation slides, Tony Rutkowski, 06/01/2010
 - O RE: CYBEX presentation slides, Takeshi Takahashi, 06/02/2010
 - O Message not available
 - Re: CYBEX presentation slides, Damir Rajnovic, 06/02/2010
- CYBEX Overview for CTO Cybersecurity Forum, Mike Hird, 06/07/2010
 - O Re: CYBEX Overview for CTO Cybersecurity Forum, Tony Rutkowski, 06/07/2010
- No CYBEX telecon tomorrow, Tony Rutkowski, 06/09/2010
 - O RE: No CYBEX telecon tomorrow, Dick Brackney, 06/09/2010
 - O Re: No CYBEX telecon tomorrow, Gregg Schudel, 06/10/2010
- Update on Robert A. Martin, Tony Rutkowski, 06/10/2010
- Fwd: Cybex Initiative, Tony Rutkowski, 06/11/2010
 - O Re: Fwd: Cybex Initiative, Damir Rajnovic, 06/23/2010
 - O <Possible follow-up(s)>
 - O Re: Fwd: Cybex Initiative, Heung Youl YOUM(염증열), 06/12/2010
 - Re: Fwd: Cybex Initiative, Tony Rutkowski, 06/12/2010
- SCAP for VoIP, Tony Rutkowski, 06/11/2010
- CYBEX telecon on Thursday, Tony Rutkowski, 06/23/2010
 - O Re: CYBEX telecon on Thursday, Youki Kadobayashi, 06/24/2010
 - Re: CYBEX telecon on Thursday, Martin, Robert A., 06/24/2010
 - Re: CYBEX telecon on Thursday, Youki Kadobayashi, 06/24/2010
- ISO draft on 'digital forensics', Damir Rajnovic, 06/25/2010
- ETSI TISPAN CYBEX related work, Tony Rutkowski, 06/30/2010
- CVRF presentation given at FIRST, Damir Rajnovic, 07/01/2010
 - O Re: CVRF presentation given at FIRST, Tony Rutkowski, 07/01/2010
- definition of CIRT, Tony Rutkowski, 07/12/2010
- [CG-CYBEX] CYBEX CG teleconference Thursday, Tony Rutkowski, 08/16/2010
 - $\bigcirc \qquad <\! Possible \ follow\text{-up}(s)\! > \\$
 - O [CG-CYBEX] CYBEX CG teleconference Thursday, Tony Rutkowski, 08/24/2010
- [CG-CYBEX] Reminder CYBEX CG teleconference in an hour, Tony Rutkowski, 08/19/2010
 - O [CG-CYBEX] Tokyo interim meeting info, Takeshi Takahashi, 08/19/2010
 - O Re: [CG-CYBEX] Reminder CYBEX CG teleconference in an hour, Youki Kadobayashi, 08/19/2010
- [CG-CYBEX] additional hotel information, takeshi_takahashi, 09/03/2010
- [CG-CYBEX] Another ontology published, Damir Rajnovic, 09/09/2010
 - o RE: [CG-CYBEX] Another ontology published, Thomas.Millar, 09/29/2010
- [CG-CYBEX] CYBEX CG teleconference Friday, Tony Rutkowski, 09/15/2010
- [CG-CYBEX] CYBEX CG teleconference Friday (confirmed), Tony Rutkowski, 09/16/2010
 - [CG-CYBEX] Re: CYBEX CG teleconference Friday (confirmed), Miho Naganuma, 09/16/2010
- [CG-CYBEX] agenda addition ncns relationships, Tony Rutkowski, 09/17/2010
- [CG-CYBEX] CYBEX CG teleconference Friday (NOT Thursday), Tony Rutkowski, 09/29/2010
- [CG-CYBEX] ENISA report, Tony Rutkowski, 10/01/2010

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- [CG-CYBEX] Q.4/17 Interim Meeting, Tokyo, registration, Takeshi Takahashi, 10/01/2010
 - O [CG-CYBEX] Re: [T17Q4] Q.4/17 Interim Meeting, Tokyo, registration, Abbie Barbir, 10/02/2010
 - O [CG-CYBEX] RE: [T17O4] O.4/17 Interim Meeting, Tokyo, registration, Mike Hird, 10/04/2010
 - [CG-CYBEX] CYBEX newsletter published, Takeshi Takahashi, 10/12/2010
 - Re: [CG-CYBEX] CYBEX newsletter published, Damir Rajnovic, 10/12/2010
- [CG-CYBEX] RE: Q.4/17 Interim Meeting, Tokyo, registration, Takeshi Takahashi, 10/05/2010
- [CG-CYBEX] IETF SCAP interest listerve page, Tony Rutkowski, 10/14/2010
- [CG-CYBEX] revised X.cybex following today's editing, Tony Rutkowski, 10/14/2010
- [CG-CYBEX] ENISA and CERTs, Mike Hird, 10/14/2010
 - O Re: [CG-CYBEX] ENISA and CERTs, Tony Rutkowski, 10/14/2010
 - O Re: [CG-CYBEX] ENISA and CERTs, Damir Rajnovic, 10/14/2010
- [CG-CYBEX] IETF SCAP interest initiative explanation, Tony Rutkowski, 10/14/2010
- [CG-CYBEX] Definition Incident, Mike Hird, 10/14/2010
 - <Possible follow-up(s)>
 - O Re: [CG-CYBEX] Definition Incident, mike harrop, 10/14/2010
 - Re: [CG-CYBEX] Definition Incident, 武智 洋, 10/15/2010
 - **Re:** [CG-CYBEX] Definition Incident, mike harrop, 10/15/2010
 - O Re: Re: [CG-CYBEX] Definition Incident, Heung Youl YOUM(연흥열), 10/15/2010
- [CG-CYBEX] Improving Cybersecurity, Mike Hird, 10/18/2010
- [CG-CYBEX] PP-10 Side Event #4 Cybersecurity, Mike Hird, 10/18/2010
 - O Re: [CG-CYBEX] PP-10 Side Event #4 Cybersecurity, Tony Rutkowski, 10/18/2010
- [CG-CYBEX] FW: PP-10 Side Event #4 Cybersecurity, sebek, 10/18/2010
- [CG-CYBEX] Latest version of draft Rec. ITU-T X.cybex [X.1500], Tony Rutkowski, 10/22/2010
- [CG-CYBEX] CYBEX CG teleconference Friday, Tony Rutkowski, 10/27/2010
- [CG-CYBEX] text for Appendix A JVN, Tony Rutkowski, 10/28/2010
- [CG-CYBEX] additions to X.cybex for telecon in 13 hours, Tony Rutkowski, 10/29/2010
- [CG-CYBEX] Re: additions to X.cybex for telecon in 13 hours, takeshi_takahashi, 10/29/2010
 - o [CG-CYBEX] Edits, comment, and additions to X.cybex, Martin, Robert A., 10/31/2010
- [CG-CYBEX] Draft Q.4/17 14-15 Oct 2010 Interim Meeting Report, Youki Kadobayashi, 10/29/2010
- [CG-CYBEX] last CYBEX CG teleconference Thursday, Tony Rutkowski, 11/01/2010
 - RE: [CG-CYBEX] last CYBEX CG teleconference Thursday, Mike Hird, 11/01/2010
 - Re: [CG-CYBEX] last CYBEX CG teleconference Thursday, Tony Rutkowski, 11/01/2010
 - Re: [CG-CYBEX] last CYBEX CG teleconference Thursday, mike harrop, 11/01/2010
 RE: [CG-CYBEX] last CYBEX CG teleconference Thursday, Minard, Julian E, 11/01/2010
 - RE: [CG-CYBEX] last CYBEX CG teleconference Thursday, Thomas.Millar, 11/01/2010
 - Re: [CG-CYBEX] last CYBEX CG teleconference Thursday, Tony Rutkowski, 11/01/2010
 - RE: [CG-CYBEX] last CYBEX CG teleconference Thursday, Thomas.Millar, 11/01/2010
 - Re: [CG-CYBEX] last CYBEX CG teleconference Thursday, Tony Rutkowski, 11/01/2010
 - O <Possible follow-up(s)>
 - O Re: [CG-CYBEX] last CYBEX CG teleconference Thursday, Heung Youl YOUM(염흥열), 11/01/2010
- [CG-CYBEX] X.1500 Rev. 1.0 version, Tony Rutkowski, 11/01/2010
- [CG-CYBEX] X.1500 Rev. 1.1 version, Tony Rutkowski, 11/03/2010
 - O [CG-CYBEX] Re: X.1500 Rev. 1.1 version, Youki Kadobayashi, 11/03/2010
 - [CG-CYBEX] Re: X.1500 Rev. 1.1 version, Martin, Robert A., 11/03/2010
 - [CG-CYBEX] Re: X.1500 Rev. 1.1 version, takeshi_takahashi, 11/04/2010
 - O <Possible follow-up(s)>
 - O FW: [CG-CYBEX] X.1500 Rev. 1.1 version, Minard, Julian E, 11/05/2010
- [CG-CYBEX] TCG relationship, Tony Rutkowski, 11/05/2010

Teleconference meetings. The Group met by teleconference on seven occasions using a telephone bridge provided by Yaana Technologies:

- 27 May 2010
- 24 June 2010
- 19 Aug 2010
- 17 Sep 2010
- 01 Oct 2010
- 29 Oct 2010
- 04 Nov 2010

Results

The Correspondence Group significantly facilitated the CYBEX work through a combination of email exchanges found in the archive and listed above, as well as teleconferences among participants held at intervals during the interim period. The group served as a highly useful means for editors to discuss their work within a larger ensemble of participants, and to discuss and reach a consensus on matters raised during meetings. As drafts were developed, they were placed either in the informal FTP areas for the interim meetings, and then submitted as temporary documents directly to the December SG17 meeting. These agreements concerning the CYBEX are reflected in the Annex to the July eMeeting and October Tokyo Interim Meeting Reports – including especially the Recommendations Planning table below.

In addition to advancing the work, the Correspondence Group played an invaluable role in discovering, outreach, and coordination with the increasing number of CYBEX user communities. Notably - during the Tokyo, Oct 2010 Interim Meeting - the participants became aware of new IETF activity that has a significant relationship to that of Q.4/17. A combination of the work at the meeting and the CG-CYBEX afterward, allowed for developing an initial message directed to the IETF so establish a continuing collaborative relationship as it considers work on security automation tool instantiations. See Appendix A.

The Correspondence Group and its collegial collaboration mechanisms also provided significant assistance to the TSB Director, staff, and representatives in preparing material for several major events such as the CTO Conference, the GSC in Beijing, and the 2010 Plenipotentiary Conference, and other outreach activities among the international organizations, and at industry and national venues.

Pursuant to the new work plan schedule and prioritization that emerged from the extensive dialogue at Tokyo Interim Meeting, X.1500 (CYBEX), X.1520 (CVE), and X.1520 (CVSS) are considered by the CG to be sufficiently stable and mature for a Dec 2010 determination. The remaining work items were set for a determination during 2011-2012 as the work is advanced by the associated development communities, although the production of detailed text for several was deferred because the lack of sufficiently detailed material at present.

Recommendation

Review and adopt the work of the CG. In addition, in view of:

- the significant continuing activity and value of the Correspondence Group in furthering the CYBEX work;
- the substantial work remaining in the 2011-2012 timeframe;
- the emergence of significant CYBEX related activity in external bodies like the IETF (see Appendix A); and
- the stated importance of the CYBEX work at the recent 2010 ITU Plenipotentiary Conference,

the Correspondence Group requests its continuation under the revised Terms of Reference provided in Appendix A.

CYBEX Q4/17 Recommendations Planning. Ref. Doc. Q4-2010-Oct-005R1

Ref.	Title	Editor(s)	Location of text	Status at Interim Meeting	Planned Determ.
X.1500 (X.cybex)	Cybersecurity information exchange framework	Stephen Adegbite, Inette Furey, Youki Kadobayashi, Robert A. Martin, Angela- MeKay, Damir Rajnovic, Gavin Reed, Tony Rutkowski, Gregg Schudel, Takeshi Takahashi	Q4-2010- Oct-Doc- 002R1	Complete with Interim Meeting Revisions	2010-12

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Ref.	Title	Editor(s)	Location of text	Status at Interim Meeting	Planned Determ.
X.1500.1 (X.cybex.1)	An OID arc for cybersecurity information exchange	Tony Rutkowski, Olivier Dubuisson	Q4-2010- Oct-Doc- 007R1	Complete with Interim Meeting Revisions, Q12 review required	2011-04
X.1520 (X.cve)	Common Vulnerabilities and Exposures	Robert A. Martin	Q4-2010- Oct-Doc- 009R1	Complete with Interim Meeting concurrence	2010-12
X.1521 (X.cvss)	Common vulnerability scoring system	Gavin Reid, Damir Rajnovic	Q4-2010- Oct-Doc- 010R1	Complete with Interim Meeting concurrence	2010-12
X.cwe	Common Weakness Enumeration	Robert A. Martin	Q4-2010- Oct-Doc- 011	Substantially complete; requires Interim Meeting review	2011-08
X.cwss	Common Weakness Scoring System	Robert A. Martin	Q4-2010- Oct-Doc- 012	Substantially complete; requires Interim Meeting review	2012
X.oval	Open Vulnerability and Assessment Language	Robert A. Martin	Q4-2010- Oct-Doc- 013	Substantially complete; requires Interim Meeting review	2011-08
X.scap	Security Content Automation Protocol	Robert A. Martin	Q4-2010- Oct-Doc- 014	Agreed to drop and include as use case in X.1500 appendix	none
X.xccdf	Extensible Configuration Checklist Description Format	Robert A. Martin	X.cybex reference	Status review	2012
X.cpe	Common Platform Enumeration	Robert A. Martin	X.cybex reference	Status review	2012
X.cce	Common Configuration Enumeration	Robert A. Martin	X.cybex reference	Status review	2011-08
X.arf	Asset Reporting Format	Robert A. Martin	X.cybex reference	Status review	2012
X.cee	Common Event Expression	Robert A. Martin	X.cybex reference	Status review	2012
X.capec	Common Attack Pattern Enumeration and Classification	Robert A. Martin	Q4-2010- Oct-Doc- 015	Initial text: Interim Meeting Review	2012-02
X.iodef	Incident Object Description Exchange Format	[T. Millar], Tony Rutkowski	Q4-2010- Oct-Doc- 016	Substantially complete: Interim Meeting Review	2012-02
X.maec	Malware Attribute Enumeration and Classification	Robert A. Martin	X.cybex reference	Status review	2012

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Ref.	Title	Editor(s)	Location of text	Status at Interim Meeting	Planned Determ.
X.pfam	Phishing, Fraud, and Misuse Exchange Format	Tony Rutkowski, Igor Polyakov , Yuri Ryazantsev	X.cybex reference	Status review and liaison with APWG required	2011
X.dexf	Digital forensics exchange format	Youn-Hee Gil	Q4-2010- Oct-Doc- 017	Initial text: Interim Meeting Review	2011
X.cyiql	Cybersecurity Information Query Language [formerly X.chirp]	Tony Rutkowski	Q4-2010- Oct-Doc- 018	Initial text: Interim Meeting Review	2011
X.cybex-disc	Discovery mechanisms in the exchange of cybersecurity information	Youki Kadobayashi Takeshi Takahashi	Q4-2010- Oct-Doc- 018, 019	Initial text: Interim Meeting Review	2011-04
X.cybex- beep	Definition of BEEP Profile for Cybersecurity Information Exchange Framework	Youki Kadobayashi	Q4-2010- Oct-Doc- 021	Initial text: Interim Meeting Review	2011-04
X.cybex-tp	Transport protocols supporting cybersecurity information exchange	Youki Kadobayashi, Damir Rajnovic	Q4-2010- Oct-Doc- 022	Initial text: Interim Meeting Review	2011-08

Appendix A – Communication to the IETF scap_interest community

20 Oct 2010, 16:30 hrs EDT Dear all,

At the ITU-T cybersecurity standards group (Q4/17) interim meeting in Tokyo last week, the participants noted the new effort to introduce into the IETF some of the systems assurance standards under the general aegis the SCAP BOF and this interest list.

An effort leveraging the same concepts and underlying standardization work was started within the ITU-T last year among an array of industry and government participants and organizations for outlining ways of sharing and exchanging structured information, that is called the Cybersecurity Information Exchange Framework or CYBEX for short. CYBEX identified the entire array of information assurance, incident response, forensics and trust specifications - most of which were in use or under development in the respective communities - as part of this Framework. The CYBEX framework is scheduled for approval as as Recommendation ITU-T X.1500, together with CVE and CVSS as X.1520 and X.1521 respectively. Many others are in various stages of maturity. The editors of X.1500 include US DHS, Japan's NICT, MITRE, Microsoft, FIRST, Cisco, and Yaana Technologies.

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Part of that framework of course includes the use of security automation schemas such as SCAP as a means to facilitate systems, services, devices of all kinds to make them "measurably" secure as to potential vulnerabilities and threats. The U.S. federal system implementation of SCAP is included as an example in the X.1500 appendix, as is a similar implementation in Japan known as JVN.

The vision includes the potential development, use, and evolution of innumerable numbers of public and private security automation schemas for innumerable systems, services, and devices – similar in many ways to the deployment of network management MIBs over the past 25 years. The IETF is one of many standards bodies that should be developing security content automation schemas, and the BOF list plus a scheduled event at the upcoming Beijing IETF meeting next month is an important step in that direction.

This development was discussed at some length at the Tokyo Interim Meeting and there was significant enthusiasm for working with IETF (and many other standards bodies) in developing these implementations for their standards based protocols and services. Also demonstrated in Tokyo was the rather remarkable work demonstrated by the Japan network security community of a RDF-based discovery mechanism for CYBEX should be an essential mechanism for enabling use of all the many distributed instances of security automation schema. The platform is part of a CYBEX discovery specification designated X.cybex-discovery. In addition, an entire new OID Arc 2.48 has been allocated for cybersecurity information exchange structured identity purposes.

Dr. Takehashi of NICT, as well as Q4/17 associate rapporteur Dr. Kadobayashi of NAIST, who have been developing CYBEX related concepts, tools, and implementations within Japan's ICT security community, will be present in Beijing for the IETF meeting, and we hope can contribute to the SCAP BOF.

An introduction to CYBEX is attached that was presented last week to the Japan ICT security technical community hosted by ISOG-J prior to the ITU-T Interim Meeting.

--tony rutkowski, ITU-T Q.4/17 (cybersecurity) Rapporteur

Appendix B - Amended Terms of Reference for CG-CYBEX

TERMS OF REFERENCE

CORRESPONDENCE GROUP ON COORDINATION OF THE CYBERSECURITY INFORMATION EXCHANGE FRAMEWORK

Background

The work item on a Cybersecurity Information Exchange Framework includes many related specification work items. The activity also includes extensive continuing coordination not only with existing CYBEX user communities, but also new bodies such as the IETF, ISO, ETSI and others that are progressing CYBEX instantiations. In order to effectively progress the Framework, coordinate the array of related work items, collaborate with these other groups, and enable a larger number of participants to follow and contribute to this work, a correspondence group is essential.

Terms of Reference

- 1. The ITU-T Correspondence Group on Coordination of the Cybersecurity Information Exchange Framework will report to Rapporteur Group Q.4/17 and assist:
 - a) Continued evolution of the overall CYBEX Framework
 - b) Coordination of the array of related Framework work items, including outreach and collaboration with other bodies developing related framework capabilities and instantiations
 - c) Provide a report of its activities to each Q.4/17 meeting during 2011 and 2012.
- The Correspondence Group will continue to use the email list <u>cg-cybex@lists.itu.int</u>. The CG interactions may include email exchange via the email list, virtual meetings, and electronic meetings.
- 3. The Correspondence Group co-convenors will be Youki Kadobayashi and Tony Rutkowski.

References

[1] SG17 TD 0565R1