Standardization Activities on Information Security in ASTAP

Heuisu Ryu

Abstract

This paper proposes to analyze the standardization activities for information security area in ASTAP forum and suggests the proper and efficient countermeasures for standardization activities. ASTAP was established in 1998 in order to establish regional cooperation on standardization among APT members and to contribute to global standardization activities. In this paper I surveyed the history of ASTAP and activities for information security area in ASTAP. Even though ASTAP is a regional standardization organization, analysis and preparation for Asia-Pacific standardization activities are needed and future work about information security for Asia-Pacific standardization should be suggested for the development of Asia-Pacific region. The main objective of ASTAP is to promote, coordinate and harmonize telecommunication standardization activities across the Asia-Pacific region through regional cooperation. Therefore EG IS needs to gather some information from member countries to resolve their concern and needs to coordinate and harmonize telecommunication standardization activities across the Asia-Pacific region up to international standardization like ITU-T.

Keywords: Information Security, ASTAP, APT, Standardization, Standardization organization

1. Introduction

Days go by efficiently and economically by IT development such as IT services and IT devices. Such richness in life with networks can bring life effectiveness and easy connectivity among people. Moreover tight communication and cooperation among members within organizations or social groups can be possible by abundance of information with the help of IT development. Network, connectivity and use among people are also as important as telecommunication network online. Good effects of information are thankful to most of the people, meanwhile bad effects from information surely exist these days. Bad effects of informatization are various such as vicious hacking, illegal use of private information, malicious release of private information and loss of network by being maliciously attacked via internet.
etc. Experts in information security area try to secure our information with various methods and thoughtful minds. Among those trials information security standardization is one of the most efficient ways to get the goal.

Standardization activities around the world are very cooperative and competitive. Many standardization organizations such as ITU, ISO and IEEE, etc. actively try to set up IT related standards and recommendations. Along with the worldwide standardization organizations’ activities, Asia-Pacific region also needs to be cooperative and to be discussed about the standards in IT area. That’s the reason why APT had been established in Asia-Pacific region.

In this paper I surveyed history of APT and objectives of APT. After APT, ASTAP forum was focused to be discussed which had expert group on information security. ASTAP forum is a standardization forum which deals many IT areas needed in the region. Among many expert groups in ASTAP forum, expert group on information security has been one of most active and profitable expert group since its establishment in 2001. I surveyed many activities of expert group on information security and propose the future activities of the group and comment for the people in security area.

2. History of ASTAP forum and expert group on security

2.1 APT

APT is an abbreviation of Asia-Pacific Telecommunity. APT was founded on the joint initiatives of the United Nations Economic and Social Commission for Asia and the Pacific(UNESCAP) and the International Telecommunication Union(ITU).

APT was established in Bangkok, Thailand in July of 1979 and is an international organization that operates in conjunction with telecom service providers, manufacturers of communications equipment, and research and development organizations active in the field of communication, information and innovation technologies. [2]

APT serves as the focal organization for ICT in the region. Currently, the APT has a strength of 36 Members, 4 Associate Members and 132 Affiliate Members. Through its various programs and activities, the APT has made a significant contribution to the development and growth in the ICT sector.

Throughout the past years, the APT has been able to assist members in the preparation of Global conferences such as ITU Plenipotentiary Conference (PP), World Telecommunication Development Conference (WTDC), World Radiocommunication Conference (WRC), World
Summit on the Information Society (WSIS), World Telecommunication Standardization Assembly (WTSA) and the ITU meetings. The APT also involves in promoting regional harmonization of their programs and activities in the region.

APT continues to support and facilitate its members in bringing about a qualitative and sustainable growth of ICT in the Asia-Pacific region.

2.2 Objectives of the APT

The objectives of the Telecommunity shall be to foster the development of telecommunication services and information infrastructure throughout the region with a particular focus on the expansion thereof in less developed areas.

In furtherance thereof, the Telecommunity may:[9]

- Promote the expansion of telecommunication services and information infrastructure and the maximization of the benefits of information and telecommunications technology for the welfare of the people in the region;
- Develop regional cooperation in areas of common interest, including radio communications and standards development;
- Undertake studies relating to developments in telecommunication and information infrastructure technology and policy and regulation in coordination with other international organizations, where pertinent;
- Encourage technology transfer, human resource development and the exchange of information for the balanced development of telecommunication services and information infrastructure within the region; and
- Facilitate coordination within the region with regard to major issues pertaining to telecommunication services and information infrastructure with a view to strengthening the region’s international position.

2.3 ASTAP forum

The Asia-Pacific Telecommunity (APT) Standardization Program (ASTAP) was formed in 1998 in order to establish regional cooperation on standardization among APT Members and to contribute to global standardization activities. It is one of the major APT work program in the area of standardization and technology development. Over the years, ASTAP has matured to fulfil its objectives and has become a regional platform for cooperative standardization.
activities. Currently, ASTAP is working on many important areas related to standardization and technology development. Among those are Bridging Standardization Gap, Green ICT, RMF Exposure, M2M, Future Network, NGN, Seamless Access Communication, Multimedia Applications, Information Security, SNLP and Accessibility and Usability. Recently, ASTAP has included the issues of Conformance and Interoperability (C&I) in its activities.

The objectives of ASTAP are as follows:

- To establish regional cooperation on standardization and to contribute to global standardization activities;
- To harmonize standardization activities in the region through cooperative standardization activities such as exchange of views and information;
- To share knowledge and experience among APT members through studies, research and analysis on telecommunications/ICT areas;
- To assist APT members, especially developing country members, to develop the skills in telecommunications/ICT areas by providing research and analysis-based study results and surveys on key telecommunications/ICT areas;
- To enhance the level of expertise on standardization for telecommunications/ICT areas among APT members;
- To foster appropriate institutional arrangements for promotion of telecommunications/ICT standardization in the Asia-Pacific region.

Since its establishment, there have been many changes in its structure. The main structure in 2016 of ASTAP is the following:

ASTAP consists of plenary, three working groups and ASTAP advisory board. ASTAP has a chairman and vice-chairmen. The working groups of ASTAP are as follows:

- Working Group Policy and Strategic Coordination (WG PSC)
- Working Group Network and System (WG NS)
- Working Group Service and Application (WG SA)

2.4 Expert group on security (BG 18)

In the 4th ASTAP forum held in 2001 at Bangkok, Thailand, Sakai, technical official, MPMPT Japan, presented a paper titled 'A proposal to establish an expert group on information security' and he mentioned that related work being undertaken to develop measures aimed at providing protection against cyber attacks in his presentation. In the same ASTAP forum, Mr. Ha from the Republic of Korea described recent initiatives concerning public key
encryption at MIC, Republic of Korea, and global application. Following their presentation, presenters were asked to collaborate and report to the next ASTAP forum. This is an initiation of the expert group on information security in ASTAP forum.

Dongil Seo from ETRI, Republic of Korea and Hiroshi Takeshi from Yokogawa Electric Corporation, Japan had prepared the foundation of the expert group. These two initiators presented the contributions regarding the establishment of the expert group in 5th ASTAP forum held in 2001 at Sydney, Australia. Dongil Seo presented the progress report, reviewed the Terms of Reference (ToR) and considered ten contributions. Hiroshi Takeshi presented the activities of the expert group as well as noting the contribution made to ITU-TQ13/7. In the first expert group meeting expert group agreed to circulate the document titled Proposal of a new study item on information security management for telecommunications systems provided by network operators among ASTAP members to seek agreement to submit the document to ITU-T SG 17 Question 10.[18]

Chairman and vice-chairman of the group were changed from 17th ASTAP forum held in 2010 at Pattaya, Thailand. Chairman and vice-chairman are Miho Naganuma from Japan and Heulsu Ryu from Republic of Korea. From the establishment of the group BG 18 worked very actively and exchanged their views among member countries. Moreover the group reflected current technology issues on its study items and Terms of References. Then aim of the group started with information security expert group and changed later to expert group on security, but the scope of the group wasn’t changed and covers all the security issues happening around us.

3. Standardization activities of expert group on security in ASTAP

3.1 Terms of references of expert group on security

Since information security expert group had been established in 5th ASTAP forum, the expert group has worked very actively gathering contributions and studying new work items. In the 6th ASTAP forum held in 2002 at Phuket, Thailand, first ToR of the expert group was consolidated and contained the following contents.[5]

- proposed output of the group
- 12 months work program
- working method
- relation to work in other programs (in APT and outside APT)
Proposed output of the group are the survey of security issues in the Asia-Pacific region, promotion of exchange of views and strong relationship on information security related topics among Asia-Pacific region and the contribution to standardization activities in international standardization organizations such as ITU-T, etc. These output covered very broad and various security areas such as utilization of cryptography on network, security evaluation criteria and evaluation method on network, firewall/IDS interoperability, VPN interoperability and new items, PKI operability, general guideline for CERT in Asia-Pacific region, mobile security, end-to-end security and multicast security.

Expert group had various working methods. Activities of the group are on a voluntary basis. Experts had communicated each other with ASTAP expert group meeting, e-mail, fax, telephone correspondence and used the web site.

Relations to work in other programs of the group are ITU-T SG 13, SG 16, SG 17, IRTF security area, ISO/IBC SC 27 and expert group on internet-related topics in APT.

As years go by, ToR of the group has been continuously changed and reflected up to date technologies and policies. For example, considering standardization needs about such areas as security management, telemetry, mobile security and communication systems security were added in proposed output of the group in ToR in 7th ASTAP forum held in 2003 at Seoul, Republic of Korea.

Recent ToR is very simplified with just objectives and proposed output. Objectives of the group are the survey of security issues in the Asia-Pacific region, promotion of exchange of views and strong relationships on information security/cybersecurity related topics in the Asia-Pacific region, contribution to standardization activities on information security/cybersecurity in international standardization organizations such as ITU-T and the Asia-Pacific region countries and providing assistance to the lead study group of security, ITU-T SG17. Distinctive change of recent proposed output compare to the one in initial stage of the group is a “Contribution to Brunel Darussalam Statement and the Strategic Plan of the Asia-Pacific Telecommunity 2015-2017” added.[7]

3.2 Contributions of the expert group on security

Expert group on security is one of most active expert groups in ASTAP forum. Since its birth, BG IS has gathered many contributions and some of them were related to other standardization organization or distributed to APT member countries. From the beginning BG IS had many contributions. In the 5th ASTAP forum ten contributions were presented and
reviewed. They were about firewall system log format, asymmetric digital signature, intrusion detection system log format, hackings/viruses, end-to-end security, security for IMT-2000 and beyond, VPN, block cipher algorithm, secure mobile system based on PKI technology and digital signature certificate and certificate revocation list profile. With complete form of expert group BG 15 had seven contributions presented and reviewed in 6th ASTAP which were about security on IMT-2000 and beyond, intrusion detection/firewall and profile for PKI interoperability. Six contributions were presented and reviewed in the 7th ASTAP. Especially changes in study area had begun to more various versions such as security requirements form obisnet work, EBM log-format, IP sec conformance test criteria, multicast security and implementation requirements of information security management.

After several years of active working, BG 15 maintains the fundamental structure and contents of the technologies. But in some aspects the group tries to satisfy other needs from member countries. One example for this is the Brunet Darussalam Statement and the Strategic Plan of the Asia-Pacific Telecommunity 2015-2017, specifically “Assist members to collaborate to build and strengthen trust and confidence in the use of ICT so that the people can use ICT for their progress and prosperity without any concern” and “Enhance reliability and confidence in the use of ICT applications by helping members to develop guidelines for the secure flow of information”.[9]

3.3 Significant activities of expert group on security in ASTAP

Most significant activity in the group is making the guideline for security. BG 15 agreed to start new discussion item “Security handbook (tentative title)” as proposed in “Proposal of the contents for Security Handbook”[5] in 21st ASTAP forum held in 2013 at Bangkok, Thailand. In the proposal, Hensyu Ryu surveyed existing handbook such as documents in ITU-T that cover comprehensive security areas; however, considering feasible resources in BG 15, the meeting agreed that the handbook would focus on specific topics.

As for one of the contents, “Method for protecting smartphone from intrusion and malicious code” was proposed. It raised issues for smartphone, in particular, an urgent necessity of raising user’s awareness on smartphone security.[4] The meeting therefore agreed to consider this topic as the first contents for the handbook and would ask further contributions on this topic to members.

The handbook was also the action for Bali Plan of Action as we can see in <Table 1>. 

ISSN: 2383-5281 AJMAHS
Copyright © 2016 HSST
(Table 1) Policy objective B: Key strategies Actions & Targets Implementation Actions Outcome and Achievements

<table>
<thead>
<tr>
<th>Key strategies</th>
<th>Actions &amp; Targets</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Enhance our regional collaborative efforts in combating cyber crimes,</td>
<td>1.4 Member countries and the APT to promote greater awareness of the issue of e-security through:</td>
</tr>
<tr>
<td>enhancing cyber-security and protecting intellectual property rights, digital</td>
<td>- Developing best practice guidelines for e-security awareness raising</td>
</tr>
<tr>
<td>identities, personal data and the privacy of individuals online.</td>
<td>- Collaborating on developing ISP codes of practice</td>
</tr>
<tr>
<td></td>
<td>- Sharing information on e-security awareness activities.</td>
</tr>
<tr>
<td>• ASTAP Expert Group on Security will consider developing a security handbook</td>
<td>• ASTAP Expert Group on Security(IS) will develop relevant activities</td>
</tr>
<tr>
<td>• ASTAP expert group on Security(IS) will develop relevant activities</td>
<td>and will report to next ASTAP Forum in 2013</td>
</tr>
</tbody>
</table>

In 25th ASTAP forum held in 2015 at Bangkok, Thailand, BG IS changed the title of the security handbook. BG IS had a detailed discussion regarding a security guideline, former called “Security Handbook”, based on the contributions gathered up to 25th ASTAP. The group proposed a new title, revised structure, and new guideline topics until its wrapup in 2017. And the meeting agreed the following outlines of the document:[8]

- Objective of the document is to provide minimum security guidelines to all users of IT devices and IT services
- Title is “Secure use of IT devices and IT services - Protect your data - ”
- Structure and contents are based on the documents as proposed contributions in previous meetings
- The discussion would continue until ASTAP-28 and the final output would be issued in 2017

BG IS has discussed the security handbook since 2013 and set a target date for an output as the year 2017. In 27th ASTAP held in 2016 at Pattaya, Thailand, BG IS agreed that it is necessary to review all related contributions from technical update view point for contents and also to agree the final output image and timetable.

The contents of the guideline are as follows so far:

Part A: IT devices

1. Smartphone
   - Methods for protecting smartphone from intrusion and malicious code
2. PC/Tablet PC
   - Methods for the choice and use of highly secured password and ID
- Minimal check points for security weakness of PC or notebook

Part B: IT Services

3. Wireless LAN
   - Matters that demand special attention for securing public wireless LAN
   - Secure use of wireless LAN at home

4. Transaction services on Internet
   - Special attention required for secure bank electronic transaction
   - One-click Fraud

5. Social Network Services
   - Social Network Services

6. E-mail
   - Protecting smartphone and e-mail from spam text messages or e-mail spam

4. Summary of standardization activities of expert group on security

4.1 Summary of standardization activities of expert group on security

In order to evaluate the activities of expert group on security, we can focus on various things. We may count the number of contributions reviewed, the number of participants in the meeting, the number of member countries involved in this expert group, or assess qualitative and quantitative level of proposals. Above all of these, distribution of views and technologies among member countries and utilization of proper security function of reasonable level will be most considerable aspects in standardization activities, especially in standardization on security. Early days work of expert group on security was very informative so that everyone could understand the situation and technologies of developed countries. Expert group covered many areas such as PKI interoperability, VPN, IPSec, DDoS attack, CERT and even cryptographic algorithms and protocols.

Relation to ITU-T was also a key focus of this expert group. Contribution titled ‘proposal of a new study item on information security management for telecommunications systems provided by network operators’ in 5th ASTAP forum which was submitted to ITU-T SG17 Question 10 was one of trials for its relation to ITU-T. In 26th and 27th ASTAP, contributions on the cloud security were proposed and group agreed cloud security as a candidate future study item and contributors had an intention of this technology proposing to ITU-T. Therefore
efforts relating to ITU-T will be continuously tried.

One of main activities in expert group on security is exchanging their views and informing technologies with member countries. In this aspect, after gathering comments by questionnaire from member countries and experts, making guideline which the expert group is concluding is exactly the appropriate activity for the group.

4.2 Future work plan of expert group on security in ASTAP

The meeting agreed that cloud security issue could be a potential work area and BG IS would consider the topic, access control process for cloud service security, as a future new work item.[7] BG IS is also considering the future work plan and future output by relating to Brunet Jerusalem Statement and the Strategic Plan of the Asia-Pacific Telecommunity 2015-2017, specifically, 4.1 and 4.8 indicated in the work programme.[12]

4.1 Assist members to collaborate to build and strengthen C1 trust and confidence in the use of ICT so that the people can use ICT for their progress and prosperity without any concern;

4.8 Enhance reliability and confidence in the use of ICT applications by helping Members to develop guidelines for the secure flow of information.

5. Conclusion and developmental suggestions

This paper has described the standardization activities of expert group on security in ASTAP including the objectives, ToR and outputs of the group. Expert group on security has been working hard for exchanging and promoting their views and technologies with other Asia-Pacific member countries. Early 2000’s contributions are rather inclined to informative proposals, but the contributions these days are guideline and new study items for the future. As in latest ToR, expert group on security has clear objectives which are accordance with that of APT.

To get the comments and opinions from member states and experts BG IS would survey the security issues in the Asia-Pacific region to promote the exchange of views and strong relationships on information security or cybersecurity related topics in the Asia-Pacific region. BG IS would also try to contribute to standardization activities on information security or cybersecurity in international standardization organizations such as ITU-T and Asia-Pacific region countries. BG would also provide assistance to the lead study group of security, ITU-T
With these objectives, BG IS would try to submit the contributions to ITU-T by ASTAP or the member of APT. BG IS would circulate the draft documents among the related expert groups and member countries under consultation with APT/ASTAP members. BG IS also survey new projects for security issues in Asia-Pacific region countries. Providing security guideline just as BG IS has been doing so far is a very useful activity for Asia-Pacific region countries. Since APT has a master plan for its own, BG IS needs to follow the strategic plan of Asia-Pacific Telecommunity 2015-2017 and needs to contribute to Brunel Darusalam Statement.

The main objective of ASTAP is to promote, coordinate and harmonize telecommunication standardization activities across the Asia-Pacific region through regional cooperation. Therefore BG IS needs to gather some information from member countries to resolve their concern and needs to coordinate and harmonize telecommunication standardization activities across the Asia-Pacific region up to international standardization like ITU-T.

We hope that BG IS coordinates regional cooperation well and contribute to worldwide as well as Asia-Pacific region.

References