**THE SIXTH APEC MINISTERIAL MEETING ON THE TELECOMMUNICATIONS
AND INFORMATION INDUSTRY (TELMIN6)
(1-3 June, 2005 Lima, Peru)**

LIMA DECLARATION

1. We, APEC Ministers responsible for the telecommunications and information industry, gathered in Lima, Peru, from 1-3 June, 2005, under the theme *Enabling Digital Opportunities: harnessing infrastructures to advance the Information Society*, make this Declaration to be presented at the next Economic Leaders' Meeting in Busan, the Republic of Korea in November 2005;

2. **reaffirming** our commitment to achieving the Bogor Goals of free and open trade and investment in the Asia Pacific region by 2010 for developed economies and 2020 for developing economies;

3. **further reaffirming** our commitment to the five objectives and ten core principles in the Seoul Declaration endorsed at TELMIN 1 (1995) as essential for the construction and the expansion of the Asia Pacific Information Infrastructure (APII) and the realization of the vision of the Asia Pacific Information Society (APIS);

4. **welcoming** the APEC Economic Leaders' Declaration entitled *One Community, Our Future*, issued in Santiago de Chile on 21 November 2004, in which APEC Economic Leaders reaffirmed the commitment to achieve sustainable and equitable growth and reduce economic disparities for the well-being of our people by meeting the Bogor Goals of trade and investment liberalization and facilitation, enhancing human security, and promoting good governance and a knowledge-based society;

5. **acknowledging** and **welcoming** the progress made by TEL in its work on telecommunications market liberalization, mutual recognition of telecommunications equipment test reports and certification, broadband development, e-government, e-commerce, interconnection, Internet charging arrangements traffic measurement and analysis, business and research models to promote greater deployment of information and communication technologies (ICT), human capacity building, cyber security and computer emergency response teams (CERTs), authentication and the development of initial implementation of the *Digital Divide Blueprint for Action*;

6. **commending** the achievement of more than doubling Internet access in the APEC region since 2000, noting the need for continued efforts and strengthened statistical gathering in order to fully recognize the goal endorsed by Economic Leaders in Brunei Darussalam in November 2000 to triple Internet access in the APEC region by the end of 2005, as referenced in the status report to Ministers on TEL Digital Divide activities;

7. **continuing** the effort to create digital opportunities in the APEC region, consistent with the vision of the APIS which will contribute to creating the evolving Global Information Society as stated in the Singapore Declaration endorsed at TELMIN3;

8. **recognizing** that infrastructure development, in which the private sector is playing an increasingly important role, and enabling its effective use, are primary drivers for digital opportunities in APEC economies;

9. **further recognizing** the importance of the private sector in developing opportunities offered by the continued introduction and evolution of information and communications technologies, **and acknowledging** the tremendous potential offered by the integration of networks and services;

10. **noting** that in some developing economies, limited telecommunications infrastructure is a great challenge for the sector, **and recognizing** the importance of policies to promote services development in a liberal and competitive environment, and for meeting economies' universal access and universal services goals;

11. **recognising** the contribution that competitive telecommunications markets make to promoting economic efficiency, growth, increased development opportunities and enabling new industries;

12. **stressing** the importance of the Doha Development Agenda (DDA) and the need for a successful World Trade Organisation (WTO) Ministerial Meeting in Hong Kong, China, in December 2005; **supporting** active participation in WTO services negotiations with a view to broadening and deepening continued liberalization;

13. **noting** the effort to conclude the accession of Russia and Viet Nam to the WTO;

14. **taking notice** of progress made in the liberalization of the telecommunications sector within the APEC region; **recognizing** the leadership demonstrated by APEC member economies in transforming the telecommunications and information industries; **reaffirming** the value of the principles outlined in the 1996 Reference List; and **urging** further work by the TEL to promote liberalisation within APEC economies;

15. **encouraging** APEC economies to renew efforts to liberalise telecommunications markets in line with the consensus of Economic Leaders to work "with a renewed sense of urgency" towards "substantially greater market access and fewer distortions" as reflected in the 2004 Santiago Declaration;

16. **further encouraging** the adoption and implementation of the WTO Telecommunications *Reference Paper*, taking into account the TEL's work on *Best Practices on Implementing the WTO Reference Paper*;

17. **welcoming** progress made to implement the Mutual Recognition Arrangement (MRA) on conformity assessment, and its impact on enabling the free flow of telecommunications equipment within the APEC region, and **encouraging** economies to implement and participate actively in this MRA;

18. **endorsing** the TEL's guidelines on conformity assessment procedures for telecommunications equipment, and encourage economies to implement their conformity assessment procedures according to the TEL guidelines;

19. **supporting** economies' work to develop a new MRA on technical requirements for telecommunications equipment, and encouraging the TEL to place a high priority on its development while duly respecting the commitments already made by APEC economies with respect to the MRA;

20. **acknowledging** and welcoming the TEL's work on *Effective Compliance and Enforcement Guidelines and Practices* as a tool to help economies create an environment of investor certainty and consumer confidence;

21. **also recognizing** the importance of spectrum resources as an important means for deploying infrastructure for basic as well as advanced services; and the importance of policies encouraging continued awareness of new technologies for the efficient use of spectrum;

22. **commending** the comprehensive work undertaken by the TEL on broadband deployment, and **encouraging** continued rapid deployment of broadband access as referenced in the Broadband Report to Ministers;

23. **supporting** continued work on next-generation networks (NGNs), including interconnection/interoperability; trade facilitation; NGN security, reliability and confidence; and capacity building in NGNs for underdeveloped areas;

24. **reaffirming** the importance of economic and technical cooperation in achieving equitable growth and sustainable development;

25. **highlighting** that rapid technological advancement, convergence of telecommunications and information networks and the globalization of services and applications require sharing of information, exchanging best practices and experiences in approaches regarding policy-making and regulation amongst economies;

26. **recognizing** and sharing the understanding that, to ensure marketplace choice and competition, to promote security, to encourage innovation, to affirm transparent, technology-neutral and balanced policies, and to realize open standard-based interoperability, both open source software and commercial software play an important role;

27. **noting** that progress made in the TEL is supportive of the World Summit on the Information Society (WSIS), where world leaders have declared their common wish and commitment to build a people-centred, inclusive, and development-oriented information society, where everyone can create, access, utilize and share information and knowledge, and enabling individuals, communities and peoples to achieve their full potential in promoting their sustainable development and quality of life;

28. **confirming** the importance of life-long human capacity development, for all age groups and genders, as well as for people with disabilities or special needs, in terms of providing

more opportunities for training and skill development; and improving the access, awareness, mastery, and application of ICT for the benefit of people in the region;

29. **noting** that Ministers urged the TEL to encourage information sharing and collaboration on e-Government initiatives in the Programs of Action agreed at TELMIN4 and TELMIN5;

30. **recognizing** the importance of ensuring the security and integrity of the APEC region's communications infrastructure, in particular the Internet, in order to bolster the trust and confidence of users and enable the continued advancement of this infrastructure;

31. **commending** the TEL's work in promoting network security to fulfil the APEC Economic Leaders' Statement on *Fighting Terrorism and Promoting Growth* (2002) and the APEC *Cybersecurity Strategy* (2002), especially in promoting the development of, and cooperation among, computer security incident response teams (CSIRTS) to exchange information on threats, vulnerabilities, and responses to security challenges; and **also recognizing** the assistance that has been provided through the TEL to economies in drafting legislation on cyber-crime as well as in conducting a series of regional and bilateral meetings of cybercrime experts, law enforcement officials, legislators and others**;**

32. **encouraging** all economies to study the *Convention on Cybercrime* (2001) and endeavour to enact a comprehensive set of laws relating to cybersecurity and cybercrime that are consistent with international legal instruments, including United Nations General Assembly Resolution 55/63 (2000) and the *Convention on Cybercrime* (2001);

33. **acknowledging** the need for regional cooperation to support communication networks and ICT applications for disaster mitigation and relief operations on APEC region and **recognizing** the importance of ICT infrastructure in the dissemination of early warning information in each economy and in providing medical and humanitarian assistance in disasters and emergencies;

34. **noting** that the *Tampere Convention on the Provision of Telecommunication Resources for Disaster Mitigation and Relief Operations* came into effect on 8 January, 2005; and

35. **recognizing** the effectiveness to date of the Steering Group structure of the TEL, **and encouraging** the TEL to conduct an ongoing review of this structure, particularly in light of challenges posed by the rapid advancement of new technologies and the changing regulatory and security environment.

HEREBY

36. **ADOPT** the *Program of Action* for the APEC Telecommunications and Information Working Group attached as Annex A;

37. **ADOPT** the *Key Principles for Broadband Development in the APEC Region* attached as Annex B;

38. **ADOPT** the *Compliance and Enforcement Principles* attached as Annex C;

39. **ADOPT** the *Guiding Principles for PKI-based Approaches to Electronic Authentication* attached as Annex D;

40. **ADOPT** the *Principles for Action Against Spam* and the *Implementation Guidelines for Action Against Spam* attached as Annex E;

41. **NOTE** that this *Program of Action* will contribute to the Action Plan to be considered at the APEC Economic Leaders' Meeting in Busan, Korea, in 2005.

APEC Telecommunications and Information Working Group

Program of Action

This Program of Action outlines a forward agenda for the APEC Telecommunications and Information Working Group (TEL) to implement pursuant to the Lima Declaration. It reflects our commitment to achieving sustainable and equitable growth and reducing economic disparities for the well-being of our people by meeting the Bogor Goals of trade and investment liberalization and facilitation, enhancing human security, and promoting good governance and a knowledge-based society.

To achieve these goals and maintain our commitments, Ministers endorse and instruct the TEL to direct its attention towards the following activities and thematic areas.

I. Advancing Information and Communications Infrastructure

Ministers recognize that the advancement of information and communication infrastructure is a key factor in expanding digital opportunities. Ministers also reaffirm their commitment to the five objectives and ten core principles in the Seoul Declaration endorsed at the first meeting of APEC Ministers responsible for the Telecommunications and Information Industry (TELMIN 1, 1995) as essential for the construction and the expansion of the Asia Pacific Information Infrastructure (APII) and the realization of the vision of the Asia Pacific Information Society (APIS). In recognition of this, Ministers instruct the TEL to undertake activities that:

a) Encourage investment and capitalization in expanding Internet access and infrastructure construction particularly in developing economies;

b) Promote the use of information and communication technologies and related services to create digital opportunities;

c) Strengthen and encourage information sharing, exchange of best practices and co-operation with other APEC fora and international and regional organizations on advancing information infrastructure and the information society;

d) Encourage the development of policy approaches to enable the implementation and application of advanced technologies and services to expand access to unserved and underserved areas;

e) Encourage APEC economies to implement the *Key Principles for Broadband Development* as each economy gains capabilities, and continue to work on broadband policies, emergent themes and issues such as broadband for small and medium enterprises; emergency response and disaster mitigation; universal service and access policies; and other policy issues related to broadband;

f) Explore innovative next generation network (NGN) approaches arising from new technologies and services, consistent with the topic areas put forward in the Lima Declaration;

g) Consider developing a clearer vision of the APIS and the new knowledge-based economy on which it is built, and identifying those areas in which the TEL could contribute most effectively;

h) Consider undertaking an assessment in early 2006 of progress towards the Brunei Goal of tripling Internet access by the end of 2005.

II. Enabling Digital Opportunities through Effective Policy and Regulation

Recognizing the challenges and opportunities posed by the rapid technological advancement and convergence of telecommunications services, as well as the importance of responding to the constantly changing environment by promoting effective policy and regulatory frameworks within APEC economies, Ministers instruct the TEL to:

a) Undertake a review of the current APEC *Principles of Interconnection* in light of issues raised by the transition to NGN, including the interoperability of services and networks;

b) Continue to hold regulatory roundtables as an effective means to exchange views on a wide range of regulatory issues;

c) Create information resources for consumers to increase consumer awareness and confidence in a changing technical environment; and consider the development of information to address the definition of service characteristics and their communication to consumers;

d) Consider the regulatory challenges posed by the increasing supply of services across the boundaries of member economies;

e) Encourage each economy to implement the APEC *Effective Compliance and Enforcement Principles*;

f) Explore work on the emerging challenges to numbering and addressing, especially in the context of NGN and transitional environments;

g) Continue work on the TEL Mutual Recognition Arrangement (MRA) implementation project; undertake a stocktake of progress by economies in implementing all facets of the MRA; continue work on the MRA Management System; commence development of a new MRA on the technical requirements of telecommunications equipment; encourage each APEC economy to implement the *Guidelines for the Use of Conformity Assessment Procedures for Telecommunications Equipment by APEC Economies* to promote the streamlining of conformity assessment procedures employed by APEC economies and further expedite the trade of telecommunications equipment with the APEC region; and support further work on a stocktake by regulators, designating authorities and conformity assessment bodies of the impact of the MRA;

h) Encourage use of the *APEC Best Practices for Implementing the WTO Reference Paper* as a guide; continue the annual update of the TEL study on *Progress Towards Adopting and Implementing the WTO Reference Paper*; update relevant member economies' progress on implementing World Trade Organisation General Agreement on Trade in Services (WTO GATS) Reference Paper commitments; and encourage capacity building and other efforts to assist developing members to participate in the Doha Development Agenda (DDA) round;

i) Consider how the APEC *Best Practice Guide for RTAs/FTAs*, welcomed by APEC Economic Leaders in Santiago, 2004, may apply to the telecommunications and information sector;

j) Explore policies to promote innovation and competition in the use of spectrum, including for legacy networks, transitional situations and NGNs – taking into account work in other international organizations; share information on experiences regarding the efficient use of spectrum; build on member economies' understanding of spectrum policy and regulatory frameworks and their implications for trade and competition; and consider potential training activities on spectrum policy and regulatory issues;

k) Support policy and regulatory frameworks for standards that promote innovation and competition, including the development of NGNs; participate in mutual recognition arrangements with respect to one another's standards-related measures; and continue work on the *Comparison of the Equivalence of Selected Telecommunications Standards Project*;

l) Undertake the proposed project on *Evaluation of Access to Domestic and International Leased Lines in the APEC Region*; and

m) Complete the current *Survey Project on Virtual Private Networks*, with the maximum possible participation by member economies in this work.

Ministers also note that individual economies may consider the outcomes of the review of *Stocktake of Progress Towards the Key Elements of a Fully Liberalised Telecommunications Sector in the APEC Region* in their progress towards liberalisation of the telecommunications sector.

III. Strengthening Security and Prosperity through the Use of Information and Communication Technologies

Ministers confirm the importance of information and communication technologies (ICT) in advancing economic and social development. They reaffirm the necessity of ensuring the protection and security of information infrastructures and recognize the importance of safeguarding of the integrity of the Internet. Ministers recognize the importance of TEL leadership in these areas and commend the work of the TEL. Ministers also note the importance of continuously exploring new areas of work on the challenges which arise from the information society.

In the area of the **security of networks and infrastructure**, Ministers instruct the TEL to:

a) Continue work on fulfilling the 2002 APEC *Cybersecurity Strategy* and develop a strategy to complement it to guide further APEC work to promote a trustworthy, secure and sustainable online environment;

b) Strengthen effective response capabilities among APEC economies, including improving the ability to respond and cooperate rapidly and accurately in response to security incidents; and where needed, conduct training courses to improve the effectiveness of the computer emergency response teams (CERTs) and computer security incident response teams (CSIRTS) of APEC members;

c) Continue its efforts to combat cybercrime, including malicious activities that attack the network infrastructure and the misuse of that infrastructure; and to promote capacity building to counter the threat of cybercrime;

d) Continue its work on information security aimed at ensuring a trusted, secure, and sustainable online environment, including examination of the security implications of emerging technologies;

e) Develop a set of guidelines which assist economies to protect from unwanted external attack on the electronic information systems of essential infrastructure and services; and

f) Pursue cooperative work with other organizations on security issues; and strengthen work on creating a safe on-line environment in the information society, dealing with such issues as spam, to counter threats to the networks, including follow up actions on APEC *Principles for Action Against Spam* and the APEC *Implementation Guidelines for Action Against Spam* and cooperation with international and regional organizations such as the International Telecommunication Union (ITU), Organization for Economic Cooperation and Development (OECD) and the Association of South East Asian Nations (ASEAN).

Economic Leaders, in their Santiago Declaration, welcomed the inputs from the business community. Economic Leaders further underscored the need to deepen capacity building initiatives in the region through private/public partnerships. Business is a key owner, developer and innovator in the area of telecommunications, and through partnerships the efforts of governments in regulatory and policy areas can best be targeted.

To broaden and deepen **business facilitation**, Ministers call upon the TEL to:

a) Strengthen existing work and explore new work on information applications for business facilitation such as open standards-based interoperability;

b) Continue work on user issues, mindful of the need to balance provider and user needs, and aware that e-enabled businesses thrive in an environment where users have the tools necessary to create confidence and trust;

c) Continue to seek ways to facilitate the use of technology by users, especially small and medium enterprises. In this regard, open new channels of cooperation with other APEC forums as appropriate, such as the Small and Medium Enterprises Working Group;

d) Explore the possibility of developing a work program for the ubiquitous network society, including in relation to content development;

e) Continue exploring the use of information and communication technologies (ICTs) to lower trade costs, promote wider use of available information for business, link with universities and other institutions for business education, and provide other types of linkages for business advantages;

f) Continue work to fulfill the *e-APEC Strategy* and, as appropriate, expand and adjust the strategy to reflect and respond to the changing communications and information environment and to foster greater global information policy coherence; and

g) Strengthen work on the development of an APEC Informatization Strategy and an APEC Telematics Strategy.

In the rapidly evolving environment which faces the TEL, it will be important for the TEL to continuously cooperate with other relevant international and regional organizations to ensure that its work remains effective and relevant.

IV. Advancing the Information Society through Human Capacity Building

Ministers recognize that building human capacity through life-long learning for people of both genders within the region is essential in achieving the benefits and the realization of a digital society and in narrowing the digital divide. Ministers note the importance of the work currently carried out by the TEL in this regard and instruct the TEL to:

a) Continue training and development for policy makers, regulators, service providers, chief information officers and users, in the areas of policy development, NGN, e-government, promoting digital opportunities, and good regulatory practices;

b) Continue development and training to accelerate the TEL MRA;

c) Continue capacity building initiatives to continue momentum towards the Asia-Pacific Information Society; and

d) Explore different approaches to human resource development, such as a possible e-university to assist e-government, and the possible use of telecenters; and continue TEL e-Learning initiatives for capacity building by utilizing ICT and emerging NGN technologies.

V. Communication Networks for Disaster Mitigation and Relief Operation

Ministers welcomed the APEC *Strategy on Response to and Preparedness for Emergency and Natural Disasters* endorsed by the APEC Senior Officials at SOM1, 2005, recognizing the importance of effectively preparing for and responding to emergency and natural disasters. In this light, Ministers instruct the TEL to:

a) Encourage the application of ICT for disaster/emergency detection, mitigation, response, and recovery including the delivery of medical and humanitarian assistance;

b) Consider areas in which the TEL can support human capacity building related to emergency response and disaster relief initiatives within APEC as a whole;

c) Continue work on ICT-based disaster early warning systems as part of the TEL's input to APEC-wide work on disaster and emergency response systems, including APEC i-DWS (Disaster Warning Systems) Development Strategy and APEC Guide(s) on i-DWS;

d) Strengthen effective response capabilities among APEC economies as well as in each economy and recognize that work related to emergency preparedness is being conducted in other APEC fora and that the TEL should cooperate and coordinate with these efforts; and

e) Explore means to exchange experiences and promote collaboration on crisis management procedures, identifying planning methods to ensure network integrity and information dissemination, including deployment of the infrastructure in cases of disasters and emergencies; and examine the application of existing and advanced information and communications technologies and services for disaster and emergency detection, mitigation, response, and recovery.

Road to the Future

Recognizing the need for the TEL to enhance its effectiveness, better respond to challenges and accommodate the different needs of economies, Ministers hereby direct the TEL to consider ways and means to further improve its working methods and structure to bring more focus into its work.

Ministers also direct the TEL to strengthen cooperation with other APEC fora and with relevant international and regional organizations and consider ways to encourage participation and contribution by the private sector in TEL activities in order to improve its outreach within APEC, as well as at global level.

Ministers congratulate the TEL on its considerable successes to date, and urge it to strive for continued success in the future.

Key Principles for Broadband Development
In the APEC Region

Information and communication technologies support economic prosperity in APEC and the development of the Asia Pacific Information Society. Broadband connectivity has become an essential component of these technologies. Since TELMIN 3 in 1998, Ministers have called upon the TEL to explore the development of broadband information infrastructures, stressing the need to extend broadband capabilities to rural and underserved areas. At TELMIN 5 in 2002, Ministers underscored the need to focus on broadband technology and its implications for economic growth. Noting the *e-APEC Strategy* and the TEL *Digital Divide Blueprint for Action*, Ministers also tied the TEL's broadband efforts to the Ministers and Leaders call to resolve the Digital Divide issues of universal access to ICTs.

Key Principles:

To meet the Bogor and Brunei Goals and other benchmarks for timely development set by Leaders, the APEC TEL Ministers recommend a new objective of universal broadband access. To attain this objective, economies are encouraged to develop and implement domestic broadband policies that:

Maximize Access and Usage

- Facilitate access to broadband services based on competitive and market-based principles within all communities in APEC economies, irrespective of location.

- Emphasize and enhance human capacity building to ensure business, community, and individual users' ability to take advantage of the full benefits of broadband services as well as to protect the integrity of networks.

- Promote the important social and economic benefits of broadband by encouraging the use of broadband in the delivery of government services and assist communities in capturing opportunities for broadband deployment.

- Encourage the development of broadband service technologies, local content, and applications to support the rapid expansion and usage of broadband for the strengthening of economies, societies, and cultures.

- Recognize the critical role of the private sector and academia in the research and development of new broadband technologies, and in the deployment, expansion, and use of broadband infrastructure.

- Consider the strategic use of targeted government incentives for infrastructure expansion to rural, remote, and underserved areas where broadband deployment is not yet commercially viable.

Facilitate Continued Competition and Liberalization

- Support effective competition and continued liberalization in infrastructure, network services and applications in the face of convergence across different technological platforms that supply broadband services.

- Promote competition between different network infrastructures that deliver broadband services, and encourage industry to work towards the compatibility and interoperability of these infrastructures.

- Support market liberalization and pro-competition policies that encourage broadband infrastructure investment and expansion to realize last mile connectivity.

- Promote and support technology choice so that competitive market forces are able to generate the best results for users, while giving due respect to legitimate domestic policy objectives for broadband deployment and taking into consideration the spirit of WTO objectives in this regard.

- Continue efforts towards liberalization and fair and effective competition that support and promote the growth of products, applications and services that can be delivered electronically via broadband.

Foster Enabling Regulatory Frameworks

- Ensure regulatory frameworks are transparent and non-discriminatory to reduce uncertainty and encourage investment.

- Ensure that regulatory frameworks allow the interests of all parties to be considered.

- Develop and maintain regulatory frameworks that promote access to existing infrastructure as well as provide appropriate incentives for new infrastructure investment.

- Promote efficient and effective spectrum use to encourage the provision of broadband services.

Build Confidence in the Use of Broadband Networks and Services

- Instill user confidence in information systems and telecommunications networks by ensuring that reliability, security, and privacy are properly addressed.

- Ensure effective protection of digital intellectual property rights (IPR) through domestic laws generally in accordance with the international treaties and agreements relevant to the individual economy, and promote awareness of respecting IPR while encouraging the use of information and the sharing of knowledge.

- Combat cybercrime by endeavoring to establish domestic legal frameworks that take account of the Convention on Cyber Crime (2001).

- Develop domestic computer incident response capabilities that can cooperate with those of other APEC economies in protecting networks from technological threats.

- Enhance the information and experience sharing of successful projects, practices, strategies and the benefits derived amongst economies to build confidence and facilitate broadband take-up.

Compliance and Enforcement Principles

Effective compliance and enforcement regimes are essential to enhancing the ICT regulatory, investment and user environment in any economy.

1.   The Regulator

1.1.   A regulator must be effective and empowered to convince the industry to comply with rules, and to enforce compliance:

> 1.1.1. The regulator should be independent -- separate and not accountable to any telecommunications supplier -- to ensure that regulated entities cannot intervene or influence decisions.

> 1.1.2. The regulator should be empowered with clear authority and jurisdiction over the telecommunications market.

> 1.1.3. The regulator should be granted a range of enforcement tools to enforce the decisions that it issues. These should include sanctions such as financial penalties, warnings, interim directions, and modification, suspension, and revocation of licenses.

> 1.1.4. The regulator should be fair and transparent in its rulemaking as well as its enforcement decisions.

2.   Compliance

2.1.   A compliance framework promotes industry self-regulation and would include:

> 2.1.1. A compliance statement that explains to operators the benefits of self-regulation;

> 2.1.2. A transparent set of instructions informing operators what constitutes both compliance and non-compliance;

> 2.1.3. A set of actions to be adopted by suppliers to demonstrate compliance; and

> 2.1.4. A process to oversee compliance and enforcement actions.

2.2.   A compliance framework, or industry self-regulation, needs to be supported by an effective enforcement regime as a means to encourage industry to comply with a set of behaviours and practices as determined by the regulator.

3.   Enforcement

3.1.   An effective enforcement regime should embrace four principles:

3.1.1. *Fast*: Enforcement decisions must be made quickly, decisively and clearly to reduce uncertainty in the market, and deter future violations.

3.1.2. *Firm*: Penalties must be severe enough to deter violations.

3.1.3. *Fair*: The enforcement system should be perceived as fair and transparent and decisions for enforcement action must be based on evidence and made publicly available.

3.1.4. *Flexible*: The regulator must also have a wide variety of tools available to it to ensure that the severity of the punishment matches the severity of the violation.

3.2.   To let the regulator enforce its rules effectively, there should be the following provisions:

3.2.1. The regulator should have the power to investigate the actions and records of all telecommunications providers. The regulator should be able to initiate an investigation where it has complete control over the process from start to end.

3.2.2. A timely way for carriers to bring complaints against other carriers with the regulator as the adjudicator.

3.2.3. A mechanism to appeal a decision to a higher level in the hierarchy, whether within the regulatory body, or to the court system.

Guiding Principles for PKI-Based Approaches to Electronic Authentication

APEC member economies are encouraged to take the following Principles into consideration when establishing either voluntary or regulated PKI schemes. They are intended to facilitate inter-jurisdictional acceptance of foreign certification authorities (CAs) and the development of cross-jurisdictional recognition arrangements for this purpose. In this regard, they provide only the basis however, as a detailed mapping of all policy, legal and technical aspects is required in order for cross-certification to occur.

These Principles are also intended to help provide guidance to member economies in establishing their authentication policies and assist those with existing policies to identify and address potential deficiencies in their approach.

Finally, it should be noted that, while these Principles have been developed for the PKI environment, they should not be interpreted as advocating any one technology solution over another. Rather, they focus attention on considerations in the PKI environment in view of the predominant role played by public-key cryptography in the electronic authentication marketplace.

I. Legislative/Legal Framework

• The development of frameworks that set out parameters for the establishment and operation of certification authorities (CAs) can facilitate cross-jurisdictional acceptance of the services they provide.

• Such frameworks should allow for the acceptance of services originating in other jurisdictions.

• The establishment of legislative and legal frameworks that give legal effect to documents and signatures in electronic form produced by both domestic and foreign CAs will facilitate legal predictability on a cross-jurisdictional basis.

• Such frameworks should not unduly require the use of particular technologies. In addition, they should allow for changing market standards, developments in existing technology and the introduction of new technology.

II. Policy Framework

• Requirements for the institutional standing of CA service providers (including capital and financing requirements for the establishment and operation of CAs) can generate public trust and confidence and facilitate cross-jurisdictional recognition of certificates issued by those CAs.

• Assessment schemes that utilise recognised standards and best practice to ensure technical interoperability between participants can facilitate cross-jurisdictional recognition of certificates.

• The implementation of widely accepted technical standards and management in PKI assessment schemes can allow for CAs to be assessed.

- Policies and procedures for cross-jurisdictional recognition of PKI assessment schemes can facilitate legal predictability and certainty in respect of certificates issued under those schemes.

III.   Operational Framework (Pertaining To Ca Operations)

General

- The use of the widely adopted Internet X.509 framework IETF/ RFC 2527 for the Certificate Policy (CP) and Certification Practice Statement (CPS) will facilitate cross-jurisdictional recognition.

Certificate Registration and Validation

- The establishment of processes for registration and initial identity validation that are fit for purpose and take into account those processes used in other jurisdictions will facilitate cross-jurisdictional recognition of certificates.

Key Management

- The use of key escrow of signature keys can undermine user confidence and impede cross-jurisdictional recognition of certificates.

- The use of best practices derived from internationally recognized sources when performing key generation will facilitate cross-jurisdictional recognition of certificates.

- The adoption of international best practice that confidentiality and signature key pairs should be different will improve user confidence and facilitate cross-jurisdictional recognition of certificates.

Cryptographic Engineering

- The use of internationally recognized cryptographic algorithms of sufficient cryptographic length and strength will facilitate interoperability and cross-jurisdictional recognition of certificates.

- Ensuring that cryptographic keys and algorithms are sufficiently strong to protect the cryptographic result from attack for the term of validity of the certificate (e.g. should not exceed 5 years) will increase security and facilitate the cross-jurisdictional recognition of certificates.

- The assessment of cryptographic processes to a minimum level of FIPS 140-1 Level 3 or equivalent will facilitate cross-jurisdictional recognition of certificates.

Distinguished Names

- The use of accepted best practice for standardizing the contents of Distinguished Names Components in the certificate will facilitate interoperability.

- In particular, the use of standard X.509 extensions such as the Policy OID to represent the intended applicability of the digital certificate will facilitate cross-jurisdictional recognition.

Directory Standards

- The use of the most commonly used international directory standards such as the X.500 Directory Service or LDAP (lightweight directory access protocol) v3 will facilitate interoperability of PKI applications

Systems and Operations
- The use of international best practices for personnel security control and physical security control will enhance security and facilitate the cross-jurisdictional recognition of certificates.

- The use of at least dual controls for the operation of CA services and processes (e.g. CA private key control and management) will facilitate cross-jurisdictional recognition of certificates.

- The use of guidelines for systems and software integrity and control that are compliant with FIPS, the Common Criteria or equivalent recognised standards will enhance security and facilitate the cross-jurisdictional recognition of certificates.

- Establishment of archival policies that ensure the retention of relevant material for a sufficient minimum duration (e.g. a minimum of 7 years) will facilitate the cross-jurisdictional recognition of certificates.

- The use of time stamps and security mechanisms to prevent any intentional changes to archival records such as the use of hashes should be advocated to facilitate cross-jurisdictional recognition of certificates

- Ensuring that the general-purpose repository and certificate revocation list (CRL) are generally available when required will develop user confidence and facilitate cross-jurisdictional recognition of certificates.

- Ensuring that facilities are generally maintained to receive and act on requests for suspension when required will develop user confidence and facilitate cross-jurisdictional recognition of certificates.

Management Guidelines
- Establishment of business continuity and disaster recovery planning provisions will develop user confidence and facilitate cross-jurisdictional recognition of certificates.

- The establishment of provisions or guidance in the event that a CA discontinues will develop user confidence and facilitate cross-jurisdictional recognition of certificates.

The use of compliance audits/assessments by an independent party as part of security best practice for accreditation or licensing will develop user confidence and facilitate cross-jurisdictional recognition of certificates.

APEC Principles for Action against Spam

Principles

These are the key principles to be considered as a means to reduce or eliminate spam.

1. High level Government commitment and a multilayered approach are cornerstones for the effective control of spam.

2. Strong domestic anti spam regulatory measures are a key component in the undertaking of anti spam activity.

3. Anti spam technology and standards are important in the fight against spam.

4. An agency/agencies should be identified to undertake domestic action and negotiate international coordination and cooperation.

5. The Marketing, ISP and ESP industries, as well as consumers, have key roles in promoting anti spam responses.

6. Domestic and international cooperation is essential to control spam and its effects.

7. The work of other organisations, domestic and international, are resources for anti spam action plans, efforts should be made to make proposals and activity coordinated and consistent.

APEC Implementation Guidelines for Action against Spam

Guidelines for economies to consider when implementing actions in the fight against spam.

By Government:

    A. Designate, or appoint a responsible agency/agencies with domestic and international authority.

    B. Establish regulatory arrangements drawing upon appropriate existing and emerging work (OECD Toolkit, ITU activities, the experience of other economies).

    C. Establish bilateral and multilateral arrangements as appropriate (see attached Best Practice Template for indicative areas to include).

    D. Encourage and assist the anti spam activities of ISPs and ESPs, e-marketers, mobile telephony service providers and consumers.

    E. Encourage the development and implementation of an adequate legal and policy framework to combat spam.

By the Identified anti Spam Agency/Agencies

    F. Focus domestic activities and international cooperation and coordination against spam.

    G. Educate consumers (behaviour on the net, maintenance of software, use of appropriate technology, choosing ISPs, the implications of and damage caused by spam).

    H. Coordinate with ISPs, ESPs and e-marketers on responses to spam.

    I. Enforce anti spam regulatory measures, including, but not limited to, technical standards and requirements.

    J. Contribute to international cooperation (ITU work, MoUs with other economies).

By Industry

    K. E-Marketers set the extent of responsible and reasonable behaviour (to preserve the e-market).

    L. ISPs and ESPs should develop cooperative governance and technical arrangements to limit spam.

    M. Develop systems to gather evidence for anti spam regulatory enforcement action.

    N. Promote understanding of issues by relating to key stakeholders such as end users and business partners

    O. Explore the option of creating a Code of Conduct for the purposes of self-regulation.

By Consumers and the Public

P. Become informed consumers

Q. Adopt responsible behaviour to limit spammers access to email addresses.

R. Maintain up to date computer operating systems, anti virus and anti spam software.

S. Assist ISPs, ESPs and the anti spam agency by providing evidence to assist in the enforcement of anti spam regulations.