



Asia-Pacific
Economic Cooperation



Institute of Defence
And Strategic Studies
An Institute of Nanyang Technological University

Singapore's Report on the APEC Symposium on Total Supply Chain Security

6-7 July 2006
Singapore

APEC Counter Terrorism Task Force

December 2006



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SINGAPORE'S REPORT ON THE APEC SYMPOSIUM ON TOTAL SUPPLY CHAIN SECURITY 6-7 JULY 2006

INTRODUCTION

- 1 In November 2005, the APEC Leaders supported the call by Singapore for APEC to put greater focus on the issue of supply chain security to protect trade against the threat of international terrorism. They also welcomed Singapore's initiative to organize an APEC Symposium on Total Supply Chain Security in 2006.

AIM OF THE APEC SYMPOSIUM ON TOTAL SUPPLY CHAIN SECURITY

- 2 The APEC Symposium on Total Supply Chain Security was held on 6 - 7 July 2006 at the Marina Mandarin Hotel, Singapore. It was organised by the Singapore Ministry of Transport, Ministry of Foreign Affairs, Ministry of Trade and Industry, and the Institute of Defence and Strategic Studies (IDSS) in collaboration with the APEC Secretariat.¹ The objectives of the symposium were:
 - (a) To raise the level of awareness amongst APEC economies of the importance of enhancing the security of the supply chain. This was in line with the agreement by the APEC Leaders that APEC should pay more attention to this issue; and
 - (b) Bring together experts from government, industry, international organisations, consultants and academics, to share their experiences and knowledge on the issues concerning supply chain security.

¹ Other Singapore Government agencies that supported the organization of this symposium included the Ministry of Home Affairs, Singapore Customs, Maritime and Port Authority of Singapore, the Economic Development Board, National Security Co-ordination Secretariat, Infocomm Development Authority and SPRING Singapore.



Guest of Honour Singapore Deputy Prime Minister, Coordinating Minister for National Security and Minister for Law, Professor S. Jayakumar (left) and APEC Secretariat Executive Director Ambassador Tran Trong Toan (right).

PARTICIPATION AT THE SYMPOSIUM

- 3 In total, 388 participants from all 21 APEC economies, and from a number of non-APEC economies and international organizations (eg. WCO, ISO) attended the symposium. Fifty-six percent of the participants were from the private sector, with the remaining forty-four percent from the public sector. A total of 29 speakers from the public and private sectors discussed ways to promote the enhancement of supply chain security in the APEC region. To harness the supply chain security experience and knowledge of other non-APEC entities, the symposium was open to participants from non-APEC economies and international organizations.

SYMPOSIUM'S PROGRAMME

- 4 The symposium covered six key areas as follows:
 - (a) Threats and vulnerabilities to the global supply chain;
 - (b) The benefits to facilitating trade and business;
 - (c) The principles of and approaches towards supply chain security – Perspectives from Governments;



Mr Barry Desker (Institute of Defence and Strategic Studies), Chair of Symposium, delivering the opening remarks.



Guest of Honour Singapore Deputy Prime Minister, Coordinating Minister for National Security and Minister for Law, Professor S. Jayakumar emphasising on the impact of terrorism on the security of the global supply chain in his keynote address.

- (d) The principles of and approaches towards supply chain security – Perspectives from Industry;
- (e) International organisations and co-operation; and
- (f) Challenges for the future.

(The symposium programme is at [Annex A](#))

KEY ISSUES DISCUSSED AT THE SYMPOSIUM

THE CRITICAL IMPORTANCE OF THE GLOBAL SUPPLY CHAIN

- 5 The Chair of the symposium, Mr Barry Desker (Institute of Defence and Strategic Studies), gave an overview of the global supply chain and its importance. He also provided Singapore’s and APEC’s rationale for organising the symposium. Essentially, the global supply chain is a complex network of relationships comprising of private and public sector entities that are interconnected and working together to provide goods and services from their point of origin (raw materials and manufacturers) to the consumers. Protecting the global supply chain against acts of terrorism is a major responsibility involving all stakeholders.
- 6 The Executive Director of the APEC Secretariat, [Ambassador Tran Trong Toan](#) noted that with the APEC region accounting

for 40 percent of the world population, 56 percent of world GDP and 48 percent of world trade, the security of the supply chain is crucial to ensure the continued economic growth of member economies. Noting that APEC had previously undertaken some efforts to address issues relating to supply chain security, such as the Secure Trade in the APEC Region (STAR) initiative launched in 2002 and the establishment in 2003 of the ‘APEC Private Sector Supply Chain Security Guidelines’ aimed at helping private sector companies improve the security of their operations, this symposium was thus a timely effort. The symposium facilitated the sharing of experience by experts and the brainstorming of the ways forward for APEC to work together to enhance total supply chain security in an integrated, multi-dimensional and holistic manner. At a broader level, following APEC’s 2006 theme “Towards a Dynamic Community for Sustainable Development and Prosperity”, total supply chain security is very much related to APEC’s ongoing work on sustainable development.

- 7 In his keynote address, Singapore’s Deputy Prime Minister, Coordinating Minister for National Security, and Minister for Law, [Professor S. Jayakumar](#), cautioned that APEC members could suffer severe economic impact if the supply chain, which is the lifeblood of trade, was disrupted

by acts of terrorism. He highlighted that various studies estimate that the losses from the closure of major gateway ports for a week could range from US\$65 million to US\$150 million per day. APEC has many major economic markets, large manufacturing bases and key air and sea hubs and hence could ill afford to suffer such catastrophes. He announced that Singapore had established its own national supply chain security programme as a step towards enhancing the security of the global supply chain. Singapore is also keen to contribute further to international efforts, including those within the APEC region, to help secure the supply chain.

THREATS AND VULNERABILITIES TO THE GLOBAL SUPPLY CHAIN

- 8 The participants noted that the global security environment had become more complex and the threat from international terrorism had become more sophisticated. The Chairman of the APEC Counter-Terrorism Task Force (CTTF), Ambassador Benjamin Defensor, elaborated on the security challenges faced within the APEC region and reminded delegates that there was no guarantee that the region would be totally safe and secure against terrorism. He emphasized three key challenges which APEC economies had to address, namely, for leadership to incorporate security into governance, public-private partnerships in enhancing the resilience of economies, and the development of a “counter-threat” culture in APEC, i.e. he emphasized the importance of multilateral cooperation against the threats of terrorism and trans-national crime.
- 9 The participants also noted the views shared by Mr Joshua Ho (Institute of Defence and Strategic Studies) on the vulnerability of sea transport to the threat from international terrorism. Mr Ho noted that maritime transport is one of the key links in the global supply chain, given that majority of the goods are transported across borders by



Ambassador-at-Large Benjamin Defensor (left) and Mr Joshua Ho (right) addressing the audience on the threats to the global supply chain and its vulnerabilities.

sea. Trade within the APEC region could be severely disrupted if the vulnerabilities are exploited by terrorists. However, prudence is needed in implementing security measures as it is impracticable to screen all containers in every port.

- 10 VADM Gordon Holder (Booz Allen Hamilton) gave participants an analysis of the severe economic impact that APEC economies could suffer if the supply chain was disrupted by acts of terrorism. He further explained that the new business and operating model for global trade should now include the following elements:
- (a) Leaders should embrace security as a necessary and strategic concept for global trade resilience, and balance between security and economic efficiency;
 - (b) Business models must evolve in such a way that security is embedded in the economics of the industry and not simply inserted into existing processes without becoming part of a solution that enhances productivity;
 - (c) There is no single solution to the securing of the entire logistics network. Solutions must address all freight and not just ship-borne containers;
 - (d) Public-private partnerships are essential

in seeking out an effective global solution. Business and government response plans must be synchronised locally and internationally; and

- (e) Governments and businesses need to develop a layered, end-to-end solution in deterring a major terrorist attack on the supply chain. This includes enhancing container design to enable inspection and tracking; creating a simplified global electronic data system for all points of cargo tracking; and enhancing the ‘fast lane’ processing system as an incentive to shippers. Creating incentives for industry participation is important and for this to succeed, a focused strategy is needed.

THE BENEFITS OF SUPPLY CHAIN SECURITY TO FACILITATING TRADE AND BUSINESS

- 11 Major established companies gave the participants first hand accounts on the benefits of investing in supply chain security measures. Mr Ken Wheatley (Sony Electronics Inc), shared how Sony’s investment in supply chain security measures had helped prevent losses and reaped such benefits as significant cost savings from prompt delivery times and the better utilization of resources.
- 12 Mr Theo Fletcher (IBM), shared that IBM had conducted two studies, one with the Massachusetts Institute of Technology (MIT) and the other with Stanford University, that demonstrated the collateral benefits enjoyed by companies such as IBM from their investment in supply chain security measures. These included increased efficiency, visibility, resilience, inventory management, and improved customer relations. Some quantifiable results showed that on average, companies that invested in supply chain security measures could gain up to 48 percent reduction in the need for security inspections of their goods, 29 percent shorter transit time, 31percent



Mr Ken Wheatley (Sony Electronics Inc.) giving the audience a corporate perspective of the benefits of investing in supply chain security.

- shorter problem resolution time, and a 38 percent reduction in theft, loss, and pilferage. Two general lessons from IBM’s experience to improve supply chain security included (1) the need to create a risk assessment database for monitoring the security of facilities, and (2) the implementation of a global supply chain readiness assessment.
- 13 Dr Robert de Souza and Dr Mark Goh (both from The Logistics Institute of the Asia-Pacific), discussed some positive achievements that have been made through the collective efforts of the user community and logistics service providers. These included, (1) reducing supply chain pipeline costs through better supply chain consolidation strategies; (2) improved end-to-end supply chain process efficiencies through better design and re-engineering; and (3) establishing industry standards by government agencies and industry associations such as ISO 18000 standards and other harmonization codes for cargo flow. The challenge of good supply chain management lay in the ability to mitigate risks at both the operational and strategic levels. They noted that given the diverse geography and culture within APEC, it is important for companies to attain a good grasp of international and regional politics, cultural nuances, social diversity, as well as legal, financial and administrative processes to help them in their efforts at enhancing the security of their portion of the supply chain.

PRINCIPLES AND APPROACHES TOWARDS SUPPLY CHAIN SECURITY – PERSPECTIVES FROM GOVERNMENTS

- 14 The participants heard the views of regulators from China, New Zealand, the European Commission and the United States, on the importance of enhancing the security of the global supply chain. Mr Chen Zhenchong (People’s Republic of China) noted some of the key initiatives being undertaken by China to ensure trade facilitation and security. These included the use of simplified procedures, and exploring the establishment of ‘green lanes’, the use of ‘smart boxes’ and targeted inspections. China was also active in co-operating with other partners such as the World Customs Organization and members of the international community, to enhance the security of the supply chain.
- 15 Mr Martyn Dunne (New Zealand) examined New Zealand’s efforts at implementing its domestic supply chain security programme. These included the conduct of audit checks on companies, scrutiny of containers, and collaboration with international partners on issues such as the development of possible common standards for supply chain security.
- 16 Mr Loris Rossi (European Commission) talked about the EC’s perspective and efforts on supply chain security, where transportation security was given further emphasis following the terrorist attacks in Madrid (2004) and London (2005). The EC had worked out common standards for air cargo and was keen on doing the same for maritime cargo. The engagement of industry players is also a key factor in its considerations.
- 17 Mr Wayne Kornmann (USA) shared the US Customs and Border Protection Bureau’s experience under its Customs-Trade Partnership Against Terrorism (C-TPAT) programme. Some of the lessons learnt included the need to understand the



Discussion on the principles and approaches towards Supply Chain Security from the Governments’ perspectives.

diverse processes in the supply chains of different industries and the need to optimize the use of scarce resources (e.g. customs inspectors).

PRINCIPLES AND APPROACHES TOWARDS SUPPLY CHAIN SECURITY – PERSPECTIVES FROM INDUSTRY

- 18 Notable organisations from the private sector gave first-hand accounts of their principles and approaches towards supply chain security. Mr Earl Agron (APL Limited), outlined some key suggestions for better supply chain security:
 - (a) The need for enhanced improvement of public-private cooperation. These included not only consultations but also the conduct of joint contingency planning against security threats that could affect the continuity of trade and movement of cargo;
 - (b) The need for container targeting of high-risk containers for security screening as it is impossible to screen all containers in the ports. In retrospect, it would be useful if non-intrusive inspection of containers could be adopted;
 - (c) The need for supply chain security programmes to be regulated according to a minimum set of standards; and
 - (d) The need for technological solutions



Mr Allan Richard Turley (Federal Express) sharing with the audience FedEx's experience in the implementation of supply chain security measures.

that would help the public and private sectors maintain security and ensure trade and operational efficiencies at the same time.

- 19 Mr Allan Richard Turley (Federal Express) shared FedEx's experience in supply chain security from the global express delivery business perspective. For such companies, the implementation of good supply chain security measures has enhanced client relationships that are usually built on trust. This is so because the measures help ensure prompt, reliable and rapid services as well as better inventory management and operational efficiency. He stressed that, for all stakeholders to implement end-to-end supply chain security solutions, government-industry partnerships are critical.
- 20 Mr Tan Puay Hin (PSA Corporation Limited) spoke of PSA's efforts in enhancing supply chain security from the physical and procedural aspects. He noted that the PSA Corporation focuses on five initiatives:
 - (a) Collaboration with governments (e.g. information exchange);
 - (b) Use of technology;
 - (c) Use of integrated processes, (e.g. the Terminal Access Control System);
 - (d) Shaping mindsets and developing a security culture amongst its staff; and
 - (e) Collaboration with other industry players such as APL in the Secure Container Programme.

The PSA is also active in other initiatives apart from adhering to the ISPS code. For instance, it has also participated in the Container Security, Radiation Detection, and Operation Safe Commerce Initiatives.

INTERNATIONAL ORGANIZATIONS AND CO-OPERATION

- 21 The participants engaged in a lively discussion on the supply chain security efforts undertaken by international organisations. Mr Michael Schmitz (World Customs Organization) elaborated on the WCO's effort in securing and facilitating the workflow of the global supply chain through its SAFE Framework of Standards. He also briefed the audience on the status of the framework. Essentially, this Framework of Standards involves sustainable capacity building and improvements of various aspects of customs administration. Although the framework is still in its early stages, many customs authorities and industry players have been very supportive of this effort.
- 22 Captain Charles Piersall (International Standards Organization) discussed the various supply chain security efforts undertaken by the ISO. These included its strategic vision of being the link between the shipping and maritime industry since 1995, which has over time translated into a burgeoning set of deliverables for global supply chain stakeholders. The ISO's Pilot Programme with the IMO in late 2001, the ISO/TC 8 and the family of specifications contained in the ISO 28000 series as publicly developed specifications, all provide useful benchmarks for supply chain security measures.
- 23 Mr Paul Collins (Her Majesty's Revenue and Customs, UK) shared the UK's experience in promoting supply chain security. This included various programmes to co-ordinate the security efforts undertaken by border protection units, airports, seaports and the various industry sectors. International



Discussion on the importance of international organisations and co-operation in the maintenance of global supply chain security.

co-operation with other economies, on for example the exchange of information was found to be useful. In addition, the use of technology, such as smart boxes, e-seals and ‘track & trade’, complemented other public and private sector efforts to protect trade against the threat from terrorism.

CHALLENGES FOR THE FUTURE

- 24 The participants had an insightful discussion on the possible future challenges to the global supply chain network and security. Mr Werner Krüdwagen (Siemens Schweiz AG), analysed the need for regulators and industry players to address the security requirements of in-transit containers. He added that Siemens, on its part, was involved in various projects that have sought to develop technological responses as solutions to the concerns.
- 25 Mr Paul Lightburn (Lloyd’s Register) elaborated on the importance of human factors in global supply chain security. He asserted that there are no substitutes to good processes, practices and people who would diligently observe security procedures. Hence, the “human element” is vital in the maintenance of supply chain security. Furthermore, he added that it is important that the top management of all companies incorporates supply chain security considerations into key business plans.



Discussion on the challenges for the future and the way ahead for members of the global supply chain.

- 26 Mr Nick Small (Unisys) shared that cooperation between the public and private sectors is necessary to spread the cost of security measures. Moreover, the synergy will also facilitate the finding of practical solutions that will help to improve supply chain security. Security measures should also be flexible as the global supply chain environment is dynamic in nature. He added that all organisations should not be too reliant on technology. There is no “silver bullet” or a single solution that will address the security needs of the entire global supply chain network. Hence, technology should be applied in tandem with other measures such as good security procedures, awareness and staff training.
- 27 Mr Graham Pettifer (Transport Canada) spoke on the key efforts which the Canadian Government has undertaken on the supply chain front. The global community, interconnected by trade, is very susceptible to terrorism. Therefore, effective supply chain security would require a global approach. The many nodes and players in the global supply chain means that it is crucial that the lines of responsibility amongst the various players in the supply chain are clearly defined.

OTHER POINTS

- 28 In his luncheon address, Mr Peter Schwartz (Global Business Network) gave all participants much food for thought with his

presentation. He conjured up two possible scenarios of the future supply chain and at the same time explored the challenges that might arise. The first image envisioned a global situation marked by increasing integration, where interconnectivity increases exponentially with technology. This was perceived to be the result of the growth of knowledge-based economies and improved governance. In the second imagined future, fragmentation is the key characteristic in global developments. Schwartz hypothesized a breakdown of shared consensus between the major economic powers, leading to resource wars, particularly for oil and water. In both imagined futures, the acute vulnerability and sensitivity of the global supply chain to fluctuations in geopolitical climate stood out as a common feature.

SUMMARY OF KEY POINTS

29 Mr Barry Desker (Institute of Defence and Strategic Studies) summarised the key points that were discussed and the issues that had surfaced during the symposium. These included:

- (a) The threat from international terrorism is real and could seriously affect trade if the global supply chain was disrupted;
- (b) Any major disruption to the supply chain from a terrorist attack would have serious implications for the economies in the APEC region. Trade and economic activities could come to a standstill. As a result, losses might be incurred and APEC economies would have to bear the cost. In this regard, the participants welcomed Singapore's offer to sponsor a study on the impact of a major disruption caused by terrorist attacks to the supply chain within APEC. (The study is expected to be completed within the last quarter of 2006.);

- (c) There was recognition that APEC economies should seriously consider investing in the enhancement of supply chain security measures, particularly to close the information gaps on the contents of containers as well as to facilitate information exchange amongst themselves;
 - (d) In looking at supply chain security from a holistic and integrated perspective, one issue requiring urgent attention stood out. This concerns the restoration of the flow of trade after a major terrorist attack. It was emphasised that losses could be minimised if international trade could be restored fast enough after an attack;
 - (e) There was consensus that the facilitation of trade and continuity of commerce within the APEC region is a shared responsibility between the public and private sectors. As such, it is important that the public and private sectors within APEC collaborate closely with each other to enhance the security of the supply chain as well as to ensure the rapid recovery of trade and commerce in the event of a terrorist strike; and
 - (f) It was recognized that the symposium provided all participants and APEC economies with a better understanding of the importance of enhancing supply chain security within the region. Participants welcomed the insightful views and experiences shared by experts from the regulatory sector, within the industry and international organisations, and recognised the need to continue raising the level of awareness, as well as the understanding and sharing of knowledge within APEC.
- 30 Based on the key points discussed as above, the key concluding recommendations from the symposium were:

- (a) that APEC Leaders endorse the need for APEC economies, including both the public and private sectors, to continue to give serious attention to the importance and benefits of enhancing the security of the supply chain, and to maintain this as a key initiative involving the public and private sector in 2007 and beyond;
- (b) that APEC economies agree that there is an urgent need to address how in the event of a major terrorist attack on the global supply chain, APEC economies could, especially within the region, aid in the recovery of trade; and
- (c) that APEC economies acknowledge that the implementation of supply chain security measures requires continual technical support and assistance in capacity building. This would include further sharing of knowledge, experiences and training opportunities amongst the public and private sectors.

PREPARED AND SUBMITTED BY:
SINGAPORE

31 August 2006

APEC SYMPOSIUM ON TOTAL SUPPLY CHAIN SECURITY, 6-7 JULY 2006, MARINA MANDARIN HOTEL, SINGAPORE

Wednesday 5 July 2006

- 1300-1800 Registration of participants (Venue: Libra at Level 1)
- 1900-2030 Welcome Reception hosted by Barry Desker, Director, Institute of Defence and Strategic Studies (IDSS) for speakers and participants
(Venue: Pool Garden, Level 5)

Thursday 6 July 06

- Opening Ceremony
(Venue: Main Ballroom at Level 1)
- 0900-0920 Opening Remarks
Barry Desker, Director, Institute of Defence and Strategic Studies (IDSS)
- 0920-0930 Welcoming Remarks
Ambassador Tran Trong Toan, Executive Director, Asia Pacific Economic Co-operation (APEC)
- 0930-1000 Keynote Address
Professor S. Jayakumar, Deputy Prime Minister and Co-ordinating Minister for National Security, Singapore
- 1000-1030 Tea Break
- Session 1: Threats and Vulnerabilities to the Global Supply Chain**
(Venue: Main Ballroom at Level 1)
- Moderator **Rohan Gunaratna**, Head of International Centre for Political Violence and Terrorism Research, IDSS
- 1030-1055 Security Challenges in the APEC Region
Benjamin Defensor, Ambassador-at-Large and Chairman, APEC Counter-Terrorism Task Force
- 1055-1120 The Threat of International Terrorism on the Supply Chain
Joshua Ho, Senior Research Fellow, IDSS
- 1120-1145 Security Vulnerabilities to the Global Supply Chain: What it means for the World Economy
Gordon Holder, Principal, Booz Allen Hamilton
- 1145-1215 Q and A and Summary Remarks (Moderator)
- 1215-1400 Lunch (Venue: Main Ballroom at Level 1)
Lunch Address: Securing the Global Supply Chain: Risks, Challenges and Scenarios
Peter Schwartz, cofounder, Global Business Network
- Session 2: Supply Chain Security : The Benefits to Facilitating Trade and Business**
- Moderator **Eduardo Pedrosa**, Secretary General of the PECC International Secretariat
- 1400-1425 The Benefits of Investing in Supply Chain: The Sony Experience
Ken Wheatley, Vice President, Corporate Security, Sony Corporation
- 1425-1450 The Benefits of Investing in Supply Chain Security: The IBM Experience
Theo Fletcher, Vice President, Import Compliance and Supply Chain Security, IBM
- 1450-1515 Supply Chain Security: Key Concepts and Current Practices in Relation to Trade Facilitation
Robert de Souza, Executive Director, The Logistics Institute of Asia-Pacific (TLIAP)
Mark Goh, Director of Industry Research, TLIAP
- 1515-1530 Q and A and Summary Remarks (Moderator)
- 1530-1550 Tea Break

Session 3: Supply Chain Security : The Principles and Approaches Towards Supply Chain Security – Perspectives from Governments

Moderator **Mary Seet-Cheng**, Consultant, Ministry of Foreign Affairs, Singapore

1550-1615 Supply Chain Security: A Perspective from China
Chen Zhenchong, Deputy Director-General of Border Control, Ministry of Customs, People's Republic of China

1615-1640 Supply Chain Security: A Perspective from New Zealand
Martyn Dunne, Comptroller, New Zealand Customs Service

1640-1705 Supply Chain Security: A Perspective from the European Commission
Loris Rossi, Directorate J- Security – Protection of Persons, Goods and Installations, European Commission

1705-1730 Supply Chain Security Programmes: Lessons Learnt from the US Experience
Wayne Kornmann, Director, Long Beach C-TPAT Office, US Customs and Border Protection

1730-1800 Q and A and Summary Remarks (Moderator)

1900-2100 Dinner for speakers and invited guests hosted by BG(NS) Choi Shing Kwok, Permanent Secretary of Transport, Marina Mandarin

END OF DAY 1

Friday 7 Jul 06

Session 4: Supply Chain Security : The Principles and Approaches Towards Supply Chain Security – Perspectives from Industry

(Venue: Main Ballroom at Level 1)

Moderator **Derk Jan Hartgerink**, Manufacturing Director, ExxonMobil Chemical Operations Private Ltd

0900-0925 Supply Chain Security: A View from the Shipping Industry
Earl Agron, Vice President, Security, APL Limited

0925-0950 Supply Chain Security as part of Global Business Operations : The FedEx Experience
Alan Richard Turley, Vice President, International Affairs, Asia Pacific Division, Federal Express

0950-1015 Supply Chain Security: The PSA Experience
Tan Puay Hin, Chief Operating Officer, PSA Corporation

1015-1045 Q and A and Summary Remarks (Moderator)

1045-1100 Tea Break

Session 5: International Organisations and Co-operation

Moderator **Amitav Acharya**, Deputy Director and Head of Research, IDSS

1100-1125 The WCO Framework of Standards – The Road for Governments and Industry
Michael Schmitz, Director, Compliance and Facilitation, WCO

1125-1150 Developments at the International Standards Organisation
Charles Piersall, Director, Technical Committee 8 Chairman, ISO

1150-1215 International Co-operation in Supply Chain Security: The UK Experience
Paul Collins, Head of Frontier Security and International Team, HM Revenue and Customs

1215-1245 Q and A and Summary Remarks (Moderator)

1245-1400 Lunch (Venue: Main Ballroom at Level 1)

Session 6:	Challenges for the Future
Moderator	Kumar Ramakrishna , Acting Head, Centre of Excellence for National Security (CENS), IDSS
1400-1425	Technological Solutions to Enhance the Security of the Global Supply Chain Werner Krudewagen , Director-Sector Sales, Siemens Schweiz AG
1425-1450	Managing Supply Chain Security: Key Challenges for the Future and the Human Element Paul Lightburn , Intermodal Security Manager, Lloyd's Register
1450-1515	The Challenges Ahead for Governments and Business – A View from Industry Hans Nicolas Small , Director, Enterprise Security Initiatives, Unisys
1515-1540	The Challenges Ahead for Governments and Business – A View from Government Graham Pettifer , Acting Director, Marine Security Policy, Transport Canada
1540-1610	Q and A and Summary Remarks (Moderator)
1610-1620	Closing Remarks Ambassador Tran Trong Toan , Executive Director, Asia Pacific Economic Co-operation (APEC)
1620-1645	Closing Remarks Barry Desker , Director, Institute of Defence and Strategic Studies (IDSS)

END OF SYMPOSIUM

The symposium papers are available at http://www.apec.org/content/apec/documents_reports/counter_terrorism_task_force/2006.html

ABOUT APEC

Asia-Pacific Economic Cooperation, or **APEC**, is the premier forum for facilitating economic growth, cooperation, trade and investment in the Asia-Pacific region.

APEC, comprising 21 member economies, is home to more than 2.6 billion people and represents approximately 56% of world GDP and 49% of world trade. Leaders of APEC economies meet annually to discuss a range of issues that are focused on economic growth and prosperity for the region.

APEC's 21 Member Economies are Australia; Brunei Darussalam; Canada; Chile; People's Republic of China; Hong Kong, China; Indonesia; Japan; Republic of Korea; Malaysia; Mexico; New Zealand; Papua New Guinea; Peru; The Republic of the Philippines; The Russian Federation; Singapore; Chinese Taipei; Thailand; United States of America; Viet Nam.

APEC places a strong emphasis on participation by the private sector in its activities.

The APEC Business Advisory Council (ABAC) helps Leaders establish the main priorities for business in areas such as trade and investment liberalisation and facilitating the movement of goods, services and people.

THE APEC SECRETARIAT

The APEC Secretariat is based in Singapore and operates as the core support mechanism for the APEC process. It provides coordination, technical and advisory support as well as information management, communications and public outreach services.

The APEC Secretariat performs a central project management role, assisting APEC Member Economies and APEC fora with overseeing more than 230 APEC-funded projects. APEC's annual budget is also administered by the APEC Secretariat.

ISO CERTIFICATION

In 2002, the APEC Secretariat obtained ISO 9001:2000 Quality Management Certification. This recognises the continuous efforts made by the APEC Secretariat to provide improved administrative and support activities. The APEC Secretariat is the first multilateral trade-related secretariat to attain ISO certification.



More Information

Visit our website at www.apec.org for more detailed information.

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ABOUT CENS

The Centre of Excellence for National Security (CENS) is a research unit of the Institute of Defence and Strategic Studies (IDSS) at Nanyang Technological University, Singapore. Established on 1 April 2006, CENS is devoted to rigorous policy-relevant analysis of a range of national security issues. The CENS team is multinational in composition, comprising both Singaporean and foreign analysts who are specialists in various aspects of national and homeland security affairs.

WHY CENS?

In August 2004 the Strategic Framework for National Security outlined the key structures, security measures and capability development programmes that would help Singapore deal with transnational terrorism in the near and long term.

However, strategizing national security policies requires greater research and understanding of the evolving security landscape. This is why CENS was established to increase the intellectual capital invested in strategizing national security. To this end, CENS works closely with not just other IDSS research programmes, but also national security agencies such as the National Security Coordination Secretariat within the Prime Minister's Office.

WHAT RESEARCH DOES CENS DO?

CENS currently conducts research in three key areas of national security:

- Risk Assessment/Horizon Scanning
 - The art and science of detecting “weak signals” emanating from the total security environment so as to forewarn policymakers, the private sector and the public about approaching “shocks” such as terrorism, pandemics, energy crises and other easy-to-miss trends and ostensibly distant events.
- Social Resilience
 - The capacity of globalized, multicultural societies to hold together in the face of systemic shocks such as diseases and terrorist strikes.
- Transportation Security

- The security of land-based, aviation and maritime transport networks and increasingly, the total supply chain vital to Singapore's economic vitality.

HOW DOES CENS HELP INFLUENCE NATIONAL SECURITY POLICY?

Through policy-oriented analytical commentaries and other research output directed at the national security policy community in Singapore and beyond, CENS staff members promote greater awareness of emerging threats as well as global best practices in responding to those threats. In addition, CENS organizes courses, seminars and workshops for local and foreign national security officials to facilitate networking and exposure to leading-edge thinking on the prevention of, and response to, national and homeland security threats.

HOW DOES CENS HELP RAISE PUBLIC AWARENESS OF NATIONAL SECURITY ISSUES?

To educate the wider public, CENS staff members regularly author articles in a number of security and intelligence related publications, as well as write op-ed analyses in leading newspapers. Radio and television interviews have allowed CENS staff to participate in and shape the public debate on critical issues such as risk assessment and horizon scanning, multiculturalism and social resilience, intelligence reform and defending critical infrastructure against mass-casualty terrorist attacks

HOW DOES CENS KEEP ABREAST OF CUTTING EDGE NATIONAL SECURITY RESEARCH?

The lean organizational structure of CENS permits a constant and regular influx of Visiting Fellows of international calibre through the Distinguished CENS Visitors Programme. This enables CENS to keep abreast of cutting edge global trends in national security research.

For more information on CENS

Log on to <http://www.idss.edu.sg> and follow the links to “Centre of Excellence for National Security”

ABOUT IDSS

The Institute of Defence and Strategic Studies (IDSS) was established in July 1996 as an autonomous research institute within the Nanyang Technological University. Its objectives are to:

- Conduct research on security, strategic and international issues.
- Provide general and graduate education in strategic studies, international relations, defence management and defence technology.
- Promote joint and exchange programmes with similar regional and international institutions; and organise seminars/conferences on topics salient to the strategic and policy communities of the Asia-Pacific.

Constituents of IDSS include the International Centre for Political Violence and Terrorism Research (ICPVTR), the Centre of Excellence for National Security (CENS) and the Asian Programme for Negotiation and Conflict Management (APNCM).

RESEARCH

Through its Working Paper Series, *IDSS Commentaries* and other publications, the Institute seeks to share its research findings with the strategic studies and defence policy communities. The Institute's researchers are also encouraged to publish their writings in refereed journals. The focus of research is on issues relating to the security and stability of the Asia-Pacific region and their implications for Singapore and other countries in the region. The Institute has also established the S. Rajaratnam Professorship in Strategic Studies (named after Singapore's first Foreign Minister), to bring distinguished scholars to participate in the work of the Institute. Previous holders of the Chair include Professors Stephen Walt (Harvard University), Jack Snyder (Columbia University), Wang Jisi (Chinese Academy of Social Sciences), Alastair Iain Johnston (Harvard University) and John Mearsheimer (University of Chicago). A Visiting Research Fellow Programme also enables overseas scholars to carry out related research in the Institute.

TEACHING

The Institute provides educational opportunities at an advanced level to professionals from both the private and public sectors in Singapore as well as overseas through graduate programmes, namely, the Master of Science in Strategic Studies, the Master of Science in International Relations and the Master of Science in International Political Economy. These programmes are conducted full-time and part-time by an international faculty. The Institute also has a Doctoral programme for research in these fields of study. In addition to these graduate programmes, the Institute also teaches various modules in courses conducted by the SAFTI Military Institute, SAF Warrant Officers' School, Civil Defence Academy, and the Defence and Home Affairs Ministries. The Institute also runs a one-semester course on '*The International Relations of the Asia Pacific*' for undergraduates in NTU.

NETWORKING

The Institute convenes workshops, seminars and colloquia on aspects of international relations and security development that are of contemporary and historical significance. Highlights of the Institute's activities include a regular Colloquium on Strategic Trends in the 21st Century, the annual Asia Pacific Programme for Senior Military Officers (APPSMO) and the biennial Asia Pacific Security Conference. IDSS staff participate in Track II security dialogues and scholarly conferences in the Asia-Pacific. IDSS has contacts and collaborations with many international think tanks and research institutes throughout Asia, Europe and the United States. The Institute has also participated in research projects funded by the Ford Foundation and the Sasakawa Peace Foundation. It also serves as the Secretariat for the Council for Security Cooperation in the Asia-Pacific (CSCAP), Singapore. Through these activities, the Institute aims to develop and nurture a network of researchers whose collaborative efforts will yield new insights into security issues of interest to Singapore and the region.

On 1 January 2007, the Institute of Defence and Strategic Studies will be formally inaugurated to become the S. Rajaratnam School of International Studies (RSIS), an institute of Nanyang Technological University.