SDA Monthly Roundtable

Assessing the Cyber Security Threat

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SDA
SECURITY & DEFENCE AGENDA

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Executive Summary

Following a fascinating debate that ranged from bullet-proof hosting to onion-routing, the conclusion had to be that the cyber security threat was evolving rapidly and was touching all aspects of society. Its political importance is also increasing and in a cyber society that "has no rules or borders", according to Estonia's Minister of Defence Jaak Aaviksoo, there is a need for improved coordination at the highest level.

Estonian Minister of Defence Jaak Aaviksoo

Indeed, the London School of Economics and Political Science's Professor Peter Sommer highlighted the need for such cooperation, although that had been his message for some years. In the aftermath of the alleged denial of service attacks on his country, Minister Aaviksoo, said they had been a threat his country's economy. Russia's Ambassador to the EU, Vladimir Chizhov, focused on the increasing number of websites that incited people to act as terrorists, many of which he said were hosted in the EU.

It was left to the Council of Europe's Alexander Seger to remind everyone that the Council had developed a Convention on Cyber-Crime, which also covered 'cyber attacks', as experienced by Estonia. He was confident that if a crime involved the use of a computer in any way, then the convention did apply. However, he added that only 22 of the 43 signatories had so far ratified the 2001 treaty, including just 13 of the EU's Member States. As Seger added, even the best treaty in the world would not work without cooperation.

Council of Europe's Alexander Seger

Background

Cyber attacks, such as the spring 2007 alleged cyber attack on Estonia made headlines across the world. The US Department of Homeland Security has staged major exercises such as 'Cyber Storm' to study the potential economic and national security impact of cyber warfare. The illegal use of cyberspace is, some say, a $100 billion business, bigger than the worldwide drug trade. With governments and the business world increasingly concerned that cyber threats are outpacing cyber defences, there are many questions unanswered. The recent SDA session on cyber security set out to find solutions to the puzzle.

> "With the best treaty in the world, you still need the political commitment to cooperate."
>
> Alexander Seger

Professor Peter Sommer, London School of Economics

The Debate

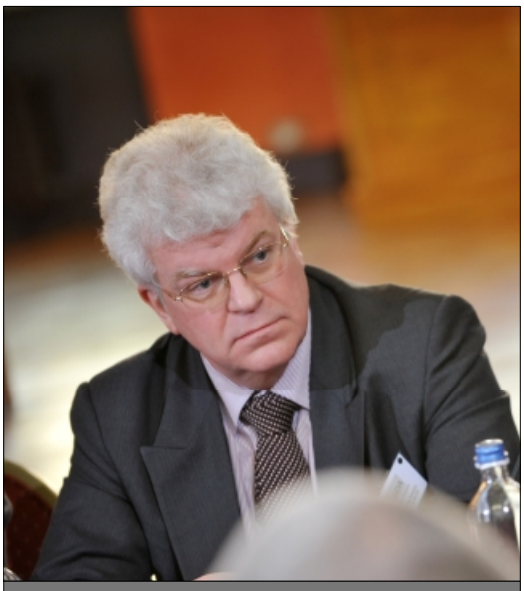
Setting the Scene

The cyber security threat is hard to define. As Estonia's Minister of Defence Jaak Aaviksoo stated, "there are no rules and no borders in cyber space". The London School of Economics and Political Science's Professor Peter Sommer, who argued that diagnosing cyber-related events was difficult, swiftly took up that point. Listing the various terms – "cyber warfare", "cyber espionage", "cyber weaponry", "cyber terrorism", "cyber crime" – Professor Sommer insisted that discipline was required when discussing the subject.

This report examines the various cyber topics discussed at the SDA event, and reviews the solutions placed on the table. Professor Sommer was right to request discipline, but that is not easy in cyber space. He also told the SDA to be "wary of statistics", so treat this document with caution.

Cyber Attacks

Most cyber attacks tend to be linked to denials of service, and can be made for political or criminal purposes. Giving an overview of the alleged cyber attacks on Estonia in 2007, Aaviksoo stated that he did not place particular importance on the details of who, what, where. He was more concerned about the perception that national security had been under attack from



Russian Ambassador to the EU Vladimir Chizhov

cyber space. There had been no attempts to access classified databases. However, Minister Aaviksoo insisted that the Estonian public, in a country where 90% of tax declarations and bank transactions are online, had thought that their accustomed way of life was under threat. Aaviksoo also placed the importance on the defence of the interface between technology and people – "because people depend on the integrity of data".

Richard Troy, Policy Officer, DG Justice, Freedom and Security, European Commission

Minister Aaviksoo added that Estonia had quickly mobilised defences after the first attacks, due to the existence of a *Computer Emergency Response Team*, established by an informal network of the key players. As for explanations, the authorities had found "no smoking gun" but the attacks had been linked to the relocation of the Soviet War Memorial in Tallinn and the "different waves of attacks took place according to Moscow time".

> "There are no footprints or fingerprints in cyber space.
>
> Jaak Aaviksoo"

Russia's Ambassador to the EU, Vladimir Chizhov argued that, paradoxically, the most advanced nations, in introducing computer technology, were also the most vulnerable to cyber attacks. To back his argument, Ambassador Chizhov claimed that the US had the most websites contaminated with malware, with a third of the world's total, followed by China (31%) and Russia with 9%. Note: But see table – origin of malware - from Symantec.

Professor Sommer insisted that identifying hackers was extremely difficult. As an example, the Professor said an attack on a US Research Laboratory had been linked to North Korea or Latvia, but had actually come from a 16-year-old boy in London, Techniques existed, he added, such as

"botnets and onion routing" that could hide the origin of the attack. Another problem identified by the Professor was that the Internet held details of weaknesses that could be used against itself, for the purposes of causing denials of service, crime or terrorism.

Cyber Terrorism

Websites can, of course, be used to incite people to take part in illegal, criminal or political acts. Ambassador Chizhov had more concern about such 'cyber terrorism' than about cyber attacks. He claimed that the number of websites that were inciting people to commit acts of violence was growing (now at +/- 5,000 according to the Ambassador). His answer was public-private cooperation, but Ambassador Chizhov highlighted fact that the EU often took no action against websites that incited violence and that were based in its Member States.

> "…we are adapting to an environment that is at once borderless and in a state of constant evolution.
>
> Richard Troy

DG Justice, Freedom and Security's Richard Troy described the Commission's approach to combating cyber crime as pragmatic, specifically targeting improvements in:

- capacity building, e.g. law enforcement, training, etc.
- operations, e.g. public-private cooperation, civil society involvement

Member of the European Parliament, Bill Newton Dunn

> "We want to crack the problem but we are not sure how to do it.
>
> Bill Newton Dunn

- education of the public
- international coordination of activities

Last year, the Commission announced the creation of the European Security Research and Innovation Forum (ESRIF), which aims to bring public and private expertise together to lay the ground for a security research agenda. This would contribute to developing the European Security Research Agenda over the medium to long-term.

Cyber Crime

Cyber crime is a growing business. Two of the main types of such crime are phishing and pharming: phishing schemes use e-mails to make people go to a phony website, whereas pharming relates to the set-up of a fraudulent website that contains copies of pages from a legitimate website in order to capture confidential information from

Director, NATO Headquarters Consultation, Command and Control Staff (NHQC3S), Major General Georges D'hollander

users.

Touching on cyber crime, Ambassador Chizhov said Russia had been promoting cyber crime legislation in line with global trends since 1997, and was ahead of most countries. But he agreed there was no legal definition of cyber crime and that political will was needed to combat such crime. His solution was to bring together the various elements of the international community under the auspices of the UN. However, Professor Sommer suggested the vital aspect was the "willingness to cooperate". The Mission of China to the EU's Deyi Gao said China was making efforts to prohibit cyber crime and was doing its best to ensure cyber security. This included the police launching campaigns against cyber crime. He saw the need for international cooperation and collaboration.

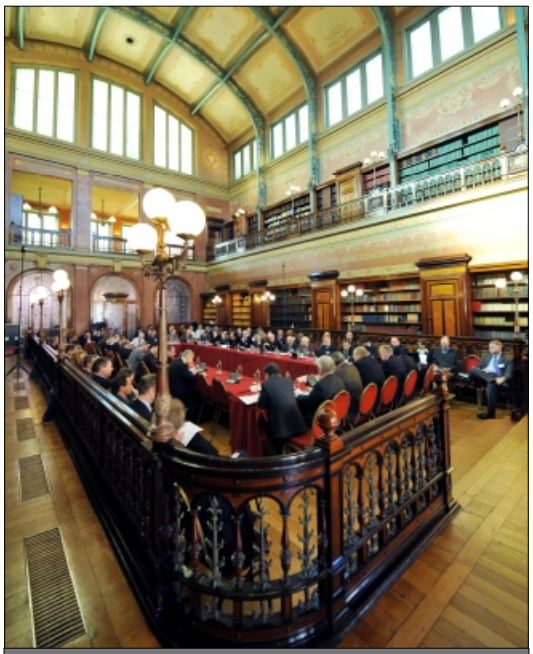
Deyi Gao, Political Counsellor, Mission of China to the EU

> "There are notorious sites that have survived several crackdowns … and have risen again in other countries, including EU countries.
>
> Vladimir Chizhov"

Troy illustrated the complex nature of the cyber-crime environment by referring to the practice of bullet-proof hosting, whereby anyone could buy a service that enabled them to offer illegal and criminal services under the mask of anonymity. Using such facilities, criminal organisations were involved in identify theft and online child abuse. MEP Bill Newton Dunn broadened the discussion regarding cyber crime by referring to the exponential increase in counterfeiting of CDs, DVDs and even fake pharmaceuticals. However, Newton Dunn did not feel that the public was particularly concerned about cyber crime and that it would take a "real crisis to attract public attention".

Alexander Seger, Head of Economic Crime Division, Directorate General of Human Rights and Legal Affairs, Council of Europe, insisted that 99.9% of computer users were acting legitimately and he did not want counter measures to infringe the human rights of such users. His solution was for everyone to sign the council's convention (see solutions).

> "We need to be disciplined in our use of language in this arena as a necessary precursor to disciplined analysis and the search for solutions. Much work has already been done by non-military security agencies."
>
> Professor Peter Sommer



The roundtable during the debate.

Solutions

NATO's Plans

NATO intends to enhance its overall cyber defence policy. Director, NATO Headquarters Consultation, Command and Control Staff (NHQC3S), Maj. Gen. Georges D'hollander said the initial focus would be on defending NATO's own infrastructure against cyber attacks. He also stressed the need for standards and the search for government and industry best practices – this was being done in league with the Network Centric Operations Industry Consortium (NCOIC) working on "network enabled capability". D'hollander added that the implementation of the policy would speed up the response capability of systems, personnel and processes in the defence against cyber attacks and that a cyber defence authority would be developed to manage cyber defence capabilities so they could act quickly.

> "NATO and UN working together could bring added-value in the fight against cyber attacks."
>
> Major General Georges D'hollander

Reviewing the Internet Itself

DG InfoSoc's Head of Unit Jacques Bus moved the attention to the Internet itself, saying it was "almost broken". Adding that many people were re-thinking the future of the Internet, Bus said there must be a technical solution

to creating safe borders, and hence increasing security, but he recognised the political and social pressures.

> "Interoperability is vital and we are working with industry on best practices and standards."
>
> Major General Georges D'hollander

D'hollander, however, was against the creation of borders, as this would affect NATO's need for information sharing. Professor Sommer was not in agreement with Bus either, as he felt the imposition of new borders would be against the trend of globalisation. The Professor was against re-inventing the wheel and was in favour of having a greater emphasis on the current proposals on international harmonisation, which were included in initiatives such as the Council of Europe's Convention on Cyber Crime.

The Council of Europe's Convention on Cyber Crime

Seger stressed that existing opportunities were not being sufficiently exploited. Focusing on the council's convention, open for signature since 2001, it has been signed by 43 countries. Adding that it was the only internationally binding treaty in the area, it covered denial-of-service attacks, data interference, computer-related fraud, child pornography, intellectual-property rights, procedural rights (to ensure more effective investigation), international cooperation and the need to balance civil rights privacy against security needs.

Despite the convention being ratified by many eastern European countries and the US, signed by Canada, Japan and South Africa, accession under way by Costa Rica, Mexico and the Philippines, Seger said that 14 of the EU's Member States had not yet done so. However, he remained optimistic, and he wanted efforts to be expanded to the rest of the world.

Importantly, Aaviksoo was concerned that the convention focused on crime and did not cover attacks that went beyond attempts at personal gain and had more political motivation. He hinted that new instruments might be needed. Seger disagreed, adding that the situation had been reviewed following the attacks on Estonia and that the convention did cover attacks against confidentiality, integrity and the availability of systems, including system interference. However, he acknowledged that the best treaty in the world would not work without sufficient cooperation.

> "Inventing new borders goes against the trend of globalisation."
>
> Professor Peter Sommer

Segers added that the convention did not mention issues such as money laundering and human trafficking, but that if a crime involved a computer (even if that was just sending an email) then the convention's procedural measures could be invoked.

Press Coverage - A Selection

"There are notorious sites that have survived several crackdowns… and have risen again in other countries, including European countries."

Russian ambassador to the EU Vladimir Chizhov
Eupolitix.com

"Events in cyberspace can affect our life at a large scale in the moment we perceive them as a national security threat."

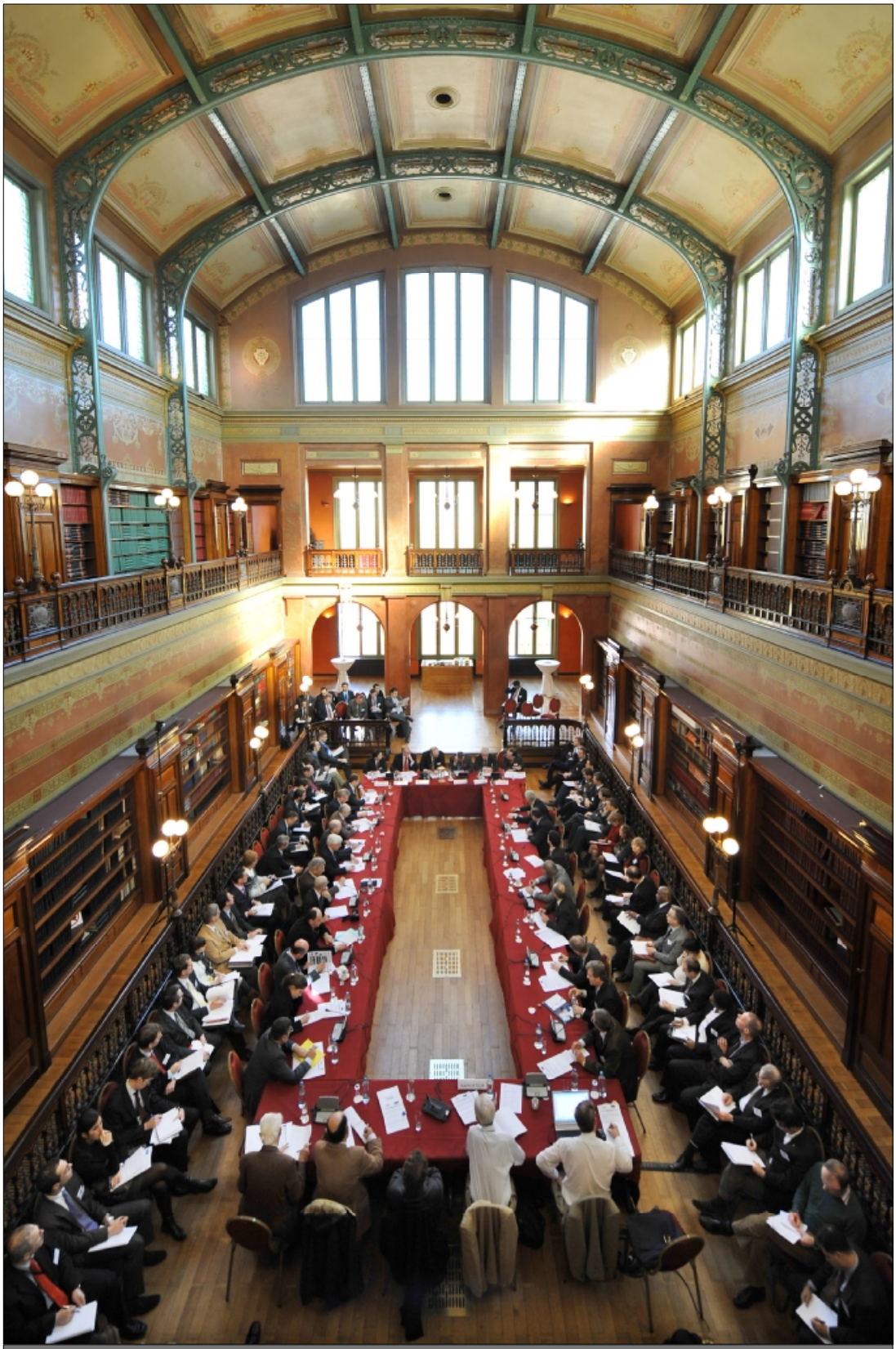
Estonian Denfence Minister Jaak Aaviksoo
Euractiv.com

"Governments can certainly do more to cooperate more with each other, to criminalise certain conduct... strengthen the confidence in cyberspace."

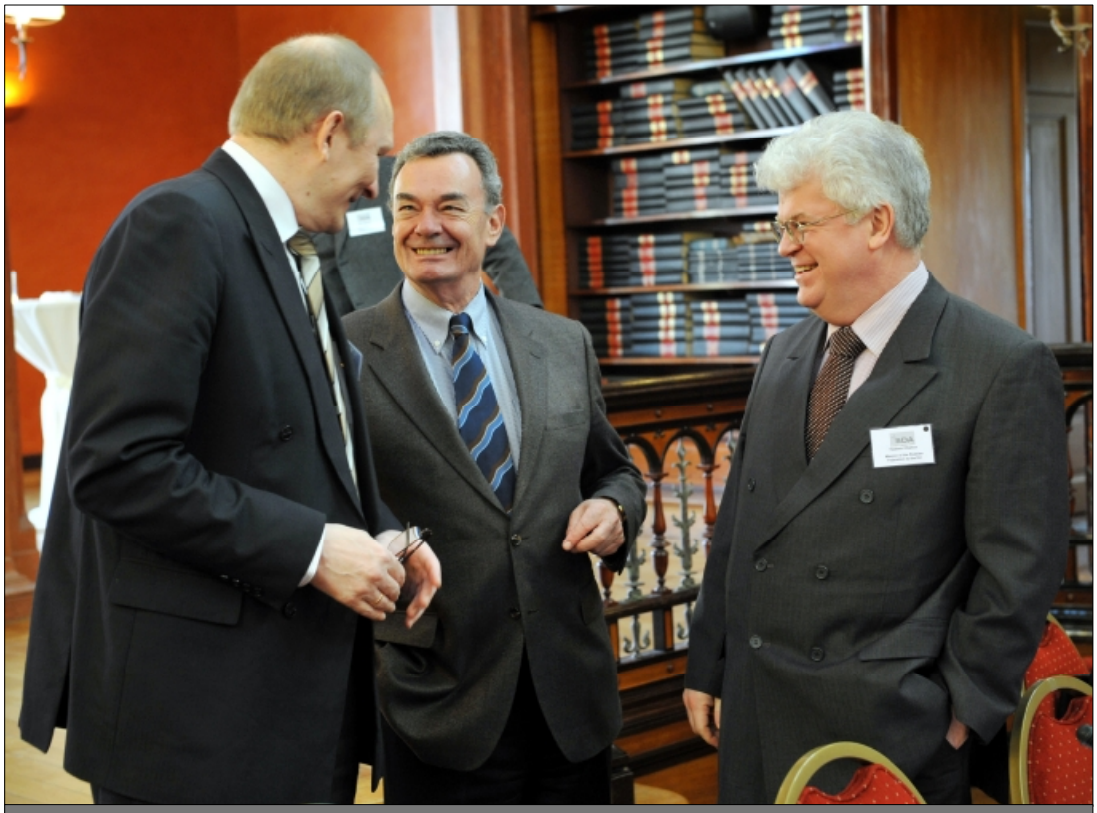
Council of Europe's Alexander Seger
Euronews

"The first priority in the field of cyber crime is to discipline the way we talk about the subject, also because the diagnosis of events is very difficult. We have to always be sure that attacks are brought about by real terrorists and not crazy teenagers."

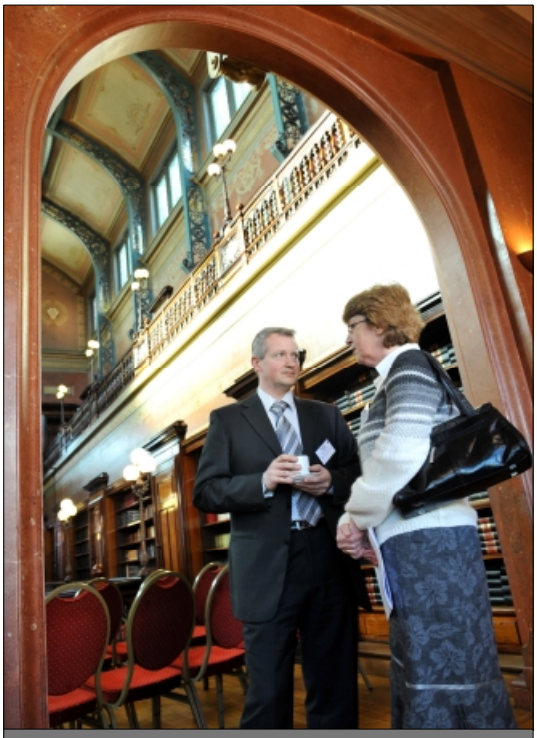
Professor Peter Sommer, London School of Economics (LSE)
Euractiv.com



Morning session of the roundtable as seen from above.



(From left) Jaak Aaviksoo, SDA Director Giles Merritt and Vladimir Chizhov talk prior to the roundtable.



Participants discuss the issues during an intermission.

A participant talks to speaker Deyi Gao.

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The Security & Defence Agenda (SDA) is the only specialist Brussels-based think-tank where EU institutions, NATO, national governments, industry, specialised and international media, think tanks, academia and NGOs gather to discuss the future of European and transatlantic security and defence policies in Europe and worldwide.

Building on the combined expertise and authority of those involved in our meetings, the SDA gives greater prominence to the complex questions of how EU and NATO policies can complement one another, and how transatlantic challenges such as terrorism and Weapons of Mass Destruction can be met.

By offering a high-level and neutral platform for debate, the SDA sets out to clarify policy positions, stimulate discussion and ensure a wider understanding of defence and security issues by the press and public opinion.

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- Monthly Roundtables and Evening debates
- Press Dinners and Lunches
- International Conferences
- Reporting Groups and special events

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