

Cybersecurity: a global security challenge

The Internet and its associated networks have become increasingly important for economic growth, openness and democracy. Consequently, cybersecurity and cyber defence have become prominent issues for governments and international organisations worldwide.

However, cybersecurity remains a contested concept. It defies easy definition, spanning a complex mix of legal, organisational, technical, educational and policy means that, together, ensure the protection of cyberspace and its assets, people and processes.

“ In a complex, rapidly changing cyber environment, policy and decision making can benefit from evidence-based research and analysis

Governments, defence organisations, civil society and the private sector therefore all seek to navigate a complex composition of roles and responsibilities, policy and legal issues, and skills and resources that cut across the civilian and military cyber domains.

Dimensions of cyberspace

Cyberspace can be seen as three distinct layers where governments, defence organisations, civil society and the private sector interact.

STRATEGIC LAYER

The top layer of cyberspace, where countries typically cooperate and compete for power. We work with governments and the defence sector on global cybersecurity issues.

SOCIAL LAYER

Where a vast majority of people's day-to-day activities take place online. In the past, industry and civil society groups have funded RAND Europe's studies into cybersecurity, critical infrastructure and the IoT.

TECHNICAL LAYER

Comprised of hardware, software and the technical components of cyberspace. We collaborate with partners on technical studies.



GOVERNMENT

As cyberspace has become fundamental and critical to our way of life, governments must ensure that they are able to protect their people, territory, economic security and infrastructure while upholding fundamental rights and a free and open Internet.



DEFENCE

With cyberspace now increasingly recognised as an operational domain, military organisations must explore and navigate the multifaceted cyber environment by utilising defensive and offensive cyber operations, cyber intelligence, and information or hybrid operations.



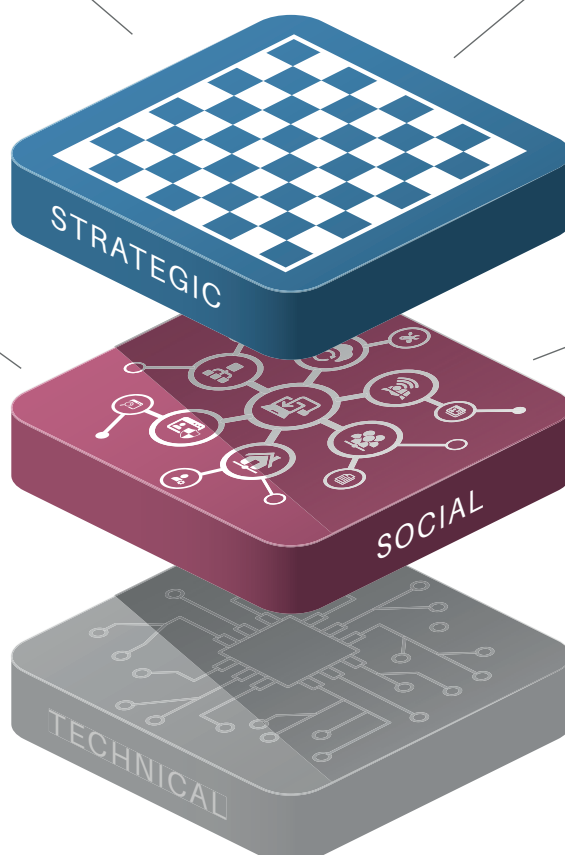
CIVIL SOCIETY

Civil society, academia, not-for-profits and other policy organisations play integral parts in the operation and maintenance of the Internet, as well as in the wider cybersecurity and cyber defence policy debates.



INDUSTRY

The private sector is widely engaged in, and affected by, cyberspace and its security developments. Some companies own and operate parts of the communications infrastructure that underpins cyberspace, while others develop the technologies and applications that enable and shape how humans interact in cyberspace. Others are simply subject to the risks and threats that connectivity entails.



RAND Europe's research

RAND Europe's work covers a wide range of cyber defence and cybersecurity issues, including:



Strategy development and evaluation – assisting governments and military organisations with the development and evaluation of national cybersecurity and cyber defence strategies.



Cyber policy and decision-making support – research into cyber workforce management, national and regional cyber-organisational structures, data protection, privacy, and cybercrime issues.



Capability assessment and development – examining current levels of national or regional cybersecurity and cyber-defence capabilities, as well as supporting targeted interventions to build policy or technical capabilities across both civilian and military domains.



Cyber acquisition and cyber industrial analysis – assessing acquisition of cyber defence and cybersecurity equipment and services, as well as issues surrounding the industrial base that provides them.



Threat assessments and risk management – understanding the cyber threats, risks and vulnerabilities that organisations and governments face, and how they deal with them. This includes research into how organisations invest in cybersecurity and cyber insurance, and manage risks stemming from the dark web.

RAND Europe's expertise

RAND Europe is well placed to conduct research and analysis in support of evidence-based policy and decision making across the cybersecurity and cyber defence domains.

- **We are independent and objective.** As a not-for-profit research organisation, RAND Europe's mission is to help improve policy and decision making through research and analysis. Our mission is underpinned by our core values of quality and objectivity, and our unwavering commitment to the highest level of integrity and ethical behaviour.
- **Our researchers have a deep knowledge of cyber-related issues.** For years, RAND Europe has been at the forefront of cybersecurity and cyber defence trends and developments. We have advised governments in Europe and beyond and provided research and analysis in support of national and international efforts in strengthening cyber capabilities and resilience. We have worked with key cyber actors, including the European Commission, the European Parliament, the European Defence Agency (EDA), the European Network and Information Security Agency (ENISA) and the North Atlantic Treaty Organization (NATO).
- **We have strong networks across the cybersecurity and cyber defence communities.** RAND Europe has well-established relationships in the global defence community, particularly in EU Member States, with EU agencies and bodies, and with NATO bodies and institutions. We also have well-established links with academia, think tanks and commercial organisations, and we frequently partner with other organisations to provide the best support to our clients.
- **We have a unique, multidisciplinary, contextual understanding of cyberspace.** RAND Europe's research portfolio spans a wide range of disciplines and topic areas ranging from home affairs and social policy to innovation, health and science. This enables us to situate cyber-specific research questions within the wider societal context, for example placing cyber defence within the wider defence context or relating dark-web cybercrime to current judiciary or liability practices.

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RAND Europe contacts



Dr Giacomo Persi Paoli

Giacomo joined RAND Europe in 2014 and is responsible for the Security, Resilience and Cyber research portfolio. Prior to joining RAND Europe, Giacomo served 14 years as warfare officer in the Italian navy specialising in telecommunications and combat management systems, including communication and information security.



Erik Silfversten

Erik has supported policy and capability development for governments and international organisations in a wide number of cybersecurity and cyber defence areas, including national cybersecurity strategies, evaluation of cyber capabilities, and cyber workforce management. Prior to joining RAND Europe, Erik held the position of manager for policy and strategic development at IMPACT, the cybersecurity partner of the International Telecommunication Union (ITU).

Read more and meet the team at www.randeurope.org/cyber



RAND Europe is a not-for-profit research organisation that helps to improve policy and decision making through research and analysis.

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CP-871-1 (2018)



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