



Emerging technologies and their impact on strategic trade controls:

Future challenges for non-proliferation, security and human rights

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What are emerging technologies?

Characteristics

- ▶ Novel elements that display disruptive potential
- ▶ Have not yet reached their full potential
- ▶ Rapid development
- ▶ Adopted by some industries
- ▶ Subject of targeted research and development efforts
- ▶ Lack of technical standards for characteristics of concerns
- ▶ No conclusive shared risk assessment



Non-proliferation, security and human rights risks

- ▶ Enabling access, faster development or development of new CBRN weapons and their delivery systems
- ▶ Application of emerging technologies in conventional arms and enabling new qualities, e.g. through the use of AI
- ▶ Use of emerging technologies for systematic and grave violation of human rights, e.g. cyber-surveillance technologies for repression
- ▶ Broadening definition of national and public security widening the scope of controls to include emerging technologies

Challenges of applying export controls to emerging technologies

Regimes

- Fast change of technical parameters
- Lack of common technical standards
- Economic and strategic impact of controls on emerging technologies
- Cross-regime relevance and lack of coordination

States

- Uneven application of controls without list-based controls
- Classification and risk assessment
- Applying and enforcing controls on intangible transfers of technology (ITT)
- Fewer effective channels for outreach to emerging technology start-ups

Exporter

- Limited awareness of risks associated with emerging technologies
- Applying due diligence to R&D collaboration, venture capital & innovation funding
- Digital transfers and access management in multi-national companies and research collaboration
- New business practices as point-of-failure leading to violations

STC instruments to address emerging technologies

- ▶ Catch-all controls
- ▶ Outreach to industry, start-ups and research organizations
- ▶ Targeted guidance materials
 - ▶ Intangible transfers of technology (ITT)
 - ▶ Cloud computing and software-as-a-service (SaaS)
 - ▶ Application of human rights standards in export risk assessments
- ▶ Dialogue and coordination across different non-proliferation instruments, organizations and communities of practitioners
- ▶ Synergies with other instruments, including CBRN security activities and foreign direct investment (FDI) screening tools



Looking ahead: Future challenges for STC implementation

- ▶ Impact of geopolitical competition on multilateral export control regimes
- ▶ Mini-lateral and unilateral national export controls
- ▶ Cloud computing as the main means of technology transfer
- ▶ Compliance in start-ups vs. 'move fast and break things'
- ▶ Transparency and public goods provision by the regimes