

# Blockchain in Practice

Testing the potential for DLT platforms to increase transparency and security.

Stimson's Blockchain in Practice program tests the potential for permissioned DLT platforms to create greater efficiencies in safeguards information management, nuclear security, the global trade in dual-use chemicals and export controls. Verifying compliance with non-proliferation and disarmament treaties requires a high level of trust. In an era when technology is rapidly evolving alongside a range of emerging threats, international security regimes face a common challenge of ensuring the integrity of data, information flows and data traceability.

The same applies to global supply chains and export controls, where increasing automation and transfer of sensitive information between industry and governments require data security for intellectual property rights and export licensing. Distributed ledger technology (DLT) offers a novel technological solution for data transfer, verification and trust-building among parties normally suspicious of one another while also streamlining process and reducing administrative burdens.

## EXPLORING THE FUTURE OF VERIFICATION

DLT is especially relevant for international security since many challenges in this area – secure and authentic information exchange among states, illicit trafficking concerns, insider threats – are problems of provenance (e.g. is the information trustworthy and traceable?) and risk reduction for high-value assets (e.g. nuclear, chemical and biological materials and technologies). Additionally, national authorities, facility operators and international organizations have experienced a steady increase in reporting requirements and are continually assessing various tools and methods for improving reporting, compliance, and verification.

Over the long term the program will guide policy practitioners as they consider and adopt the technology to improve non-proliferation and study its impact on organizations, people, and security regimes. Notably, our research remains objective,

## PROJECTS

[DLT and International Security Regimes](#) Applied research on distributed ledger technology to improve trust, security, and transparency

[SLAFKA Prototype](#) DLT for Nuclear Material Accountancy and Control

## LEADERSHIP

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testing and prototyping to determine whether the technology is appropriate for a specific operational or policy challenge rather than automatically supporting its adoption.

## **TESTING NEW TECHNOLOGY TO PREVENT UNAUTHORIZED ACCESS AND THEFT**

Potential outcomes for the application of DLT to international security regimes could be significant for improving the timeliness for detecting diversion, unauthorized access, loss or theft of dual-use materials and technology. By providing trusted data, real-time monitoring, and faster reconciliation of corrections to declarations, security regimes could experience dramatic reductions in time dedicated to book inspections, which make up a large fraction of the total inspection effort. Simultaneously, DLT could reinforce confidence in information provided by States and operators, even as corrections and adjustments are appended to the ledger. These improvements could transform how international organizations, national authorities and industry review and process information to allow for greater efficiencies in reporting and verification and thus inspire greater confidence in conclusions related to (non)compliance.

Stimson is on the cutting edge of exploring and testing how DLT might apply to international security regimes. The program is among the first to engage international and regional non-proliferation and disarmament organizations, national authorities and DLT companies on the applications of DLT for non-proliferation. We are also the first to work directly with a national nuclear regulator to develop a small-scale prototype to demonstrate the potential of DLT for creating greater efficiencies and effectiveness in safeguards information management. Stimson is at the forefront of studying and socializing the technology among stakeholders and testing the technology in real-life scenarios. Moreover, the Blockchain in Practice program works cross-programmatically with others at Stimson elevating our expert credibility as we engage across the non-proliferation spectrum.

## **Contact**

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