

INATBA POLICY POSITION

Smart Contract & Automated Data-Sharing Agreements

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PRIVACY WORKING GROUP



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Introduction

In today's rapidly evolving technological era, maintaining precision and clarity in regulatory language is more than just an academic concern – it's a necessity for ensuring industry stability and fostering innovation. As technologies become more complex and intertwined, any ambiguity in regulatory definitions can lead to misunderstandings, misapplications, and potentially costly legal challenges. Nowhere is this clearer than in the ongoing discussions surrounding the EU's Data Act.

A focal point of these discussions is the Act's portrayal and definition of 'smart contracts'. With the latest advancements, features like self-termination in smart contracts are being introduced, leading to some conceptual overlap with automated data-sharing agreements. Such overlaps threaten to dilute the unique essence of what a smart contract represents, especially within the blockchain ecosystem. Considering the latest regulatory developments, it is imperative to demarcate clear boundaries. Having a robust and unambiguous understanding of what a smart contract is – and what it is not – is vital for all stakeholders in the blockchain space.

This paper analyses this complex topic, comparing the characteristics of smart contracts and automated data-sharing agreements, with the intent of scoping clear-cut definitions that both industry practitioners and regulators can rally behind.

What is a Smart Contract?

A smart contract is a self-executing contract with the terms of the agreement directly and immutably written into lines of a computer program. The code controls the execution, and transactions are trackable and irreversible. Smart contracts can operate on both public and private blockchain networks, allowing for transparency in transactions.

Decentralised smart contracts function without reliance on a central authority. However, the coding flexibility remains such that even within fully decentralised networks, smart contracts can assume highly permissioned and centralised attributes. Essentially, a smart contract represents a computer program executing

predetermined instructions. On a decentralised network, the sole guarantee is that the logic will remain unchanged; it will unfailingly execute what has been coded. Nevertheless, the range of possibilities spans from full decentralisation to highly permissioned and centralised functionalities, embodying a spectrum of potential implementations.

It is imperative to consider that while smart contracts generally operate autonomously based on their pre-defined code, their behaviour is ultimately dictated by their programming.

Definition of Smart Contract	
Data Act	ISO
'smart contract' means a computer program stored in an electronic ledger system wherein the outcome of the execution of the program is recorded on the electronic ledger	'smart contract' means a computer program stored in a distributed ledger system wherein the outcome of any execution of the program is recorded on the distributed ledger

What is an Automated Data-Sharing Agreement?

Automated data-sharing agreements automate the process of data exchange, but they have inherent features that set them apart. They often operate within established systems and have predefined conditions that regulate the sharing of data. Importantly, these agreements do not necessarily rely on blockchain technology, instead often utilising standard web technologies for data-sharing protocols and storing.

Comparison

While both smart contracts and automated data-sharing agreements involve automation and digital execution of agreements, they differ in their underlying technology, operational control and security.

	Smart Contract	Automated Data-Sharing Agreement
Access Control	They don't have access controls (unless explicitly written into the smart contract), usually operate in a decentralised system without a single entity exercising control.	Automated data-sharing agreements usually operate under centralised systems, where access control is normally implemented.
Immutability	Smart contracts inherently offer immutability due to their blockchain foundation.	Automated data-sharing agreements, unless on a blockchain, typically do not offer immutability.

Infrastructure requirements	Relies on blockchain or similar distributed ledger technology for operation.	Does not rely on blockchain technology; instead, it often uses standard web systems and databases.
Purpose	Generally used to automatically execute conditions of a contract when predefined criteria are met. They exist to fulfil a contractual obligation without the need for intermediaries.	Primarily designed to automate the process of data exchange based on predefined conditions. The goal is the regulated sharing of data.
Security	Offers high security due to blockchain's transparency, immutability, and disintermediated nature.	Security is defined by centralised control, often with built-in safeguards and permissions, but can be potentially changed or interrupted.

Conclusion

Recognising and considering these fundamental differences is critical for a balanced approach needed to regulate new technologies. It's imperative to ensure that definitions used in regulations are accurate and foster growth, understanding, and innovation rather than creating unintended barriers and uncertainty.

In the ever-evolving realm of technology, clarity in terminologies is paramount to ensure that regulatory frameworks remain relevant and effective. The EU's Data Act brings forth a pertinent example, where the term 'smart contract' may be conflated with automated data-sharing agreements. While both mechanisms serve to automate specific tasks, their foundational technologies, control paradigms, and security models diverge significantly. Smart contracts, rooted in blockchain technology, emphasise decentralisation, transparency, and immutability. In contrast, automated data-sharing agreements, operating often on traditional web technologies, emphasise centralised control and modifiability. The discrepancies in the definitions provided by the Data Act and ISO 22739, particularly the use of 'electronic ledger' instead of 'distributed ledger', further highlight the importance of precision in regulatory language. As technology continues to advance, it becomes increasingly vital for regulatory bodies and standards organisations to align their definitions, ensuring that stakeholders across the spectrum have a clear and consistent understanding of these critical terms.



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