4 DLT 4 ALL

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Learning module 6: Privacy and Property Rights

Description

Computing is no longer operating in a vacuum and as such it affects and is affected by society. Moreover, in most cases technology is ahead of society settings and legislation, and, in most cases both society and legislation need to catch up and adapt to the new situation as defined by the technology. In rare occasions, however, the technology is coming to the aid of legislation and society, and, allows certain operations to take place in a more transparent and faster fashion than current practices allow.

Learning Module 6 discusses how blockchain technology can support legislation on Property Rights, both tangible and intangible and describes privacy related issues in blockchain. The European legislation on property rights and licensing is presented and how blockchain technologies could help designing a fair remuneration scheme is discussed. The GDPR and issues related to privacy are then discussed, together with implication related to blockchain immutability for rights that need to be guaranteed under GDPR (like the right to be forgotten). Finally, technologies to enhance privacy of blockchain-based systems are presented and related issues discussed in detail.

Dependencies

This learning module has the following prerequisites:
- Introduction to the DLT world (LM0)
- Smart Contracts (LM5)

Learning Objectives

- To present the current European legislation framework related to Property Rights.
- To describe existing types of software licenses.
- To explain international copyright laws.
- To discuss license coordination and the role of registries.
- To discuss issues related to Property Rights that arise when using DLTs.
- To present the European GDPR and its implications for privacy and information freedom.
- To discuss issues related to GDPR that arise when using DLTs.
- To present a set of privacy-preserving encryption techniques.
- To discuss issues related to privacy that arise in a DLT-based system.

Learning Outcomes

- **Understand** the GDPR and its implications for blockchain technologies.
- **Understand** how to avoid conflicts with the law when utilizing blockchain technology.
- **Describe** property rights can be protected utilizing blockchain.
- **Understand** how personal data can be in the control of individuals thanks to blockchain technology.
- **Describe** how Angel Investors can valuate Blockchain-related companies.
- **Recite** the role of IPR rights in encouraging innovation and creativity and how blockchain can accommodate/facilitate IPR.

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- **Understand** how the property rights can be protected utilizing blockchain technology.
- **Examine** security and privacy considerations of storage integration.

Syllabus

1. Property Rights
    1.1. The legislation around Intellectual Property Rights (CPDA 1988)
    1.2. What a software license is
    1.3. License types
    1.4. International copyright law
    1.5. Token as a license?
    1.6. Private ordering
    1.7. Fragmentation
    1.8. Licensing coordination
    1.9. Registries
    1.10.   Formalities
    1.11.   Orphan works and the public domain
    1.12.   Rights management information
    1.13.   Fair remuneration

2. DLT Issues pertaining to Property Rights

3. GDPR – Issues with privacy and Information Freedom

4. DLT Issues pertaining to GDPR

5. Applied encryption techniques for privacy
    5.1. Chameleon hash functions
    5.2. Stealth addresses
    5.3. Confidential transactions through ring signatures
    5.4. Implementing privacy through zero-knowledge proof
    5.5. Private smart contracts – Enigma
    5.6. Off-chain storage

6. Privacy issues of DLTs