verify.it

Case Study

How FCSE switched to frictionless issuance of digital documents based on tamper resistant verification

The **Faculty of Computer Science and Engineering (FCSE)** (https://www.finki.ukim.mk) is recognized as the strongest and most advanced scientific research and educational institution in North Macedonia in the field of Informatics. It enrolls about 1000 students per year and has more than 4300 active students in the first and second cycle of studies.

In recent years, utilizing its modern infrastructure, FCSE also established itself as a leading hosting and application service provider. The notable mentions in its portfolio are the **National System for Electronic Health Records** and the **National Distance Learning Platform**.

The complexity behind the issuance of verifiable documents

FCSE issues various types of documents to its students for various reasons. To name a few:

- **student confirmation letters** - e.g. needed to complete a scholarship application
- **digital transcripts** - e.g. needed to apply for an internship abroad
- **diplomas** - at the end of the studies

The underlying reasons for the usage of the documents might be different, but there are still some common traits:
- there is a well-defined workflow behind each one of them: request for the document, preparation of the data, verification and signing, delivery / distribution
- multiple users playing different roles are involved in the process of their creation
- integration with the other available infrastructure (e.g. the archival system) is required
- it **should be possible for the final recipient of the issued document** (e.g. the entity receiving the scholarship application or a potential employer abroad) **to verify that it was really issued by FCSE**.

The need for verification is one of the main reasons why the **paper format** (signed and stamped by the organization's representatives, per the governing law) is still a predominant way of issuing the documents. Needless to say, this involves **additional manual efforts on behalf of FCSE and ultimately increases the operational costs.**

Fortunately, the national law for handling electronic documents and electronic signatures has developed in a way that allows for issuance of digital documents that could be verified both domestically and internationally.

Frictionless digital issuance

As part of its mission to deliver enterprise grade products and services based on blockchain technology, **Blokverse has developed verify.it,** a comprehensive, next-generation platform for issuance of digital verifiable documents.

It is designed for the modern issuing organizations that need to optimize their processes while remaining **compliant with the respective data protection laws**. The following aspects are covered:

- Credential Lifecycle Management
    - possibility to schedule, issue and revoke any kind of documents
- Global Unique Identifier
    - association of unique identifier to the issued document that is used as a base for verification
- Digital Signing
    - integration with signing services from qualified trust service providers that provide cross-border compliance
- Blockchain Notarization
    - storage of cryptographic proof for every issued document in a tailor-made, tamper proof data store for easy and fast verification
- Email Distribution
    - distribution of issued documents to the recipients based on configurable templates

FCSE has joined forces with Blokverse to do the digital transformation of their issuance processes based on the verify.it platform.

"What we like about verify.it is that we are able to iterate, i.e. start with a few documents, then add more over time. The ability to reduce friction between our existing infrastructure is beneficial for us long term. It is important to be able to support both the current and the future issuance requirements."

FCSE Vice Dean for Academic Affairs assist. prof. d-r Petre Lameski

Tamper resistant verification

There are numerous disadvantages when it comes to the issuance and usage of documents in a paper format
- they are more expensive to create as there is a manual effort involved in the process
- the recipient of the document can lose or accidentally damage the document
- there are many known cases of document fraud (e.g. using a false or altered document)

To eliminate or significantly reduce document fraud, there is a need for a simple and affordable means of verification of the issued documents. The verifier should be able to do answer the following questions:
- Is the document really issued by the respective organisation?
- When was the document issued? Is it still valid?

The formal verification of the issued documents in a paper format usually ends up with manual checks at the issuing organisation. This approach is time consuming and costly for both the issuing organisation and the verifier. Hence, it is unfortunate but true that a formal verification is often not done.

Fortunately, in recent years, blockchain technology has emerged as a technological solution for building tamper resistant systems that could perfectly be used for verification of issued documents. With the maturing of the initiatives such as **European Blockchain Services Infrastructure (EBSI)**, it is expected that these systems will enter the mainstream in the years to come.

Built on the same premise, **verify.it** solution is based on an **international permissioned blockchain network** that consists of several trusted institutions and companies in the role of the trust anchors. By participating in the consensus protocol with their respective nodes, the trust anchors enable the cryptographically based verification of the digitally issued documents.

Already an experienced hosting and application service provider, **FCSE has joined verify.it blockchain network** as one of the network members**.**
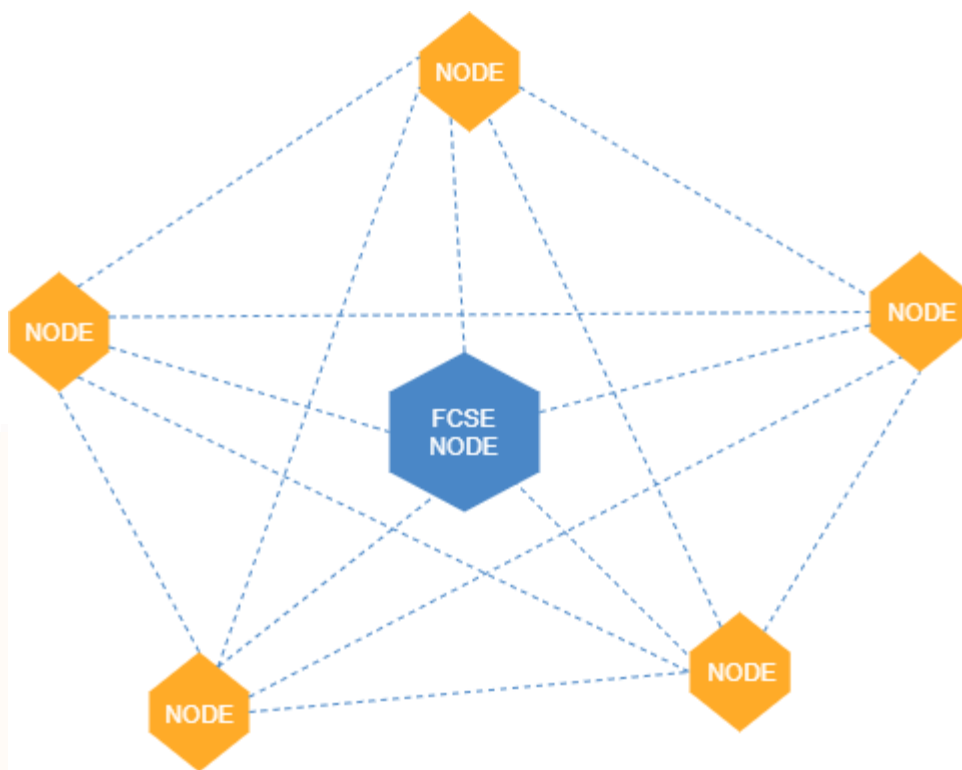
FCSE as a trust anchor in verify.it blockchain network

"FCSE has a strong track record when it comes down to embracing new disruptive technologies. It was, therefore, a natural step to choose to participate in verify.it blockchain network. We think it has the potential to streamline the verification of our issued documents both domestically and across borders."

FCSE Dean prof. d-r Ivan Chorbev