



Final report after participation in The Financial Supervisory Authority of Norway regulatory sandbox for fintech

**Use of blockchain to obtain, store and provide
audit evidence in the execution of an audit**

26.01.2022

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Content

1. Introduction	3
1.1 The purpose of the sandbox	4
1.2 Motivation for participation in the sandbox	4
1.3 The value of putting audit evidence on the blockchain	4
1.4 Objectives	5
2. Organization	6
2.1 Execution	6
2.2 Participants in the sandbox	6
2.3 Participation in European cooperation	6
3. Results and regulatory clarifications	7
3.1 ISA 500 Audit Evidence	7
3.2 ISA 505 - External Confirmations	8
3.2.1 Purchase receipts on blockchain as audit evidence	8
3.3 ISA 402 Service Organizations and Outsourcing	9
3.3.1 Service Organization	9
3.3.2 Outsourcing	9
3.4 ISA 230 Audit Documentation	9
3.5 ISA 240 The Auditor's responsibilities relating to fraud in an audit of financial statements	10
3.6 Feedback from auditors	10
3.7 Anti-money laundering	11
4 Achievement of success criteria related to the objectives	11
5 Next step for Abendum	11

1. Introduction

Auditors are the public's fiduciaries and shall create confidence that annual accounts meet applicable legal requirements and do not contain material misinformation, cf. Section 9-1 of the Auditors Act. Auditors are subject to supervision by The Financial Supervisory Authority of Norway, cf. Section 1, first subsection of the Financial Supervision Act. The auditor shall plan and carry out an audit so that the auditor at the conclusion of the audit has reasonable assurance to confirm that the accounts are without material misstatements.

From The Financial Supervisory Authority of Norway annual report 2019 page 71:

«... The most serious breaches were that the auditor had not obtained sufficient and appropriate audit evidence as a basis for the audit opinion.»

Audit evidence is defined in ISA 500 point 5 litera c as information used by the auditor to arrive at the opinion on which the auditor's assessment is based. Audit evidence includes both information contained in the accounting material that supports the accounts, and information obtained from other sources.

Our claim is that Abendum's proof-of-concept software can put audit evidence on the blockchain. Regulatory ambiguities, on the other hand, may hinder whether auditors dare to use evidence from the blockchain.

The software was therefore enrolled in the The Financial Supervisory Authority of Norway regulatory sandbox for fintech in March 2021 to get an assessment of the quality of evidence the technology can achieve in line with ISA standards and the legislation for the auditor.

The software can take a hash (fingerprint) of each posting in the ledger and put it on the blockchain. Each fingerprint is unique to the individual player, so the fingerprint can be reconciled/checked against trading partners' fingerprints.

The tool will provide the auditor with a new, effective way of obtaining sufficient and appropriate audit evidence.

The ISA standards shall in principle be technology neutral, which was investigated more closely in the sandbox. In the sandbox, we were able to raise relevant issues and take a new look at technology and legislation. This resulted in a better solution than the original solution.

The most important issue we were able to clarify in the sandbox dealt with the quality of evidence on the audit documentation and any outsourcing that arises from the use of the evidence on the blockchain. A separate anti-money laundering tool was also discussed. The result in the form of this report may provide more regulatory clarity both for auditors and audit companies, but also for others who want to build solutions on the blockchain.

We hope the work in the sandbox leads to a tool that contributes to effective auditing and blockchain innovation.

1.1 The purpose of the sandbox

In the regulatory sandbox, businesses will have the opportunity to test new, innovative products, technologies and services under the supervision of The Financial Supervisory Authority of Norway, including assessing which permits are required.

The purpose of the sandbox is to:

- contribute to innovative businesses gaining increased knowledge about the regulations
- contribute to increasing The Financial Supervisory Authority of Norway understanding of new technological solutions in the financial market
- contribute to increased technological innovation and more new players

Admission to the regulatory sandbox does not imply an approval or quality assessment of the product, technology or service.¹

1.2 Motivation for participation in the sandbox

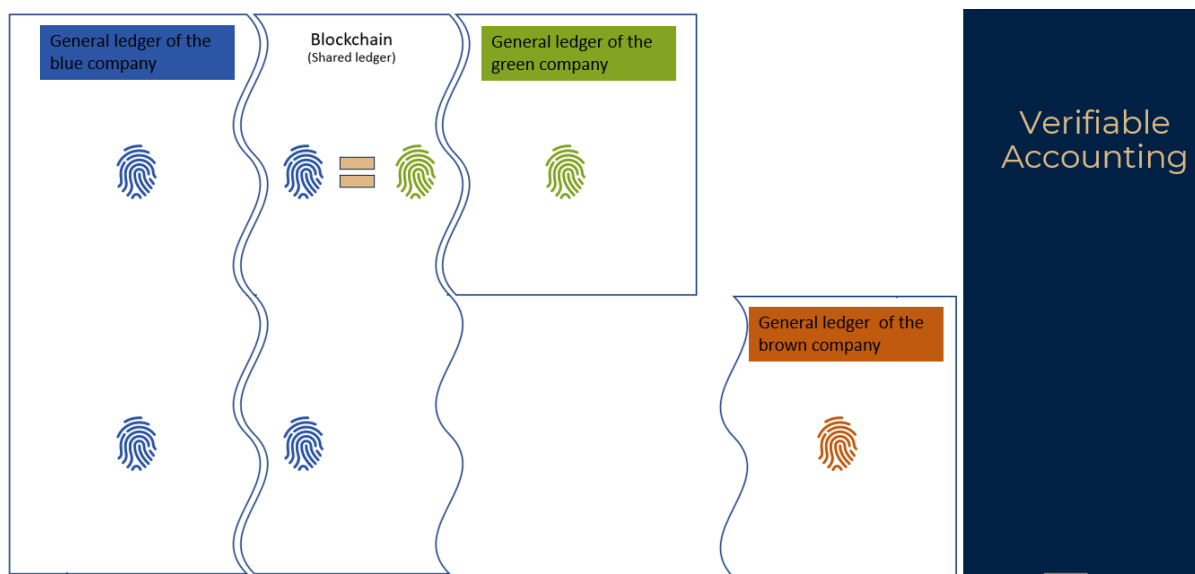
The user group of Abendum's software will be auditors and accountants, subject to licensing requirements and supervision from The Financial Supervisory Authority of Norway. For users to adopt new solutions, necessary regulatory issues must be clarified. It was therefore important for Abendum to test our software in the sandbox.

1.3 The value of putting audit evidence on the blockchain

The use of blockchain technology may streamline the auditor's work by automated collection of audit evidence. The blockchain, which is a "shared ledger", can strengthen the integrity and availability of audit evidence because it acts as an immutable global ledger. In practice, the tool is an extension or integration of an accounting program used by companies. The tool will take a fingerprint of the general ledger postings and log these against the blockchain on an ongoing basis. It will happen automatically and will not affect the normal accounting procedures. Even if the fingerprint is placed on an open blockchain, it is not possible to read confidential information. The solution is within the framework of the auditor's duty of confidentiality because the accounting data is encrypted on the open blockchain.

The image below illustrates how a fingerprint of a posting on both the blockchain and the ledger can be used to ensure data integrity and to reconcile or confirm transactions between two parties.

¹ <https://www.finanstilsynet.no/tema/fintech/finanstilsynets-regulatoriske-sandkasse/>



The tool is built on a scalable, open ledger to achieve efficient and secure logging (timestamping) of accounting data that facilitates efficient reconciliation between ledgers. In the example above, the ledgers of blue and green are reconciled. The benefits of using extensive publishing of fingerprints of data to ensure data integrity and timestamping can be linked back to Haber and Stornetta's experiments in the 1990s, where the publication of the fingerprint was made in The Times Magazine's column for 'notices & lost and found'.² Abendum uses the globally available and public Bitcoin SV blockchain that Satoshi Nakamoto invented based³ on Haber and Stornetta's technique, but with the publication of fingerprints in a public network, i.e. public blockchain.

In the future, extensive use of solutions based on open ledgers in the form of blockchains may enable new audit procedures that can verify assertions of completeness, accuracy and occurrence. For example, 'search for transactions that have not been posted' in the audit client's accounts can be done on the ledgers of other participants in the blockchain.

The final report can be useful for an auditor who is considering adopting automated audit procedures where the audit client has adopted blockchain technology in its interactions with customers and suppliers. The same applies to accountants since they are working on documenting the accounts to be audited.

1.4 Objectives

It is a goal to clarify questions related to (in order of priority):

- ISAs: 500, 505 and 402, including key parts of the Auditors Act considering blockchain technology.
- Documentation requirements for the auditor, in accordance with ISA 230.
- Testing the solution together with accountants and auditors.
- The Anti-Money Laundering Act and blockchain.

² <https://coingeek.com/stuart-haber-and-scott-stornetta-how-our-timestamping-mechanism-was-used-in-bitcoin-video/>

³ <https://craigwright.net/bitcoin-white-paper.pdf>

- Whether receipts automatically written to blockchain can provide better audit evidence and more transparency in investigations related to money laundering regulations.

2. Organization

2.1 Execution

The sandbox consisted of 5 workshops that lasted 3 hours each and were carried out from May to November 2021. All documentation was shared in a shared portal. Prior to the workshops, user stories, relevant material and issues for discussion were circulated. In parallel, a pilot project was carried out with accountants and auditors who tested the software and provided input.

2.2 Participants in the sandbox

Part	Responsibility	Name
Abendum	Coordinate the project on Abendum's part. Contribute content to the workshops. Write final report.	Torje Vingen Sunde CTO
Abendum	Contribute blockchain expertise to the workshops.	Stephan Nilsson CEO
The Financial Supervisory Authority of Norway	Coordinate the project on The Financial Supervisory Authority of Norway's part.	Vidar Stjern Nordtømme Manager
The Financial Supervisory Authority of Norway	Regulatory auditing clarifications.	Olav Bjørge Pettersen Professional advisor
The Financial Supervisory Authority of Norway	Regulatory clarifications related to IT auditing.	Aksel Palm Professional advisor
The Financial Supervisory Authority of Norway	Regulatory clarifications related to anti-money laundering.	Anders Schøitz Worren Head of Section Anti Money Laundering and Payment Companies

2.3 Participation in European cooperation

Abendum (and Unisot SSI⁴)⁵ participate in the European Blockchain Services Infrastructure (EBSI), an initiative for cross-border data flow based on blockchain technology in the EEA.

⁴ Unisot is the sister company to Abendum and SSI stands for Self-Sovereign Identity

⁵ <https://ec.europa.eu/cefdigital/wiki/display/CEFDIGITAL/EBSI>

3. Results and regulatory clarifications

The auditor shall carry out the audit in accordance with the Auditors Act, including in accordance with good auditing practice, cf. Section 9-4, third subsection, first sentence of the Auditors Act. The requirement for good auditing practice is a legal standard that is complemented by international industry-determined standards (ISA).

3.1 ISA 500 Audit Evidence

The auditor's goal is to design and carry out audit procedures in such a way that the auditor can obtain sufficient and appropriate audit evidence to have reasonable assurance as a basis for the auditor's opinion, cf. ISA 500 point 4. Audit evidence obtained from external sources is more reliable, and strengthens the quality of evidence, cf. ISA 500 point 7 cf. Section 7 of the Regulations. guidance point A35. External confirmations are a method for the auditor to obtain evidence from external sources and are just one of several ways to obtain audit evidence. This is highlighted in more detail under ISA 505. One issue with Abendum's use of a shared ledger and blockchain is whether the evidence obtained meets the criteria set to be considered an external source.

A key question for assessing whether the evidence is external, is whether or not Abendum is to be defined as a service organization. The next question is whether Abendum is a service organization for the auditor or the audit client. The problem follows from ISA 500 Definitions 5 (d) second sentence definition of an External information source:

"When information has been provided by an ... organization acting in the capacity of ... a service organization ... the organization is not considered an external information source with respect to that particular information."

The sandbox assessment of whether Abendum is a service organization, or whether the service is outsourcing, is highlighted in more detail in Section 3.3 of this report.

In summary, the assessment is that an audit evidence where the fingerprint of a general ledger transaction is matched on the blockchain can be considered as an external source as the transaction is signed by the counterparty. The fact that the audit evidence is considered an external source has an impact on the quality of the evidence.

Nevertheless, this does not imply that the same quality of evidence can be achieved as in the case of an external confirmation (ISA 505), partly because the auditor shall have control over the request for it to be an external confirmation, see Section 3.2.

The extent of audit evidence that the auditor can obtain using Abendum's tools will depend entirely on how much of the trading partners' ledgers are shared into the blockchain. Abendum doesn't seek to lock users up only on its own platform. To facilitate for data mobility, it must be possible for more tools from other innovators to use and produce the fingerprints placed on the blockchain. One role Abendum can play in this work is to share ideas that can lay the foundation for a separate ISO standard, which can provide increased compatibility with other solutions that want to streamline their accounting by sharing ledgers into the blockchain. This will also allow users to bring their own data and switch service providers as more providers arrive. We believe this can lead to faster implementation of tools that build on the blockchain and more innovation.

The appropriateness of the audit evidence on the blockchain must be assessed by the individual auditor against the relevant assertion and the nature of the evidence. The use of blockchain technology must be assessed against the requirement for good auditing practices and relevant auditing standards and does not replace the auditor's requirements for good auditing practices and compliance with relevant ISA standards. The objective of obtaining audit evidence from shared ledgers (the blockchain) is to give the auditor better tools.

3.2 ISA 505 - External Confirmations

External confirmations are in line with ISA 505 point 6 litera a: Audit evidence obtained as a direct written response to the auditor from a third party (the affirmative party), in paper form, electronic or other form. External confirmations are usually a very good audit evidence. But collecting this type of evidence on a large scale can be a time-consuming process.

Since the audit evidence in the form of 'confirmations' will be available in shared ledgers/on the blockchain even before the auditor enters the audit process, the auditor's control over requests for external confirmations of the blockchain is a new issue. This issue was raised early during our participation in the sandbox.

The ISAs should in principle be technology neutral, and this principle was put to practical test in the sandbox. After thorough reviews and proposed adjustments to how the tool is used to collect data, the conclusion is that ISA 505, and other ISAs discussed in the sandbox, are in fact technology neutral *and* that it is possible to obtain audit evidence that can be classified as an external confirmation on the blockchain.

The original idea was to leave all transactions fully confirmed on the blockchain prior to the audit. This does not comply with ISA 505 because the auditor has no control over the request, cf. ISA 505 point 7. It can be solved by having a function that allows the auditor to make a request to the external party to have a list of all blockchain transaction IDs with fingerprints of accounting records they have posted against their counterparty, which are then reconciled.

The solution may seem obvious and simple afterwards. It can be a mindset for technology experts and innovators where the first reaction is that rules or standards need to change when new technology arrives, in this case blockchain technology. In our case, a new look at technology and legislation led to a better solution than the original solution.

3.2.1 Purchase receipts on blockchain as audit evidence

In the sandbox, participants explored the benefits of connecting receipts with the blockchain. The receipts will not qualify as external confirmation as it does not meet the requirements of ISA 505, but it may be evidence obtained from an external source.

The concept discussed was to make a lookup in a trading partner's general ledger to see if a transaction, e.g. a sale, has also been posted with the counterparty, or if there are transactions on the blockchain that are not included in the accounts. This may be a procedure to audit the assertion of occurrence and completeness of the financial statements. A prerequisite for this audit procedure to be possible is extensive use of shared ledgers. A search of the blockchain can also be used to match accounting documents other than just receipts, such as invoices or contracts.

3.3 ISA 402 Service Organizations and Outsourcing

3.3.1 Service Organization

Since it is Abendum's software that extends a fingerprint of a general ledger posting into the blockchain, at first glance it may appear that Abendum is the accountant's service organization (ISA 402).

A service organization is defined in ISA 402 point 8 letter e as: *"A third-party organization (or a segment of a third-party organization) that provides services to user entities that are part of the user entities' information systems relevant to financial reporting."*

The tool does not affect calculation or processes either *before* or after a transaction is posted to the general ledger. It is only *after* the postings are entered into the general ledger that Abendum makes a fingerprint of the posting in the shared ledger.

IT auditors and The Financial Supervisory Authority of Norway recommend that Abendum obtains an ISAE3402 report (Type 1 first year of operation, then type 2 report from the second year of operation and later) that can be used by the users' auditor. The role of Abendum as a service organization for a company arises if Abendum's software is adopted by a company and where the auditor wants to use this solution for obtaining audit evidence for the audit of the same company.

3.3.2 Outsourcing

If the auditor enters into an agreement with Abendum and uses the tool and presents this as a solution that the auditor wants clients to use for an effective audit, a joint work between the auditor and Abendum may entail outsourcing depending on the underlying contractual relationships.

This is based on The Financial Supervisory Authority of Norway' Circular 7/2021 Guidance on outsourcing.⁶ What is outsourced from the auditor to Abendum must be assessed based on what tasks Abendum may perform on behalf of the auditor's company. In the sandbox, it was considered that procedures such as obtaining, compiling and presenting audit evidence from various sources, verification of data and the identities of the source and such are examples of audit procedures that are potentially outsourced in the solution.

For the auditor to be able to make an adequate risk assessment in connection with outsourcing, it is important to have insight into the tool and blockchain technology that underlies it.

3.4 ISA 230 Audit Documentation

Considering the requirements for documentation of audit evidence in ISA 230, it was pointed out that the system must be able to make extractions that the auditor can store in his/her own documentation. Audit documentation prepared at the right time is more accurate and helps to increase the quality of the audit, cf. ISA 230 point 7 cf. guidance point A1. Audit evidence

⁶ <https://www.finanstilsynet.no/nyhetsarkiv/rundskriv/2021/veiledning-om-utkontraktering/>

available on the blockchain can strengthen the auditor's capacity and the opportunity to prepare sufficient and appropriate audit documentation in a timely manner.

3.5 ISA 240 The Auditor's responsibilities relating to fraud in an audit of financial statements

By narrowing a list of transaction IDs from the blockchain (postings from the shared ledger) against the company's general ledger, the auditor can get an indicator of whether something has been deleted or changed. In addition, the auditor can more easily capture abnormal activity from users who post in the ledger. It can be a simple procedure to uncover whether management has overridden controls.

An internal control or "controls" is defined in the glossary of ISA / ISQC1 as: "*The process designed, implemented and maintained by those charged with governance, management and other personnel to provide reasonable assurance about the achievement of an entity's objectives with regard to reliability of financial reporting, effectiveness and efficiency of operations, and compliance with applicable laws and regulations. The term "controls" refers to any aspects of one or more of the components of internal control.*"⁷

Audit procedures against management's override of controls are important because this is one of the few risks that is always present, cf. ISA 240 point 32. The auditor shall therefore always design and carry out audit procedures aimed at the risk of management override, cf. ISA 240 point 33.

This action (to compare a list of transaction IDs from the blockchain to the general ledger) will not depend on trading partners having to post or confirm against the blockchain. However, it is a prerequisite that the tool is integrated into the accounting system before the fiscal year begins.

3.6 Feedback from auditors

Three accountants and five auditors have been involved in testing and giving professional feedback of Abendum's proof-of-concept in the sandbox. Overall, the assessments and feedback have been in accordance with The Financial Supervisory Authority of Norway's feedback.

Among the feedback from the auditors, some believed that some of the functionality could be a bit reminiscent of standard audit file-tax (SAF-T) in real time since a transaction can be reconciled between two parties.

An experienced IT auditor found it challenging to assess whether Abendum was a service organization, and if so, a service organization for an accountant or for the auditor. This shows the usefulness of the work in the sandbox where we got clarifications that Abendum can be regarded as a service organization for the accountant and may result in outsourcing for the auditor after a concrete assessment of the underlying contractual conditions. To conclude this, one must look at the relationship between the parties and what tasks are solved.

⁷ <https://revisorforeningen.no/globalassets/fag/standarder-og-veiledninger/revisjonsstandardene/pr-05022021/isa-ordliste-n-0120.pdf>

In cases where the auditor was unsure, it has been of great help to be able to go in-depth and get clarifications from The Financial Supervisory Authority of Norway. Especially for assessing the conditions related to service organisation, outsourcing and quality of evidence.

3.7 Anti-money laundering

In the sandbox, it was briefly discussed whether blockchain technology can be a tool for sharing information between reporting entities and the authorities in anti-money laundering work. An implementation must be designed so that the information sharing regulations on anti-money laundering and terrorist financing measures (the Anti-Money Laundering Act) are complied with. There may be opportunities to streamline some of today's processes using blockchain technology.

4 Achievement of success criteria related to the objectives

The following success criteria are associated with the objectives:

- The auditor receives regulatory clarification on the use of audit evidence that can be obtained via blockchain and can thus more easily decide whether it is suitable as an audit evidence.
- Insight is provided into how the system can help combat money laundering.
- The Financial Supervisory Authority of Norway and users of the solution (mainly auditors and accountants) get a better understanding of the use of blockchain.

5 Next step for Abendum

The regulatory clarifications related to the audits and the response of the Financial Supervisory Authority of Norway in the sandbox, pilots and partners in the market strengthen Abendum's plans to scale up, seek additional financing and develop a commercial tool of the current Minimal Viable Product.

Torje Vingen Sunde

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