Methodology for implementing electronic audit projects (SAF–T UA) for large taxpayers in Ukraine

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Abstract

The article discusses the features of the process of creating and implementing software that will form an electronic audit file (SAF–T UA). The main aspects of the structure of the SAF–T audit file are considered, the key technical and organizational challenges are identified, and recommendations for the successful implementation of this software are offered. The project problems that large commercial taxpayers may face when implementing the project are described. An architecture for software development is proposed. The project's main organizational and technical tasks include forming a team of specialists, integrating data from accounting systems, designing data warehouses, validation, and testing. Detailed recommendations are given to the project team that will develop and implement the SAF–T software. Particular attention is paid to data control, information security, archiving, and interaction with fiscal authorities. Experts from different functional areas and directions were interviewed on the project's main implementation issues and strategic understanding. Their conclusions were analyzed, considered, and agreed upon; in particular, the key expectations and challenges of SAF–T implementation were identified, including an imperfect understanding of the requirements of fiscal authorities, the need for staff training, and the complexity of tax control automation. The authors emphasizes the importance of implementing SAF–T as a step towards European integration, optimizing business processes, and increasing the transparency of tax audits. The article recommends that developers and project teams ensure technical efficiency, compliance, and sustainable development.

Keywords

SAF–T, electronic audit, digitalization of tax audit, enterprise information systems, business processes modeling of information systems, legal aspects of electronic document, management and administration, accounting and taxation, finance, professional junior bachelor

1. Introduction

More than 20 years ago, controlling authorities of different countries thought about transparency, optimization, and standardization of tax audits. Despite the development and success of information technology, auditors still had to dive into piles of paper documents or files of scans of these documents to track the correspondence between previously filed declarations and the activities of the company. Time expenditures, backwardness, the non-technological nature of the audit process, and the growth of business activity did not allow audits to be conducted in the previous ways. A separate point was the human factor, which, intentionally and unintentionally, could lead to the distortion of tax information. Any tax audit should exclude the corruption component, be template, standardized, transparent, and understandable to both parties, and not disrupt the work processes of the enterprise. This multifaceted problem exists in many countries, which is why in 2005, OECD, Organization for Economic Co-operation and Development [1], which also deals with tax issues, developed the first version of the SAF–T 1.0 (Standard Audit File for Tax). It included three main blocks: General Ledger, Account Receivables and Account Payable.

In 2010, the second version of the audit file, SAF–T 2.0, was released. This version was expanded with

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two additional blocks: Inventory and Fixed assets. In the same year, version SAF–P appeared, adding to SAF–T 2.0 a section of payrolls with the company's employees, their taxes, and social obligations.

Also, in 2010, many methodological documents and instructions were created to help businesses form the SAF–T audit file. Today, 11 countries in the European Union use this format for auditing.

In Ukraine and Bulgaria, the filing of tax reports of large taxpayers in the SAF–T audit file format is planned for 2025. The main goal is to simplify the filing and processing of tax reports at the request of government agencies and auditors. Other countries have also begun implementation with large taxpayers, as they are the main problem for fiscal authorities.

In this regard, scholars investigate the problem of electronic auditing and reporting standardization to optimize accounting data flows based on the possibilities of using the SAF–T file.

Mihaela and Alin [2] analyzed the process of implementing the Standardized Tax Audit File (SAF–T) in Romania regarding the impact on two main actors – the state and the taxpayers themselves. Given the lack of previous studies analyzing the perception of SAF–T by business entities, this work is essential for forming further policies in the field of tax administration and studying the effectiveness of SAF–T implementation and its impact on budget revenues and business tax discipline.

In a study on the presentation of financial information in digital formats, Shygun et al. [3] focused on systematizing digital formats for the presentation of financial information, which are essential for the analysis and audit of business activities of enterprises in Ukraine. They analyzed digital formats such as XBRL and SAF–T UA, emphasizing their role in conducting electronic audits. The study also contains a structural analysis of the legal framework for disclosure of financial information in electronic format XBRL in Ukraine, as well as a comparative analysis between XBRL and SAF–T UA. The study confirms that the SAF–T UA electronic format is effectively used in conducting electronic audits of taxpayers and can be used to calculate the tax burden, which is essential for controlling the completeness of calculations and payment of taxes to the state budget.

The study by Lemos et al. [4] emphasizes the importance of the dematerialization of documents to ensure greener and more sustainable business practices, especially for small and medium–sized enterprises. The research focuses on studying tax incentives for the digital transformation of accounting provided to Portuguese micro and small enterprises, particularly for implementing SAF-T (PT), QR code, and ATCUD. The authors conclude that the studied tax incentives have not become widespread among Portuguese micro and small enterprises. This may indicate insufficient information support from the government and a lack of knowledge among the companies themselves about the existing opportunities. The study emphasizes the need to better inform businesses about tax incentives and encourage their participation in digitalization programs. It also points to potential barriers that may deter SMEs from adopting new technologies, negatively impacting their competitiveness and ability to adapt to the current economic environment.

The work of Sousa et al. [5] addresses the issue of e-auditing in the context of digital transformation, which affects financial and tax audits. The authors note that traditional digital tools are not practical enough to identify and verify inconsistencies in economic information. The main problem is that many irrelevant violations lead to complications in auditors' work and incomplete data analysis. This topic is relevant due to the growing complexity of business processes and the data that needs to be analyzed in real–time. Therefore, the authors propose an approach to the e-audit process based on improving the semantics of SAF–T (PT) files using a graph-based data structure representation format [6].

Auksztol and Chomuszko [7] examined the possibilities of adapting entrepreneurs and accountants to the new conditions caused by introducing the SAF-T (Standard Audit File for Tax) standard. SAF–T changes the approach to tax control, shifting more responsibility to enterprises. This change reduces the burden on tax authorities but, at the same time, increases the risks for entrepreneurs, including financial penalties and legal liability. The study is relevant due to the global digital transformation in tax administration and audits and the need for businesses to implement new management strategies to comply with regulatory requirements.

One of the studies that may attract the attention of researchers is the study by Silveira et al. [8], which aimed to use SAF–T files not only for tax purposes but also to support business intelligence in Portuguese companies. SAF-T is a standardized data format that covers information on accounts,

accounting, and taxation [8]. The study's relevance lies in an innovative approach to using these files to analyze the client base, optimize marketing strategies, and support decision-making processes beyond purely tax administration. Namely, the use of SAF-T files to determine customer profiles using RFM (Recency, Frequency, Monetary Value) analysis (customer segmentation) [8]. The segmentation results were cross-checked using a decision tree and linear discriminant analysis.

In general, for the effective implementation of information systems and the components of these systems, it is essential to apply structured methodologies, particularly the Application Implementation Method (AIM) methodology, which provides a systematic approach to managing the implementation process [9, 10].

Chernukha et al. [11] describe the various stages of Enterprise Resource Planning (ERP) implementation, such as planning, design, configuration, testing, and deployment. The problems that arise at each stage are analyzed, among which the main issues can be resistance to change, technical difficulties, lack of training, and inadequate project management [11]. The researchers surveyed experts from various technical fields to identify common problems related to implementing the information system [11]. It was found that special attention should be paid to the preparation and understanding of project documentation, which plays an important role in the ERP implementation process [11]. The study concludes that although implementing ERP systems is complex, applying a methodological approach and focusing on project documentation and staff training can significantly increase the likelihood of success [11].

Currently, no complete software solutions exist for creating an audit file on the Ukrainian market. Scientific researchers do not consider many issues concerning the implementation features and possibilities of using the SAF–T file.

The article *aims* to analyze the problems of implementing electronic audit projects (SAF–T UA) for large taxpayers of Ukraine. Also, practical recommendations are offered for developing and implementing this software.

2. Selection of methods and diagnostics

2.1. SAF–T audit file structure

SAF–T audit file structure (figure 1) [12]:

1. Header includes the name, codes, company address, etc.
2. Master files – used to disclose information filed in other sections.
3. General ledger – information on accounting transactions and transactions for the selected period.
4. Source documents – details the types of documents required to transcribe accounting transactions.
5. Tax differences – the block is present only in the Ukrainian version of SAF–T, physically located in the reference section.

2.2. Methodology of opinion research of officials representing large enterprises

To find out the peculiarities of the development and implementation of the SAF–T software, the respondents were identified and interviewed on this issue. The survey involved officials representing large enterprises whose activities are related to the development and implementation of the SAF–T audit file:

- Project manager (1 person);
- Chief Accountant (1 person);
- Accountant (3 persons);
- Product Manager (2 persons);
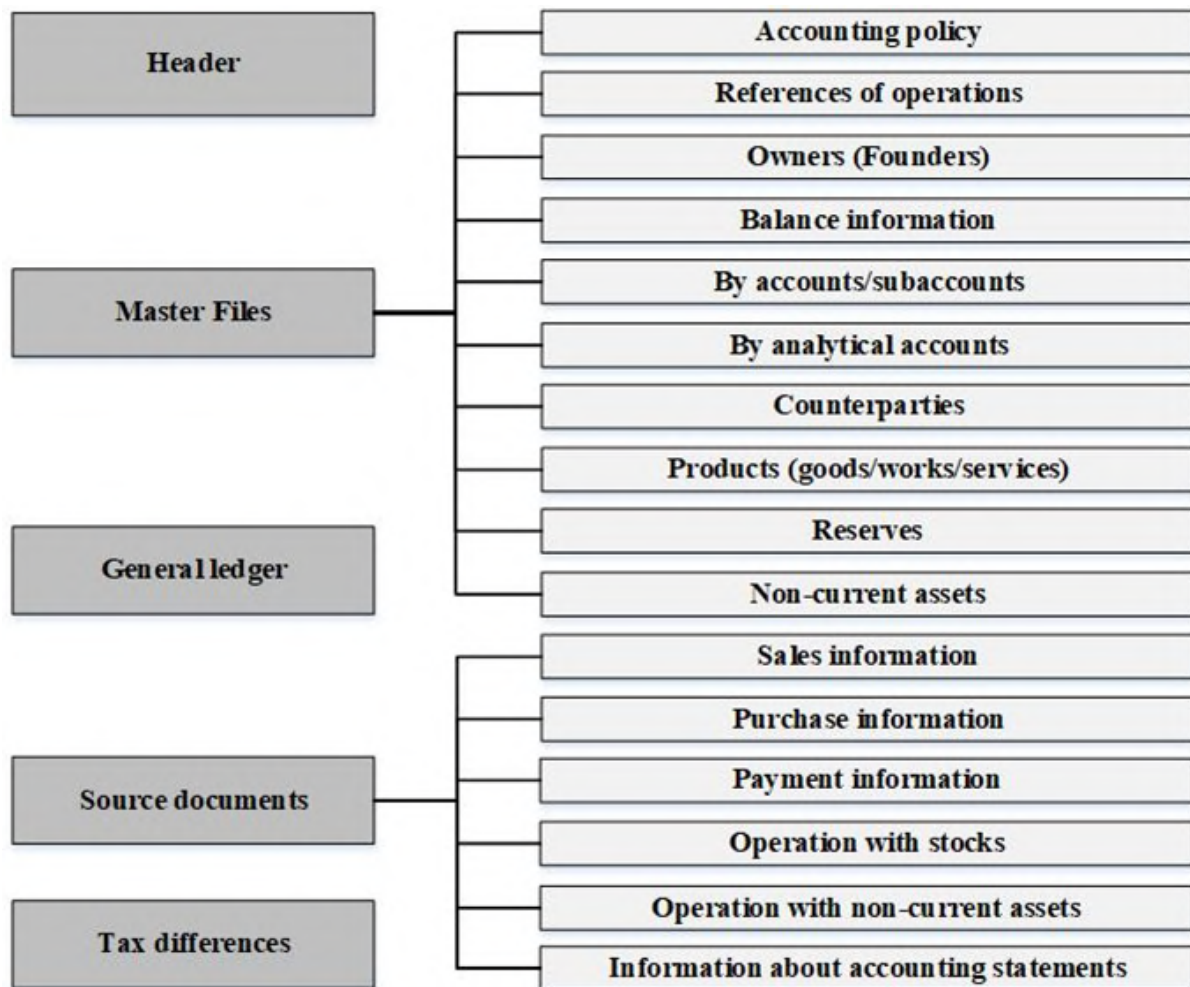- Software architect (1 person);

Figure 1: SAF–T audit file structure.

- Software developer (2 people);
- Software tester (2 persons).

The respondents were offered the following questions (the answer to questions 1–20 could be chosen from the options "yes" or "no"; the answer to question 21 was "adjustment" or "repeat"):

1. Is SAF–T planned to be implemented using standard software product development methodology?
2. Is it planned to create a full–fledged project team?
3. Is full integration with the accounting and financial system of the enterprise planned?
4. Is it expected that SAF–T implementation will optimize the work of the accounting department and reduce administrative costs?
5. Are you familiar with all the tax authorities' requirements for the SAF–T format?
6. Does the enterprise have all the necessary resources to develop the SAF–T?
7. Have you analyzed existing accounting and bookkeeping data to populate the SAF–T?
8. Is there a plan to train staff to use the SAF–T?
9. Will errors in generating the SAF–T online be resolved?
10. Do you have experience working with tax authorities in electronic format?
11. Will implementing SAF–T change the enterprise's business processes and interaction with tax authorities?
12. Is it possible to fully automate tax control with an audit file?

13. Will accounting data transparency increase with the implementation of an audit file?

14. Is the implementation of an audit file a full–fledged new software development project?

15. Can the implementation of the audit file change the system architecture of the organization's software?

16. Is the development of a full–fledged data warehouse required for SAF–T software?

17. Should inter–system reconciliations be performed when an audit file is generated?

18. Is integrating SAF–T software into the enterprise ERP system rational?

19. Can the audit file implementation project be moved to a cloud environment?

20. Is online technical support for the SAF–T implementation project required?

21. Should the SAF–T audit file be adjusted by re–generating or creating adjustments?

3. Results and discussion

3.1. The main tasks of the formation of the SAF–T audit file

SAF–T (Standard Audit File for Tax) is an electronic audit file reporting standard for exchanging accounting data. Its purpose is to simplify the submission of accounting information to businesses at the request of government agencies or auditors.

The SAF–T audit file is submitted in *.xml format, which is complex and voluminous. The legislative base for this file is prepared – the law of Ukraine on electronic documents and electronic document flow [13] and separate orders of the Ministry of Finance [14, 15]. Also, the Ministry of Finance created a concept for the implementation of electronic audit, which was discussed and agreed upon with European partners [16, 17]. The methodology for implementing the audit file will be individualized for each enterprise. It will depend on the enterprise's size and the level of technical specialists and project team.

The introduction of the audit file is a practical step towards European integration and standardization and an opportunity to simplify the audit process for businesses and the state. This is a real working way to make tax audits clear, transparent, and understandable for companies and exclude auditors and businesses' unfairness. It is also a significant step towards attracting investment and foreign business.

3.2. Technical tasks that may arise when working on the project

Outsourcing makes forming the SAF-T audit file possible. However, large enterprises do not yet accept this option because the final information must still be extracted and provided to the outsourcer, who will create an XML file. Therefore, most Ukrainian taxpayers form the audit file independently. In preparing and shaping the audit file, which is a challenging new project in its own right, the following major tasks must be accomplished:

1. Create a full–fledged team of specialists to implement the SAF–T project both on the side of developers and testers and on the side of business and accounting.

2. Identify data source systems and map these data and file section fields for report construction, definition, search, transformation, and collection of all necessary information. Line staff, even yesterday's junior bachelors in management and administration, can be utilized for this extensive work.

3. Designing storage for collecting the required information (the volume of processed information can reach hundreds of gigabytes because all data is stored at the transaction level).

4. Allocating technical resources and technical specialists of the enterprise (servers, communication channels, developers, system administrators)

5. Addressing issues related to limited data, such as incomplete historical data that were previously unnecessary to store. Decisions need to be made in advance and approved by regulatory authorities.

6. Data integrity checks, audits, and controls before sending the file to the fiscal authorities.

7. Develop a process for archiving and possibly updating the repository data.

8. A serious issue is organizing access rights to the system and the possible filing of restricted information, e.g., personal data, state secrets, official information of restricted use, etc.

A single file format for all types of business, its maximum detailing, and the use of all possible sections, with an additional unique Ukrainian section, "Tax Differences", raise separate questions and suspicion.

A significant problem is the limited methodological description and insufficient support of the audit file by the controlling authorities. There is also practically no information on checks of the system of the recipient of audit files "E-audit" on the side of fiscal authorities. Possible problems in synchronizing system directories of the audit file and the system "E–audit" will be identified in the future.

There are no complete software solutions for audit file creation in the Ukrainian market now.

In our opinion, technical challenges may arise while working on the project:

1. Develop and implement a new full–fledged audit data storage system (ADSS) to receive all primary data from other systems and generate an audit file. An ADSS can be created as a separate module of the ERP system. Manual generation of the audit file is not possible.

2. Rules for data validation in the ADSS should be developed according to the audit file's XSD scheme.

3. Development of mechanisms and interfaces for automatically filling ADSS from various data sources, such as ERP, CRM, 1C, Excel, etc.

4. Solving the storage, administration, and processing issues of large volumes of ADSS data. These may be tens and hundreds of gigabytes, and additional server capacity is guaranteed to be needed at the enterprise.

5. Development of mechanisms for internal reconciliation and auditing of ADSS data.

6. Possible development of mechanisms to recalculate and update ADSS data.

7. Determining how to edit existing ADSS data.

8. Qualitative testing of all steps, from primary data extraction to audit file generation.

9. Maintaining and updating the ADSS when new versions of the audit file are released.

10. Presence of technical variances in XSD schema that do not cover all business scenarios.

11. The architecture concept of SAF–T software is presented in figure 2.

3.3. Recommendations to the project team involved

Recommendations to the project team involved in developing and implementing SAF–T software:

1. Users should Export the audit file and sign it for the regulatory authorities without involving technical specialists.

2. It is necessary to provide quality documentation for the audit file generation system being developed. It will help to save the time of user support. Having self-learning tools and materials on data sources, internal system control, and logic algorithms for error detection. Documentation should be printed in the form of online help and online help.

3. Develop a pool of additional business processes for employees generating the SAF–T audit file.

4. Ensure full-fledged internal control in processing incoming data and develop preventive, remedial, and corrective functions of such control. Develop mechanisms for both prevention and elimination of data integrity violation errors. Pay attention to control records.
   Standard controls, however, may include:
   a) Accounting controls;
   b) Operational controls – monitoring the day–to–day operation of the system for compliance with business objectives;
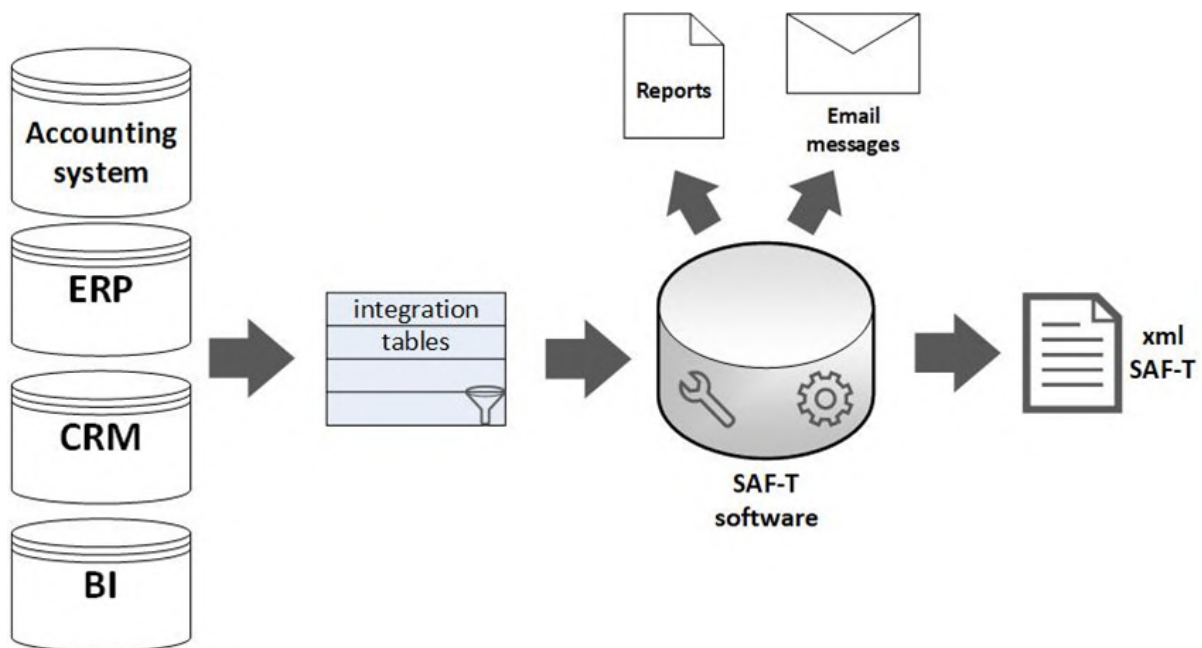   c) Administrative controls – monitoring operational effectiveness in functional areas.

Figure 2: Conceptual scheme of the project architecture.

Internal controls of interest to the tax auditor that are relevant to the integrity of the tax return may be:

  a) System access – access controls that ensure that only authorized users have access to process information;
  b) Data processing – controls over data processing to ensure the protection, integrity, and correctness of information throughout the processing period;
  c) Data collection – input and output controls to ensure data accuracy and security;
  d) Outbound Data Controls – assurance that system output is in the correct format and will be correctly received by the recipient;
  e) Data security – auditing user editing and deletion of source data;
  f) A backup procedure that should ensure that backup copies of electronic records are retained and restored in the event of a system failure.

Such internal control procedures are general regardless of the type of business.

5. Give attention to the creation of audit logs, logs of such items as:

  a) General ledger and financial statements;
  b) Subsidiary books, e.g., accounts receivable and accounts payable books;
  c) Primary documents, e.g., invoices, journals;
  d) Data logs based on accumulation records, e.g., detailed and summary records of cash received, payroll, etc.;
  e) Records of changes in permanent data maintained in master files;
  f) Other accounting and non–accounting data.

When working on logs, it is necessary to:

  a) Maintain a complete audit trail of data edits;
  b) Provide for rollback of transactions to restore the original information;
  c) Maintain full audit and control of data loading into the system;
  d) Keep information on EDI messages with counterparties;
  e) Pay careful attention to data conversion procedures and formats.

In general, the developed business application software should create and then save recoverable logs that record the processing of records from the original information or documents to the final record in tax returns and support its recovery in reverse order.

Electronic signatures, certificates, and information exchange with EDI providers (the integrity of orders and invoices, for example) are essential indicators of the reliability and validity of data in the system being developed. Security services, combined with appropriate modern technology for the system and the stored records, are a key requirement to ensure reliable record keeping.

6. Special attention should be paid to testing internal controls and data contained in computerized accounting systems. The following describes the types of tests that auditors may apply to audit tax returns. They may be conducted using a set of testing procedures applied to a standard audit file by testing specific data or any combination depending on the circumstances and the methodology used. Possible errors and individual records requiring further investigation are identified through exception reports. Standardized tests to identify common mistakes, such as duplicate data, are standard.

    a) General tests summarize information stored at the entry-level, for example, by document type or tax code, and generate control totals or perform arithmetic checks that can identify individual entries.
    b) Tests of individual ledgers (general ledger, sales, purchases) require access to entry–level data. Exception reports and comparative tests, e.g., for duplicate invoices, are widely used.
    c) Reference Data Checks – checks of the permanent data and directories used to process entries, often critical to taxation.

Fiscal authorities can perform audits in these ways:
    a) External audit by auditors using proprietary audit software;
    b) Through resident audit programs, resident audit programs are flexible reporting features built into modern accounting systems that allow both the business and the tax auditor to effectively and quickly monitor tax areas of particular risk;
    c) The use of continuous auditing techniques. This is a special case of resident audit programs. Continuous audit programs track tax entries "as they occur" and can immediately notify both the company and its tax authority of potential problems. The ability to track and, if necessary, adjust tax entries before preparing an income tax return can save a business significant compliance costs.

It is prudent to work with the fiscal authorities to develop a proposed set of substantive tests for direct and indirect tax purposes. The issue of tests on the side of the budgetary authorities is fundamental in developing the software to generate the SAF–T audit file. There will be checks of directories of the audit file and the movement of current and non–current assets. It is possible to check data for compliance with previously filed declarations. Also, in the Ministry of Finance's concept of e-audit, there was talk about the potential purchase of licenses for specialized software – ACL (Galvanize), IDEA, SESAM, and the like, with the help of which the audit is conducted. It is difficult for businesses to predict the logic of controlling authorities if audit software is involved.

7. General principles:
    a) Readable format SAF–T should be created in a non-proprietary XML format and widely used worldwide. It should be available to proprietary audit software and be used as a transport mechanism for building data structures.
    b) Ability to provide data on request. Since the tax authorities may audit books and records for previous years, the company should provide, on request, the audit file not only for the current year but also for any past period subject to statutory audit.
    c) Data content – The content of the SAF–T should include all relevant data required for the audit of the accounts, including the balance sheet and income and expenditure statements, together with all entries and opening balances. The level of detail will determine the data set.
    d) Extensibility is a key feature of the SAF–T. This flexibility can be expressed in format, content, and structure to meet the requirements of different tax regimes and jurisdictions.

8. Pay attention to archiving procedures that ensure the integrity and readability of data after a given period. It is necessary to find a balance between enterprises' costs for storing primary

documents and accounting records and tax authorities' requirements. Commercial reasons for storing such data should also be taken into account. Previously generated SAF–T audit files should also fall under the data archiving procedure. It is necessary to support the mechanism of auditors' access to primary electronic documents.

9. Full backups are preferable to system backups and archiving procedures based on the "change–only" method but are riskier.

10. Close cooperation and communication with tax administrations to address possible issues, both technical and accounting, is encouraged. In contrast, tax administrations are encouraged to work with business system developers to include an electronic mechanism for filing tax returns in their software. Taxpayers may also have obligations to other government agencies, such as statistical agencies, so it is not unreasonable to provide a flexible architecture supporting international standards that may be needed.

11. The possible architecture of the project, using integration tables to upload data from the central information systems of the enterprise, is shown in the diagram below. One of the tasks of integration tables is initial checks, data collection, and optimization. The information is then fed into the SAF–T software, where transformations, data additions, and checks and audits are performed before the SAF–T XML file is generated. The checks and audits can be either technical or accounting. Depending on the configured business processes, data results can be sent to users, or reports can be generated upon request.

3.4. Analysis of opinions of officials representing large enterprises

As a result of a survey of officials representatives of large enterprises whose activities are related to the development and implementation of the SAF–T audit file, the results presented in table 1 were obtained.

Respondents' responses to the questionnaire questions are presented in the form of a line chart in figure 3 and figure 4.

As shown in figure 3, all respondents answered questions 1, 2, 4, 7–11, and 13 positively. They support the standard SAF–T implementation methodology based on the software implementation methodology by creating a full–fledged project team. They provide a positive result of SAF–T implementation, characterized by optimization of accounting and administrative costs, changes in enterprise business processes, and the format of interaction with tax authorities. It is worth noting that all respondents have experience working with tax inspectorates based on the exchange of data submitted electronically. They also analyzed the available accounting and other data to fill in the SAF–T. All the interviewed employees of a large enterprise hope that staff will be trained on how to work with SAF–T and have the opportunity to correct errors when working with the SAF–T file.

All the respondents confirmed that they are not yet familiar with all the tax authorities' requirements for the SAF–T format (question 5, figure 3).

Most respondents believe fully automating tax control using the SAF–T audit file is impossible (question 12, figure 3).

Regarding assessing the necessary resources for SAF–T development (question 6, figure 3), the enterprise's chief accountant, another accounting employee, a software developer, and a tester gave positive answers. Perhaps these employees are more aware of the enterprise's resource potential.

Most respondents believe implementing the SAF–T audit file is a software development project (question 14, figure 3). The survey participants directly involved in software development and testing, as well as the chief accountant, supported the opinion that implementing the SAF-T audit file will change the system architecture of the enterprise software, which is related to their experience and specific work (question 15, figure 3).

Due to the specifics of software development, the manager, the software project architect, and the direct software developers and testers clearly understood the need to provide a data warehouse. Therefore, only they provided positive answers to question 16 (figure 3).

The respondents' opinions were also divided on technical issues related to working with the audit file, such as reconciliations and ongoing technical support, and the rationality of integrating SAF–T software

Table 1
Results of a survey of officials.

Questions	Number of answers "Yes"	Number of answers "No"
1. Is SAF–T planned to be implemented using standard software product development methodology?	12	0
2. Is it planned to create a full–fledged project team?	12	0
3. Is full integration with the accounting and financial system of the enterprise planned?	8	4
4. Is it expected that SAF–T implementation will optimize the work of the accounting department and reduce administrative costs?	12	0
5. Are you familiar with all the tax authorities' requirements for the SAF–T format?	0	12
6. Does the enterprise have all the necessary resources to develop the SAF–T?	4	8
7. Have you analyzed existing accounting and bookkeeping data to populate the SAF–T?	12	0
8. Is there a plan to train staff to use the SAF–T?	12	0
9. Will errors in generating the SAF–T online be resolved?	12	0
10. Do you have experience working with tax authorities in electronic format?	12	0
11. Will the implementation of SAF–T change the current business process of the enterprise and interaction with tax authorities?	12	0
12. Is it possible to fully automate tax control with an audit file?	1	11
13. Will accounting data transparency increase with the implementation of an audit file?	12	0
14. Is the implementation of an audit file a full–fledged new software development project?	9	3
15. Can the implementation of the audit file change the system architecture of the organization's software?	7	5
16. Is the development of a full–fledged data warehouse required for SAF–T software?	6	6
17. Should inter–system reconciliations be performed when an audit file is generated?	8	4
18. Is it rational to integrate SAF–T software into the enterprise ERP system?	8	4
19. Is it possible to move the audit file implementation project to a cloud environment?	10	2
20. Is online technical support for the SAF–T implementation project required?	8	4
21. Should the SAF–T audit file be adjusted by re-generating or creating adjustments?	3	9

into the company's ERP system (figure 3). Positive answers were provided mainly by representatives of management positions and some other respondents.

The chief accountant and another accounting representative do not support implementing a cloud-based SAF–T file implementation project (question 19, figure 3), which may be due to the need for significant costs at the initial stage of implementing these technologies.

When asked a specific technical question about adjusting the SAF–T audit file, three respondents (accounting representatives and a manager) answered that it should be re–formed (question 21, figure 4). This may be due to the lack of awareness of the company's personnel with the specifics of working with this file. Other respondents said it would be enough to make appropriate changes to the file if necessary rather than to create it again.

In general, the survey showed that the staff of a large enterprise positively perceives the need to
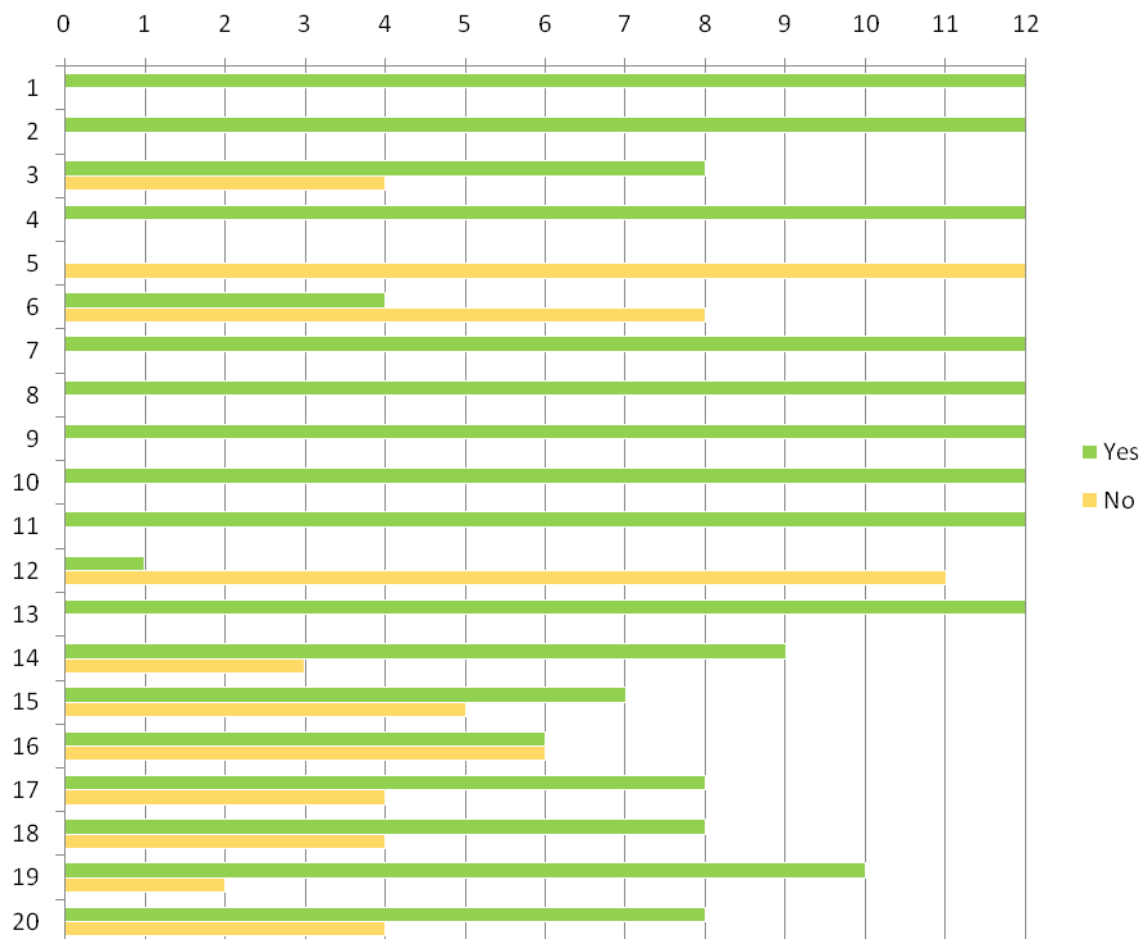
Figure 3: Diagram representing respondents' answers to questions №1–20.
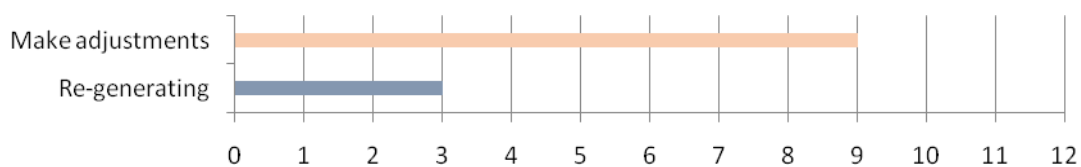

Figure 4: Diagram representing respondents' answers to question №21.

reform tax reporting formats using the SAF–T audit file to facilitate tax audits. This will also enable optimizing accounting activities, reducing administrative costs, and positively changing the enterprise's business processes.

Based on the above, it is worth emphasizing that effective enterprise management requires a deep understanding of accounting [18] and knowledge of auditing, information systems, and data management in today's environment. It is significant for future business and administration professionals [19], particularly at the junior bachelor's level, to understand the role and importance of the sources of the audit file. Its correct formation is critical for ensuring the audit's transparency and meeting the regulatory requirements for company reporting. Preparing data for the audit file involves close cooperation with the accountant. The manager should help identify key attributes that affect decision-making but are beyond the accountant's scope of expertise. Understanding the sources of the audit file and the requirements for its preparation will help future professionals correctly analyze the company's internal business processes, ensure that the documentation meets the requirements of regulators and auditors, and increase the transparency and efficiency of company management. Thus, a manager in management and administration becomes a key figure who combines the competencies of accountants,

auditors, and IT specialists to create a high-quality audit product.

4. Conclusion

Implementing the SAF–T audit file in Ukraine is a promising step towards standardizing accounting and harmonizing with European practices. We analyzed the development and implementation process of electronic audit file generation software (SAF–T) in large commercial enterprises, which are large taxpayers.

The main problems and challenges in implementing this project are explained, such as the lack of ready–made software solutions, the need to adapt to the audit conditions in Ukraine, the need for additional resources for software development, the need to integrate SAF–T with existing accounting systems, the creation of a specialized project team, staff training, and raising additional funds.

The materials can be used as detailed recommendations to the project team, recommendations for personnel training, and training of future university specialists in business and administration. Project problems that a large commercial enterprise may encounter when implementing a project are described. A general concept of architecture for software development, including integration solutions for interaction with existing ERP and CRM data systems, is proposed. The project's main organizational and technical tasks are listed, particularly ensuring the collection, processing, and storage of large amounts of data.

The article emphasizes the need to involve specialists in a multifaceted project. Its tasks are complex and can affect a large number of business processes. To implement SAF–T, you must engage developers, testers, accountants, and business process specialists. This requires significant financial and human resources. Participation is needed not only from accounting and IT but also from merchandising, management, administration, and other functional areas.

Implementing SAF–T can significantly simplify tax control, reduce administrative costs, and make interaction with tax authorities more transparent. This has great potential for developing accounting and tax processes in Ukraine but requires a comprehensive approach to solving technical, organizational, and methodological issues.

This paper contains practical experience implementing one project. 2026, after the mass launch of SAF–T projects, a broader study, material collection, and formalization of the results in a separate paper are envisaged. The study's results are also intended to be discussed and shared with other projects.

Declaration on Generative AI: During the preparation of this work, the authors used Grammarly in order to: Grammar and spelling check. After using this software tool, the authors reviewed and edited the content as needed and takes full responsibility for the publication's content.

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