



Contemporary Accounting Case Studies

Vol. 2, No. 1, March 2023

Article 30

ANALYSIS AND DESIGN APPLICATION E-REPORTING AUDIT FOR NON-TAX STATE REVENUE

Velasri Vebraudia

Master of Accounting Program, Faculty of Economics and Business, Universitas Indonesia
velasri.vebraudia01@ui.ac.id

Dr. Tb. Muhamad Yusuf Khudri, S.E., M.T.I., CA

Master of Accounting Program, Faculty of Economics and Business, Universitas Indonesia
yusufkh@ui.ac.id

ANALYSIS AND DESIGN OF AN APPLICATION FOR THE E-REPORTING OF NON-TAX STATE REVENUE AUDITS

*Velasri Vebraudia**, *Tubagus Muhamad Yusuf Khudri*

Master of Accounting Program, Faculty of Economics and Business, Universitas
Indonesia

ABSTRACT

The XYZ organization is a unit of X organization which acts as an internal auditor for the Indonesian Government. It conducts supervision to increase the fiscal capacity obtained from non-tax state revenue audits. To date, audits have been performed manually. The manual reporting of audit results has caused several problems, such as errors in the calculation formula when compiling the appendix report, disorganized audit data storage, and paper wastage during the manual review process. The review process is also long because it is conducted over three to four stages and requires the review team's attendance in the office. An information system is needed to help the audit report be completed quickly and accurately and to resolve the problems faced. This study reports on the design of an information system in the form of a computer application that will resolve issues arising from the implementation of manual audits. The research provides an overview of the process to be carried out by the application. The application for the e-reporting of audits for non-tax state revenue at XYZ organization was designed using the FAST (*Framework for the Application of System Thinking*) framework of Whitten and Bentley (2007), involving scope definition, the logical design of data models, model process, and model user interface.

Keywords: e-Reporting Audit for Non-tax State Revenue, FAST, Information System Design, Non-tax State Revenue

* Corresponding Author's Email: velasri.vebraudia01@ui.ac.id

1. INTRODUCTION

Non-tax state revenue contributed significantly to Indonesian Government revenue in 2021, reaching IDR 452 trillion, or 22.56% of total government revenue. To ensure that non-tax payers have fulfilled all their obligations, the non-tax state revenue management agency cooperates with XYZ organization to supervise non-tax state revenue receipts. PP 1/2020 regulates Audit for Non-Tax State Revenue carried out by the government's internal supervisory apparatus for non-tax payers. The non-tax state revenue audit was conducted based on a request from the head of the non-tax state revenue management agency. The audit period was set to a maximum of 60 working days start from the non-tax payer receives the audit assignment letter.

The XYZ organization has been supervising non-tax state revenue since 1998, including audits for non-tax state revenue obligations which must be deposited to the state by a non-tax payers. The audits aim to optimize government revenue from sectors other than taxes. Over the past six years, audit findings have identified a shortage of deposits from non-tax payers of up to 23 trillion rupiahs. The level of these findings may indicate that there is a lack of compliance from non-tax payers in making payments according to the regulations, so the by non-tax state revenue audit process must continue to be conducted to ensure that the state receives the right amount of revenue at the right time.

Reporting of non-tax state revenue audit results is part of the audit process at organization XYZ. The report is prepared following four steps, starting from the preparation and acquisition of the temporary audit findings (TAF), followed by the preparation and revision of the audit findings (AF), the official report of audit (ORA), and the revision and printing of the audit report (AR). In addition, each document prepared requires a review at three to four levels to ensure that it is accurate. It is not a short process; auditors must complete all the stages in a maximum of 60 working days. During the initial interview with the audit team, constraints often continue to occur, including difficulties in compiling attachments to audit reports because these are prepqred separately by the audit teams. The XYZ organization does not facilitate a database to work on report attachments together, even though these are related to one spreadsheet to different spreadsheet. This problem impacts the audit process, which takes longer because it requires sufficient confidence that the compilation results presenting the calculation formulas and data are accurate.

Nainggolan (2021) states that the application of information technology (IT) in organizations has many advantages, such as shorter and more accurate durations of work, cost and time savings, improvements in the quality of the information obtained, and increased productivity. Therefore, to solve the problems in reporting audit results, an application is needed to assist the non-tax state revenue audit reporting process in the XYZ organization so that the reports produced are accurate, fast, and timely.

The XYZ organization has realized the constraints on the audit process; that is, audits have not been based on information technology until now. The organization has also tried to create an audit application for non-tax state audit, but has consistently failed to do so due to the development process which is arranged on a self-taught basis. To reduce the risk of failure in application construction, it is necessary to construct a system gradually, from the development, to construction, testing and application of the information system. Zain (2008) conducted research using the FAST (*Framework for the Application of System Thinking*) method, involving steps from system analysis to implementation. It was concluded that the FAST method can help companies reduce problems in implementing information systems because it includes several steps in detecting problems. The method, developed by Whitten and Bentley (2007), has eight phases that must be passed before the information system is ready for use. Phases 1 to 4 describe the process of developing information systems, while phases 5 to 8 cover the selection of technology, construction, testing, and implementation.

Previous research on the development of information systems conducted by Kusumastuti (2018) on the revenue cycle at PT X; Santoso (2019) on budget planning at BLUD for health; and Sari (2019) on budget management at LAN Jakarta also used the FAST method. This was because the method is more detailed, flexible, and can reduce the failures of previous systems. This research also focuses on the design and development of an application, so the FAST method was only followed up to the fourth phase, namely logical design. System development using the FAST method must go through each phase on an ongoing basis. The first phase begins by determining the definition scope of the application, then continues with the second phase, namely analysis of the problems that the application is intended to solve. The third phase then analyzes the requirements that the application must provide. The fourth or final phase is the logical design of the data, process and interface model of the e-reporting of audit of non-tax state revenue.

The four phases are expected to answer the research questions concerning how the XYZ organization needs the design of a non-tax state revenue audit

report application to support related audit reporting. The research results in a proposed application design for reporting non-tax state revenue audit results and is expected to be a benchmark for the construction of such audit applications. The application is intended to minimize existing problems related to the manual reporting of audit results.

2. THEORETICAL REVIEW

2.1 REPORTING THE AUDIT OF NON-TAX STATE REVENUE

Government Regulation Number 1/2021 stipulates that non-tax state revenue audits should be conducted by the government's internal auditor. The audits are at the request of the head of the Non-Tax State Revenue Management Agency. The amount of non-tax state revenue owed is calculated independently by the non-tax payer. The auditor must then check that the amount that has been calculated separately through a non-tax state revenue audit. The scope of this audit is limited to examination of financial statements and other supporting documents related to the object, as evidence of the financial transactions related to the payment or deposit.

The XYZ organization issued non-tax state revenue audit guidelines regulating audit preparation, implementation, and reporting at each step. These steps involve internal discussions on temporary audit findings (TAF); submission of audit finding (AF); meetings between the audit team, management agencies and non-tax payer; and preparation of the audit reports.

2.2 FRAMEWORK FOR THE APPLICATION OF SYSTEM THINKING

The Framework for the Application of System Thinking (FAST) developed by Whitten and Bentley (2007) is a hypothesis method used to represent the system development process. FAST methodology involves eight phases:

- **Scope Definition:** This phase also describes the problems, opportunities, limitations and visions that must be analyzed and formulated in the definition of the scope. For problem reports, the developer will use the PIECES framework: **P** refers to Performance, **I** to Information and Data, **E** to Economics, **C** to Control and Security, **E** to Efficiency and **S** to Service.
- **Problem Analysis:** This phase includes study and analysis of existing systems or manual activities; the results will provide the project team with an understanding of the problems which have led to the project.

- Requirement Analysis: This phase analyzes decisions on the benefits that must be provided by the system; it concludes the definition and priority of the business requirements that need to exist.
- Logical Design: This phase translates the business requirements formulated in the previous phase into a system model. This model describes the system individually as technical solutions. The phase features several models, namely the:
 - Logical Data Model, which describes the data and information requirements in an integration database.
 - Logical Process Model, which describes the plot and information of the business processes.
 - Logical Interface Models, which describe the interface requirements of the systems developed.
- Decision Analysis: This phase identifies the candidates for the technical solution of the system created, analyzes the feasibility of the solution and recommends the selected system candidates for the design.
- Physical Design and Integration: This phase transforms the business requirements into physical design specifications that will guide the system construction process.
- Construction and Testing: This phase builds and tests systems built from business prerequisites and physical design specifications, and then implements a dashboard view between the new and old systems.
- Installation and Delivery: This phase facilitates the installation and service of the system in the company's operational processes. The system developer will install the system from its developer environment into the production environment.

2.3 SYSTEM MODELING TECHNIQUES

Whitten and Bentley (2007) describe system modeling techniques as data and process modeling.

- Data Modeling: The model which describes data modeling is *an entity relationship diagram* (ERD) as it describes entities and their relationships using data.
- Process Modeling: This refers to the techniques to manage and illustrate the structure and flow of data through system processes against the logic, policies and procedures implemented in the system process. The techniques, using a diagram called a *data flow diagram* (DFD) and a *flowchart* system, are used to perform process modeling analysis.

3. RESEARCH METHODS

3.1 RESEARCH APPROACH

The research use a qualitative method. Abdussamad (2021) states that qualitative methods use facts in the field. The characteristics of such research include a focus on actual conditions, data collection made through observations and direct interviews, and with data collected in words and images. There are three types of qualitative research: ethnography, case studies and grounded theory; case study research is used in this study. A case study is an in-depth study of an individual or group over time; the goal is to obtain a complete and in-depth illustration of an entity under study.

3.2 DATA COLLECTION

Abdussamad (2021) states that qualitative proximity requires humans as instruments so that researchers can examine the subjects of their research through interviews, group observations, analysis of documents and literature, and analysis of the documentation. In this case, the observation method, interviews and reviews of primary documents such as manual audit documents that will be input into the audit system were employed.

Interviews with five participants were held. The interviewees were representatives of the review and audit teams, with interviews lasting for 1 hour. The criteria for the choice of interviewees were that they already had training and experience in non-tax state revenue audit and that they had held an audit or review team role for more than 2 years.

The interview questions were developed from the PIECES framework and problem-solving checklist of Whitten and Bentley (2007, p.78) and reprocessed based on conditions in the XYZ organization. The interview sessions focused on the issue of manual non-tax state revenue audits and information systems required by the XYZ organization.

3.3 SYSTEM ANALYSIS AND DEVELOPMENT USING FAST

Analysis was made of the data obtained and the interview findings for anticipated audit reporting application. The methodology used was based on the

FAST framework, but focusing only on the initial four phases, as outlined in Figure 1. The first phase, namely scope definition, was analyzed using the PIECES (Performance, Information and Data, Economics, Control and Security, Efficiency, Service) framework. In the second stage, the causes and impacts of the manual audit reporting problems were analyzed and then the objectives and limitations of the application to be developed were formulated. The third phase analyzed the functional and non-functional requirements to be included. The final phase was the logical design phase, in which the design of the data modeling, process modeling and interface modeling in the application to be developed were described and analyzed.

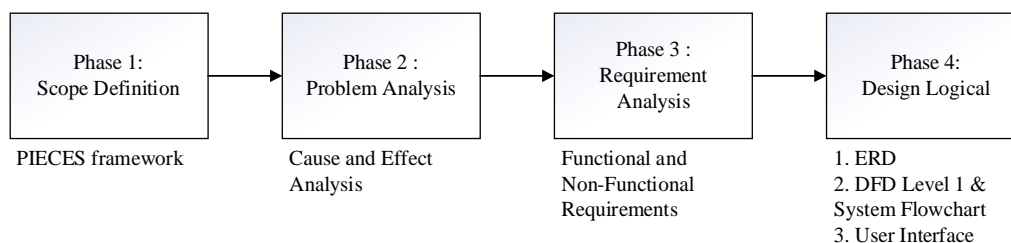


Figure 1. Phase 1 to Phase 4 of the FAST Methodology

Source: Whitten and Bentley (2007), reprocessed by the researcher

4. ORGANIZATIONAL PROFILE

The XYZ organization is one of the work units under X Organization. Its duties and functions are to organize government affairs in the field of state financial supervision. One of the tasks mandated to the organization is to conduct supervision in order to increase the potential for government revenue from implementing non-tax state revenue audits.

The organization is led by the director, aided by one administrative division and two audit divisions. The audit divisions are staffed by auditors who have roles as technical controllers, audit leaders teams and audit team members. To ensure that the non-tax state revenue audit can run smoothly, XYZ has established a non-tax state revenue team consisting of all auditors in the audit division. The organizational structure consists of:

- Review Team: Their task is to review the audit reports and authorize them if they are complete and comply with regulations. The team consists of

the Technical Controller, the Head of the Audit Division and the Director of the XYZ Organization.

- **Quality Assurer Team:** This task of this team is to ensure that the values or numbers in the report attachments are in line with the calculation formulas and methods described in the audit guidelines.
- **Audit Team:** The audit team includes auditors who conducts non-tax state revenue audits. The audit team audits and compiles audit reports until their completion and authorizes them manually. The team consists of the leader of the audit team and members of the audit team.
- **Operational Staff:** They comprise a team appointed by the XYZ organization to assist management in the implementation of the supervision, from the audit planning stage up to the audit reporting stage.

In a non-tax state revenue audit, the audit team undertakes the flow and processes described in the audit guidelines issued by the XYZ organization. The audit reporting cycle is related to eight interconnected steps, which are documented in the manual. An overview of the cycle of non-tax state revenue audit results in organization XYZ is shown in Appendix 1.

5. ANALYSIS AND DISCUSSION

The researchers analyzed the data obtained from the interviews and observations of the non-tax state revenue audit process. These data were the basis of the design of the application. The application development analysis was based on the phases described in the FAST methodology developed by Whitten and Bentley (2007), up until the fourth phase, namely logical design.

5.1. SCOPE DEFINITION

The scope definition stage, or the first stage in the FAST method, focuses on determining the scope, which includes problem identification and the proposed application designs to be developed. Problems were identified from the findings of interviews using the PIECES framework checklist of Whitten and Bentley (2007). Analysis of these problems resulted in identification of those that occur in the XYZ organization and problem in the proposed application design, as detailed in table 1.

Table 1. Problem Identification

Framework	Problem statement	Proposed application design
Performance	The realization of audit tasks is only 75% - 80% of the total number of audit requests from the non-tax state revenue management agencies. The reason for this is the lack of human resources and budgeted funds.	The application will speed up the process of reporting the audit results and minimize the limited use of auditors.
	The steps for compiling audit results are very long, starting from preparation and review, which is conducted in 3-4 steps. The review always uses physical documents, which means that the review team must be present in the office.	The application will facilitate the review team's online review and digital authorizations.
Information and Data	The XYZ organization does not have centralized storage for soft copies of working papers related to non-tax state revenue audits.	The application will help organizations to collect a soft copy of audit data centrally which can be accessed anytime and anywhere.
Economics	There is a lack of auditors to fulfil all the audit duties in the organization because auditors have other duties for other organizations.	The application will help speed up the audit process and minimize the use of auditors within a team.
Control and Security	The XYZ organization does not have centralized storage on the server for softcopy data of working papers and audit reports online. So that previous audit data is vulnerable to loss, damage and crime.	The application will help the storage of softcopy data centrally, which will be able to be accessed anytime and anywhere by parties who already have access.
Efficiency	Waste of paper occurs in case of an error in a manually reviewed document because the document must be reprinted.	Using the application, formula errors due to compilation failures that can occur will already be resolved to minimize the use of paper when reviews are tiered.
Service	The results of Non-Tax State Revenue audit require a long step to ensure that the inputted data can be accurate and become the basis for billing to non-tax payers.	The application will help minimize problems in the calculation of non-tax state revenue payable, so auditors will be able conduct more in-depth audits of non-tax state revenue due.

Based on the problem statements and proposal that have been formulated above and the results of the analysis of the non-tax state revenue audit guideline documents, the application design scope involves the process of implementing the audit reporting of non-tax state revenue, starting from the compilation of audit attachments, up to printed reports at the end of the audit task. The reporting process will be divided into four modules, namely the data task audit module, the audit findings module, the official audit report module, and the non-tax state revenue audit report module.

5.2. PROBLEM ANALYSIS

The second phase, the problem analysis phase, studies and analyzes the problems arising from the non-tax state revenue audit. The analysis process uses the interview findings according to the matrix cause and effect analysis of

Whitten and Bentley (2007). Furthermore, this stage provides an understanding of the problem and the impact of preparing audit reports manually. The analysis focuses on the existing problems, with their causes and impacts, and then on the application limitations that may exist in the development phase. The analysis is explained in detail in Table 2.

Table 2. Problem Analysis

No.	Problem	Reason	Impact	Application Limitations
1.	The review process always uses a physical document.	1. No application is available to facilitate an online review of audit reports. 2. Each reviewer must provide manual authorization of audit reports.	The review process takes a long time because the review team performs other tasks in another partner organization.	Digital authorization is required to ensure a high-security system and avoid unauthorized access.
2.	Calculation errors and failures to compile an audit report attachment.	The Microsoft Excel formulas change when compiling attachments.	Extra control is needed in reviewing the report attachment submitted by the audit team.	The system can manually change the data in the report attachment in the application as a result of discussion and review of audit results.
3.	Unavailability of centralized non-tax state revenue audit softcopy data storage.	1. There is no regulation that requires audit data to be stored centrally. 2. No person is in charge or assigned responsibility for storing audit data centrally.	The auditor who is given the audit task cannot anticipate the condition of the non-tax payer because their data profile, risk and condition are not available.	The candidate server is a shared server and is managed by Agency X. Therefore, the application needs strong controls and security to protect the stored audit data.
4.	Waste of paper	The concept of the audit report will be printed in hardcopy form. Therefore, if there is an error, it can impact other attachments and must be reprinted before being given to the next reviewer.	Excessive use of paper.	The audit report is compiled, reviewed and revised by the application. It still provides a print function for audit reports that require manual authorization.

5.3 REQUIREMENT ANALYSIS

This phase analyzes the needs and requirements that must be provided in the application if XYZ organization wants it to be perfect. The requirements include:

- The system is able to import attachment data from Microsoft Excel files to the application database. In addition, users can fill in the data in the application manually if the imported data is incomplete.

- The system can perform simple calculations to support the results of audit reporting.
- When importing data, data from the attachment that are related to other attachments must have the same values. If the data have changed, the other data in the other attachments should automatically change. For example, the invoice number associated with three attachments, namely the product sales attachments, the product benchmark price attachments, and the adjustment fees attachments, must have the same value. If the invoice number on the product sales attachment has changed, the application will automatically change the product benchmark price attachment and adjustment fees attachment.
- The system can generate attachments to temporary audit findings, audit findings, official audit reports , and audit reports.
- The system can provide reports in Word document format following non-tax state revenue audit guidelines. The format should facilitate the adding and deletion of sentences, auto-filling from the database into a report format, adding comments and authorizing digitally.
- The system can provide additional information on users who use and change data.

5.4 LOGICAL DESIGN

Logical design, or the fourth phase, translates the pre-designed business requirements into the system model. The design uses the system analysis methods and system modeling techniques developed by Whitten and Bentley (2007). System modeling techniques start with data modeling. The data modeling designs the data requirements in the database and the interaction between databases. The second stage is process modeling. This describes the interaction between application users and applications and databases. The final stage of logical design is the design and analysis of the application interface. The interface model will illustrate to application users how to use the e-reporting audit application for non-tax state revenue.

5.4.1. DATA MODEL DESIGN

Data modeling is used to document data in a database. The application will begin with the process of allocating auditors and non-tax payers to the audit task table in the integrated database by the operational staff (SO). This process will

give auditors access to the chosen non-tax payer and close access the other non-tax payer data.

After auditors have finished the audit task, they will use the application to begin reporting the audit results. The reporting process begins when the audit team imports report attachments in Microsoft Excel files into the application. The data will automatically fill in the database attachment query, which consists of six attachment : non-tax state revenue payment, product sales, official payment, product benchmark price, adjustment fees, and royalty and exchange rates. The application then automatically shows results related to underpayment and late penalty on principle. The results automatically fill in data in the audit results table on a yearly basis. The contents of this table will be the value on the template of the audit findings (AF), official report of audit (ORA), and audit report (AR). Changes to attachment data in the database will automatically change the data in the other attachments. All the tables in the database and the relationships between tables are explained in Appendix 2.

5.4.2. PROCESS MODEL DESIGN

Process modeling is a stage in illustrating the facts and real flow from a non-tax state revenue audit report. This model will document the data structure and flow from the allocation of audit tasks up to the printing of audit reports (AR). The model is illustrated in the data flow diagram (DFD) and system flowchart. Appendix 3 and Figure 2 describe the process model for the application; Appendix 3 shows level 1 for DFD. This DFD illustrates the users who will interact with the application, namely the Director of the XYZ Organization, the Head of the XYZ Organization Division, the quality assurer team, and the technical controller, all of whom acted as the review team; operational staff (SO); and the audit team. The application is divided into four subsystems: the data task audit subsystem, the audit finding (AF) subsystem, the official report of audit (ORA) subsystem, and the audit report (AR) subsystem. The AF subsystem is divided into temporary audit findings (AFs) and AF. The ORA subsystem is divided into temporary ORA (ORAs) and final ORA (ORA).

The process starts with the data task audit subsystem, in which the SO can input and allocate auditor data, audit task data based on the audit assignment letter, and check non-tax payer data. The input process will automatically update the existing database. After the audit, the audit team will use the application to prepare AFs, AF, ORAs, ORA and AR. The preparation of AFS and AF occurs in the AF subsystem of the audit results. This subsystem will help the audit and

review teams compile, revise, and digitally authorize AF documents online. The result of this subsystem is a printed AF document for authorization manually by the director.

After the non-tax payer has approved the AF document, SO will arrange joint discussions between three parties, the audit team, the non-tax payer and management agencies for non-tax state revenue. The results of the discussions are ORAs and ORA. ORAs is an agreement between three parties, while ORA is an agreement between the non-tax payer and the audit team. The auditor will use application to arrange ORAs and ORA documents as a result of compiling an attachment query in the database. The application automatically fills in the ORAs and ORA templates from the audit results table. This will make it easier for the audit team to print ORA and ORA documents. The physical document will be signed manually by the parties.

Based on the approval of ORA, the audit team will compile an AR concept in the AR subsystem. The subsystem will help the audit and review teams to compile, revise, and digitally authorize AR documents online. The application finishes after the AR is printed for the Director of XYZ Organization to manually authorize it.

The designed application is web-based and will integrate all the databases online, as illustrated in Figure 2. It will display an interface for SO to input non-tax payer data and audit assignment letters onto the audit task subsystem, an AF interface on the audit finding subsystem, an ORA interface on the official audit report subsystem, and an AR interface on the audit report subsystem. The application will issue physical output documents such as AF, two types of ORA and AR. All activities in the system will be automatically stored in an integrated database.

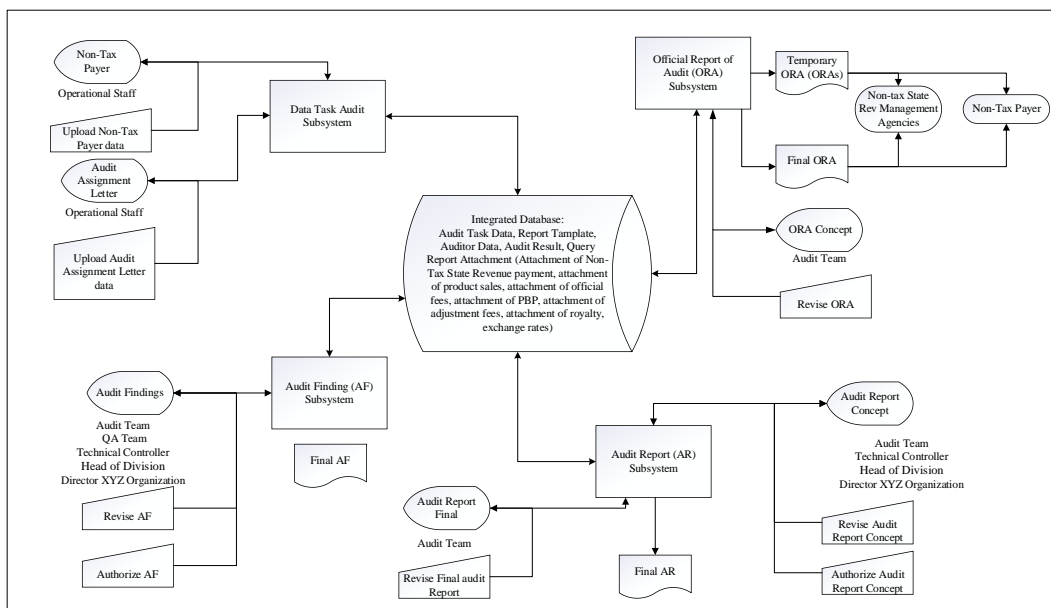


Figure 2. Application Design of e-Reporting Audit for Non-Tax State Revenue

5.4.3. USER INTERFACE MODEL DESIGN

This stage illustrates the application's user interface. Figure 3 shows the proposal for this. All systems use the centralized servers in the same domain URL, i.e. earntsr.xyz.com. The interface provides a button for users to log in. After pressing the login button, the system will display a form for filling in a username and a password. In addition, users can also see the status of the audit task in real-time by selecting the Overview Audit Task button. This button will display the audit task status for all audit assignment letters. For the help button, a manual system will be provided for this application.



the form of a Word Document. The application facilitates the automatic filling in of data from an integrated database and manual filling in of other audit data.

This interface also facilitates reviewing, correcting the content of reports, adding comments, and digital authorizing. Any changes, additions, and corrections to content in the AF template made by the user will be stored in the audit trail in the system. This contains details of the users who have changed data and when the changes were made. This process will also occur when the user compiles the official report of audit and audit report concepts in other subsystems.

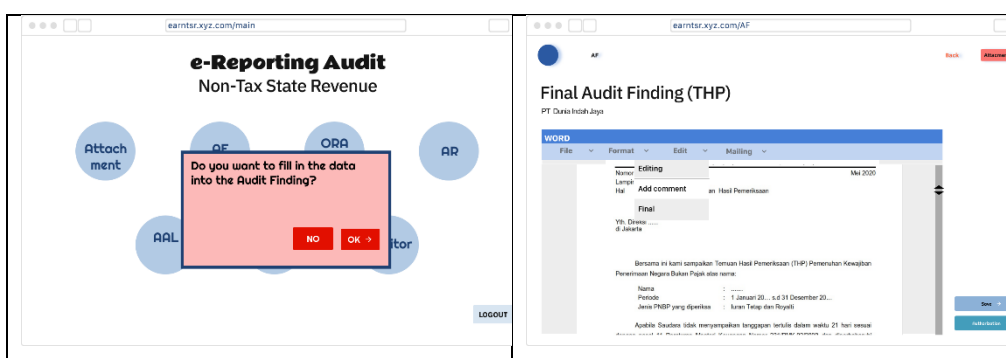


Figure 5. Audit Finding Interface

Table 4. List of Data Inputted into Audit Finding (AF)

No	Database	Data	
1	Audit Task Data	<ul style="list-style-type: none"> Name 	<ul style="list-style-type: none"> NIP
2	Non-Tax Payer	<ul style="list-style-type: none"> Company Name Head Office Branch Offices Location No. SK IUP Area IUP Effective Date 	<ul style="list-style-type: none"> IUP Effective End Date NPWP number Entity Status Capital Status Business Type No. Stand Act Date of Deed of Incorporation
3	Audit Result	<ul style="list-style-type: none"> Audit Year IP- Less of Official Payment IP- Late Penalty of Official Payment IP- Total Less of Payment 	<ul style="list-style-type: none"> R- Less of Official Payment R- Late Penalty of Official Payment R- Total Less of Payment

In addition to facilitating the audit reporting process, the application also facilitates the initial audit process which allocates the auditor and the non-tax payer. This process can only be operated by administrators, namely operational staff (SO). To start this process, the SO can select the audit assignment letter

(AAL) circle, and the application will display the AAL interface, as shown in Figure 7. SO can input AAL data and select the non-tax payer in the dropdown menu. If non-tax payer data is unavailable, the SO will select the non-tax payer interface and add a new non-tax payer. After choosing the non-tax payer, the SO will select the review and audit teams. If the auditor data is unavailable, the SO can add these to the auditor interface. In addition to adding auditors, the SO also sets the username and password for them.

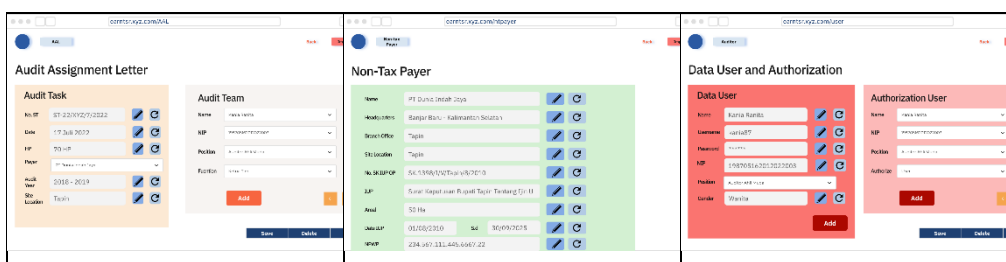


Figure 7. Administrator Interface

6. CONCLUSION AND RECOMMENDATIONS

6.1. CONCLUSION

The XYZ organization is a unit under X Organization that supervises national finances and significantly increases fiscal revenue from non-tax state revenue audits. These audits are presently conducted without the assistance of IT. Without such help, the audits often encounter certain obstacles that mean the reports are completed in more than 60 working days, contrary to PP 1/2021. Other issues that can cause delays are calculation errors and failure to compile audit reports, non-centralized data storage, paper wastage, and the long review process of printed documents.

The application of IT in reporting non-tax state revenue audit results will help work become faster and more accurate, saving costs and time. Therefore, the XYZ organization needs a computer application to help report the results of non-tax state revenue audits, so that the Non-Tax State Revenue Management Agency can receive reports on time.

This research used the FAST (Framework for the Application of System Thinking) method to develop a web-based application for reporting non-tax state revenue audit from the first phase, namely determining the scope, to the fourth phase, logical design. The research has solved the research problems regarding the proposed application design that is able to assist the reporting process of PNBPN examination results at the XYZ organization. Any problems identified can be overcome by the application. The proposed application design to solve the existing problems includes the following features.

- The application developed can help compile audit report attachments when there is a change in data after passing the review and discussion stages of audit results. The application will change the related data in other attachments when the audit team changes them. The double checks carried out on report attachments can be minimized and even eliminated because the compilation process has run automatically in the system.
- The application facilitates the centralized storage of data in a separate database. The centralized database will also assist subsequent audit teams in searching for previous audit data.
- The application's reporting process saves paper because the review and revision process is completed online. Changes that occur can be directly made in the body of the report by the system, without having to provide printouts manually.
- The application developed will reduce the time needed for the review process by the technical controller, quality assurer team, Head of Division, and Director of the XYZ Organization because the review can be made anywhere and anytime.

All problems can be solved by the e-reporting audit non-tax state revenue application. It will help speed up the process of completing audit reports.

6.2. RECOMMENDATIONS

Based on the conclusions of the research results, the design of the web-based application for non-tax state revenue audit reporting will help the XYZ organization to provide audit reports faster by solving the existing obstacles. Therefore, it is recommended that the organization supports the innovations in and changes to the process of reporting audit results, which can now be conducted online instead of manually, assisted by the application designed. The many review stages of the process will ensure that reports produced comply

with rules and regulations. It will also be very helpful for the reviewer team to be able to use the application anytime and anywhere.

6.3. RESEARCH LIMITATIONS

The research is limited to the four initial stages of the FAST method, namely scope definition, problem analysis, requirement analysis and logical design. The research also only facilitates the reporting of PNPB audit results from the overall PNPB audit conducted by the XYZ organization.

6.4. SUGGESTIONS FOR FUTURE RESEARCH

It is recommended that future research could improve the application as a basis for developing and constructing web-based audit applications, from audit preparation, audit implementation and integration with other audit reporting applications.

ACKNOWLEDGEMENTS

The authors are grateful to the XYZ organization and the Education Fund Management Institute (LPDP) of the Ministry of Finance for their cooperation with the research.

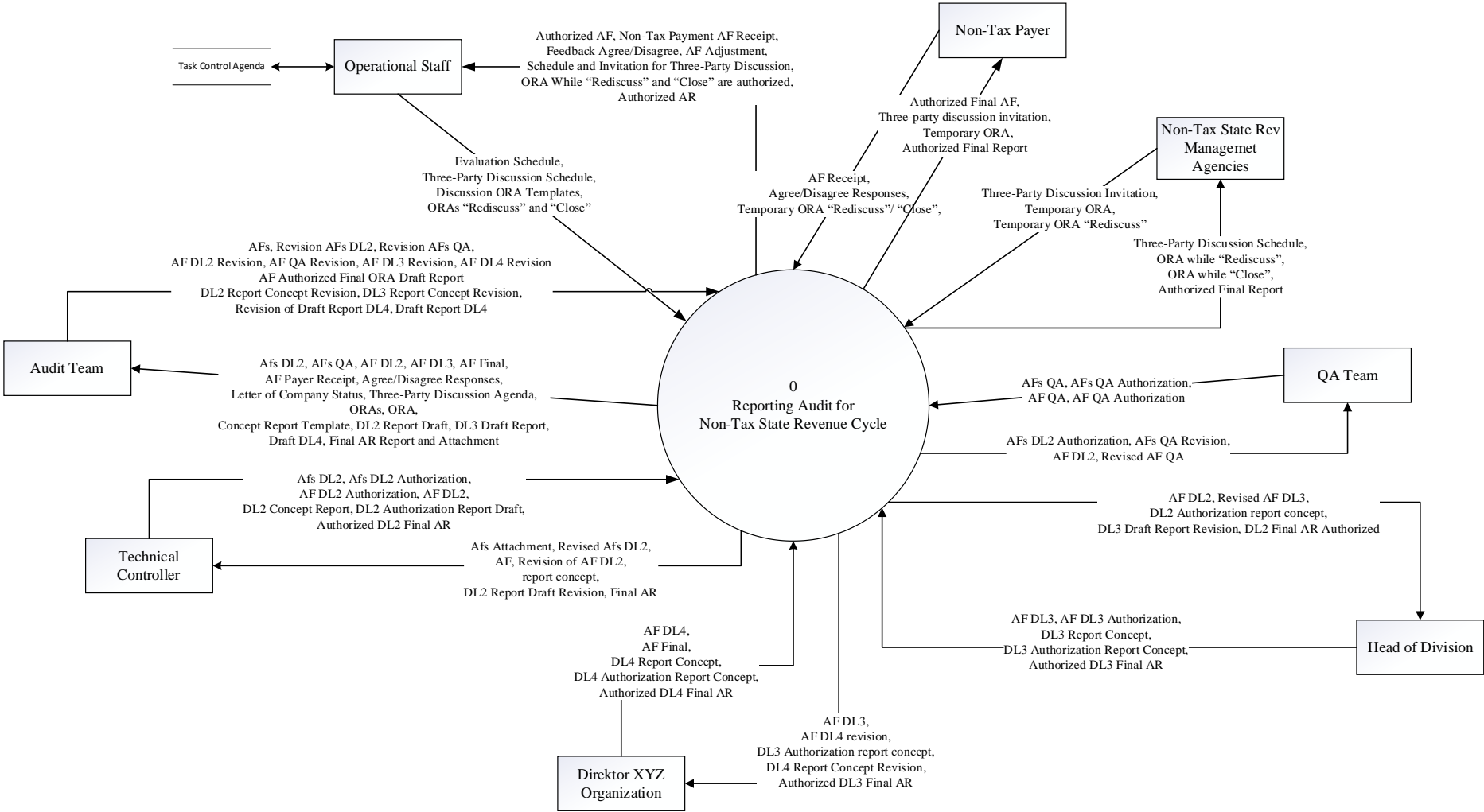
REFERENCE LIST

- Abdussamad, Z (2021). *Metode Penelitian Kualitatif* [Qualitative Research Methods]. Makassar : Syakir Media Press
- Anonim. (2020). *Pedoman Pemeriksaan PNPB pada Wajib Bayar* [Non-tax State Revenue Audit Guidelines for Non-tax Payers]. Organisasi XYZ
- Anonim. (2021). *Petunjuk Teknis Pemeriksaan Kewajiban PNPB* [Technical Instructions for Non-Tax State Revenues Audit]. Organisasi XYZ
- Juliandi, A. (2014). *Metodologi Penelitian Bisnis – Konsep dan Aplikasi* [Business Research Methodology – Concepts and Applications]. Medan: UMSU Press
- Kusumastuti, T. T. (2018). *Studi perancangan sistem informasi pada siklus pendapatan PT. X* [The study of information system design on the revenue cycle of PT. X]. <http://acctlib.ui.ac.id/detail?id=13776&lokasi=lokal>
- Nainggolan (2021). *Komunikasi Organisasi : Teori, Inovasi dan Etika* [Organizational Communication: Theory, Innovation and Ethics]. Medan: Yayasan Kita Menulis
- Pemerintah, RI. Peraturan Pemerintah Republik Indonesia Nomor 1 Tahun 2021 tentang Tata Cara Pemeriksaan Penerimaan Negara Bukan Pajak [Government Regulation of the Republic of Indonesia Number 1 on 2021 concerning Procedures for Examination of Non-Tax State Revenue]. (2021). Indonesia
- Sari, P, & Khudri, TBM (2019). Analysis and design of an information system for implementation of budget management at lan Jakarta. *Contemporary Research in*

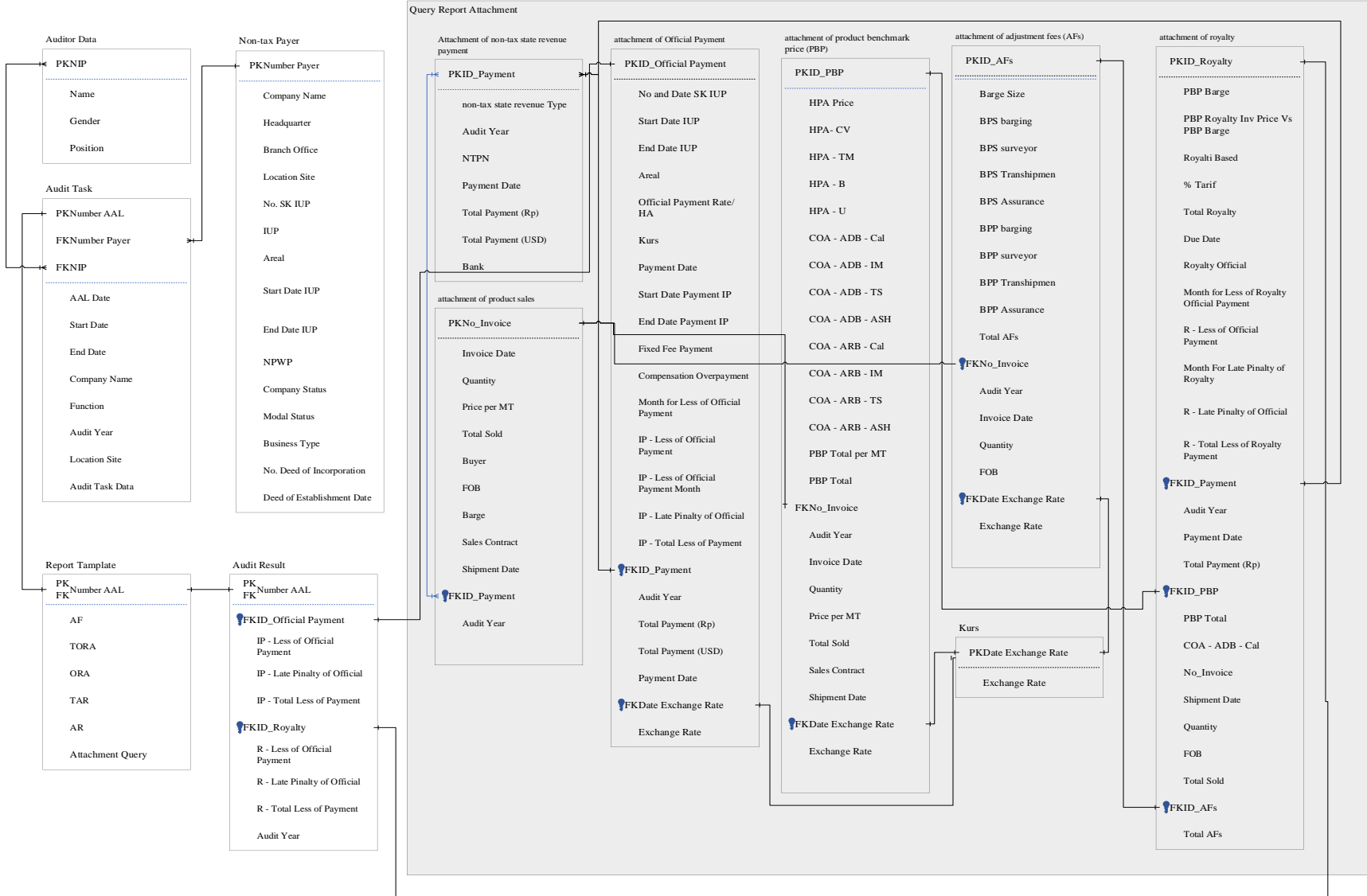
- Accounting: An Indonesian Context*, scholar.ui.ac.id, 22, 51-72,
<https://scholar.ui.ac.id/en/publications/analysis-and-design-of-an-information-system-for-implementation-o>
- Santoso, B.L, & Prasetya, M.E (2019). Budgeting information system design in iframes: case study on health sector BLUD. *AFEBI Accounting Review*, 4(02), 67-78
<https://doi.org/10.47312/aar.v4i02.292>
- Whitten, J.L & Bentley, L.D. (2007). *Systems Analysis and Design Methods* (7th ed.). New York: MacGraw-Hill
- Zain, M. Y. (2008). Minimizing the Problems of Enterprise Resource Planning (ERP) Implementation for Small to Medium Cigarette Company Through Framework for Applications of Systems Thinking (FAST). *Media Informatika*, 6(1), 57-69.
<https://doi.org/10.20885/informatika.vol6.iss1.art4>
- Zamzami, Faiz, M. (2018). *Audit Internal Konsep dan Praktik* [Internal Audit Concepts and Practices]. Yogyakarta: Gadjah Mada University Press

APPENDICES

Appendix 1. Audit Reporting Cycle of Non-Tax State Revenue in XYZ Organization



Appendix 2. ERD Application for the e-Reporting of Non-Tax State Revenue Audit in XYZ Organization



Appendix 3. DFD Level 1 Application for the e-Reporting of Non-Tax State Revenue Audit in XYZ Organization

