INTELBOX

2024

REVENUE ASSURANCE SYSTEM (RAS)

PROPOSAL

PREPARED FOR:

OFFICE OF THE NATIONAL SECURITY ADVISER (ONSA)

INTELBOX

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BACKGROUND

Nigeria's Cybercrime Act of 2015 established a comprehensive framework to combat cybercrimes, protect critical infrastructure, and promote cybersecurity. However, an essential element – the National Cyber Security Fund – requires stronger monitoring to ensure consistent contributions from designated entities. To address this gap, we are introducing the ONSA-RAS I Solution – a cutting-edge solution powered by Artificial Intelligence (AI) that streamlines revenue collection and enhances cybersecurity.

Addressing the Challenge:

- Current Issue: Lack of a compliance monitoring system hinders full contributions to the National Cyber Security Fund.
- Our Solution: ONSA-RAS I Platform provides real-time visibility and automated compliance monitoring, guaranteeing full fund contributions from designated entities.

This proposal demonstrates how ONSA-RAS I Platform aligns with ONSA's priorities for revenue assurance and national security, driving a comprehensive approach to cyberspace protection in Nigeria. The proposed Solution is designed to address the critical need for a robust mechanism to monitor, report, and facilitate the efficient utilization of funds generated through the levy imposed by the Cybercrimes (Prohibition, Prevention, etc.) Act, 2015 in Nigeria. This legislation mandates a levy of 0.005% to be deducted from specific channels, including Banks and Financial Institutions, Telecommunication Companies, Insurance Companies, and the Nigerian Stock Exchange.

The primary objective of this solution is to establish a centralized and secure system that seamlessly integrates with the financial infrastructure of the designated channels. By doing so, it ensures accurate and transparent collection of levies, providing real-time visibility into fund accumulation. This introduction sets the stage for the subsequent discussion of the system architecture, implementation strategy, and key principles guiding the solution's design.

The need for such a solution arises from the increasing significance of cybersecurity in the face of evolving digital threats. The National Cyber Security Fund serves as a vital resource to support initiatives aimed at safeguarding Nigeria's cyberspace. The subsequent sections will delve into the technical aspects, legal compliance, and operational considerations essential for the successful deployment and management of the proposed solution.

IMPLEMENTATION STRATEGY

Technology is merely an enabler. We no longer lack access to technology, what is important is the ability to weave together existing technology to provide effective and lasting solutions to our problems.

A successful implementation of the Comprehensive Revenue Assurance Solution ONSA-RAS I, involves strategic collaboration with regulatory bodies and industry stakeholders. It also requires a well-structured training program for relevant entities to ensure seamless integration and a clear understanding of levy deductions.

ENGAGEMENT WITH REGULATORY BODIES

Establishing collaboration with regulatory bodies, such as the Central Bank of Nigeria and relevant financial oversight agencies, is crucial. This collaboration ensures alignment with existing financial regulations and compliance standards. Regular consultations with regulatory bodies will provide insights into potential changes in policies or procedures, allowing the system to adapt accordingly.

ENGAGEMENT OF INDUSTRY STAKEHOLDERS

We will engage industry stakeholders, including representatives from Banks and Financial Institutions, Telecommunication Companies, Insurance Companies, and the Nigerian Stock Exchange. By fostering open communication and collaboration, the implementation process can benefit from industry expertise, address concerns, and garner support for the levy collection initiative.

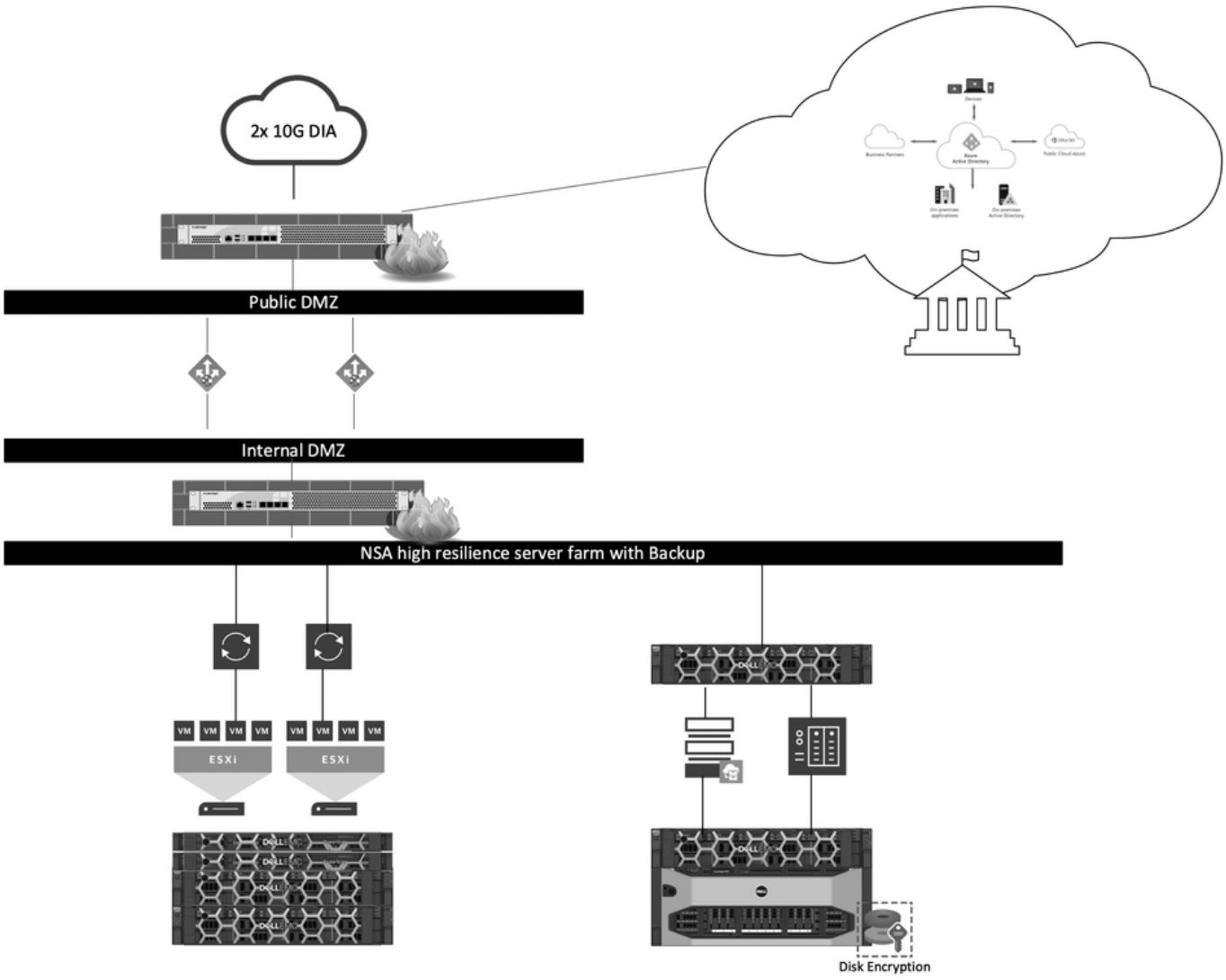
CUTTING EDGE TECHNOLOGY

Once the framework is established, cutting edge technology is then required to drive compliance, adoption and revenue. We are aware of the tendency to be dependent on data that is reported by relevant stakeholders (such as financial institutions), however, with the advancement in data science and artificial intelligence, we are able to build prediction models to generate demand notices. This way, we know from data what to expect from various stakeholders.

SYSTEM
ARCHITECTURE

ONSA DATA CENTER

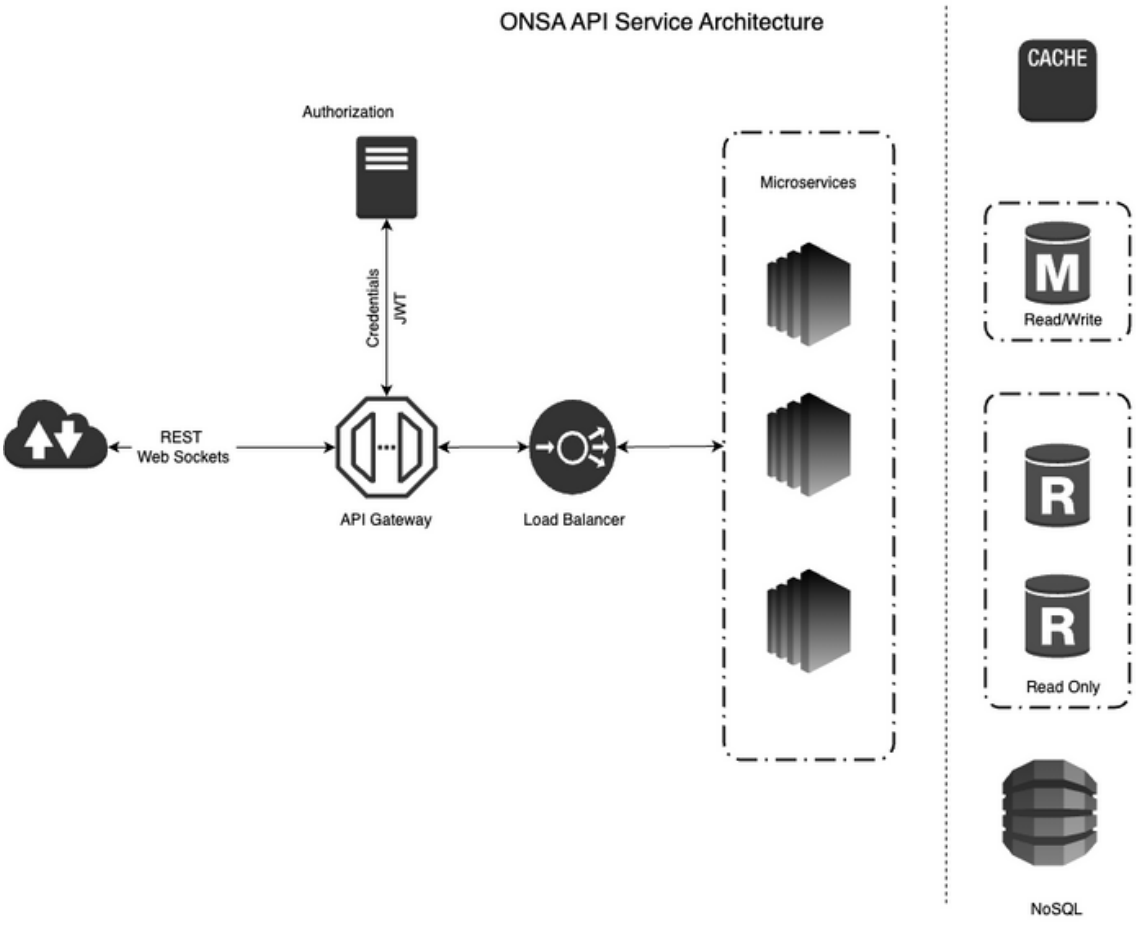
We propose to build an infrastructure that will host a private cloud with elastic resources to provide a secure, customizable, and controlled environment for managing all the subsystems. It will address the unique needs of the ONSA which requires dedicated infrastructure, data privacy, and the flexibility to scale resources based on demand, ultimately contributing to the efficiency, security, and cost-effectiveness of the service.



SYSTEM
ARCHITECTURE

ROBUST AND ELASTIC API INFRASTRUCTURE

An elastic infrastructure will allow resources to scale automatically in response to changes in demand. This ensures that the API services can handle varying levels of traffic without manual intervention. Considering the varying volume of transactions at peak and off peak periods, available resources will scale automatically in response to varying needs.

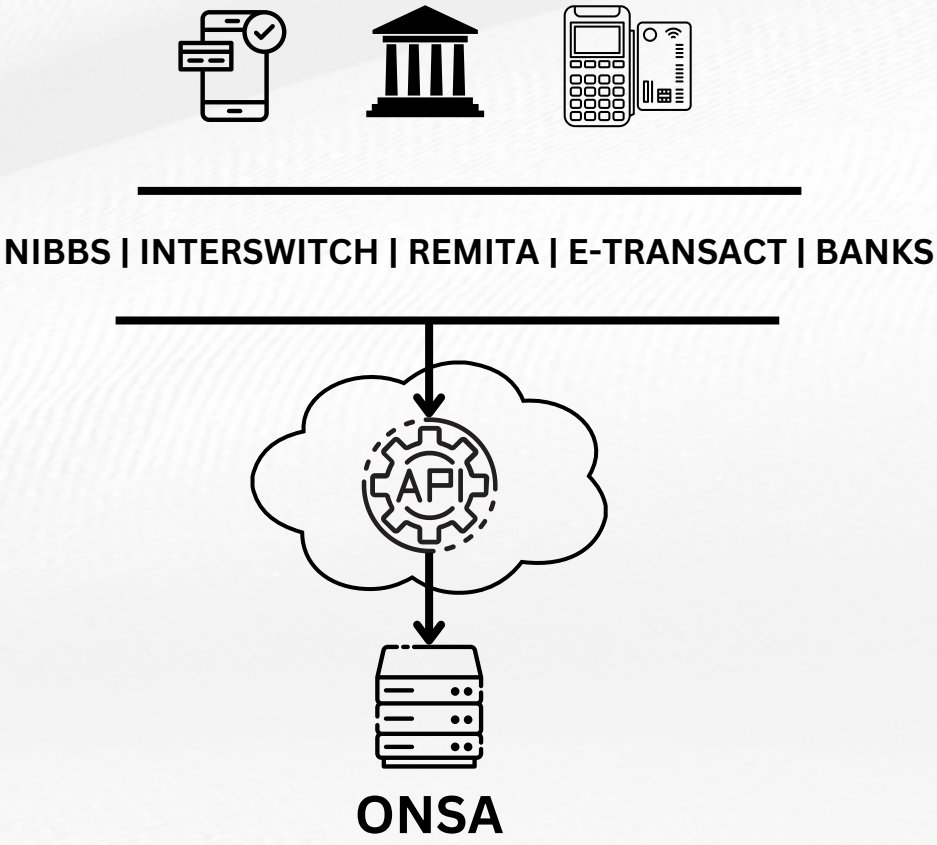


This model for API services provides a flexible, scalable, and cost-effective solution, ensuring optimal performance and availability while adapting to changing workloads and business needs.

DATA COLLECTION

BANKS AND OTHER FINANCIAL INSTITUTIONS

Switches are strategically positioned to provide visibility into all interbank transactions, including transactions carried out by payment service providers and mobile money operators. At the switch level, payment notifications can be sent to the ONSA infrastructure and deductions can be made at source.

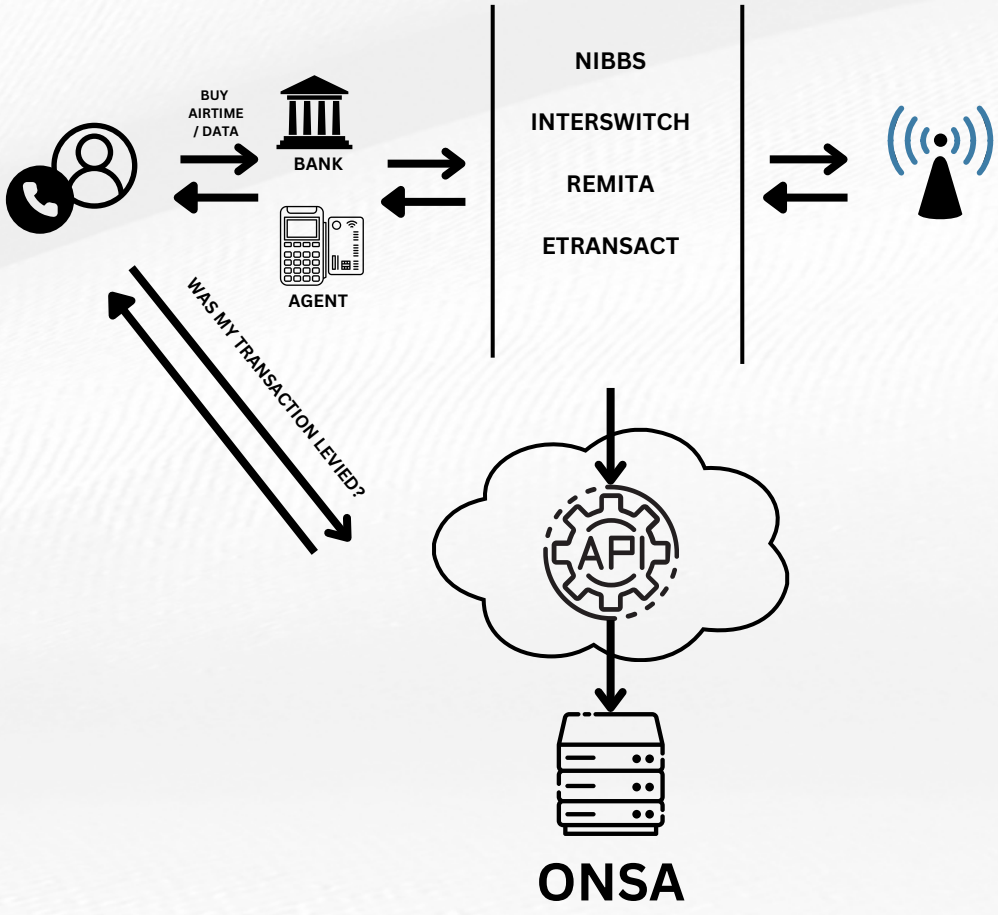


The Central Bank of Nigeria and relevant regulators can issue a circular to switch to make the deductions at source. Unlike previous circulars issued by the CBN instructing financial institutions to remit, this method provides a traceable, auditable and transparent trail of transactions that can be levied.

DATA COLLECTION

GSM PROVIDERS AND ALL TELECOMMUNICATION COMPANIES

Airtime and Data Vending: Every airtime and data transaction leaves an audit trail visible to the customer, Mobile Network Operator, Bank, Switch and the regulator (NCC). The audit trails make it easy to "follow the money".



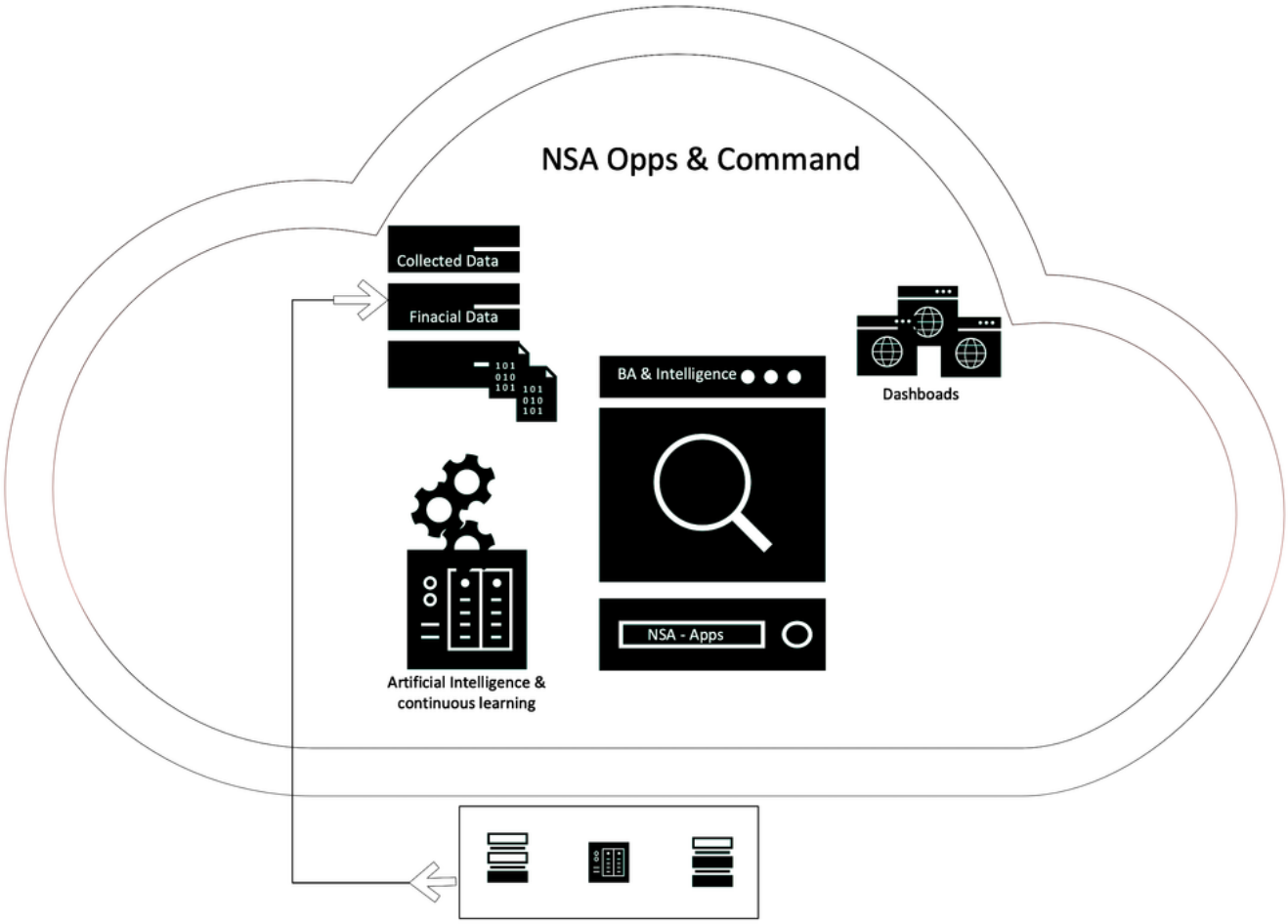
The airtime and data purchase vectors exposed by super agents are all backed by switches and banks. It is therefore possible to levy such transactions at source. The CBN can instruct all payment providers to make the deductions.

Additionally, the ONSA will provide an interface to customers to "check" the operators. Crowdsourcing this data will naturally keep every one in check, as fines may be levied for non-compliance

INSIGHTS AND ANALYTICS

INTELLIGENCE, ANALYTICS AND INSIGHTS

The proposed system involves addressing challenges related to data accuracy, trustworthiness, and potential underreporting by banks. Implementing data science and AI techniques, along with intelligent dashboards, can help mitigate these risks and enhance the effectiveness of levy collection systems



By leveraging data science and artificial intelligence, the entire system can enhance the reliability and trustworthiness of the data reported by the stakeholders. The use of data science, AI, and intelligent dashboards provides the tools needed to detect anomalies, identify patterns, and monitor transactions effectively, reducing the risk of underreporting and ensuring the integrity of the levy collection process. Regularly updating and evolving these systems based on emerging technologies and regulatory changes is crucial to maintaining their effectiveness.

SYSTEM FEATURES

The proposed system architecture for the Comprehensive Revenue Assurance Solution (ONSA-RAS I), is a carefully structured framework designed to ensure the effective monitoring, reporting, and management of funds collected for the National Cyber Security Fund. This architecture consists of distinct features tailored to the specific needs of each designated channel involved in the levy collection process:

a) Centralized Database:

- Secure Repository for Storing Collected Levy Data: The heart of the system is a centralized database, ensuring a secure and organized repository for storing all levy-related data. This repository is fortified with robust security measures to protect sensitive financial information and maintain data integrity.
- Real-time Integration with Relevant Financial Systems: To facilitate seamless levy data collection, the centralized database is intricately connected in real-time with the financial systems of the designated channels. This integration ensures the immediate and accurate recording of levy deductions, providing a comprehensive and up-to-date overview of fund accumulation.
- Integration with Respective Sectors: The system will also be integrated with the respective entities for report generation. This will ensure a first-level reconciliation analysis.

b) Data Collection Modules:

- Interfaces for Each Channel to Facilitate Automated Levy Deductions: The system incorporates dedicated data collection modules, each equipped with interfaces tailored to the unique requirements of Banks and Financial Institutions, Telecommunication Companies, Insurance Companies, and the Nigerian Stock Exchange. These interfaces streamline the process of automated levy deductions, reducing manual intervention and potential errors.
- Secure API Connections for Seamless Data Transfer: Security is paramount in data transfer. The data collection modules establish secure Application Programming Interface (API) connections for the seamless and encrypted transfer of levy-related data between the centralized system and the respective channels. This ensures the confidentiality and integrity of the transmitted information.

c) Monitoring and Compliance Module:

- Regular Audits to Ensure Compliance and Accuracy of Levy Deductions: A dedicated monitoring and compliance module conducts regular audits on the collected levy data. This proactive approach ensures strict adherence to regulations governing levy deductions and verifies the accuracy of the recorded information.
- AI-enhanced Audits: The ONSA-RAS I, solution through it's inbuild AI mechanism performs round-the-clock reconciliations to highlight irregularities or discrepancies.
- Alerts and Notifications for Irregularities or Discrepancies: The system is equipped with alert mechanisms to promptly notify relevant stakeholders, including the National Security Adviser, in case of identified irregularities or discrepancies during the automated audit process. This ensures swift corrective actions to maintain the credibility of the levy collection system.

d) Reporting Dashboard:

- Real-time Dashboard for the National Security Adviser to Track Fund Collection: A user-friendly and real-time reporting dashboard is provided to the National Security Adviser. This dashboard serves as a central hub for tracking fund collection activities, offering immediate insights into the status of levy accumulation.
- Empower strategic decisions with real-time insights: Our secure, user-friendly platform delivers unparalleled data intelligence through a suite of visually appealing, intuitive, and role-based web applications.
- Powerful Search: Find anything instantly. A full-text search interface retrieves entities, events, transactions, and metadata with flexible queries, visualized through timelines, graphs, and tables.
- Detailed Reports: Generate downloadable daily, weekly, and monthly reports with in-depth analyses.
- Advanced Analytics: Dive deeper for specialized insights. Data scientists and analysts can explore terabytes of structured and unstructured data through SQL, NoSQL, and machine learning APIs.
- Granular Breakdowns by Channel, Time, and Region: The reporting dashboard provides granular breakdowns of levy data, allowing detailed analysis based on channels, time periods, and geographic regions. This feature enhances decision-making capabilities and supports informed strategic planning for the utilization of the National Cyber Security Fund.

SECURITY

Ensuring robust data security and privacy measures is paramount in the implementation of the Comprehensive Revenue Assurance Solution. This involves the implementation of stringent protocols to safeguard sensitive financial and personal data, coupled with unwavering adherence to data protection laws and regulations.

- **Encryption at Rest and in Transit:** our system utilizes advanced encryption algorithms to safeguard data both at rest and in transit. Encryption at rest ensures that data stored in the centralized database remains unreadable without proper authorization. Encryption in transit secures the communication channels, preventing unauthorized access during the transfer of levy-related data between the system and the designated channels.
- **Secure Key Management:** Our system is implemented with secure key management practices to safeguard encryption keys. Robust key management ensures that only authorized personnel have access to the keys required for encrypting and decrypting sensitive data.
- **End-to-End Encryption:** End-to-end encryption is utilized to ensure that data remains confidential throughout its entire lifecycle—from the point of collection to storage and reporting. This comprehensive approach minimizes the risk of unauthorized access or interception at any stage.
- **Comprehensive Compliance Framework:** The system is established based on a comprehensive compliance framework that aligns with relevant data protection laws and regulations, including Nigeria's data protection legislation and any international standards applicable. This framework covers aspects such as data processing, storage, access control, and breach notification.
- **Regular Compliance Audits:** Regular Compliance Audits will be conducted to ensure strict adherence to data protection laws. These audits will assess the effectiveness of implemented security measures, identify areas for improvement, and verify compliance with evolving regulatory requirements.
- **Data Minimization and Purpose Limitation:** ONSA-RAS I, is designed in adherence to the principles of data minimization and purpose limitation. It collects and processes only the necessary data required for levy deductions and fund management.
- **User Access Controls:** Robust user access controls are embedded to restrict access to sensitive data based on role-specific permissions. This ensures only authorized personnel have access to the information essential for their designated tasks, minimizing the risk of unauthorized data exposure.
- **Incident Response Plan:** Working with ONSA, we will develop and maintain a comprehensive incident response plan to address potential data breaches or security incidents promptly. This plan will outline procedures for detecting, reporting, and mitigating security incidents, as well as for notifying relevant authorities and affected parties as required by data protection laws.

CONTINUOUS IMPROVEMENT

tIn the dynamic landscape of cybersecurity and financial technology, the Continuous Improvement aspect of the Comprehensive Revenue Assurance Solution ONSA-RAS I, is crucial. This involves a commitment to regular updates and iterative reviews to adapt the system to evolving financial and technological landscapes, ensuring its efficiency and relevance over time.

- **Technological Upgrades:** The System will be upgraded regularly to leverage new features, enhance security, and improve overall performance. This includes adopting the latest encryption standards, integrating emerging technologies, and optimizing algorithms to keep the system at the forefront of cybersecurity practices.
- **Scalability Considerations:** The ONSA-RAS I, architecture is designed with scalability in mind to accommodate potential increases in data volume and evolving demands. This ensures that the system remains resilient and responsive to the growing needs of levy collection processes without compromising efficiency.
- **Interoperability Enhancements:** ONSA-RAS I, is designed to foster interoperability through regular updates to seamlessly integrate with evolving financial systems and emerging technologies. This ensures compatibility with new platforms, protocols, and data formats, promoting a smooth flow of information between the Revenue Assurance Solution and the designated channels.
- **Performance Reviews:** Comprehensive reviews will be performed regularly to assess the system's performance. Factors such as processing speed, response times, and resource utilization will be evaluated to identify areas for optimization. This will help maintain system efficiency and responsiveness.
- **Security Audits:** Periodic security audits will be conducted to assess the effectiveness of existing security measures. Identify potential vulnerabilities, assess risks, and implement necessary updates to fortify the system against emerging cyber threats.
- **User Feedback and Satisfaction:** Feedback will be gathered from users, stakeholders, and entities involved in levy deductions. This feedback loop will provide valuable insights into user satisfaction, system usability, and any challenges faced during the operation.
- **Compliance Checks:** Compliance checks will help mitigate legal risks and demonstrate a commitment to ethical practices. Regular reviews on the system's adherence to data protection laws, financial regulations, and other relevant compliance standards, will be performed to keep track of changes in legislation and ensure that the system remains compliant through timely updates and adjustments.

CONCLUSION

The development and implementation of the Comprehensive Revenue Assurance Solution ONSA-RAS I, for the National Cyber Security Fund represent a strategic and multidimensional effort aimed at bolstering security initiatives in Nigeria. The proposed solution encompasses a series of interconnected components, each designed to address critical aspects of levy collection, fund management, and transparency.

The system architecture, with its centralized database, dedicated data collection modules, monitoring and compliance module, and reporting dashboard, forms the backbone of a robust infrastructure. This architecture ensures real-time integration, secure data transfer, and transparent tracking of fund collection, providing stakeholders with a comprehensive view of the National Cyber Security Fund.

Key principles, such as scalability, security, and adaptability, guide the design and implementation of the solution, ensuring that it can evolve to meet the dynamic needs of the financial and technological landscapes. Continuous improvement processes, including regular updates, performance reviews, and security audits, further strengthen the system's efficacy and relevance over time.

Collaboration and transparency initiatives foster engagement with participating entities and the public. By establishing open communication channels, conducting regular audits, and maintaining transparent reporting practices, the solution promotes a collective understanding of the National Cyber Security Fund's purpose and benefits.

Legal compliance is prioritized through a commitment to strict adherence to the Cybercrimes (Prohibition, Prevention, etc.) Act, 2015. Continuous monitoring, legal advisory support, and proactive system updates ensure that the Revenue Assurance Solution aligns with legislative requirements, mitigating legal risks and maintaining the system's integrity.

In essence, the Comprehensive Revenue Assurance Solution is not just a technological infrastructure but a holistic approach to cybersecurity funding, emphasizing collaboration, transparency, public engagement, and legal adherence. By embracing these principles, Nigeria can fortify its cybersecurity capabilities, protect its digital assets, and foster a resilient and secure cyberspace for the nation's continued growth and development.

COST

GET IN TOUCH

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