

IDRAS

INTEGRATED DOMESTIC REVENUE
ADMINISTRATION SYSTEM

Contents

01 Tax Administration

Overview

Business Overview Diagram 1

Registration

1. Registration 2

2. Central Motor Vehicle Registration 3

3. Central Driving License 3

4. Inventory 4

5. E-Tax Invoice 5

Return

1. Return Filing 6

2. Assessments 7

3. Tax Relief and Exemptions 8

Account

1. Revenue Collection & Accounting 9

2. Refunds 10

3. Debt Management and Compliance 10

Audit & Investigation

1. Risk Management 11

2. Risk Profiling 11

3. Audit & Investigation 12

Communications

1. Objections and Appeals 13

2. Private and Class Ruling 13

3. Communication 14

4. Knowledge 15

5. Taxpayer Education 15

Statistics

1. Information Analysis (DW) 16

02 Portals

1. Taxpayer Portal 17

2. Internal Portal 18

3. TaxConnect Portal 19

4. StakeHolder 20

5. e-Message 21

6. Portal Management 21

7. Workflow 22

8. Dashboard 23

9. Performance Measurement 24

03 System Architecture

1. MSA (Microservice Architecture) 25

2. Security 26

3. IDRAS AI 27

4. Disaster Recovery (DR) 28

5. System Monitoring 29

6. EWACS 30

7. GitLab CI/CD 31

8. Development Methodology & SaaS 32

04 Interface Architecture

1. Interface Architecture Diagram 33

2. Interface Monitoring 34

3. Security 35

Acronyms

Acronym	Description
TRA	Tanzania Revenue Authority
IDRAS	Integrated Domestic Revenue Administration System
TANCIS	Tanzania Customs Integrated Systems
OGD	Other Government Department
GePG	Government Electronic Payment Gateway
EFD	Electronic Fiscal Device
EFDMS	Electronic Fiscal Device Management System
API	Application Program Interface
VAT	Value added Tax
UIN	User Identification Number
VFD	Virtual Fiscal Device
FTP	File Transfer Protocol
POS	Point Of Sale
MNO	Mobile Network Operators
GFS	Government Financial Statistics
E-filing	Electronic filling
ETSMS	Electronic Tax Stamp Management System
GePG	Government Electronic Payment Gateway
SMS	Short Message Service
VRN	Vat Registration Number

Acronym	Description
TPF	Tanzania Police Force
BOT	Bank of Tanzania
MoF	Ministry of Finance
BPRA	Business and Property Registration Agency
BRELA	Business Registration and Licensing Agency
eGA	e-Government Authority
NIDA	National Identification Authority
TANROADS	Tanzania National Roads Agency
TARURA	Tanzania Rural Roads Authority
TBS	Tanzania Bureau of Standards
TCRA	Tanzania Communication Regulatory Authority
TFDA	Tanzania Food and Drugs Agency

Module

Module	Description
COM	Common
EPT	External Portal (Taxpayer)
OPT	Internal Portal
REG	Registration
CMV	Central Motor Vehicle Registration
CDL	Central Driving License
IMS	Inventory Management
RFA	Return Filling and Assessments
TRE	Tax Relief and Exemptions
RCA	Revenue Collection & Accounting
REM	Refunds Management
DMC	Management and Compliance
IRM	Risk Management and Risk Profiling
AUT	Audit
INV	Investigation
OBA	Objections and Appeals
PCR	Private and Class Ruling
CMS	Communication Management
KMS	Knowledge Management
EDU	Taxpayer Education
DW	Information Analysis (Data Warehouse)



Tax Administration

01



Overview

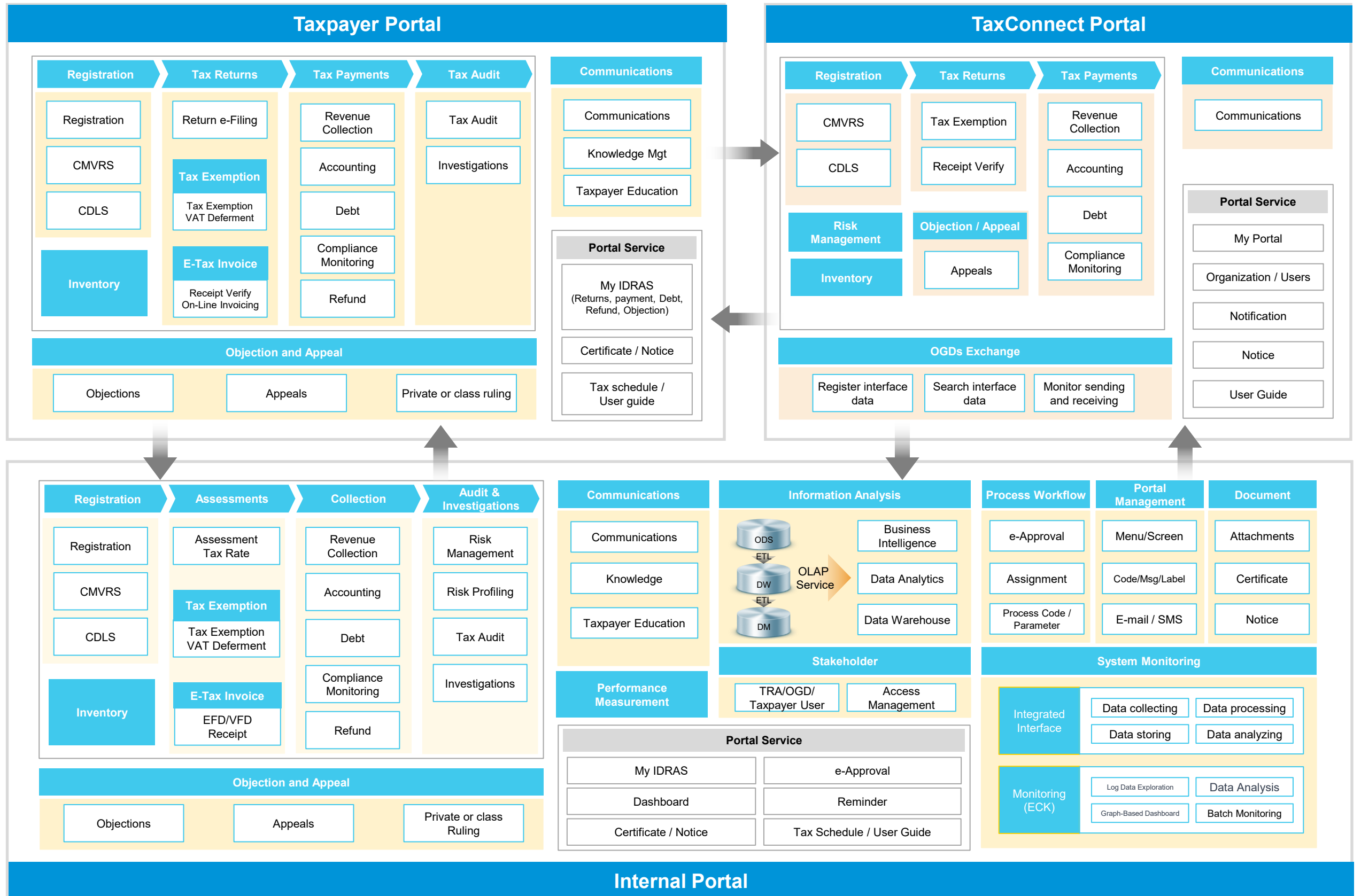
IDRAS is Tanzania's Next Generation Integrated Taxation System that **integrates entire taxation administration process** to support **increase of tax collection by efficient and transparent operation based on data.**

IDRAS

INTEGRATED DOMESTIC REVENUE
ADMINISTRATION SYSTEM



Business Overview Diagram

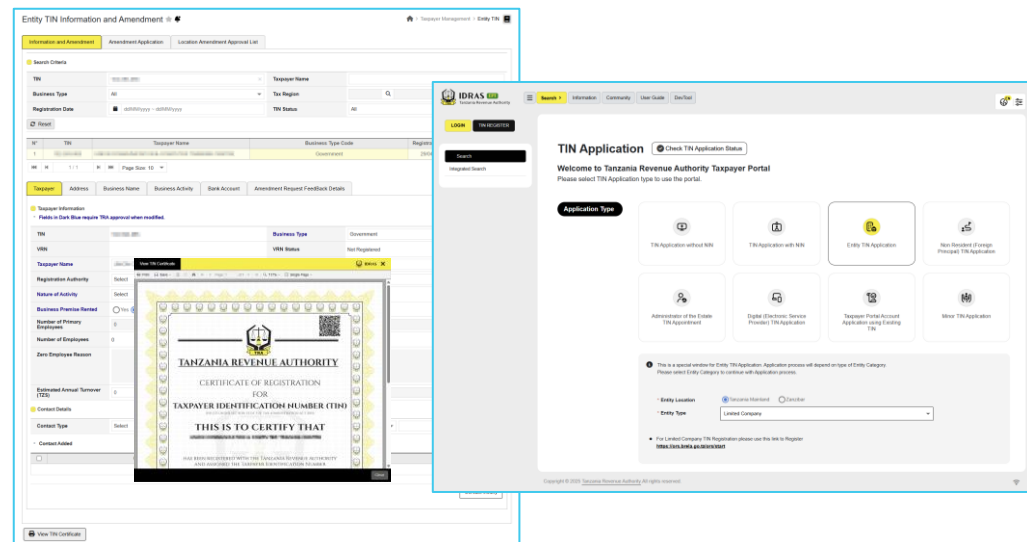
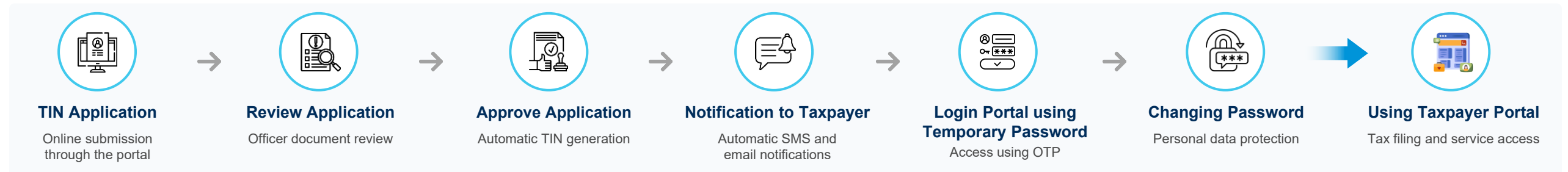
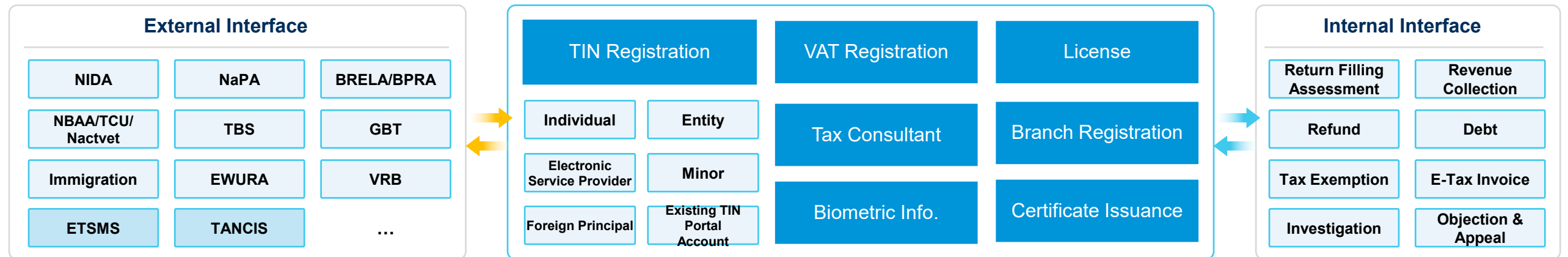


Registration



1 Registration

TIN Registration is an integrated platform that enables accurate and efficient taxpayer registration through interface with external institutions and automatic processes.



- Efficient application form completion through the interface
- Automatic TIN generation using data from verified institutions

- Full automation of taxpayer registration processes
- Enhanced validation through expanded internal / external interfaces
- Data acquisition and automatic assignment of business TINs

- Simplified registration fields and automatic block allocation
- Consistent access and data protection through role-based access control

Accuracy

- Improved data accuracy by minimizing manual user input
- Strict management of business activities with immediate updates upon amendment

Efficiency

- Fully automated functions to improve efficiency for taxpayers and officers
- Enhanced efficiency through interfaces and integrated data

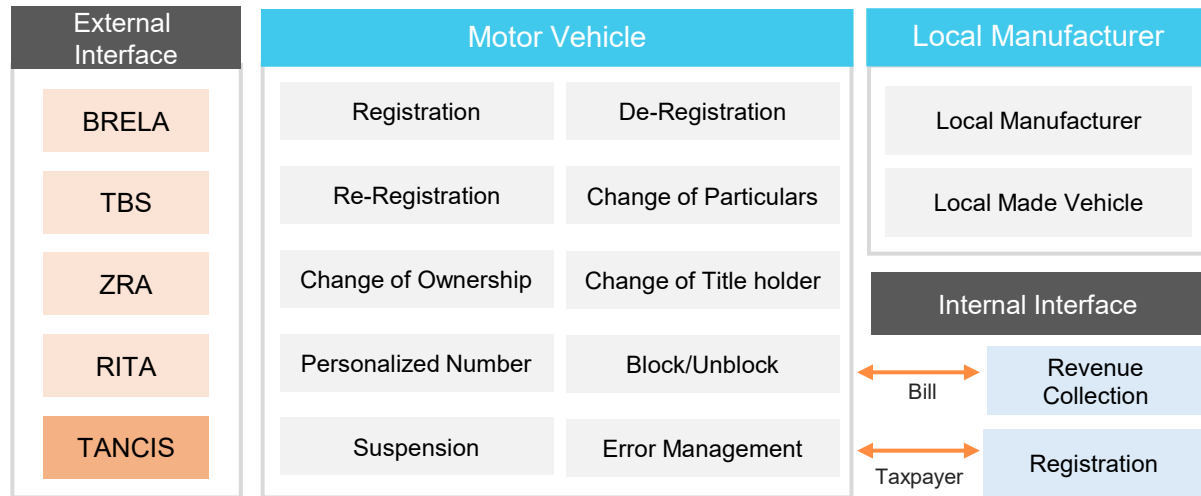
Convenience

- Use of internal and external data to minimize required input fields
- Consistent access ensured by systematic function definition



Central Motor Vehicle Registration

Taxpayer Portal provides entire motor vehicle registration process



More Convenience

- Unification of application via Taxpayer Portal
- Digitalization of entire process

Interface Information Use

- Use of External organization interface real-time information
- Task process through OGD Portal for motor vehicle related organization

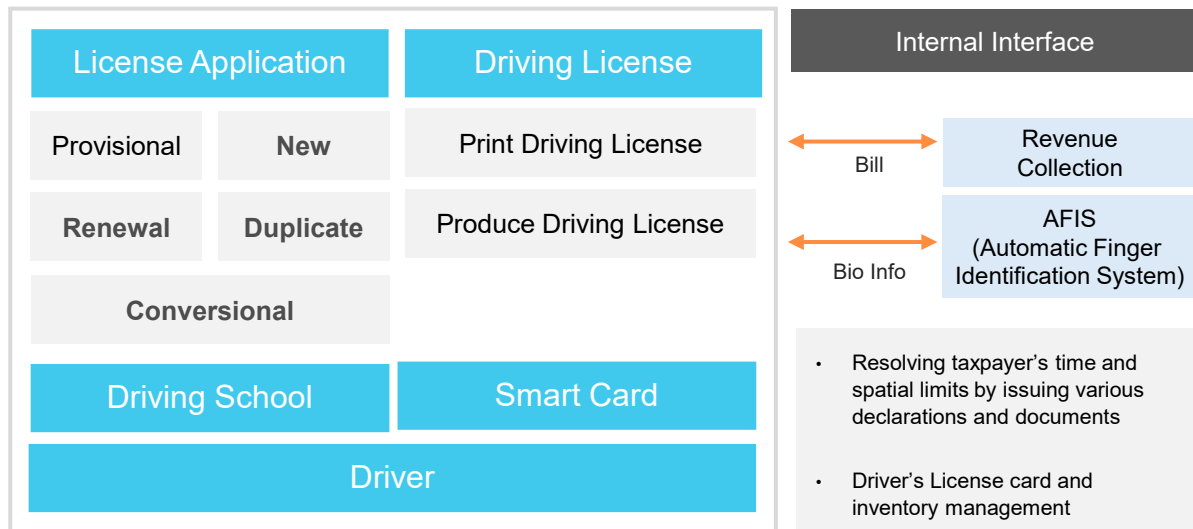
Paperless

- Digital motor vehicle registration issuance including QR code
- Verify motor vehicle registration through mobile



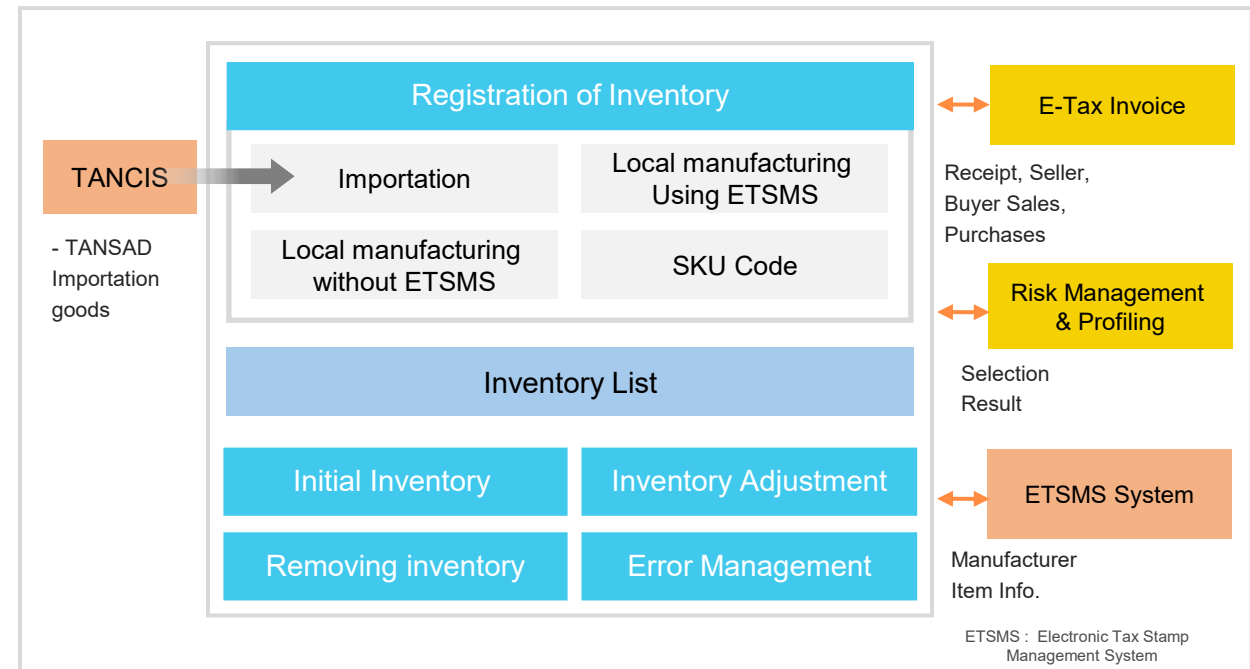
Central Driving License

Entire process will be integrated and managed from Driver's License application, Competence Test and Driver's License issuance.



Inventory

It registers taxpayer's imported and locally manufactured inventory of goods, and interfaces with E-Tax Invoice to real-time reflect purchase and sales history.



Increase of tax collection with the use of purchase and sales information by connecting goods inventory and EFD

Real-time Goods Inventory Monitoring

- Digitalization of goods inventory management to monitor
- Goods registration of ETSMS, TANCIS interface

Inventory Adjustment

- Damage, fire etc, update on Removing inventory items
- Inventory update through EFD receipt
- IMS Error Management inventory update

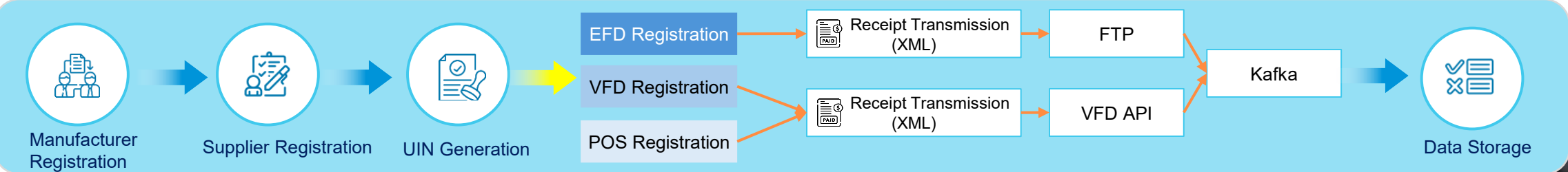
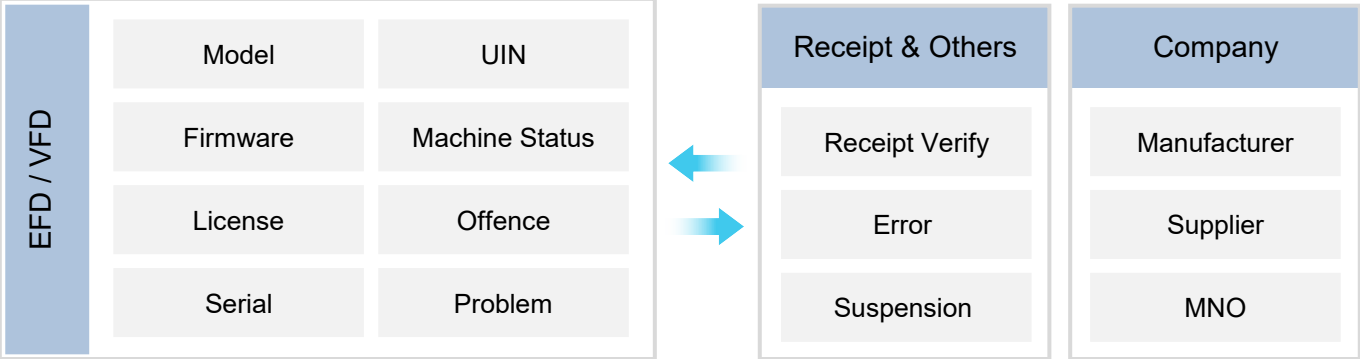
Tax Collection Increase

- Select Audit / Investigation targets
- Encouraging accurate tax payments by taxpayers through inventory management.

5. E-Tax Invoice



An integrated platform that collects, verifies, and manages electronic receipt data from EFD/VFD systems in real time. It enhances the efficiency and transparency of tax administration by connecting data and onboarding processes from manufacturers to taxpayers.



EFD Infrastructure Management

- 1 Manufacturer - Model Registration**
Automatically generates manufacturer certificates and updates the list of registered EFD models in real time. When a model is deactivated, it goes through an approval process and taxpayers are automatically notified.
- 2 Supplier - MNO Registration**
Automatically integrates and registers TIN information of contracted suppliers and MNOs (Mobile Network Operators) into the portal, preventing registration errors and ensuring consistent management.
- 3 SIM Card - Model License**
The system automatically validates SIM card issuance requests internally, and sends approval or rejection results for model licenses to suppliers via email.
- 4 EFD Provisioning - Command Processing**
Automates device supply and serial number transfer between suppliers and manufacturers. Supports remote EFD configuration changes and firmware updates through commands from tax authorities.

Taxpayer Onboarding & Compliance Support

- 1 EFD Device Registration (UIN Application)**
When a supplier applies on behalf of a taxpayer, the EFD is registered through taxpayer consent and authentication procedures. Provides a secure onboarding process that protects taxpayer rights.
- 2 UIN Cancellation**
Handles the cancellation of UINs and disconnection of related EFDs in a structured manner based on requests from taxpayers or tax authorities.
- 3 EFD Receipt Verification - Problem Management**
Verifies the authenticity of issued receipts instantly within the system. Tracks EFD-related issues from submission to resolution and sends automatic reminders for unresolved cases.
- 4 Error Management, Inquiries & Complaints**
Systematically handles receipt errors. Collects EFD/E-Invoice-related inquiries and complaints through a communication module and automatically assigns them to responsible personnel.

Improved Tax Administration Efficiency & Enhanced Taxpayer Convenience

By automating repetitive tasks such as registration, approval, and notification, tax officers can focus on high-value work. Provides a convenient environment where taxpayers can handle EFD-related tasks anytime and anywhere, including online UIN applications, real-time receipt verification, and online inquiry/complaint submission.

Enhanced Tax Transparency & Strengthened Revenue Collection

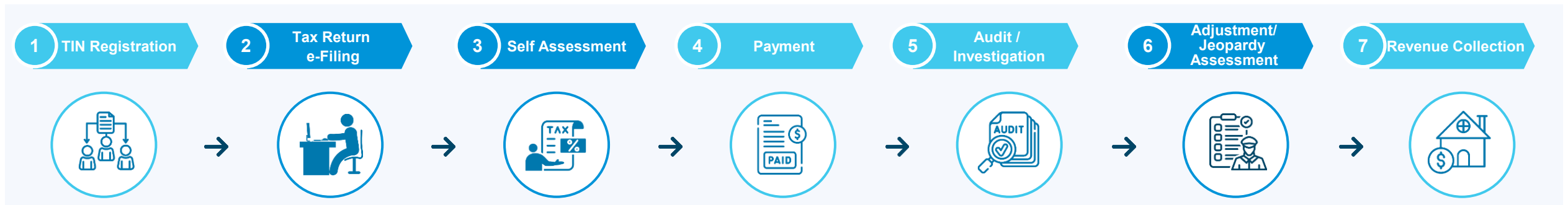
Real-time collection and analysis of e-tax invoice data enable early detection of fraudulent transactions and tax evasion attempts, fostering a fair taxation environment. Data-driven anomaly detection and prioritized enforcement minimize revenue leakage and establish a sustainable tax revenue system.

Return



1 Return Filing

Integrated Tax Return e-Filing system that digitalizes the entire tax process to simultaneously improve the efficiency, transparency, and convenience of tax filing, payment, and administration.



Highly Efficient Tax Collection with Full e-Filing of Tax Returns

Personal Income Tax	Value Added Tax	Port Service Charges
Corporate Tax	Excise Duty	Airport Service Charges
Pay As You Earn(PAYE)	Stamp Duty	Money Transaction Levy
Skills and Development Levy	Bed Night levy	Capital Gain Tax
Withholding Tax	Gaming Tax	Lump Sump Payment

Unfiled Returns

S/N	Return Type	Income Year	Period / Month	Due Date	Overdue
1	Port Service Charge	2025	08	20/08/2025	
2	Bed Night Levy	2025	08	07/08/2025	14 days overdue
3	State and Development Levy	2025	08	07/08/2025	14 days overdue
4	Value Added Tax - Normal Businesses other than Financial Services	2025	08	20/08/2025	
5	Port Service Charge	2025	08	20/07/2025	40 days overdue
6	Port Service Charge	2025	05	20/06/2025	75 days overdue
7	Port Service Charge	2025	04	20/05/2025	100 days overdue
8	Port Service Charge	2025	03	20/04/2025	127 days overdue
9	Port Service Charge	2025	02	20/03/2025	154 days overdue
10	Port Service Charge	2025	01	20/02/2025	181 days overdue

Tax Return e-Filing

User Friendly Work Environment

- Helps taxpayers easily complete filings by providing an e-filing interface in familiar statutory tax return formats, along with step-by-step guidance for each item.
- Enables online submission, search, and issuance of supporting documents, references, and certificates.
- Provides real-time monitoring, reminders, and notifications to track and manage filing and payment processes.

Transparency

- Provides transparency through real-time tracking of the entire tax process, including filing, assessment, and payment
- Ensures consistency and reliability in tax processing through a standardized workflow

Efficiency

- Supports end-to-end automation from filing to payment and assessment
- Reduces processing time by minimizing repetitive tasks through an integrated data-driven system

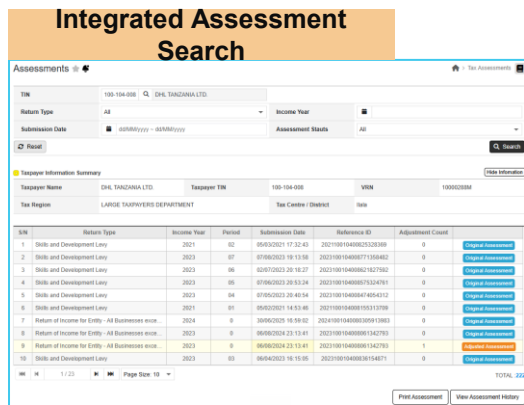
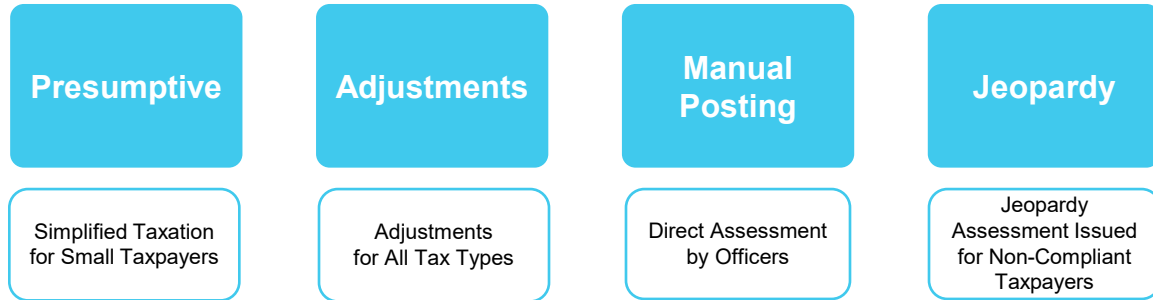
Convenience

- Enables end-to-end tax operations in a single environment
- Offers a unified platform with an intuitive UI/UX and simplified filing process

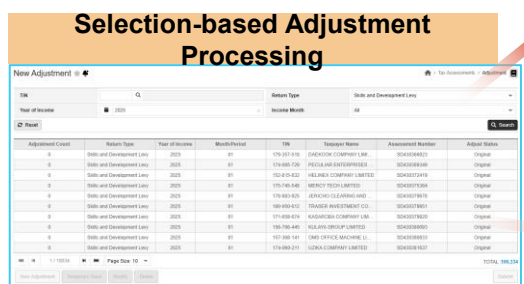
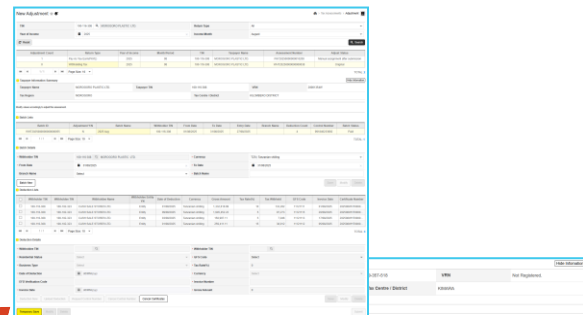


Assessments

Flexible tax assessment framework and strong compliance management for tax authorities, including self-assessment, simplified taxation for small taxpayers, automatic and manual adjustments, direct assessment by officers, jeopardy tax assessment for non-compliant taxpayers.



- Provides search of all submitted tax returns (assessments)
- Supports search and filtering by tax type, period, status, and other criteria
- Enables follow-up processing based on prior filing history



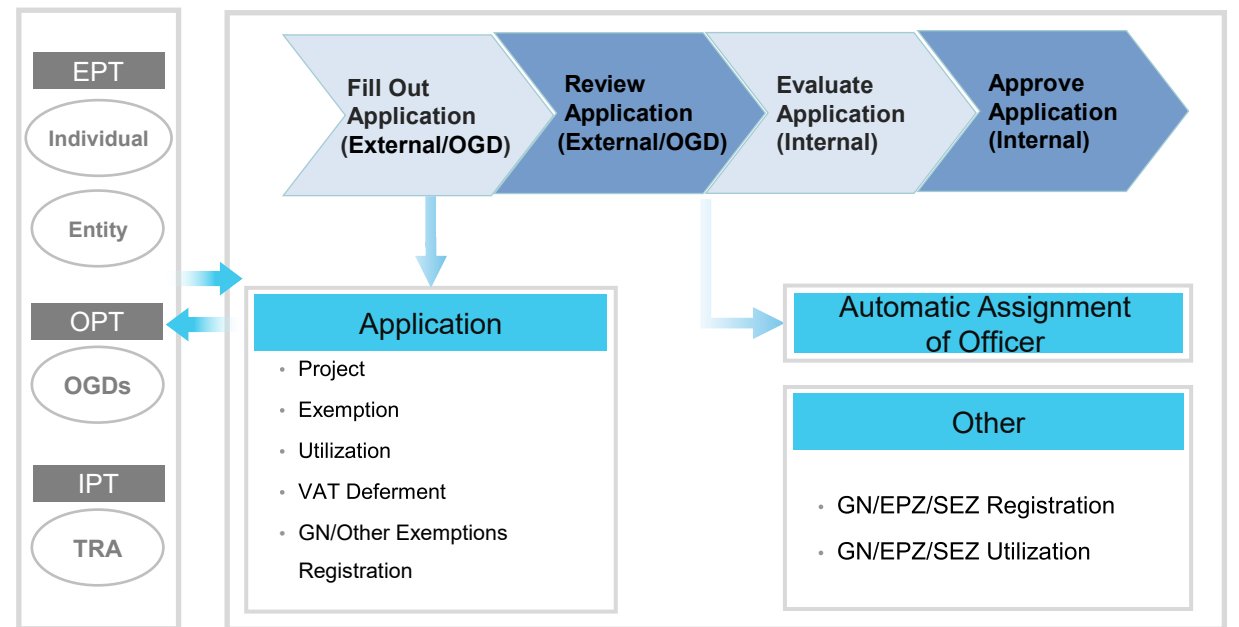
- Target returns are selected from the existing filing list during the adjustment
- Enable adjustments based on the selected return

Supports adjustment functionality for all tax types, enabling fast correction of errors and changes while ensuring accurate and flexible tax processing



Tax Relief and Exemptions

Fully integrated system that manages the entire lifecycle of tax exemption requests—from application and approval to certificate issuance and utilization—enhancing both efficiency and transparency.



Exemption Management

Offers exemption management system that enables integrated management of all requests, processing, and approvals related to tax reductions and exemption benefits

Process Automation

Ensures enhancement of operational efficiency through simplification of similar and redundant processes and automation of exemption certificate generation

Data Integrity

Ensure data accuracy and data consistency through integrated systems and interfaces

- Systemization of all exemption processes, including VAT deferment and GN registration
- Strengthening prevention of misuse of tax reduction and exemption benefits

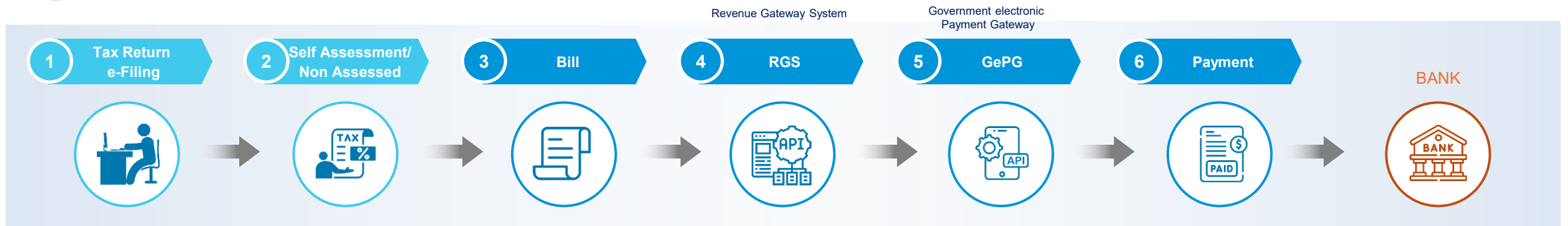
- Simplification of multiple similar exemption review procedures
- Automated issuance process for detailed certificates

- Elimination of redundant data synchronization processes through system integration
- Unified management of key data such as TIN and HS Code

Account



1 Revenue Collection & Accounting



Internal Interface

- RGS / FTCS
- GePG Government electronic Payment Gateway

BANK

- Bank of Tanzania
- Tanzania Commercial Bank

- Bill Information
- Request Control Number

- Response Control Number
- Daily Exchange Rate
- Bank Statement
- Paid Transactions

Paid

- TANCIS
- TANAPA
- NCAA
- TAWA

Payment Registration	Refund Management
Assessed Taxes	Refund payment
Non-Assessed Taxes	Requesting Fund
Revenue Target	Deposit Management
Planning / Registration	Internal Adjustment
Accounting	Standard Management
Reports	GFS Code
Ledgers & Journals	Chart of Accounts
Taxpayer Account	Reconciliation

- Enables taxpayers to verify required tax payment information in real time, contributing to increased tax revenue.
- Establishes an accounting system aligned with standard accounting policies
- Supports efficient operations by providing timely and accurate data in alignment with TRA business processes.

Accounting

Transparency

- Permission management by organization and task
- Provision of standardized accounting information

Efficiency

- Improvement of accounting processes
- Automated calculations and reconciliation

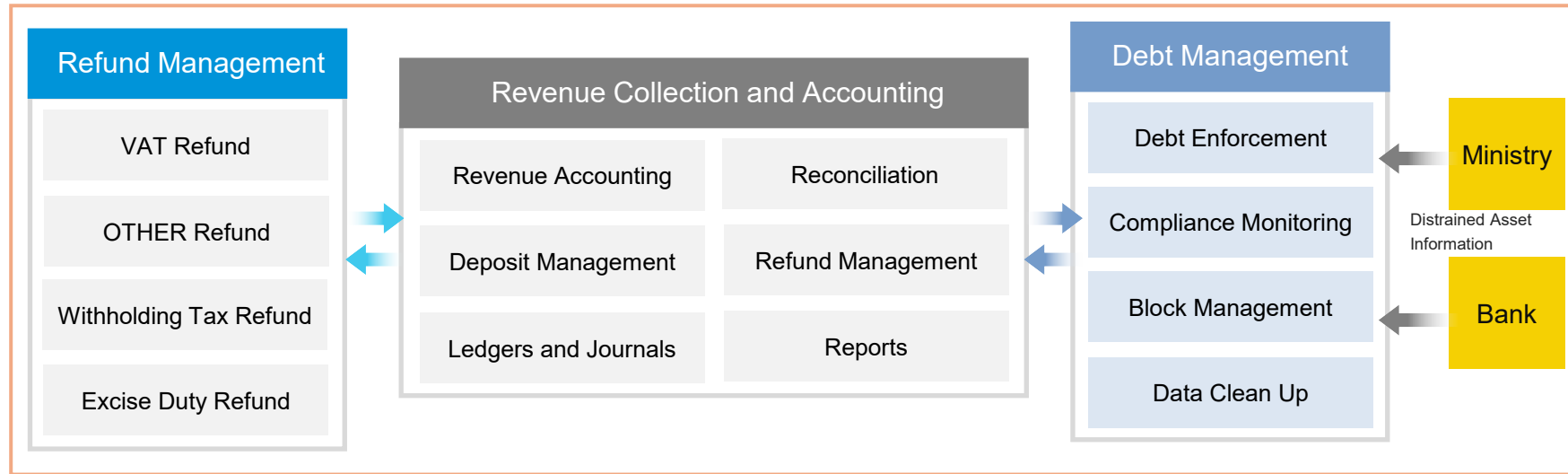
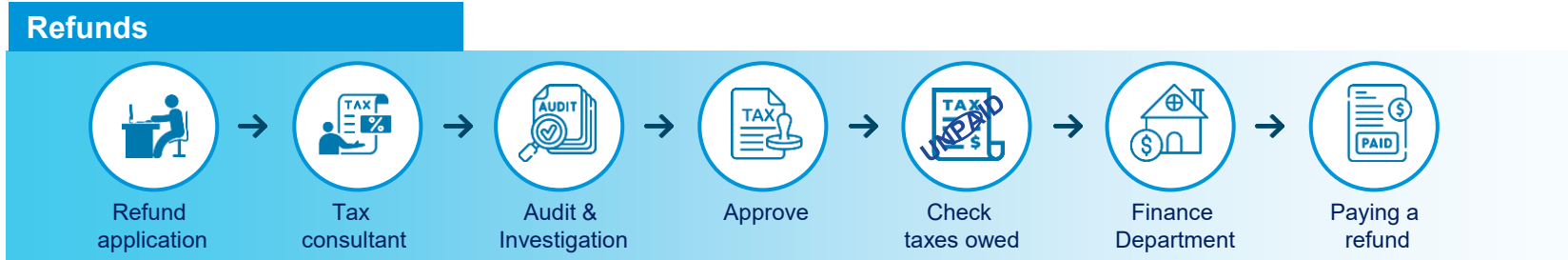
Convenience

- 100% online processing
- Enhanced notification functionality (mobile and email)

2 Refunds

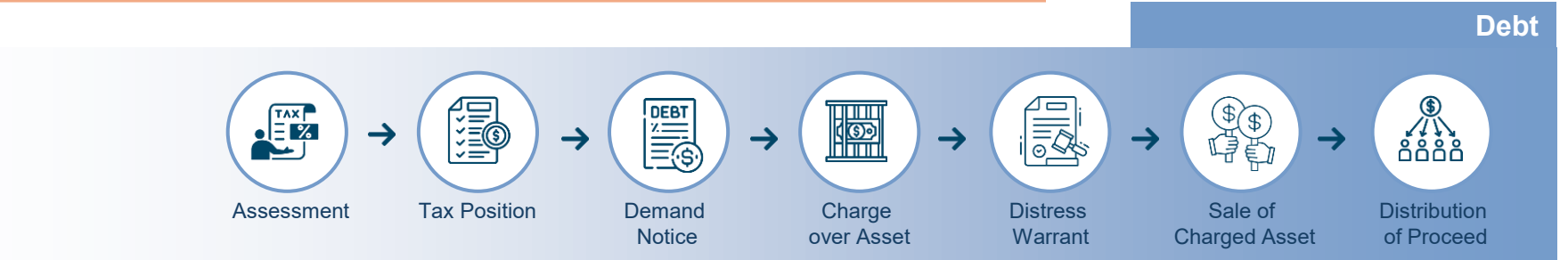
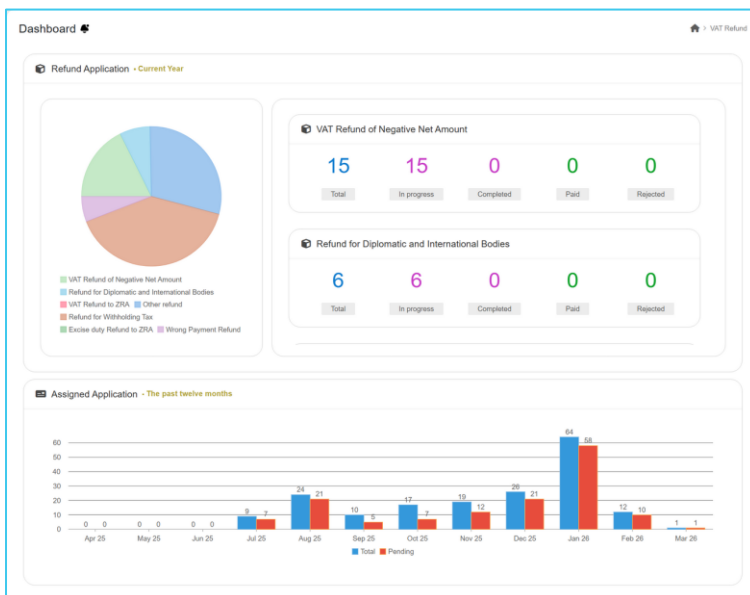
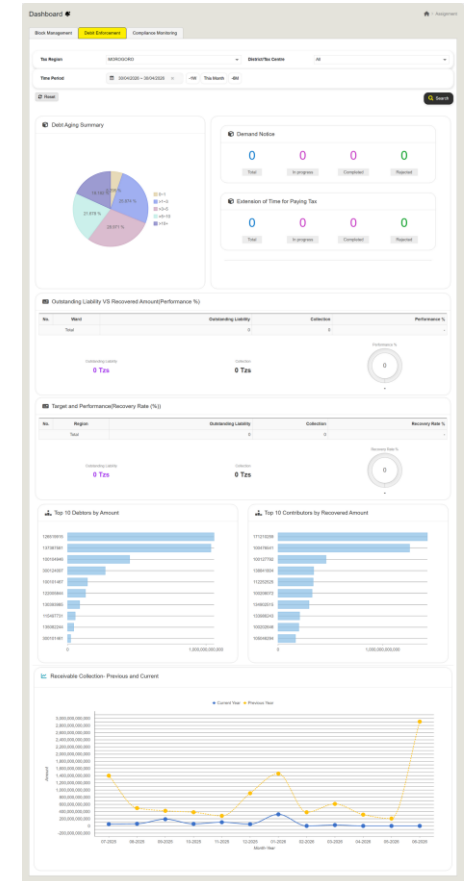
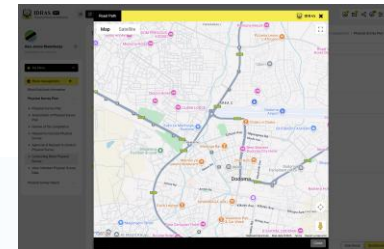
A service-oriented administrative process that accurately and promptly refunds any overpaid taxes or amounts eligible for refund from taxes already paid by the taxpayer.

- Establishes a foundation for efficient operations by enabling control of fraudulent refund claims from the taxpayer's refund application submission stage through digitalization.
- Supports accurate and prompt processing through 100% digitalization of refund procedures.
- Enhances user satisfaction with the online refund application service through screen design tailored to the user's level.



3 Debt Management and Compliance

An enforcement and control-focused administrative domain for collecting unpaid taxes and monitoring taxpayer compliance.



- Contributes to preventing revenue loss through real-time integrated taxpayer information
- Eliminates processing delays via real-time compliance check with external institutions
- Improves accessibility by digitalizing filings and certificate issuance

Transparency

- Integrated management of taxpayer information
- Real-time visibility of outstanding tax liabilities

Efficiency

- Real-time data access via external interfaces
- Online access and printing of notices

Convenience

- Automated reminders for periodic tax filings
- Enhanced usability and accessibility for external users

Debt Management and Compliance

Tax Position

TIN: 163-470-489 ABBY ESTATES LIMITED

Tax Type: All

Year:

Due Date Range: dd/MM/yyyy - dd/MM/yyyy

[Reset](#)

Taxpayer Information

TIN: 163-470-489

Trading Name: ABBY INSURANCE BROKERS

Tax Center: GEREZANI

Postal Address: P.O. Box 76535, Dar es Salaam

Physical Address: 11106 KARIAKOO

- Tax Position
- Age-wise Analysis
- Collection File

Tax Position Summary

Tax Type	Unpaid Balance	Tax stood over	TOTAL
Pay As You Earn(PAYE)	2,649,403.00	0.00	
Corporate Tax	5,875,499.84	0.00	
Withholding Tax	480,902.04	0.00	
Value Added Tax	75,812,768.59	0.00	
Penalty	300,000.00	0.00	
Grand Total	85,118,573.47	0.00	

Tax Position

No.	Tax Type	Case Type	Year	Period	Due Date	Debit No.
1	Value Added Tax	Regular Payment	2026	03	20/04/2026	202604001192
2	Pay As You Earn(PA...	Interest	2026	02	30/03/2026	202602000113
3	Value Added Tax	Regular Payment	2026	02	20/03/2026	202603009671
4	Pay As You Earn(PA...	Interest	2026	02	13/03/2026	202602000007
5	Value Added Tax	Regular Payment	2026	01	20/02/2026	202602000067
6	Value Added Tax	Regular Payment	2025	12	20/01/2026	765007908
7	Corporate Tax	Provisional Original	2025	4	31/12/2025	752323148
8	Value Added Tax	Regular Payment	2025	11	20/12/2025	764424214
9	Pay As You Earn(PA...	Regular Payment	2025	11	07/12/2025	764199894
10	Value Added Tax	Regular Payment	2025	10	20/11/2025	763963517

View Normal Flow Taxpayer

TIN: Tax Location:

Block Name: Assigned Officer:

[Reset](#) [Search](#)

List of Normal Flow Taxpayers

TIN	Taxpayer Name	Tax Centre	Block Name	Number of Return Obligations	Assigned Officer	Added Date
100-179-253	ENT_TEST79253	ARUMERU DISTRICT		3	Albashir Abdillah Kijaji	03/10/2025
100-201-534	IND IDRAS TEST01534	NGARAMTIONI TAX CENT...		2		11/11/2025
100-167-484	IND IDRAS TEST67484	MTO WA MBU TAX CENTRE		3	Innocent Emmanuel Minja	11/11/2025
100-204-479	IND IDRAS TEST04479	KARATU DISTRICT		4		23/01/2026
100-449-633	IND IDRAS TEST49633	NGORONGORO DISTRICT		1		23/01/2026
100-230-542	ENT_TEST30542	NGORONGORO DISTRICT		3		23/01/2026
105-494-165	IND IDRAS TEST94165	ARUSHA		1	Albashir Abdillah Kijaji	11/12/2025
105-478-674	IND IDRAS TEST78674	ARUSHA		2	Innocent Emmanuel Minja	17/12/2025
100-169-851	IND IDRAS TEST69851	ARUSHA		2	Deogratius Denis Mrosso	12/11/2025
100-167-689	ENT_TEST67689	ARUSHA		3	Deogratius Denis Mrosso	12/11/2025

Details of Normal Flow

TIN: 100-179-253 Taxpayer Name: ENT_TEST79253

Tax Region: ARUSHA Tax Centre: ARUMERU DISTRICT

Block: VRN

Postal Address: P.O. Box 877, UNKNOWN

Physical Address: 23226 TARAKWA ARUSHA ARUSHA

Phone Number: Email:

Business type: Limited Company Business Sector:

Return Filing Obligation:

- COR
- PAY
- SDL

Average Contribution: 0

Collection Gap

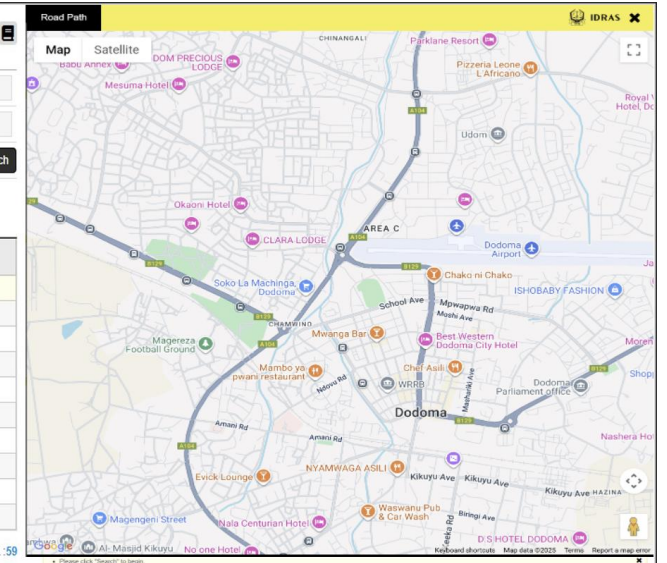
[Return Filing](#)

List of Return Filings

Tax Type	Return Type	Year	Period	Due Date	Filing Status	Filing Date	Due Date
SDL	SDL	2026	04	13/05/2026	Unfiled		13 days, 12 hrs and 25 min
SDL	SDL	2026	03	13/04/2026	Unfiled		17 days overdue
COR	SETPI	2026	0	31/03/2026	Unfiled		30 days overdue
SDL	SDL	2026	02	13/03/2026	Unfiled		49 days overdue
SDL	SDL	2026	01	13/02/2026	Unfiled		76 days overdue

Return and Registration Eligibility

EFD Device	Month	Daily Total	Exclusive STD	VAT STD
Total		0	0	0



No.	Image	Auction LOT Number	Asset Description	Warehouse	Asset Location	Starting Price	Count Down Time
1		MET0020260270007	View Details	WASH-01	WASH-01	TZS : 305,856,288	Auction Ends in : 21d : 23h : 20m : 21s
2		MET0020260270003	View Details	WASH-03	WASH-03	TZS : 500,000,000	Auction Ends in : 21d : 23h : 20m : 21s

TANZANIA REVENUE AUTHORITY

ISO 9001 - 2015 Certified

MAMLAKA YA MAPATOTO TANZANIA

Ref No: _____

TIN No: _____

NAME: _____

MV/REG No: _____

VALID TO: 30/09/2025

DATE: 29/10/2025

This is a valid document

TAX CLEARANCE CERTIFICATE VERIFICATION

This document is confirmed to have been issued through IDRAS online services.

Document Type	Tax Clearance Certificate
Certificate Number	DMC202600000
Issue Date	30/03/2026
Expiry Date	31/12/2026
Issuing Office	ILALA TAX REGION
Taxpayer Name	
TIN	1 6
Status	Valid

© Tanzania Revenue Authority

Audit & Investigation



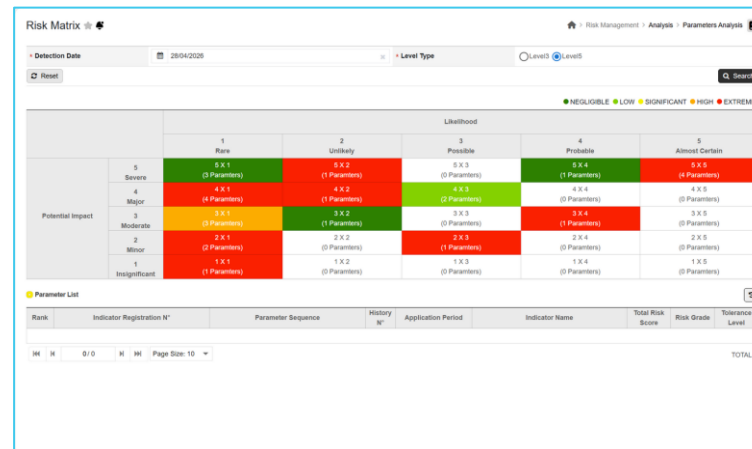
1 Risk Management

Risk Management is an integrated risk management system that automatically analyzes risks based on module-specific risk parameters and intuitively visualizes risk levels through dashboards and a Risk Matrix.



Risk Matrix : Risk levels are assessed by combining the potential impact and likelihood of a risk

- Extreme
- High
- Significant
- Low / Negligible



Dashboard

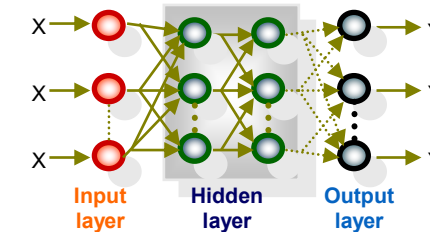
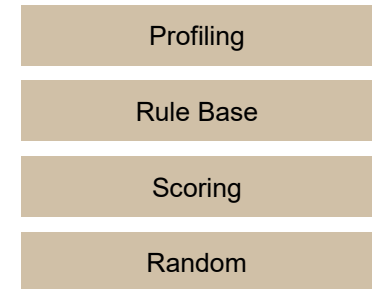
- Risk Overview by Module (Summary Dashboard)
- Risk Trend Analysis (Time-based)
- Region / Risk Distribution by Business Unit
- Parameter-based Risk Analysis
- Risk Distribution & Visualization



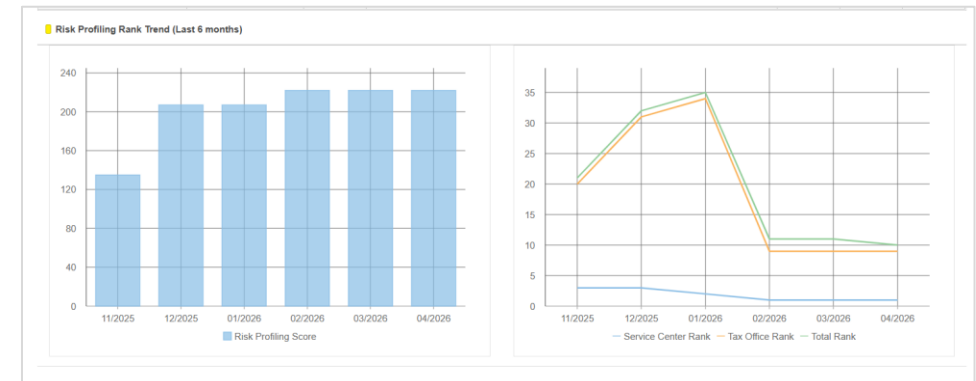
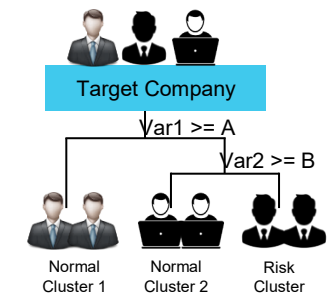
2 Risk Profiling

Target Selection & Visualization

The system profiles all taxpayers based on various selection criteria, selects taxpayers for Audit, Examination, and Reserve, and provides visualization of the profiling results.



Selective application of AI algorithms



3. Audit & Investigation



Tax justice is established through precise audits, and effective law enforcement is ensured through in-depth investigations.

Enhancement of taxpayer compliance, strengthening of law enforcement effectiveness, and securing of tax revenue

Decline in targeting accuracy and inefficient use of investigation resources

Manual target selection

Dependence on simple rules or manual selection processes leads to low precision and the potential for subjective intervention.

Data fragmentation across systems

Existing national tax systems and major systems such as TANCIS are fragmented, making it difficult to perform integrated risk analysis of taxpayers.

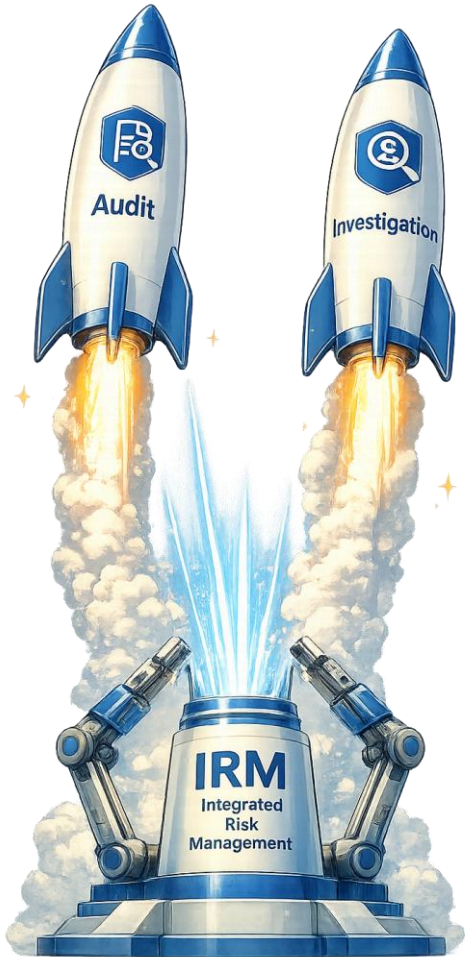
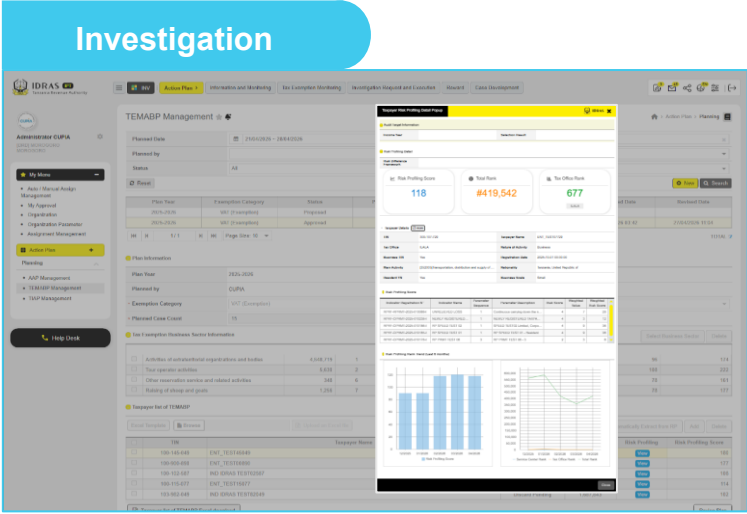
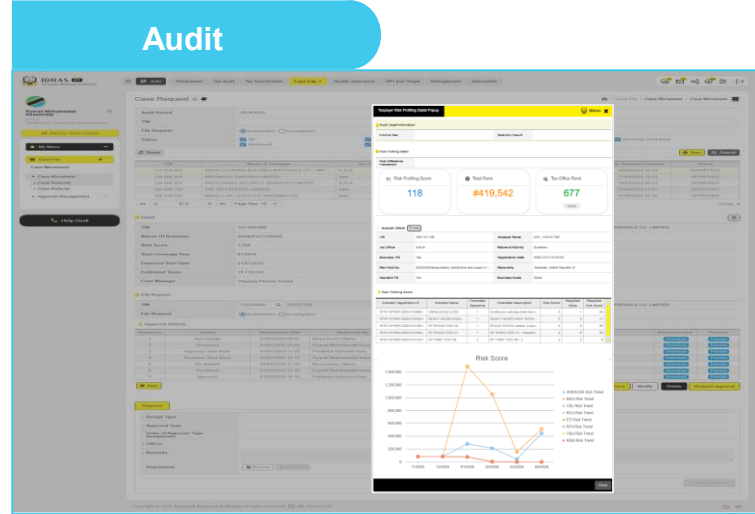
Low targeting accuracy

Weak identification of high-risk groups leads to low tax evasion detection rates and inefficient targeting, including the selection of compliant taxpayers.

Inefficient utilization of audit and investigation resources

Limited investigation resources are not optimally allocated, as they are deployed to low-risk groups.

Transition to an intelligent audit and investigation system



Tax data-based risk assessment

The system enables the objective and scientific generation of taxpayer risk scores through the analysis of large-scale tax data.

Priority-based target selection

Based on risk profiling results, targets are strategically selected to determine who will be audited and investigated.

System Integration

Data across related systems such as TANCIS is integrated to enable 360-degree comprehensive audits and investigations of taxpayers.

Audit & Investigation is transformed into a "strategic targeting function" based on Integrated Risk Management (IRM).

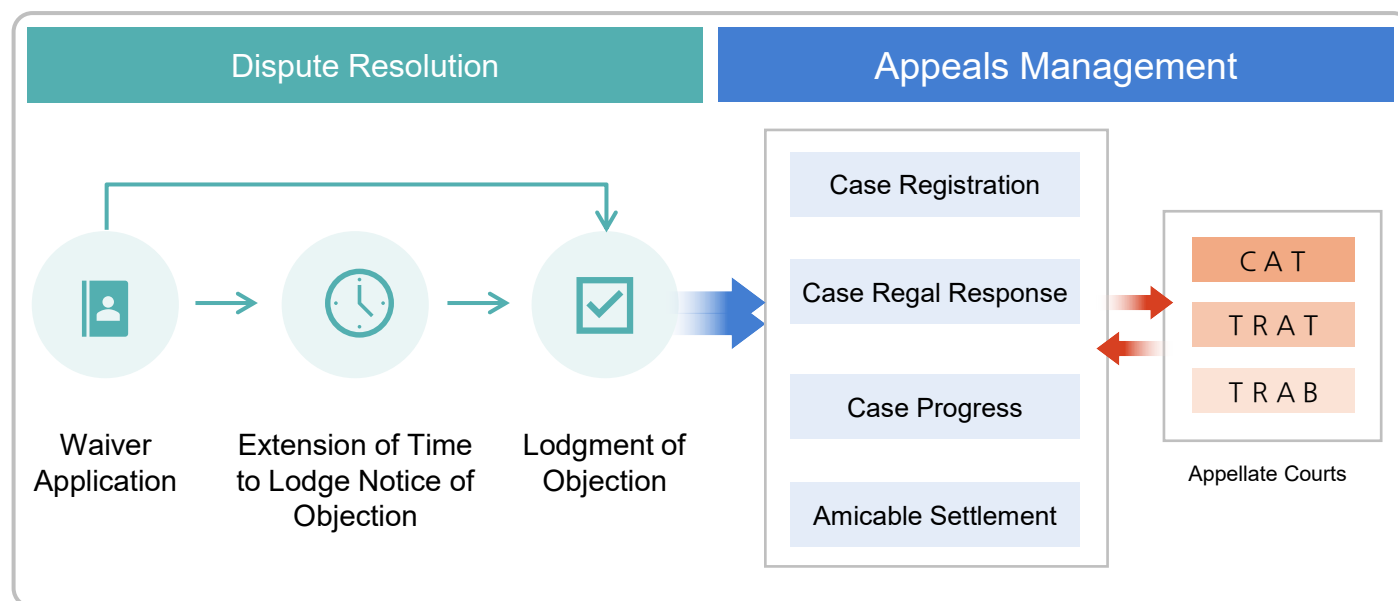
Communications



1 Objections and Appeals

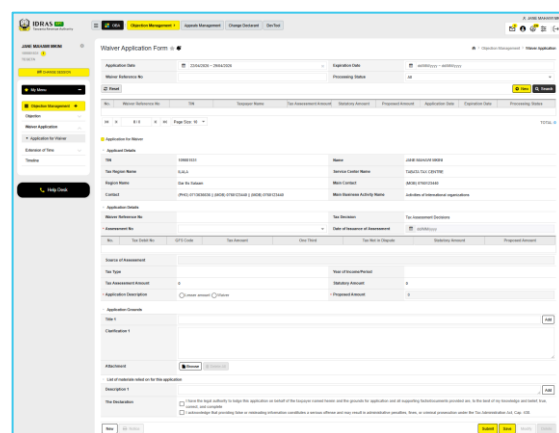
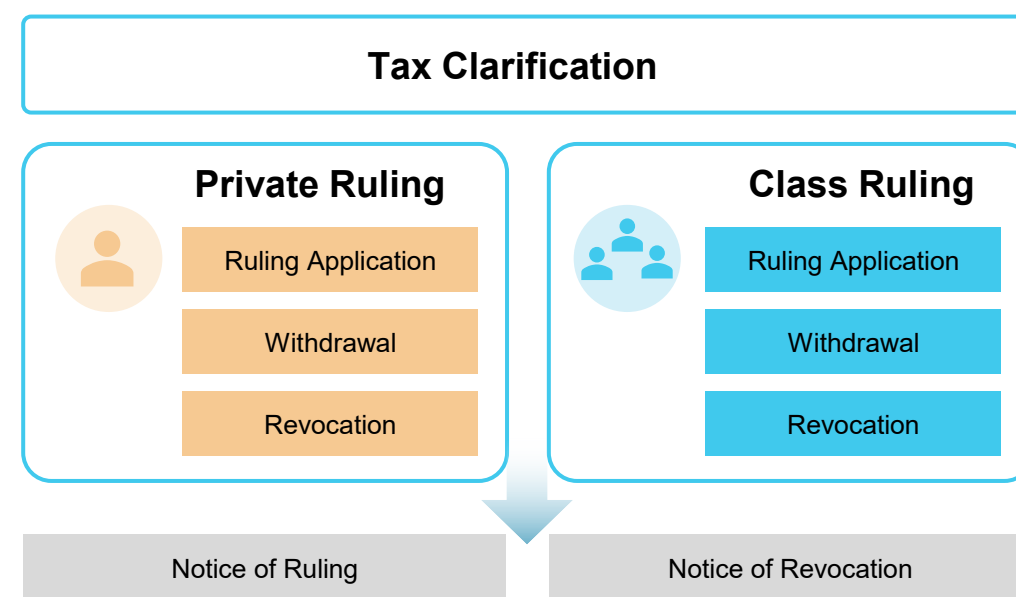
Taxpayers' objections are being submitted and processed digitally, with appeals coordinated in conjunction with the appellate court.

Development of an integrated dispute management framework across the continuum of "Dispute Resolution → Appeals Management → Linkage with the Appellate Court"



2 Private and Class Ruling

Taxpayers may request Private or Class Rulings, for which the TRA formally determines and issues the outcomes. Application status is instantaneously available for monitoring via the Dashboard.



Waiver Application

Portal-Based Dispute Resolution Filing

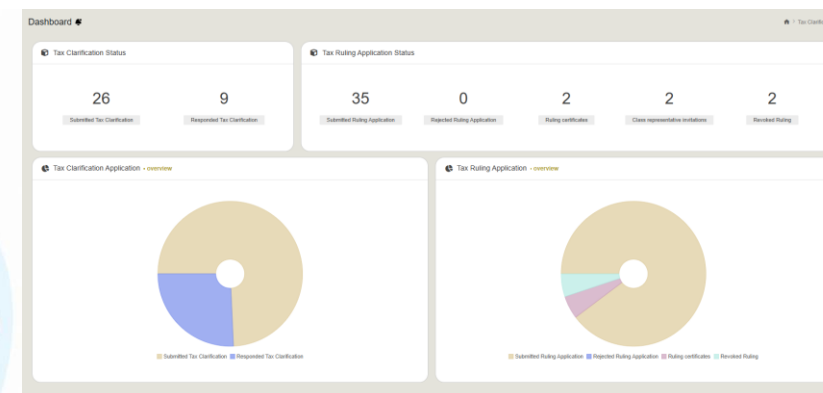
- Improving Data Quality through Digital Filing (Accuracy and Consistency)
- Eliminating Inefficient Offline Document Submission

Integrated Appeal Case Management

- Comprehensive monitoring and management of appeal cases via the Case-in-Progress feature
- Registration and internal submission processing of various cases

Expedited Determination of Objections

- Automated Application Allocation and Live Validation of Liability Amounts under Objection

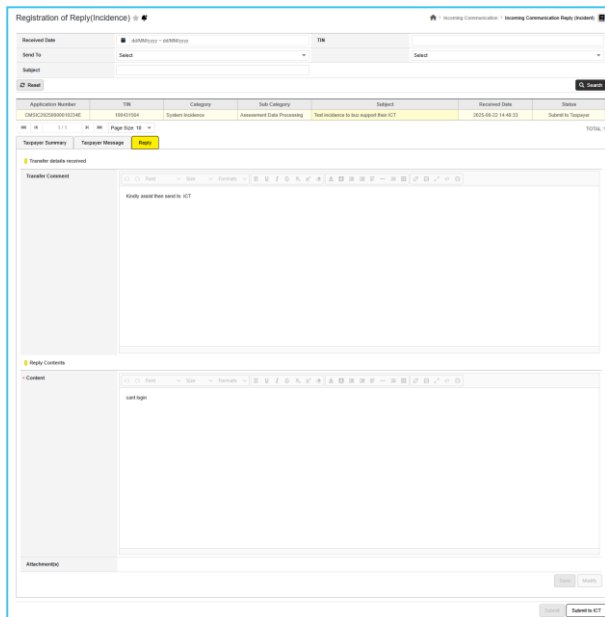
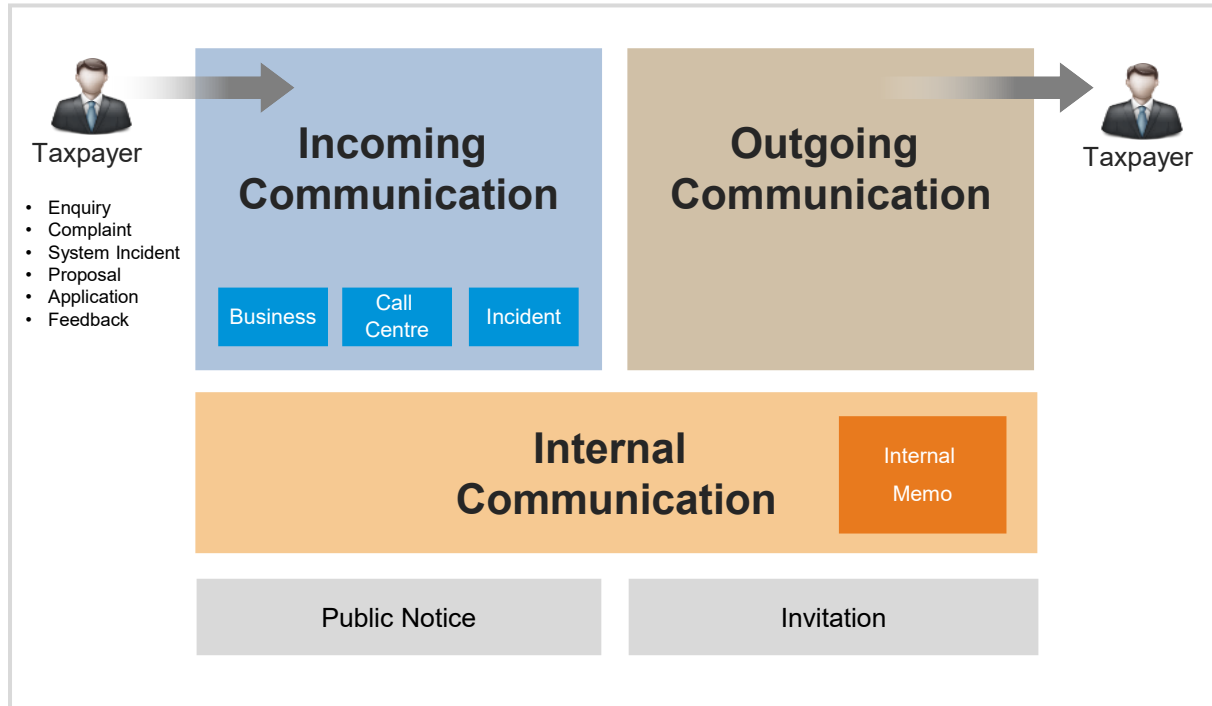


Taxpayer Dashboard

3

Communication

It is a communication platform that manages two-way communication with taxpayers through incoming/outgoing communications and internal cooperation through internal memos in an integrated way, improving **both the efficiency of tax administration and service quality**.



Incoming Communication - Incident

Incoming Communication

- Business : Tax-related service requests (registration, filing, payment, etc.)
- Call Centre : Inquiries and support requests through the call center
- Incident : System errors, complaints, and incident reports

Outgoing Communication

- Requests for replies to tax-related tasks (tax filing and processing)

Internal Communication

- Internal Memo : Deliver internal notices, guidelines, and policy

Public Notice

- Approval of content for public notices

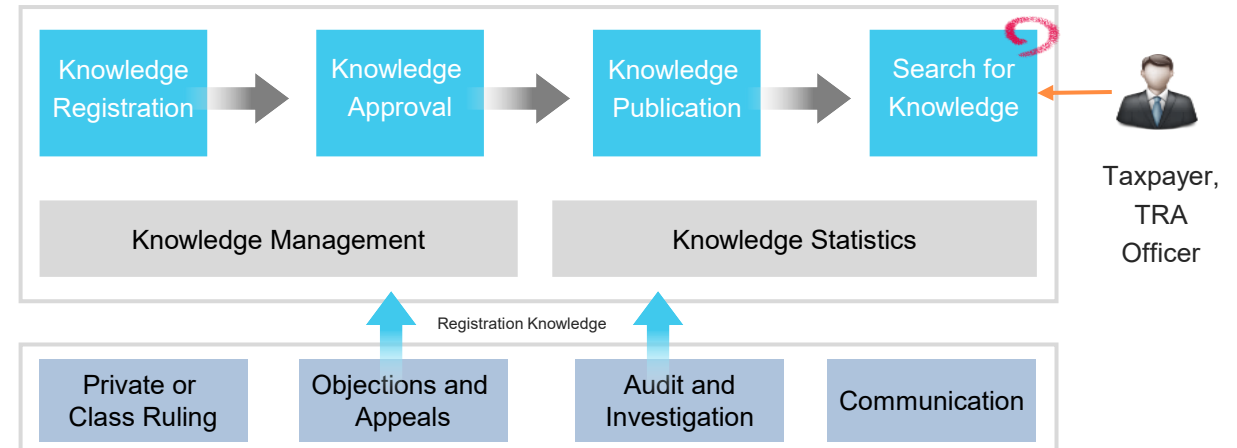
Invitation

- Training, meeting, and event invitation management

4

Knowledge

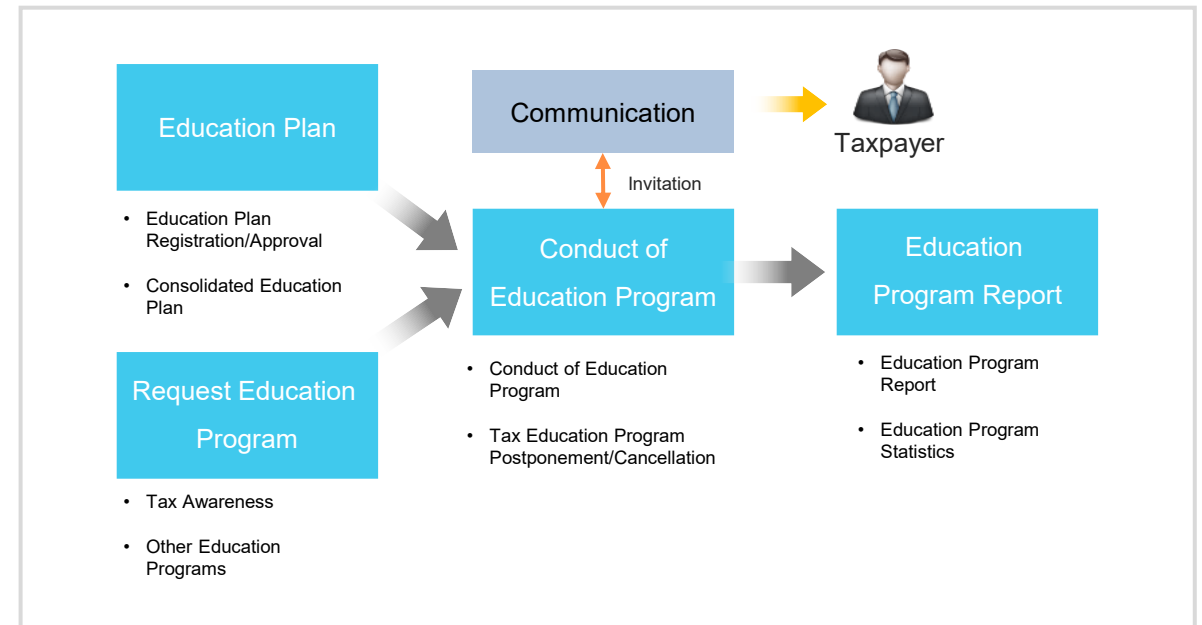
"Knowledge Management" is **an integrated knowledge lifecycle system that accumulates, validates, and shares experiences and cases** generated in business operations as standardized knowledge, **allowing the entire organization to reuse knowledge**.



5

Taxpayer Education

"Taxpayer Education" is a system that **delivers education programs to taxpayers based on program plans and field requests**, and continues to improve through outcome analyses.

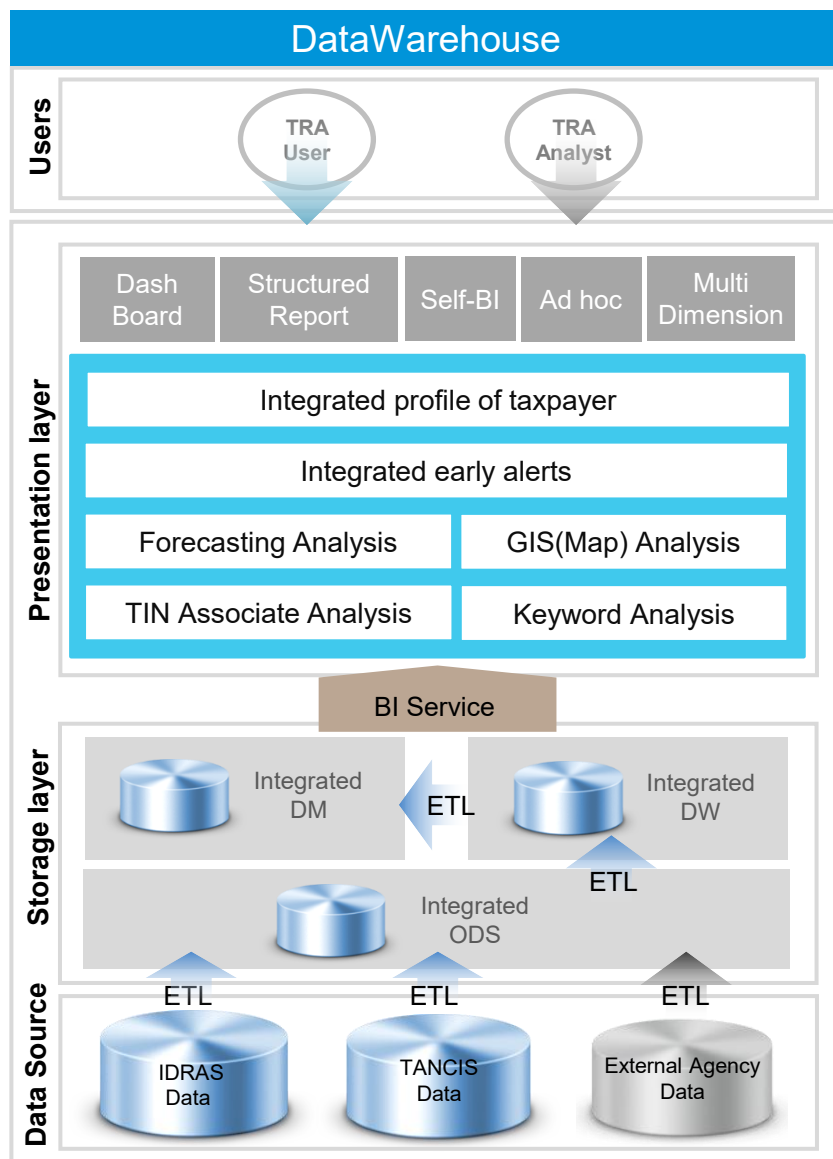


Statistics



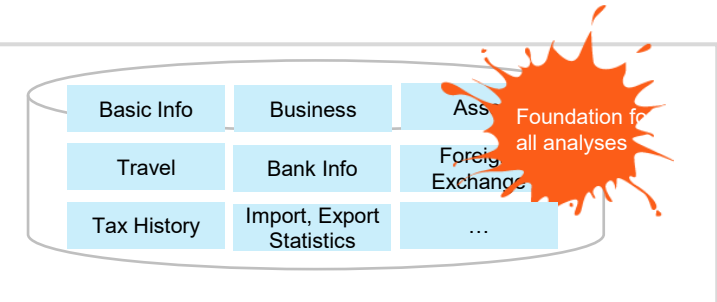
1 Information Analysis (DW)

Data Warehouse is a core platform that integrates internal and external data to build a taxpayer-centric unified profile and enables **data-driven tax administration** with early risk detection and advanced analytics.



Integrated profile of taxpayer

- Based on IDRAS information, Taxpayer profiles are provided by collecting TANCIS/External Data
- Taxpayer profile is used as the foundation for all analyses.



Integrated early alerts

- Early alerts are provided by detecting the activities of delinquent taxpayers/habitual tax evaders.
- Basic information and addresses of delinquent taxpayers/habitual tax evaders are displayed on a map.

Taxpayer Name	TIN	Arrear of Taxes	Frequent	Arrear of taxes amount	Address
Taxpayer1	...	Y	Y		Map
Taxpayer2	...				Map
Taxpayer3	...			0	Map
Taxpayer5	...		N	0	Map
Taxpayer7	...	Y	Y	300	Map

Domestic expense records
Trade, customs activity
Vehicle data

Analysis

- Forecasting Analysis: Predicts and analyzes future outcomes based on historical data.
- GIS(Map) Analysis: Analyzes data based on geographic regions.
- TIN Associate Analysis: Analyzes relationships between TINs.
- Keyword Analysis: Analyzes keyword usage.

Portals

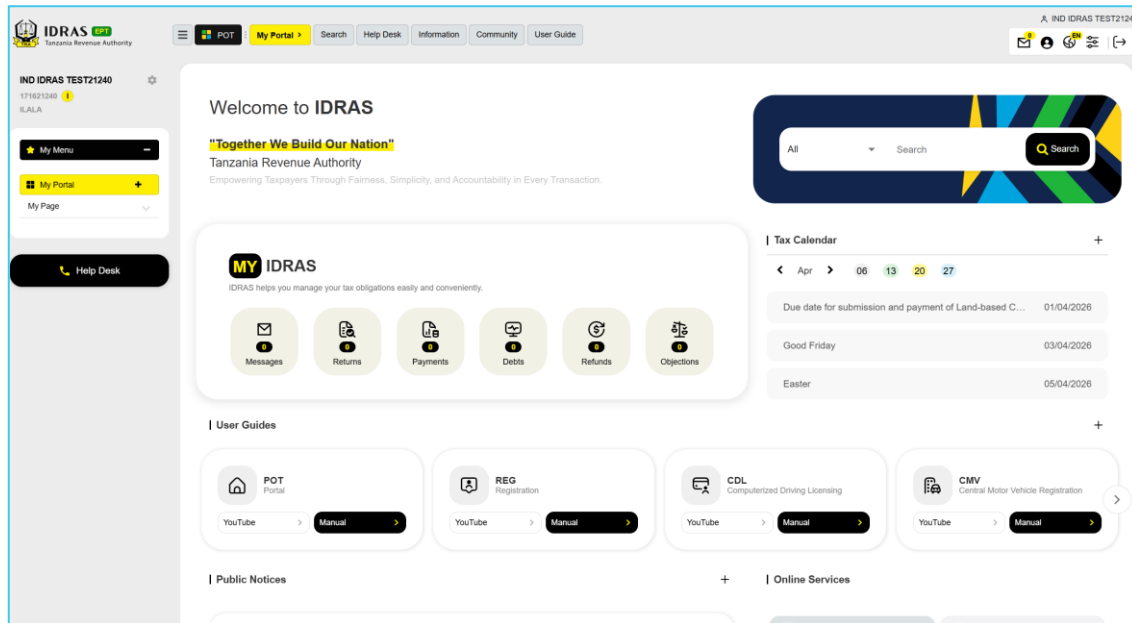
02



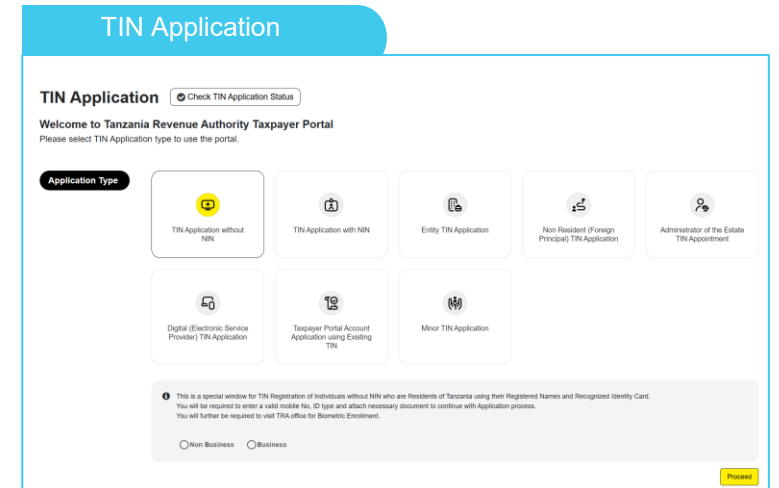
1. Taxpayer Portal



It provides user-first service that enables taxpayers to view, process, manage tax-related tasks at one place.
 “An integrated electronic tax administrator portal for taxpayers to handle tax matters easily and quickly”



- Search**
 - Service, menu, information search
 - Easy access without complicated menu search
- Public Notice**
 - Policy change, notifications
 - Delivery of updated tax info
- Tax Calendar**
 - Declaration/ due date notification
 - Public holidays or other important schedules
 - Tax duty schedule management
- Navigation Menu**
 - Help Desk
 - My Menu / My Portal
 - Providing personalized menu



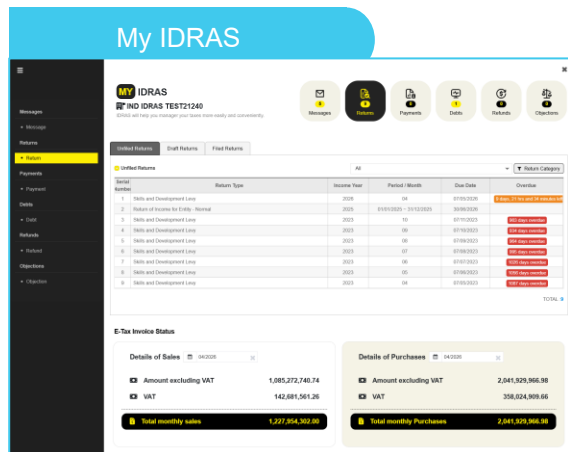
TIN application is simple registration system that can be done automatically after selecting type. Through **National Identification Authority (NIDA) & Business Registration and Licensing Agency (BRELA) interface**, it will be issued fast and correctly.

One-Stop Service
 Declaration → Payment → Search can be done at one single portal
 Providing Tax notification service

User-first UI/UX
 Intuitive icon + Simple menu structure
 User selects system theme by himself

Self-Service based
 Taxpayer will be able to perform task by himself. There will be task improvements.

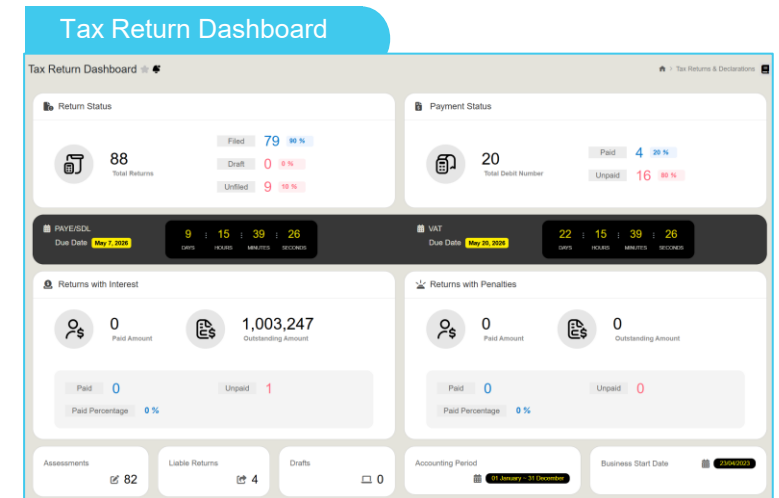
Scalability (Module)
 Easy integration of newly added modules



MY IDRAS Main Features

Taxpayer's main works are provided intuitively by form of icon
 One-click access allowed

- Messages
- Returns
- Payments
- Debts
- Refunds
- Objections



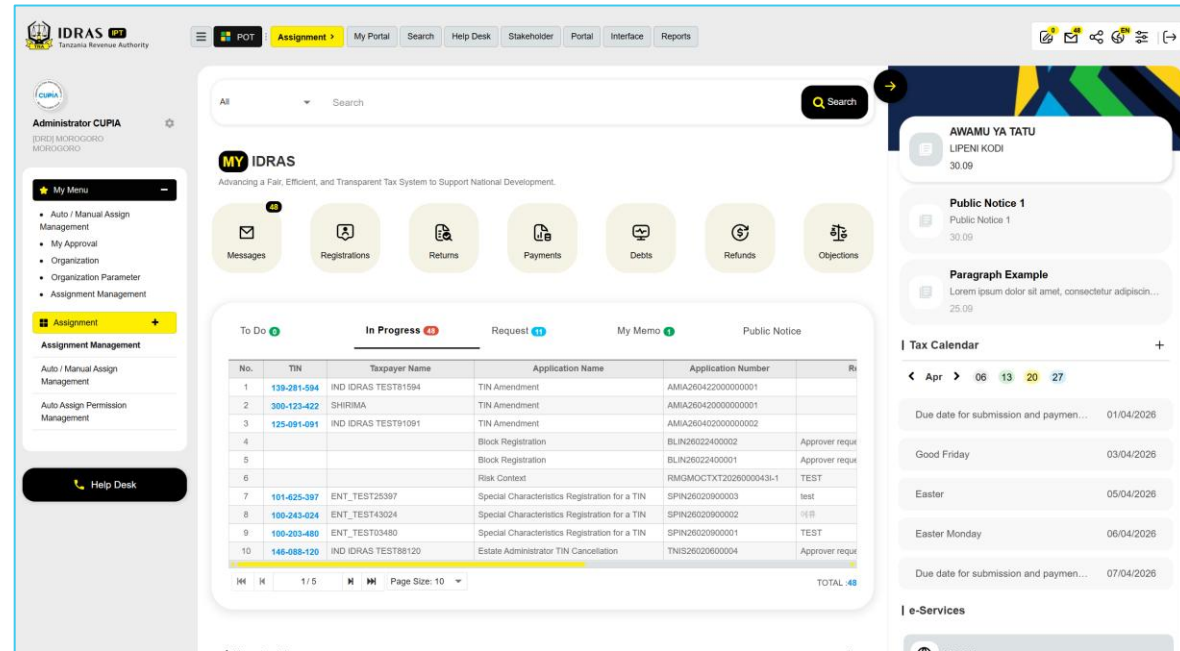
This is a Tax Return Dashboard and core screen that shows taxpayer's declaration and payment status at a glance.

- Return Status
- Returns with Interest
- Payment Status
- Returns with Penalties



Internal Portal

IDRAS Internal Portal (IPT) is an operational platform that **integrates and manages all tax tasks, centered on the processing status of assignment and Workflows.**



Workflow-based task handling that manages Task search → Process → Approval → Manage

Workflow-based operation

Task handling structure per process

All tasks status can be viewed at glance

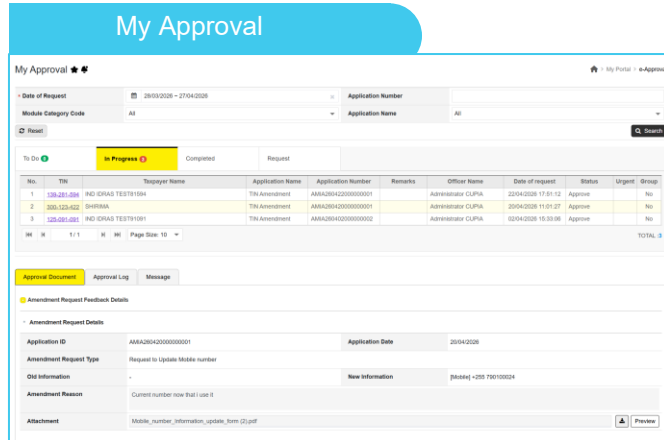
Auto-assignment feature

Efficient task distribution
Task handling based on the role of Officer / Reviewer / Approver

Integrated work environment

Various modules (Registration, Return etc) integrated management

Minimize repetitive tasks + fast process



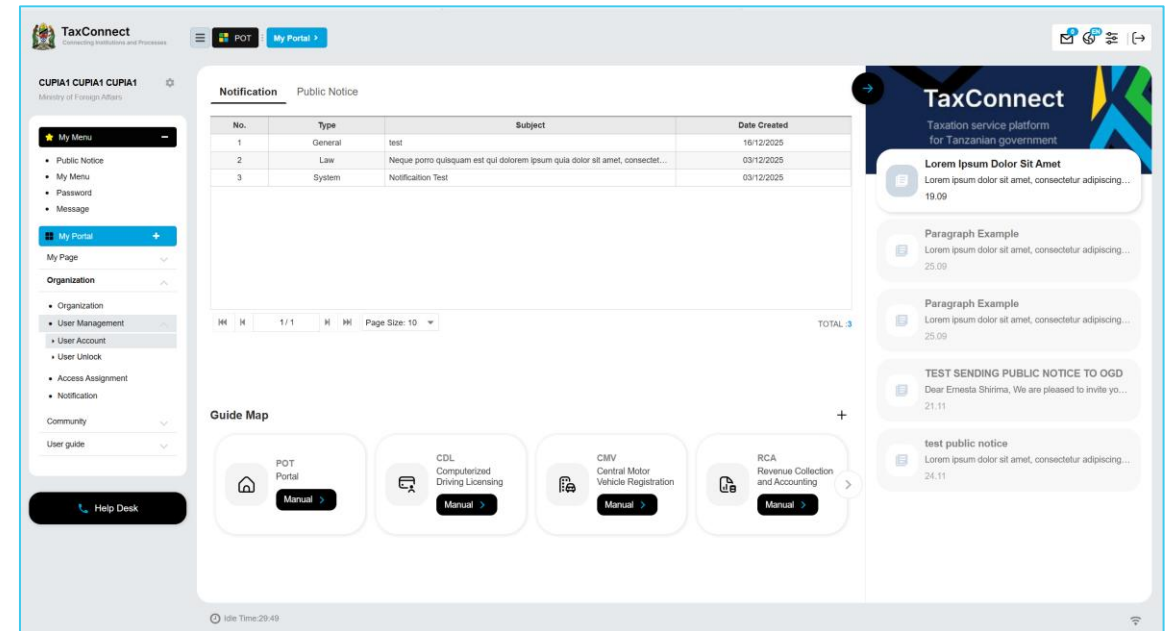
IDRAS e-Approval is a task processing system that integrates automated approval line + electronic approval + audit records and communication features.

- Automated and manual distribution of Approval Lines
- E-Approval-based approval system
- Automatic saving of approval history (Audit)
- Search Approver's message



TaxConnect Portal

TaxConnect (Other Government Portal, OGD Portal) is a collaboration portal provided to enable other government agencies to directly work on tax-related tasks.



Notification / Public Notice

- Notification and policy info
- Message delivery to organizations

My Portal

- Provides task menu of agency representatives
- Tax-related requests/process feature

Organization / User

- Access management by agencies
- Access control by roles

Access Assignment

- Allows system access authorization
- Authorization setting by task

Guide Map

- Provide short-cut access to main modules

Characteristics and strengths

- ✓ **Strengthening inter-agencies collaboration**
 - TRA ↔ OGD real-time task interface
- ✓ **Data sharing and interface**
 - Motor vehicle, driver's license, business information and etc
- ✓ **Task process speed improvement**
 - Immediate request and result check

- ✓ **Task digitalization**
 - Offline/documents-based process deletion
- ✓ **Security and authorization management**
 - Access control per agencies / users
- ✓ **Able to audit and trace**
 - All tasks record shall be saved



StakeHolder

What organization are you working for?

Organization	TRA Organization	Organization Parameter
	Other government Organization	Special Team

- ✓ **Flexible organization structure support**
 - HQ / Region and etc, able to manage by hierarchy
- ✓ **Operational organization separation**
 - Special Team will be managed separately
- ✓ **Policy-based operation**
 - Organization's task rules will be controlled by parameter

Who will be using?

User	TRA Officer	Taxpayers
	External Stakeholder	OGD Officer

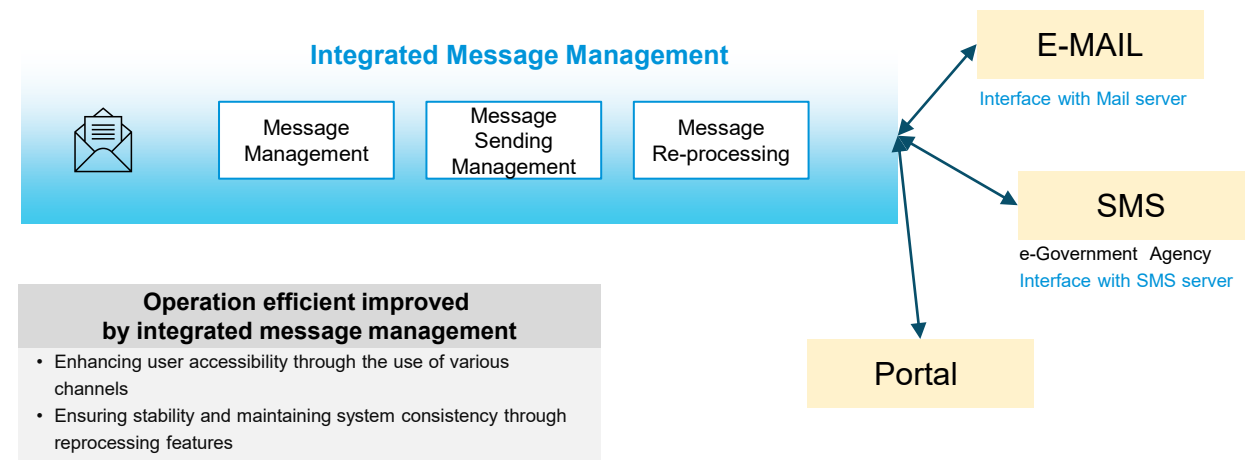
- ✓ **Multi-user type integrated management**
 - Internal + external user integrated management
- ✓ **Task role-based user configuration**
 - Task-centered user management
- ✓ **Authentication interface**
 - AD(Active directory), Auth2-based log in
- ✓ **E-approval/approval system support**
 - Provide signatures management feature

What can be done?

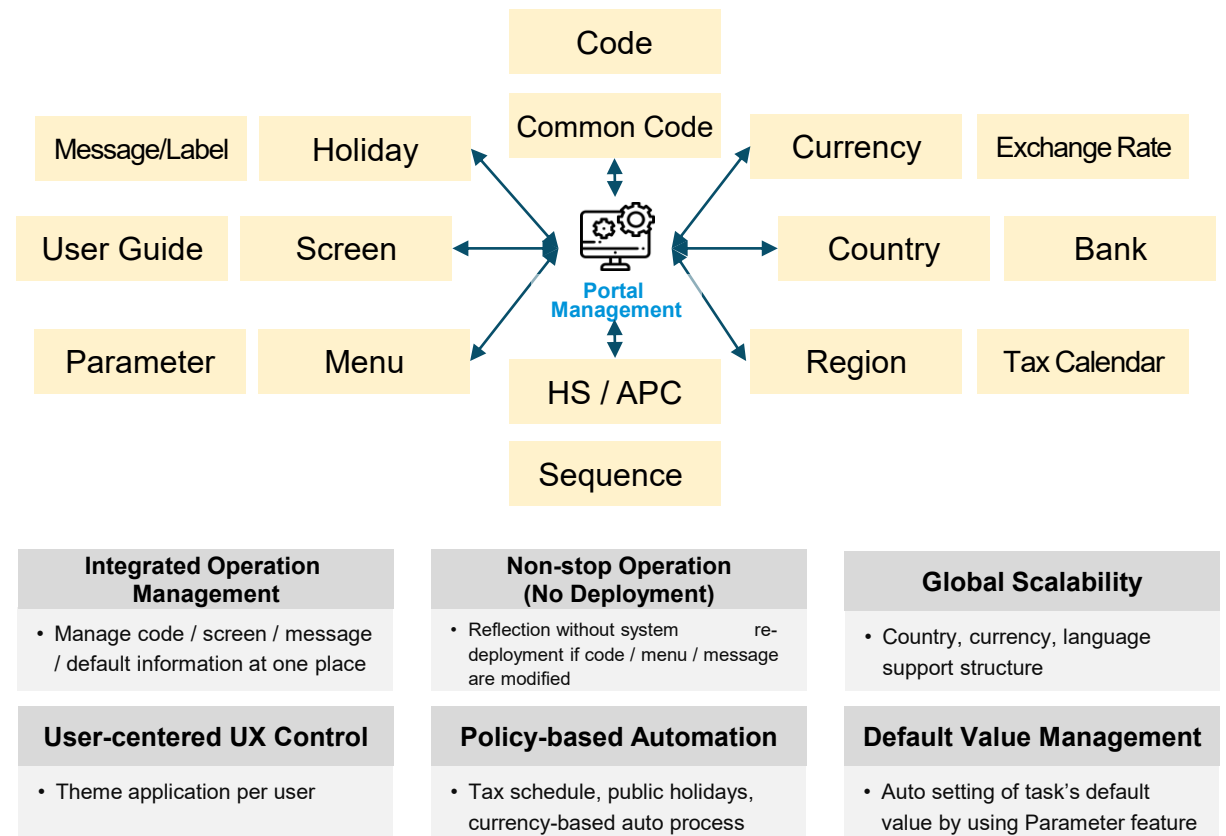
Access	Access Assignment	Access Assignment History
	Permission / Role	Access Application

- ✓ **RBAC (Role-Based Access Control)**
 - Role-centered authorization management
- ✓ **E-Approval process**
 - Authorization application → Approval → Auto grant
- ✓ **Able to trace history**
 - All authorization modification record management
- ✓ **Security enhancement**
 - Least Privilege principle is applicable

e-Message



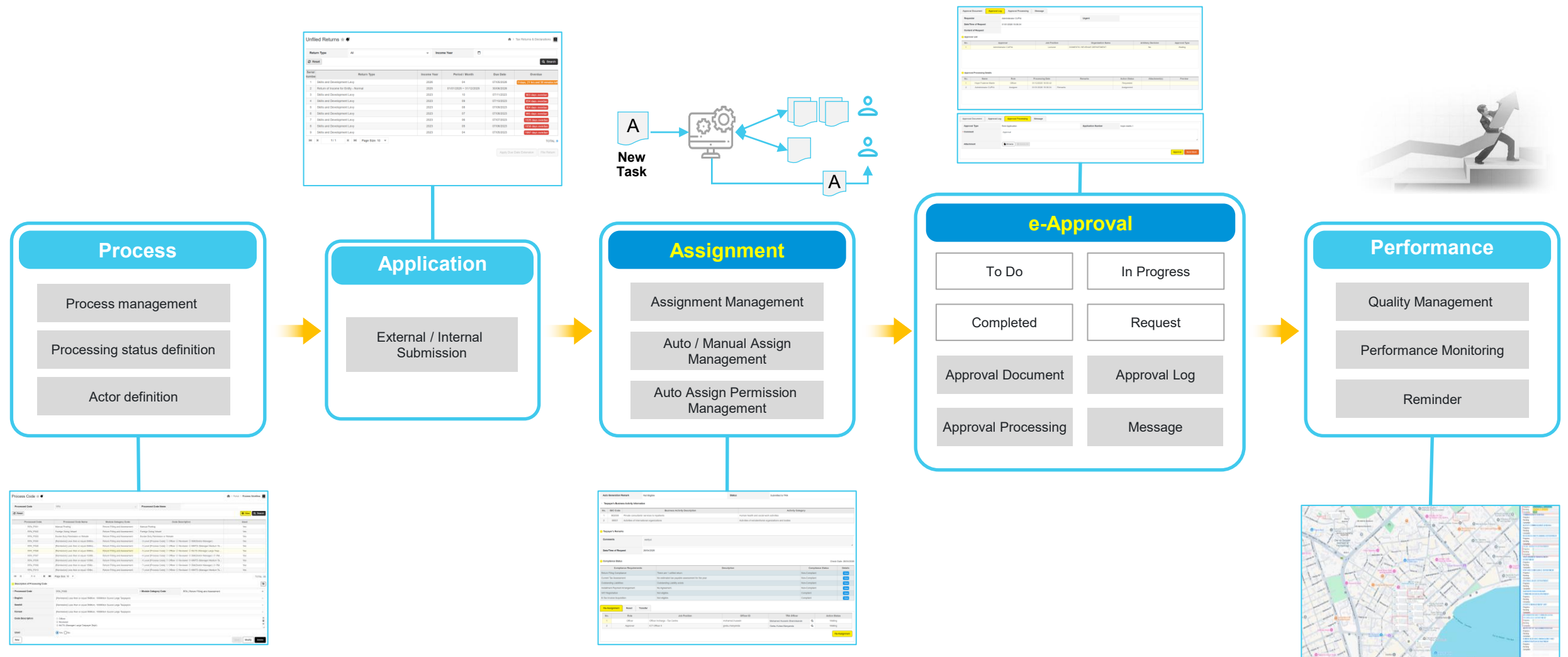
Portal Management



7. Workflow



IDRAS Workflow is an **end-to-end integrated business processing system** that pre-defines business processes (Process), automatically or manually assigns tasks based on roles and authorities derived from user requests (Application), controls approval, history, and decision-making through electronic approval (e-Approval), and finally **monitors performance and quality for continuous improvement**.



Characteristics and strengths

- ✓ End-to-End Automation
 - The entire process is connected, from non-definition to performance management
- ✓ Role-based Flow Control
 - Motor vehicle, driver's license, business information

- ✓ Status-based Management
 - Entire tasks will be status-centered and will be traceable
- ✓ Approval-centered Control Structure
 - Through e-Approval, every important task will be recorded and controlled

- ✓ Continuous Structure Improvement
 - At Performance stage, processed/unprocessed tasks will be analyzed and managed

* IDRAS Workflow is an integrated business processing system that follows the sequence of task definition -> application -> automatic/manual distribution -> electronic approval -> performance management

System Architecture

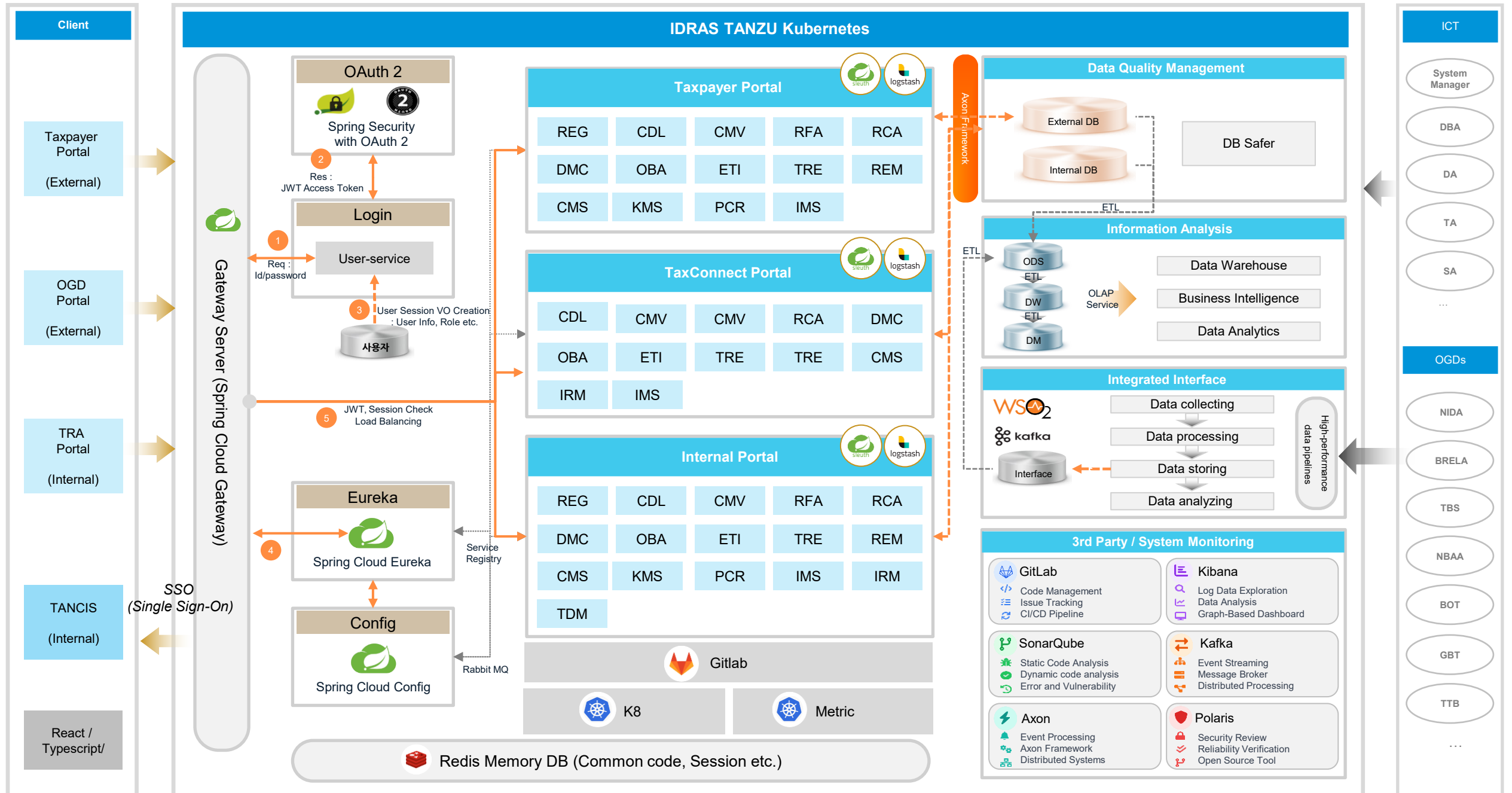
03



1. MSA (Microservice Architecture)



IDRAS is a **cloud-native MSA platform** that integrates various channels through OAuth2-based authentication and Gateway, separates business modules into **Microservice for independent operation** on TANZU Kubernetes, and secures scalability and stability through **Kafka-based interface DW/BI analysis structure**.

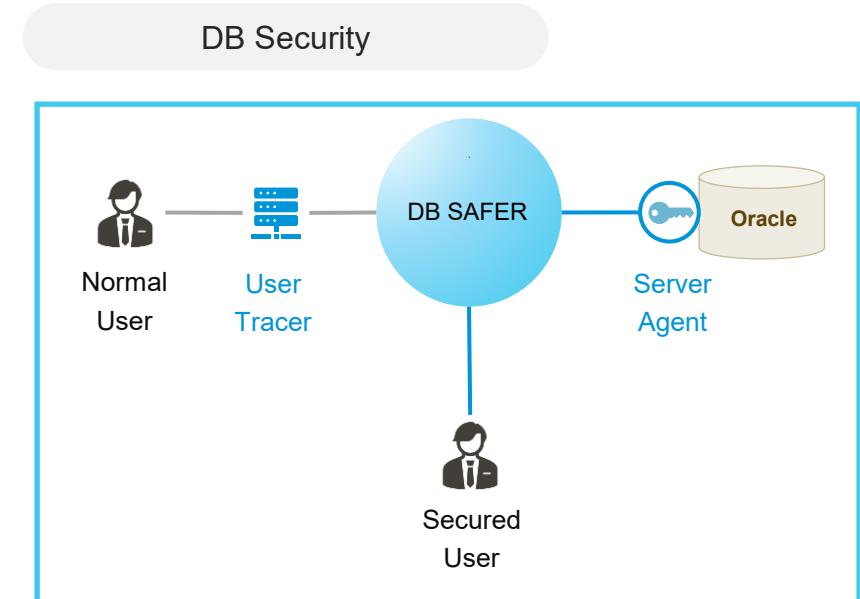
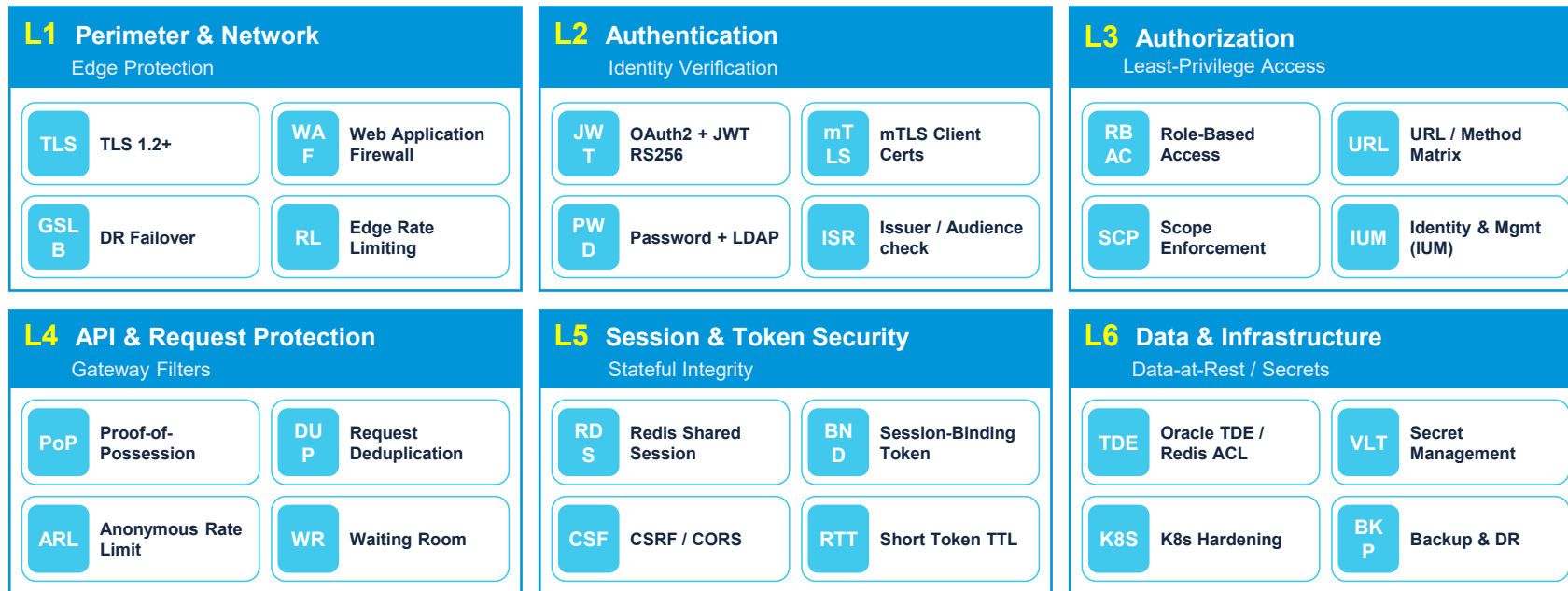


- Fully Distributed MSA Structure
- Event-Driven Architecture
- Cloud-Native Platform
- Unified Authentication Mechanism
- Data-Centric Architecture

2. Security



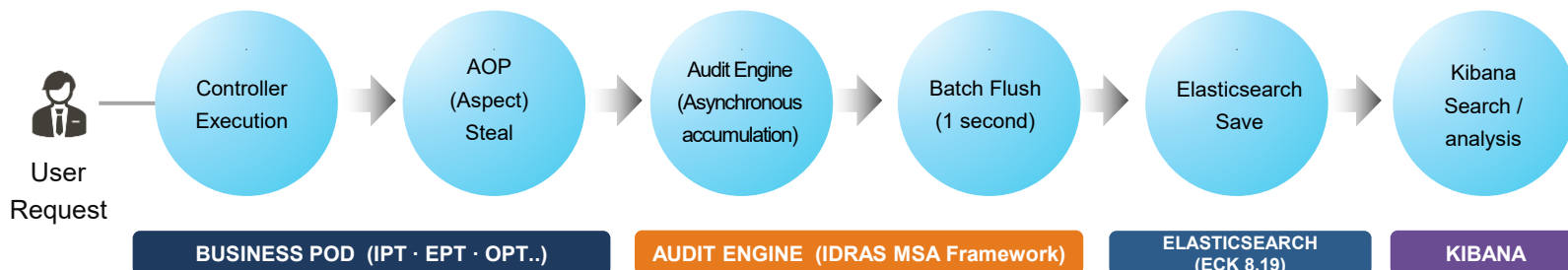
IDRAS is a **Zero Trust-based security architecture** that applies L1 ~ L6 multi-layered security from external attacks to internal, providing end-to-end protection for authentication, authorization, sessions, APIs, and data.



OAuth2 RFC 6749 · JWT RFC 7519 · JWS RS256 RFC 7515 · JWK RFC 7517 · mTLS RFC 8705 · PoP (ECDSA-P256) · OWASP Top 10 Aligned · ISO 27001 Ready

Application Audit

IDRAS's Application Audit is structured to record all user actions and API calls without omission while ensuring no impact on service performance. "A high-performance audit logging structure that intercepts controller calls using AOP, loads them into an asynchronous queue, stores them in batches in Elasticsearch, and audits/analyzes them in Kibana."



Access / Authorization Control

- Central management on various accesses to DBMS
- Access control (Employee number, IP, Application, DB accounts, time, etc)
- Authorization control (DDL / DML / DCL sentence, Table/Column etc)

Audit Logging & Real-time Monitoring

- It provides real-time monitoring on audit data, and offers an environment, where accurate data can be verified by rapidly accessing logs at the relevant point in time from various perspectives during log analysis of the specific events

Bypass Access Block & Logging

- Blocking Bypass access without going via Gateway (unauthorized access) & logging
- Blocking access via direct console within computer room & logging

Segment Transfer Encryption

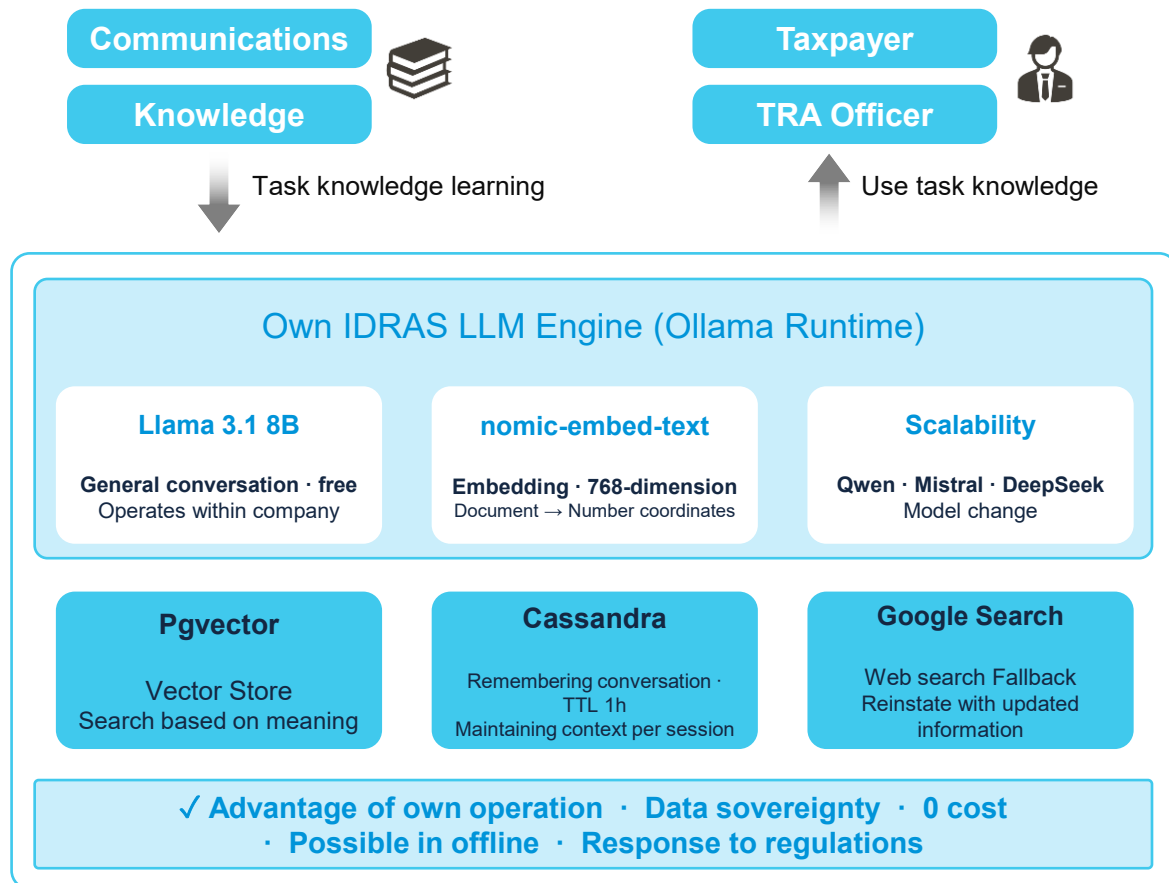
- DBSAFER provides encryption feature across the entire communication channel between the user PC and DBSAFER, between the DBSAFER the server to be secured (unique in the industry, providing full-path encrypted communication)

Database access control security solution DB SAFER applied



IDRAS AI

IDRAS AI Platform is a hybrid AI system that **operates mainly based on internal Open Source AI** while combining external GPT when necessary to optimize security, cost and performance.



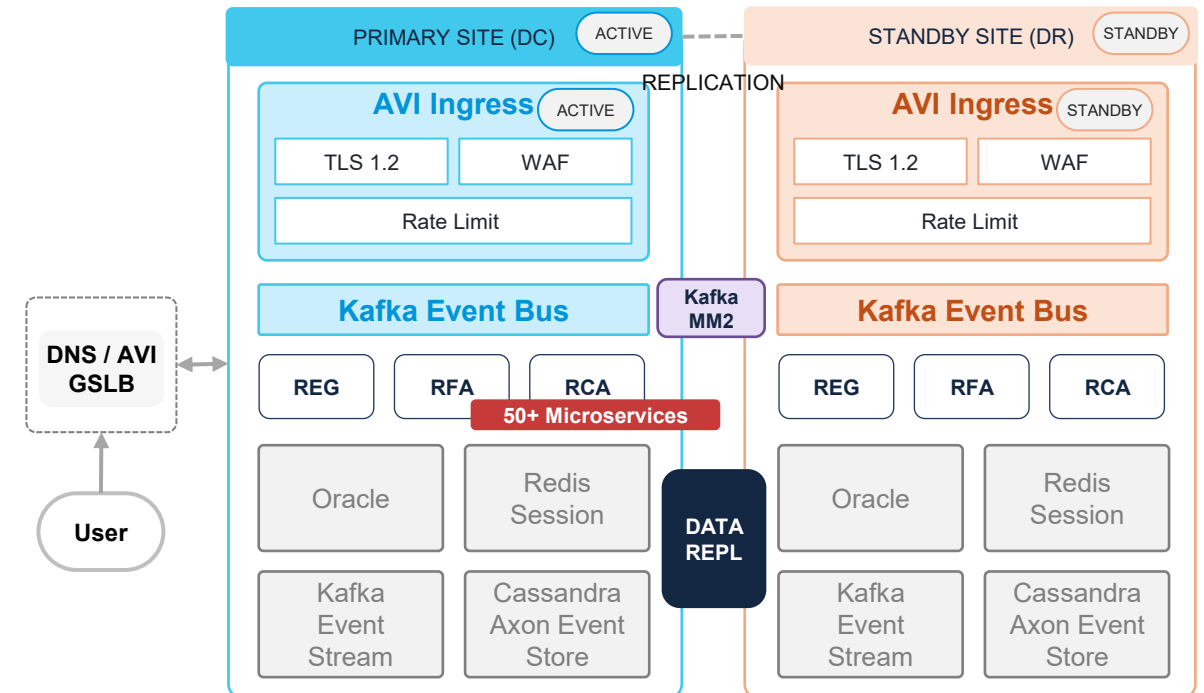
- Applied Technology**
- Spring AI 1.0.0
 - Spring Boot 3.5.8
 - Java 21
 - **Ollama (Llama 3.1 8B)**
 - OpenAI GPT-4o (Optional)
 - pgvector 0.8.2
 - Cassandra
 - RAG
 - K8s StatefulSet

- Open-Source Self-Hosted**
- ✓ **Internal AI Platform**
 - Ollama-based LLM operation, Llama 3.1 (Conversation / summary)
 - nomic-embed-text (Embedding)
 - ✓ **Data Learning**
 - Internal system interface learning
 - System administrator / user manual load
 - ✓ **Infra**
 - pgvector (Vector DB), Cassandra (Session / memory)
 - Google Search (Fallback)

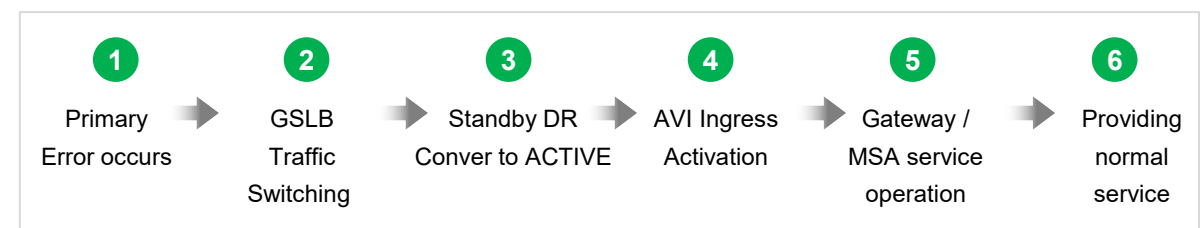


Disaster Recovery (DR)

IDRAS DR applies MSA-based DR architecture that **switches to DR in the event of a Primary failure in a GSLR-based Active-Standy structure**, and maintains data consistency based on Data Guard and Kafka MM2.



Failover flow when error occurs



Core DR index

RPO (Allowed data loss time)	RTO (Target recovery time)
≤ 15 min Oracle SYNC / Redis ASYNC	≤ 30 min GSLB Failover + Promote
Backup	Observability
Velero + RMAN Daily Full / 15m Incr	ECK Cross-Cluster Kibana · APM · Fleet



5 System Monitoring

IDRAS operating environment features a structure comprising a Kibana-based integrated monitoring system, providing a **system monitoring architecture that monitors infrastructure, applications and end-to-end workflows.**



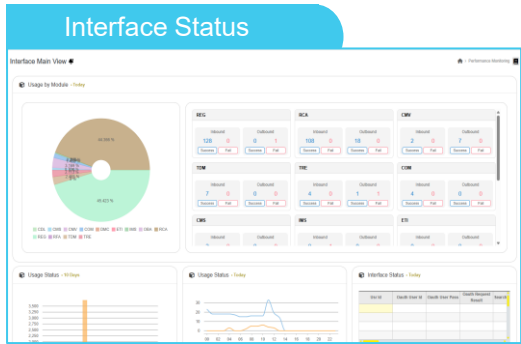
Monitoring Targets

- CPU / Memory / Disk
- Pod status (TANZU)
- Service response time (Latency)

Roles

- Detect infra errors (Server down, resource shortage)
- Pre-detect of performance degradation

• Able to check real-time status
• Able to Alert if exceeds the threshold



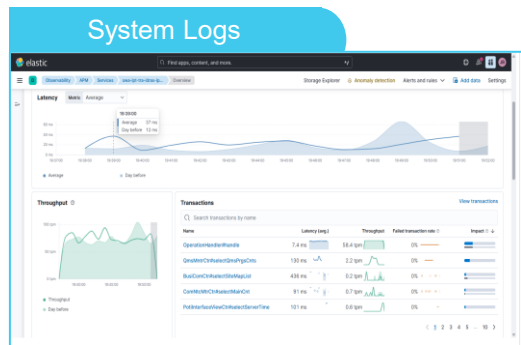
Monitoring Targets

- External system interface (TANCIS, NIDA, MOFA etc)
- API 호출 success/failure

Roles

- Detect interface error
- Check data sending and receiving status

• Immediate detect after interface failure
• Able to detect external dependent system status



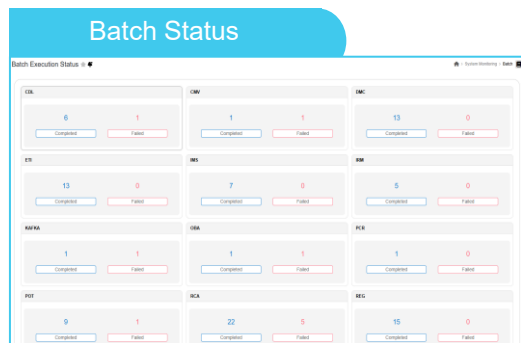
Monitoring Targets

- User's activities (Log in, modification, approval)
- Authorization change history
- Main data change history

Roles

- Response to security and audit
- Tracing user's activities

• Obtaining complete traceability
• Able to respond to regulations and audit



Monitoring Targets

- Number of Batch execution
- Number of succeeded / failed
- Execution time

Roles

- Night works and large amount process status check
- Obtaining data consistency

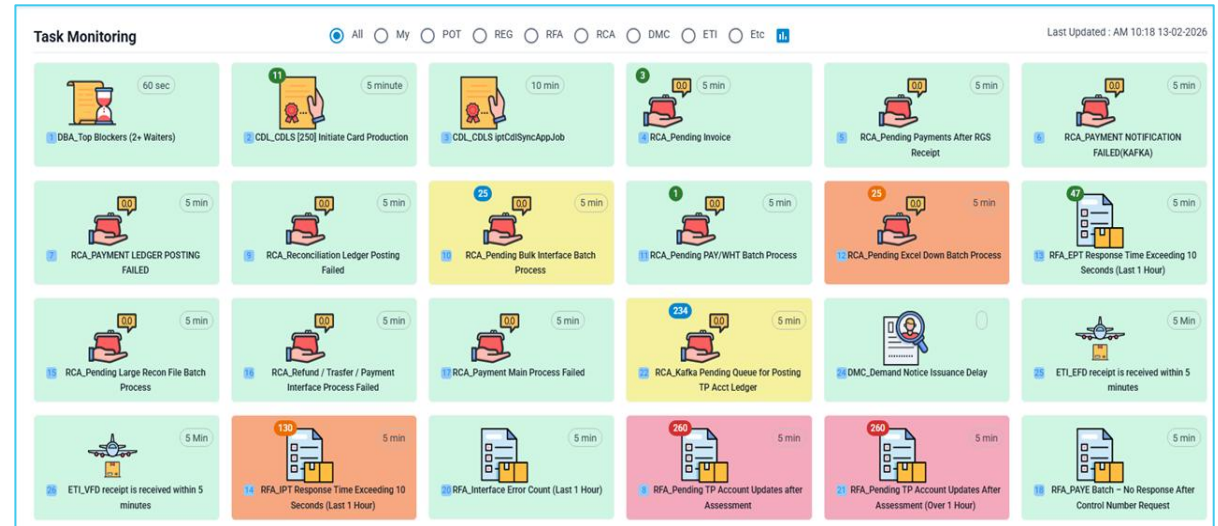
• Immediate re-process is possible after task failure
• Minimize the effect on task

EWACS



EWACS (Early Warning And Control System) is an operation / monitoring system that **detects and controls abnormal signs in advance based on data and system status** generated by IDRAS.

EWACS Main Features



1 Dashboard

- Service Port Monitoring
 - Service status
- Exchange Server status
 - Storage usage (Tablespace), system resource status
- Real-time Indicator
 - Normal / ● Warning / ● Error

2 Task Management

- Task Registration
 - Creating task request (Allocation, inspection, error handling and etc)
- Task Details
 - Checking task progress status
- Task Approval
 - Task execution approval process

3 Task Monitoring

- Task progress status monitoring
- Task result and check the log
- Delay/failure task notice
- Check real-time status
- Immediate identification when error occurs

4 Agent Registration

- Registration of target service or server which need to be monitored
 - Sever (CPU, Memory, Disk)
 - Application
 - Network / Ports

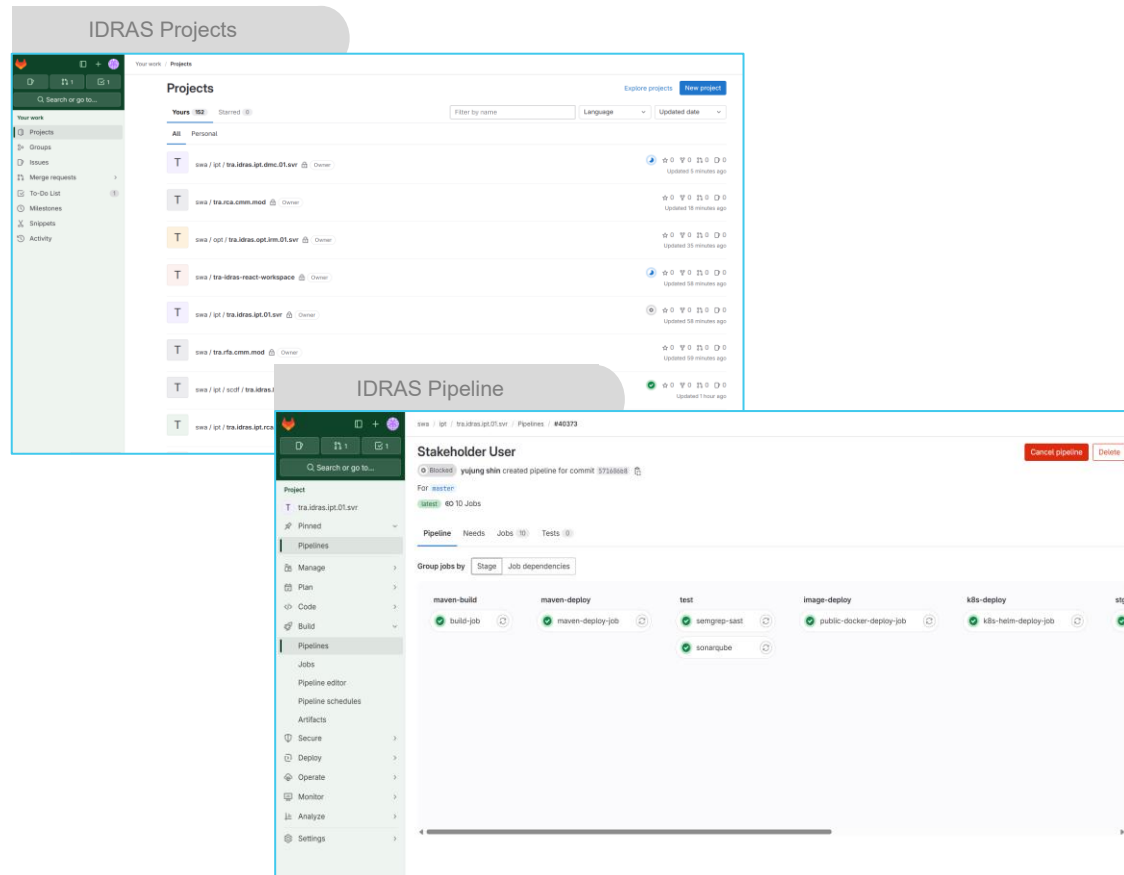
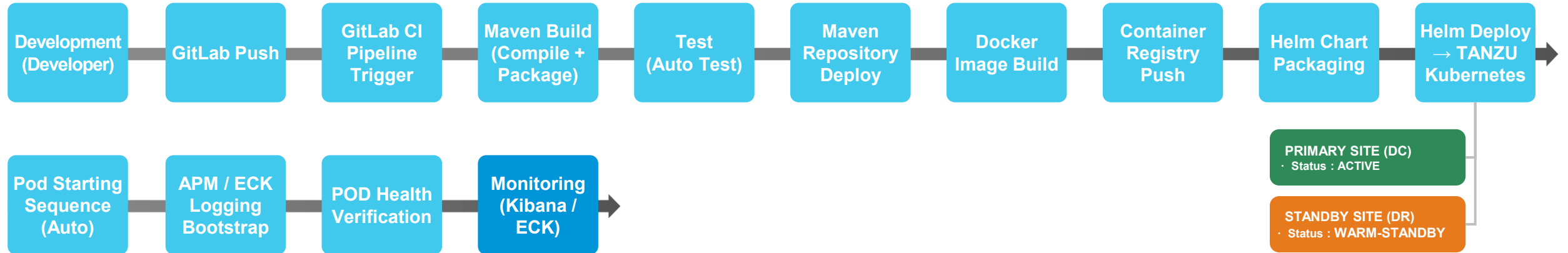
7. GitLab CI/CD



“just only 1 click”



IDRAS operates automizing entire process from development to deployment through **CI/CD(Continuous Integration / Continuous Deployment) System** by using GitLab. In other words, “**DevOps environment in which “Code Change → Auto Build → Test → Deployment will be automatically processed”**”



Main Configuration Components

- ✓ **GitLab Repository**
 - Source code version management
 - Branch strategy (feature / develop / main)
- ✓ **GitLab CI Pipeline**
 - Auto build and test execution
 - Auto execution upon code change
- ✓ **Containerization (Docker)**
 - Application packaging to container image (Ensuring deployment consistency)
- ✓ **Container Registry**
 - Docker Image Storage
 - Image management per version
- ✓ **CD (Deployment)**
 - Auto deployment at Kubernetes (Tanzu)
 - Application of Rolling Update method
- ✓ **Monitoring Interface**
 - Kibana and ECK-based log and its status check
 - Auto status verification after deployment

Core Characteristics and Strengths

- ✓ **Automized Deployment**
 - Stable and fast deployment without manual works
- ✓ **Quality Improvement**
 - Error prevention by test automation
- ✓ **Deployment Speed Improvement**
 - Code reflection → Time saving until operation reflection
- ✓ **Stable Operation**
 - East to rollback and version management
- ✓ **DevOps Environment Implementation**
 - Development + Operation integration
- ✓ **MSA / Cloud Environment Optimization**
 - Obtaining Kubernetes-based scalability

Effects from Operations View

- ✓ Fast rollback when error occurs
- ✓ Fast reflection of feature improvements
- ✓ Reducing operational risk
- ✓ Development productivity improvement

8. Development Methodology & SaaS

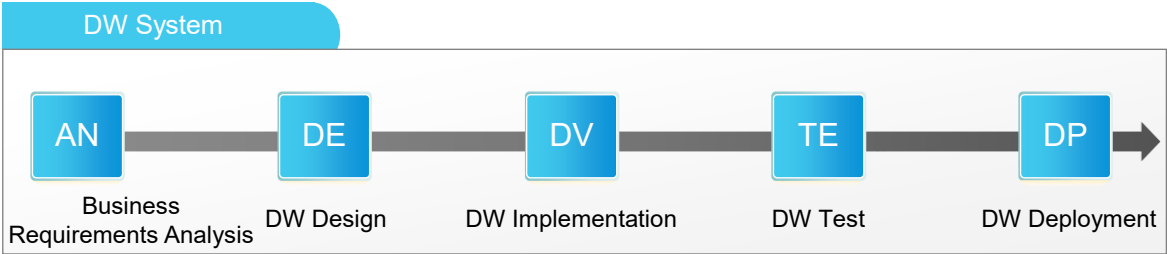
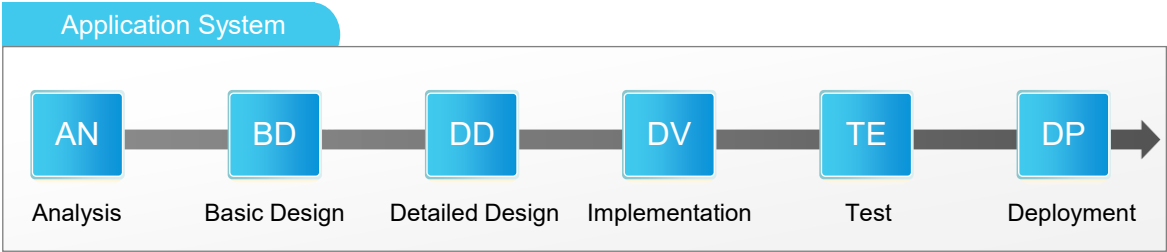


A development guide is provided to standardize the processes and deliverables for each phase of information system development based on an object-oriented, CBD (Component-Based Development) approach.

This ensures **improved development productivity, enhanced system quality, and systematic management** throughout the development lifecycle.

- The development lifecycle has been defined by adapting the international standard ISO/IEC 12207 to the TRA environment.
- The 'CUPIA Software Development Methodology' has been adopted to establish TRA's standard development processes and deliverables.

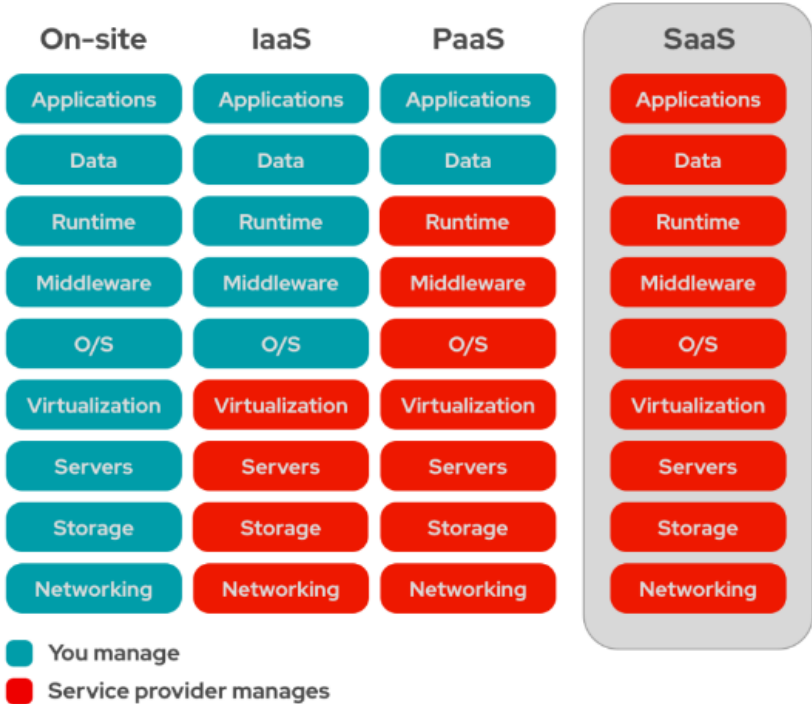
ISO/IEC 12207 is an international standard defined by ISO that establishes the software lifecycle processes (SDLC, Software Development Lifecycle).



Adopt **12 Factor App Methodology** to establish SaaS-based web application

SaaS(Software-as-a-Service)-based IDRAS system

- The IDRAS system is implemented using a SaaS model to support a cloud-based application environment.



● PaaS (Platform-as-a-Service)

Platform-as-a-Service (PaaS) provides development and testing environments, data services, and middleware through the cloud

● SaaS (Software-as-a-Service)

Software-as-a-Service (SaaS) delivers cloud applications, along with the underlying IT infrastructure and platform, to end users via a web browser.

● IaaS (Infrastructure-as-a-Service)

Infrastructure-as-a-Service (IaaS) provides storage, network resources, and server infrastructure as cloud-based services.



Interface Architecture

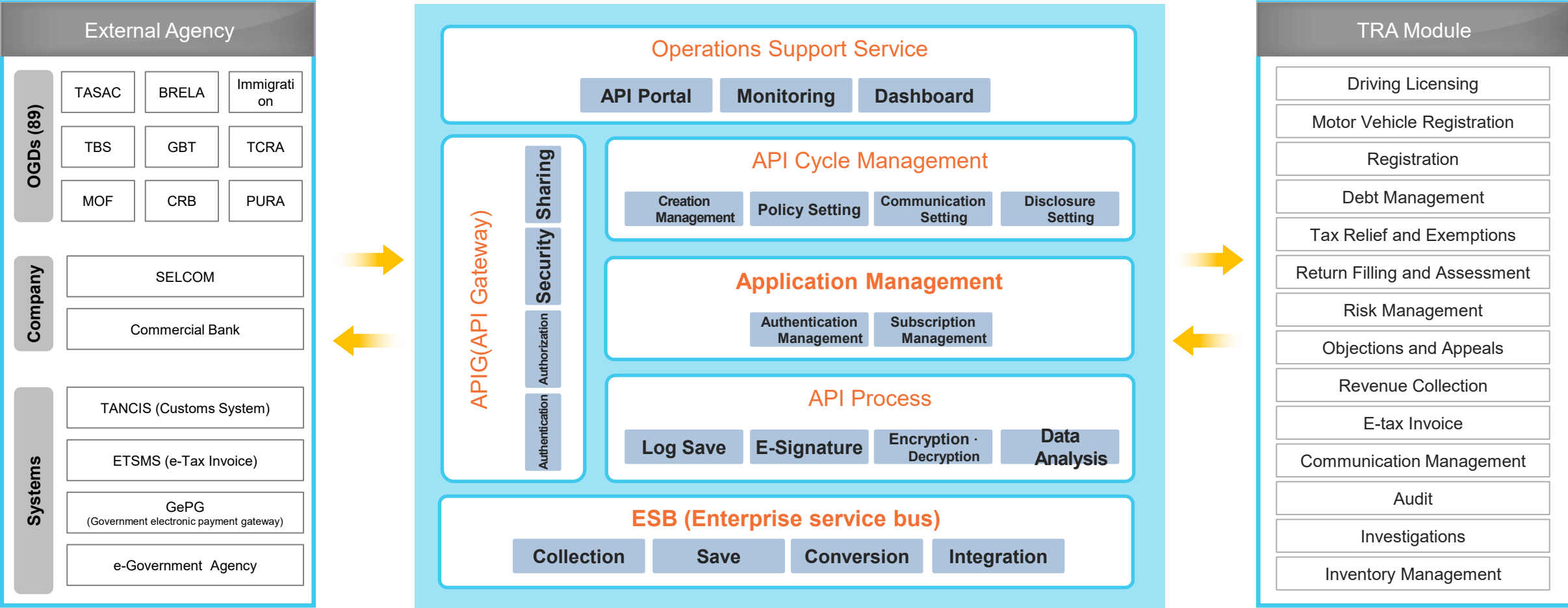
04



1. Interface Architecture Diagram



It integrates safely, efficiently and flexibly with various partners and system environment and ensures high operational stability and work efficiency by providing monitoring tools and dashboards.



API Gateway

- Authentication and authorization for API user identification
- Open API lifecycle management including creation, publication, and renounce
- Backend service routing through URL mapping
- Same data caching feature support for performance enhancement
- Prevention of excessive incoming through traffic control
- Various sending format support including Json, Soap, Xml etc

API Portal

- API Key issuance management for authentication
- Registration and management of API specifications for Backend Service
- API call history
- API Gateway engine management
- Provides API Mock-up test feature
- Provides needed information for API search, test, and utilization through the developer management portal

API Analytics

- API usage status analyzation
- API real-time traffic monitoring
- API usage statistics
- API sum data creation
- API response analyzation
- Provides API integrated dashboards



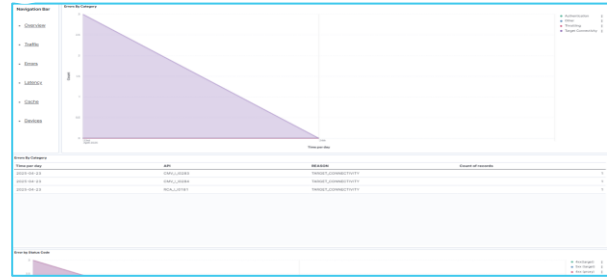
2 Interface Monitoring

1 Log search through Console

```

[2025-04-23 20:31:21.389] INFO - SourceHandler Writer (null) when calling informWriterError
[2025-04-23 20:31:21.389] DEBUG - wire HTTP-Listener I/O dispatcher-9 << "HTTP/1.1 400 Bad request[V][\n]"
[2025-04-23 20:31:21.389] DEBUG - wire HTTP-Listener I/O dispatcher-9 << "Connection: Close[V][\n]"
[2025-04-23 20:31:21.389] DEBUG - wire HTTP-Listener I/O dispatcher-9 << "Date: Wed, 23 Apr 2025 11:31:21 GMT[V]"
[2025-04-23 20:31:21.389] DEBUG - wire HTTP-Listener I/O dispatcher-9 << "Content-Length: 0[V][\n]"
[2025-04-23 20:31:21.389] DEBUG - wire HTTP-Listener I/O dispatcher-9 << "[\n][\n]"
[2025-04-23 22:00:49.554] INFO - SessionCleanupService session data cleanup task is running successfully for re
xtern=256colorxtern=256color
  
```

2 Log monitoring through Kibana



WSO2

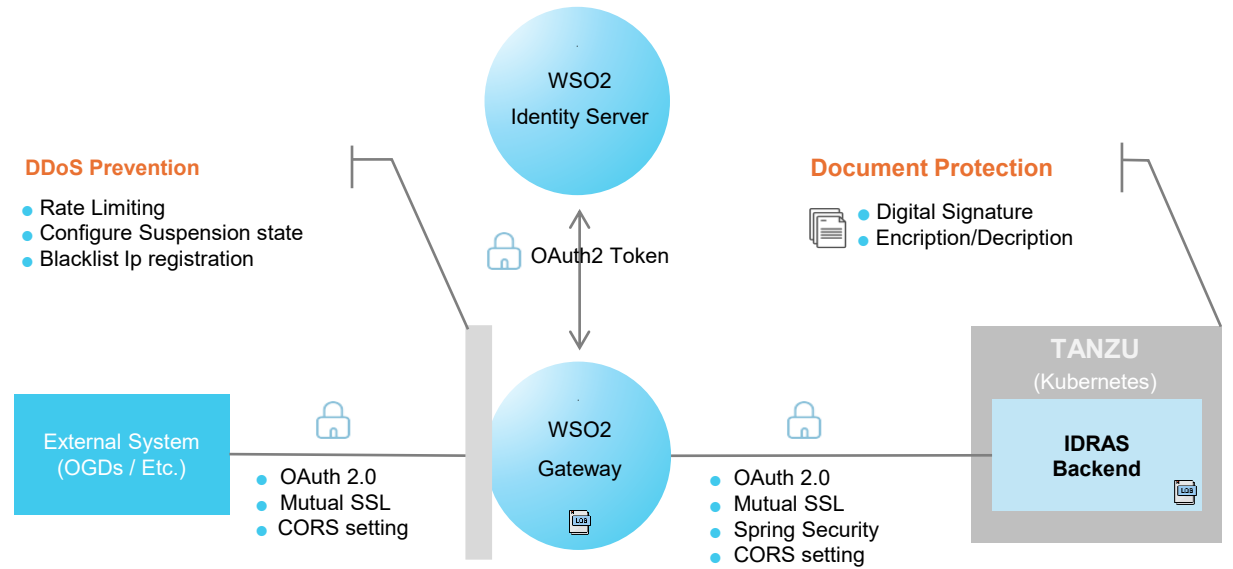
- When error occurs, analyze root cause
- Certain API failure / timeout / connection refused analysis
- Check if it works fine after deployment
- Entire system status monitoring
- Traffic increase / Error pattern analysis
- SLA & Performance index check (P95, response time, etc)

WSO2 : Open source-based integration platform for enterprise integration, API management, ID and Access Management

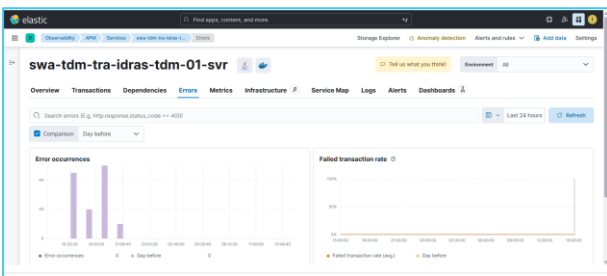
3 Security



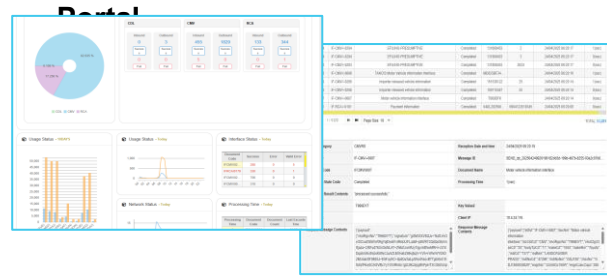
It safely controls communication with external system and provides **centrally managed multiplexed authentication and authorization architecture.**



1 Log monitoring through Kibana



2 Biz Log monitoring through Internal Portal



IDRAS

- Kibana**
 - Detect error rate increase
 - Certain API (Ex: TANCIS, NIDA) failure confirm
- Internal Portal**
 - Check which tasks get affected (Ex: TIN registration failure increase)
- Measure**
 - Resolving technical problems (WSO2, DB, Redis, etc)
 - Minimize effect on tasks

Digital Signature

Role	Explanation
Identity Authentication	To prove you are the one who signed
Integrity Guarantee	To prove data is not forged
Denial Prevention	To prevent signed person cannot deny
Audit Trace	To provide e-history of identity, time, change and etc

Point TO Point	GovESB
SHA256withRSA	SHA256withECDSA (ECC Algorithm)

Data Encryption

Role	Explanation
Confidentiality Guarantee	Protect data from unauthorized access
Integrity Protection	Verify whether data is forged and guarantee data originality
Authentication and Denial Prevention	Sender · receiver ID verification, prevention of data sending denial
Compliance Support	Meet legal and regulation requirements
Leakage Accident Prevention	Prevention of data exposure when data is leaked

Point TO Point	GovESB
SHA256withRSA (PKCS1 Padding)	SHA256withRSA (OAEP Padding)



CUPIA Tower, 460 Baekjegobun-ro, Songpa-gu, Seoul

Tel: +82-2-736-0395 | Fax: +82-2-736-2824 | E-mail: admin@unipass.or.kr

Copyright 2026 CUPIA All Right Reserved.