TERMS OF REFERENCE
AND TECHNICAL SPECIFICATIONS

I. General information

Assignment name	Framework Agreement for Senior Digital Trade System Expert
Beneficiary	Ministry of Trade and Regional Integration – MoTRI
Country	Ethiopia
Total estimated number of days	250 Working Days (Estimated)

II. Context and justification of the need

The ECOTRADE Project is a four-year initiative (2025–2029) funded by the European Union and implemented by Expertise France. It supports Ethiopia's implementation of the African Continental Free Trade Area (AfCFTA), with a focus on strengthening institutional capacity, promoting private-sector-led regional value chains, and supporting knowledge systems.

The rationale behind the Project and its focus on supporting the implementation of the AfCFTA in Ethiopia with a focus on the private-led value chain development (VCD) approach is based on the following elements:

- Ethiopia, with the fastest-growing youth population, stands to benefit the most if the country implements trade facilitation measures that cuts red tape and simplifies customs procedures for the private sector. Nevertheless, it requires expertise in various areas to guide policymakers and chain actors in the implementation of the AfCFTA.
- In countries such as Ethiopia, which are affected by fragility and conflict, the private sector plays a critical role in providing jobs, income, and stability. Hence, providing technical support to private sector players to build their internal capacity to start trading across borders, or increase their trade volumes, or/and geographical coverage is paramount and must take centre stage.
- The Private Sector will need to be capacitated to increase their readiness across various strategic sectors to take advantage of new opportunities unfolding under the new single market that the AfCFTA creates.
- The promotion of value chains is a complex challenge within the realm of private sector development and beyond; therefore, the potential of such interventions for local economic development and poverty reduction through trade in value added and RVCs is significant.

- Promoting value chain development is increasingly being recognized as a promising approach to address not only economic development, decent job creation, equitable and inclusive growth, but a wider range of social and environmental development issues, thus able to legitimise stronger efforts to support private sector development.
- Increasing openness to AfCFTA will lead to higher competitive pressure on regional but also on Ethiopian domestic markets. This regional integration, where production and trade relationships are nowadays much more coordinated, leaves less space for individual firms and small enterprises to design, produce, and market on their own. Thus, it is important to understand how to integrate in value chains in a way that allows for incorporation of a growing number of the workforce and increasing levels of productivity and incomes for SMEs and women-led businesses.

The Project currently has five (5) Strategic Objectives (SOs).

- Specific Objective 1: The private sector is actively engaged alongside the government to support the AfCFTA's successful implementation

- Specific Objective 2: Regional value chains are integrated, and trade/transport connectivity is facilitated with a focus on increasing women's participation in commercial and logistics processes

- Specific Objective 3: Relevant authorities in the implementation of the AfCFTA are supported

- Specific Objective 4: Academic institutions and research institutions are supported

- Specific Objective 5: Enhance Ethiopia's readiness to implement the AfCFTA Digital Trade Protocol

The Ministry of Trade and Regional Integration (MoTRI), in collaboration with Expertise France's ECOTRADE Project, is strengthening Ethiopia's e-commerce ecosystem, trade competitiveness, and digital trade infrastructure.

The initiative includes interventions related to trade facilitation, logistics modernization, export promotion, digital trade systems, market information systems, customs and border management improvement, private sector participation, and institutional strengthening. It also supports Ethiopia's efforts toward regional and international trade integration, including the implementation of the African Continental Free Trade Area (AfCFTA) Digital Trade Protocol, regional trade agreements, and digital economy reforms.

Effective implementation requires strong technical leadership in digital trade systems, government e-service digitization, cross-agency system integration, and disciplined delivery governance of technology investments. To ensure the technical success of these initiatives, MoTRI and ECOTRADE require a highly qualified Senior Digital Trade System Expert who

combines solution architecture expertise with proven experience leading the delivery of national-scale government systems.

III. Objectives and desired results

General Objective

The primary objective of this assignment is to provide technical leadership, architectural oversight, and deliver governance to ensure that the systems built to regulate the national digital trade ecosystem are robust, secure, interoperable, and sustainably owned by MoTRI.

Specific Objectives

- Lead the design and oversee the implementation of system integration protocols that enable effective regulatory oversight of e-commerce platforms, market operators, and digital service providers

- Lead the architecture and oversee the development and deployment of a centralized National E-Commerce Database that securely aggregates trade metrics, registry data, and sector performance indicators

- Ensure that MoTRI's request-based services are digitized end-to-end, and that implementation teams, vendors, and partner agencies deliver to agreed standards, schedules, and quality levels.

IV. Description of the assignment

Under the direct supervision of the e-commerce head and in close coordination with MoTRI's technical leadership, the Senior Expert shall perform the following duties:

1. Solution Architecture and Digital Service Design

- Lead the end-to-end solution architecture, technical blueprinting, and requirements definition of trade integration frameworks that facilitate, monitor, and register national e-commerce activities.

- Formulate technical standards for online request-based services, ensuring that all physical-to-digital service conversions within MoTRI bypass manual gaps and enable a fully paperless, remote customer application journey.

- Ensure that all designed platforms are scalable, modular, and resilient against service disruptions, and that they comply with national e-government and information security standards.

2. National E-Commerce Database Design and Oversight

- Lead the data architecture, data modelling, and logical/physical schema design of the centralized National E-Commerce Database, and oversee its back-end development and deployment by the implementation team or vendor.
- Define master data management (MDM) policies, data dictionary standards, and metadata registries to ensure consistent and reliable reporting.
- Define the data integration approach and oversee the development of automated ETL (Extract, Transform, Load) pipelines that securely aggregate sector performance indicators from distributed sources.

3. API Management and Cross-Agency Interoperability

- Define the API management strategy, interface standards (RESTful/GraphQL), and API gateway policies to connect MoTRI's regulatory systems with external platforms, and oversee their implementation.
- Lead technical coordination with the National Bank of Ethiopia (NBE), Ministry of Innovation and Technology (MInT), Ethiopian Customs Commission (ECC), Ministry of Revenues (MoR), and the Information Network Security Administration (INSA) to establish automated data-sharing arrangements.
- Establish standardization guidelines and an onboarding framework for private market operators, payment gateways, and logistics providers into the national reporting system.

4. Information Security, Data Protection, and Business Continuity

- Define security architecture and requirements covering access controls, encryption of data at rest and in transit, and compliance with national data protection and information security frameworks.
- Ensure Role-Based Access Control (RBAC) and robust audit trails are implemented to prevent unauthorized access and modification.
- Coordinate security audits, vulnerability assessments, and penetration testing with the relevant national authorities (e.g., INSA) prior to go-live.
- Develop disaster recovery, backup, and business continuity protocols for all centralized data platforms.

5. Technical Delivery Governance and Vendor Oversight

- Develop and maintain the technical implementation plan, milestone schedule, risk and issue register, and change-control process for all systems under the project.

- Supervise and coordinate implementation teams, system integrators, and vendors, and review their technical outputs for compliance with approved designs and standards.
- Define quality assurance, user acceptance testing (UAT), and go-live readiness criteria, and lead the technical acceptance of delivered components.
- Lead the technical evaluation of third-party systems, software components, and infrastructure procured under the project.

6. Technical KPI Monitoring and Performance Management

- Establish technical Key Performance Indicators (KPIs) covering system performance, API processing speed, integration uptime, data ingestion, and query efficiency.
- Oversee the development of operational dashboards for real-time tracking of database transactions, data ingestion status, and sector reporting.
- Ensure regular performance monitoring, query optimization, and capacity planning so that platforms can handle high concurrent transaction volumes.

7. Capacity Building, Knowledge Transfer, and Documentation

- Ensure production of comprehensive system documentation, including architecture diagrams, API registries, database schemas, and operations manuals.
- Lead knowledge-transfer sessions and hands-on workshops for MoTRI's IT staff and network administrators to build sustainable in-house ownership of the systems.
- Give technical support on digital trade technology strategy, sustainability, and the institutional arrangements required to operate the platforms after project closure.

V. Anticipated Deliverables (not exhaustive)

Deliverables	Description
1. Inception Report	Technical execution roadmap, refined methodology, resource needs, and a detailed implementation schedule.
2. Solution Architecture and Requirements	Technical blueprints, component topology, digitized service process maps, and requirements specifications for the E-Commerce Regulatory and Integration Framework.
3. National E-Commerce Sandbox Framework	Logical/physical schemas, data models, Master Data Management (MDM) standards, metadata registry, and infrastructure setup requirements.

4. Integration and API Specifications	API gateway policies, middleware integration guidelines, and interface specifications for connecting with payment, logistics, and identity networks.
5. Private Sector Onboarding Framework	Standardized technical guidelines, protocols, and data exchange frameworks for onboarding e-commerce marketplaces and payment gateways into the national database.
6. Security and Business Continuity Specifications	Data encryption (at rest and in transit), RBAC, audit logging, privacy compliance, security audit readiness, and backup/disaster recovery plans.
7. Delivery Governance Pack	Implementation plan, risk/issue register, vendor oversight procedures, and QA/UAT technical acceptance reports.
8. Monitoring and Reporting Tools	Operational real-time dashboards, API latency and uptime monitoring, and automated sector reporting templates.
9. Progress and Closeout Reporting	Monthly Technical Progress Reports summarizing design milestones, integration progress, cross-agency coordination, technical risks, vendor performance, and training and knowledge-transfer sessions conducted. Final Closeout Report detailing overall system deployment achievements, handovers, final documentation, lessons learned, and sustainability recommendations.

Note:

1. The above deliverables are indicative.
2. Specific deliverables and reporting schedules will periodically be issued by the ECOTRADE Project (based on the MoTRI's needs) and validated by both the MoTRI and the ECOTRADE Project
3. All deliverables must be submitted in English.

VI. Duration of Assignment

The assignment shall be for one (1) year, renewable based on satisfactory performance, Project needs, and availability of funds.

VII. Required Qualification and Experience

Education

- Master's degree in Computer Science, Information Systems, Software Engineering, Information Technology, or a closely related field.
- Professional certifications in enterprise architecture, project/program management, IT service management, or information security (e.g., TOGAF, PMP, PRINCE2, ITIL, CISSP/CISM) are an asset.

Experience

- Minimum of 10 years of progressive professional experience in software development, enterprise system architecture design, database development, or large-scale digital platform integration projects, including at least five (5) years in a senior technical leadership role.
- Demonstrated experience in designing or leading the delivery of centralized data warehouses, transactional registries, or sector-level reporting systems, preferably for government institutions.
- Proven track record of designing and deploying request-based online service systems that fully automate physical office workflows.
- Experience with e-commerce, payment, logistics, or digital trade platforms is an advantage.

Technical Competencies

- Strong knowledge of Relational Database Management Systems (RDBMS) and SQL environments (e.g., PostgreSQL, MS SQL, MongoDB), data modelling, and data integration/ETL.
- Strong understanding of API design, microservices architecture, secure API gateways, middleware integration, and enterprise service buses (ESB).
- Strong knowledge of information security practices, including access control (RBAC), encryption standards, security audit/VAPT processes, and Ethiopia's national data protection and information security requirements.
- Working knowledge of database administration, query optimization, and technical KPI monitoring tools.
- Strong command of the software development life cycle (SDLC), Agile and hybrid delivery methods, quality assurance, and technical acceptance processes.

Other Requirements

- Full professional fluency in English and Amharic (written and spoken).

- Excellent technical writing, architectural diagramming, and documentation skills.
- Strong collaborative and stakeholder-management skills, with experience interfacing with technical teams across government institutions (MInT, NBE, ECC, MoR, INSA, etc.) and private technology platforms.

VIII. Reporting Arrangement

The Senior Expert will report to:

- E-commerce Focal Point/ – MoTRI /ECOTRADE Focal Point

The Senior Expert will work closely with:

- MoTRI IT department and technical units
- Technical departments of partner institutions (MInT, NBE, ECC, MoR, INSA)
- Technical leads of private sector marketplaces, payment gateways, and contracted vendors

Reporting Requirements

- Monthly technical progress reports
- Quarterly implementation reports
- Training and workshop reports
- Annual performance reports

IX. Management Arrangements

The Senior Expert will work at MoTRI in Addis Ababa. The Senior Expert shall ensure that all system designs, integration code, and database setups comply with the Project Operational Manual (POM) and national information security policies.