ASSISTANCE IN THE IMPLEMENTATION OF A PILOT ELECTRONIC DATA INTERCHANGE SYSTEM IN TURKMENISTAN

Annual Project Progress Report
2024

Implementing Agency:	United Nations Development Programme (UNDP)
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Gender Marker:	GEN 1
Digitalization Marker:	
Project Title:	**Assistance in the implementation of a pilot electronic data interchange system in Turkmenistan**
Project Duration:	27 February 2023 – 31 December 2025
Country / Region:	Turkmenistan
Funding Partner/s:	Agency „Turkmenaragatnashyk "of the Agency of Transport and Communications under the Cabinet of Ministers of Turkmenistan
Responsible Parties:	
Reporting Period:	01 January 2024 – 31 December 2024
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Table of Contents

Acronyms

UNDP	United Nations Development Programme
EDI	Electronic Data Interchange
National Partner	Agency "Turkmenaragatnashyk" of the Agency of Transport and Communications under the Cabinet of Ministers of Turkmenistan
RFP	Request for Proposal
AWP	Annual Work Plan
DIM	Direct Implementation Modality
M&E	Monitoring and Evaluation
ToC	Theory of Change
CIS	Commonwealth of Independent States
HSM	Hardware Security Module

I. Executive Summary

The "Assistance in the implementation of a pilot electronic data interchange system in Turkmenistan" is a collaborative project between the UNDP and the Agency "Turkmenaragatnashyk" of the Agency of Transport and Communications under the Cabinet of Ministers of Turkmenistan (National Partner). Launched on February 27, 2023, the project is scheduled to be completed by December 31, 2025. The primary objective is to support Turkmenistan's digital transformation by implementing a pilot Electronic Data Interchange (EDI) system based on the X-Road platform. The project will include the installation and configuration of the platform, assess the readiness of the legal and ICT infrastructure, improve data interoperability, and build the institutional capacity of the Beneficiary's technical team. Initially, up to ten government agencies in the communications and transportation sector will participate in the pilot, which will serve as a foundation for broader application across other sectors in the future.

Progress against Outputs and Outcomes

Significant progress has been made in the project's first year, with major activities aligned to the defined outputs:

- The contract with Nortal AS, an Estonian company, was signed on April 22, 2024. Nortal will deliver the EDI solution based on their extensive experience with the X-Road platform. Nortal's technical expertise ensures they meet UNDP's qualification requirements, positioning them well to execute the project effectively.
- The project consists of seven key phases. The Inception Phase was successfully completed by September 2024, ensuring alignment between all stakeholders on the project scope and implementation plan.
- The Deployment phase, focused on the installation and configuration of central EDI components, has been successfully completed ahead of schedule. The installation was done in close collaboration with the Turkmenaragatnashyk technical team, and the deployment phase is now scheduled for completion by November 2024 (ahead of the original December 2024 deadline). Two HSMs (Hardware Security Modules) were delivered and installed as per the project timeline, marking a significant achievement in this phase.
- The Customization Phase is ongoing to address specific operational needs. This includes potential modifications to the system's branding, language, and user interface.
- The development of a legal framework for secure data exchange is a critical part of the project, and it is expected to be finalized by the end of 2024.
- Integration will begin in January 2025, wherein Nortal will integrate 10 selected data services and 10 ministries and agencies. 10 additional services will be integrated by the Turkmenaragatnashyk team by the support of Nortal's experts, ensuring seamless operation across all connected agencies.
- A major milestone was reached at the "Turkmentel-2024" held from November 14-16, 2024, where a demo version of the MISP portal was showcased. This demonstration highlighted the progress made in the project, particularly the enhanced data exchange and interoperability benefits of the X-Road platform. The expo served as an important platform to raise awareness of the project's achievements and the role of digital transformation in improving public services in Turkmenistan.

Key Challenges and Risks

During the implementation phase, several key challenges and risks have emerged:

- Limited Participation in the Tender Process: The RFP was launched in November 2023, but it faced challenges in attracting bids due to concerns over Turkmenistan's IT infrastructure and limited local expertise. Only two bids were submitted, one of which did not meet the technical requirements. This

limitation was largely due to European companies' reluctance to engage in the CIS region, given the perceived complexities of the region's IT landscape.

- **Risk of Re-announcing the Tender:** A re-announcement of the tender is unlikely to yield better results. Most qualified companies have already expressed reservations about the project due to its regional challenges. Therefore, it is strongly recommended to move forward with Nortal AS as the selected bidder, negotiating to optimize the scope of work and reduce costs while maintaining the integrity of the competitive process.
- **Technical and Institutional Capacity:** The lack of local expertise in the X-Road platform has been identified as a significant barrier. Therefore, comprehensive capacity building for the Beneficiary's team is essential to ensure sustainability and successful handover at the project's conclusion.

Utilization Update

The project budget as outlined in the Annual Work Plan (AWP) is well-defined, and as of the reporting period, the project has achieved a utilization rate of approximately 42,15%. This reflects progress on the initial phases, including procurement, the completion of the inception phase, and early activities related to the deployment and customization of the platform.

Total project budget	2,488,861.00 USD
Total approved in 2024	1,850,915.86 USD
Cumulative Utilization (as of 2024)	780,222.45 USD (42.15%)

Key Recommendations

1. *Finalize and expedite the Legal Framework:* The legal framework for data exchange is a critical component for the system's long-term success. It is essential to expedite its finalization by year-end to ensure the system operates within a clear and secure regulatory environment.
2. *Enhance Capacity Building for Local Teams:* To mitigate the risk of local capacity gaps, continue with extensive training programs for the Beneficiary's technical staff. This should include hands-on workshops, mentorship from Nortal's team, and a structured knowledge transfer plan to ensure the sustainability of the EDI system post-project.
3. *Monitor Project Timeline and Risks*: Given the complexity of the project and its reliance on external expertise, it is recommended to closely monitor the project's progress, particularly the integration and customization phases, to avoid delays. Proactive risk management and regular project reviews will help ensure the project remains on track.

By following these recommendations, the project will be well-positioned to achieve its outcomes and contribute significantly to Turkmenistan's digital transformation goals.

II.   Introduction / Background

The "Assistance in the Implementation of a Pilot Electronic Data Interchange (EDI) System in Turkmenistan" is a collaborative initiative between the UNDP and the Agency "Turkmenaragatnashyk" of the Agency of Transport and Communications of Turkmenistan, launched in February 2023. This project aims to support Turkmenistan's digital transformation by implementing a pilot EDI system based on the X-Road platform, a key enabler of secure and efficient data exchange among government institutions. The project is designed to improve the transparency, efficiency, and interoperability of public services by modernizing how government agencies exchange information and processes. It will initially involve ten government agencies from the communications and transportation sectors.

The project aligns with Turkmenistan's broader national goals to transition to a digital economy, as outlined in the "Concept for the Development of the Digital Economy of Turkmenistan" (2018) and the "State Program for the Development of the Digital Economy of Turkmenistan (2021-2025)". By introducing the EDI system, the project contributes to achieving SDG 9 (Industry, Innovation, and Infrastructure), which advocates for building resilient infrastructure and fostering innovation, and SDG 16 (Peace, Justice, and Strong Institutions), focusing on the promotion of transparent, accountable institutions and public service delivery. The project also supports SDG 17 (Partnerships for the Goals) through collaboration with international and national partners to improve governance and e-services.
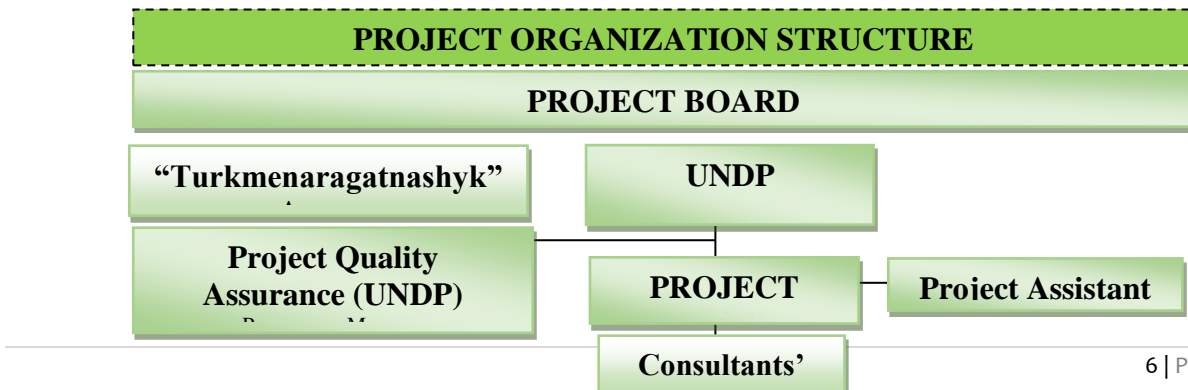
Contributing Outcome (UNSDCF, CPD):

Outcome 1: By 2025, people have access to more effective, innovative, and transparent public administration based upon the rule of law, human and labour rights, gender equality and quality data.

 Output 1.2: State institutions have improved public administration system with electronic government systems and digital public services for the population with special focus on services for vulnerable groups.

The project is implemented within the context of ongoing regional development programs focused on digital governance, public sector modernization, and regional cooperation in Central Asia. It complements other UNDP regional initiatives aimed at enhancing e-government capacities and improving service delivery.

The project follows a phased approach with seven key stages, including inception, deployment, customization, integration, and the development of a legal framework for data exchange. The main responsible parties are UNDP, Turkmenaragatnashyk, and Nortal AS, the Estonian company contracted for the implementation of the X-Road platform. The Turkmenaragatnashyk technical team is heavily involved in the installation, configuration, and customization of the system.

The project is implemented in accordance with the UNDP Direct Implementation Modality (DIM) by UNDP rules and procedures. The national partner is "Turkmenaragatnashyk" Agency of the Agency of Transport and Communications under the Cabinet of Ministers of Turkmenistan.

Monitoring and Evaluation (M&E) tools include:

Track progress	Progress data against the results indicators in the Results and Resources Framework will be collected and analyzed to assess project progress against agreed objectives
Control and manage risks	Identify specific risks that may threaten the achievement of planned results. Identify and monitor risk management activities using the risk log. This includes measures and monitoring plans that might be required in accordance with the UNDP social and environmental standards. The audit will be conducted in accordance with the UNDP Audit Policy for Financial Risk Management.
Learn	Knowledge, best practices and lessons learned will be collected regularly, as well as actively drawn from other projects and other partners and integrated into the project.
Project quality assurance	Project quality will be assessed against the UNDP quality standards to identify project strengths and weaknesses and to make management decisions to improve the project.
Review and make adjustments	Internal analysis of data and factual information following the results of all monitoring activities for decision making.
Project report	A progress report will be presented to the PSC and key stakeholders. The report will consist of project progress data showing results achieved against predefined annual objectives at the task level, an annual summary of the project quality rating, an updated risk log with mitigation measures, and any evaluation or review reports prepared during the reporting period.
Project Review (Project Steering Committee (PSC)	The Project Management Mechanism (i.e. the PSC) will conduct regular reviews of the project to evaluate its performance and review the multi-year work plan to ensure that the budget is realistic over the life of the project. In the final year of project implementation, the PSC should conduct a final review of the project to capture lessons learned and discuss opportunities for expanding and generalizing the project results and lessons learned with the appropriate audience.

The project's success hinges on effective coordination between the UNDP Country Office, the Agency "Turkmenaragatnashyk", and Nortal AS, with continuous monitoring of activities to ensure the sustainability and scalability of the EDI system after the pilot phase concludes in 2025.

III.   Progress Review: Key Activities and Results for 2024

Section 1: Analysis of Theory of Change

The Theory of Change (ToC) for the "Assistance in the Implementation of a Pilot Electronic Data Interchange (EDI) System in Turkmenistan" project assumes that implementing the X-Road-based EDI system will improve data interoperability, efficiency, and transparency in Turkmenistan's public services. The project's success hinges on five key assumptions: government commitment to digital transformation, a supportive legal environment, adequate technical infrastructure, institutional buy-in, and effective partnerships with local and international stakeholders.

Analysis of Assumptions

- *Government Commitment:* The government's commitment to digital transformation remains strong, but more focus is needed on capacity building and technical readiness across government agencies, particularly as challenges with technical expertise emerge.
- *Legal and Policy Framework:* Progress on the legal framework is on track, but there are gaps in data governance and cross-border data policies. These gaps need to be addressed to ensure the long-term sustainability of the system.
- *Technical Infrastructure:* The assumption of adequate technical infrastructure remains mostly valid. However, additional efforts are required to build local technical capacity for long-term system maintenance and troubleshooting.
- *Institutional Buy-in:* The initial engagement from key sectors, especially communications and transportation, has been positive. However, wider adoption across other sectors will require additional effort to demonstrate the broader benefits of the EDI system.
- *Collaborative Partnerships:* The partnership with Nortal AS has been effective, though procurement challenges revealed the need for more diverse technical partnerships. Future partnerships should include local firms and regional vendors to mitigate risks and ensure sustainability.

The Theory of Change remains largely relevant, but adjustments are needed to address gaps in capacity building, legal frameworks, and stakeholder engagement. Ensuring flexibility and adaptation will be key as the project progresses to scale and aims for broader impact across Turkmenistan's public sector.

Section 2: Overall progress against outcomes

Key Outcome: Consultation and support for the development and deployment of the pilot EDI system and organization of the EDI system operator.

The project contributes to the development and deployment of the Electronic Data Interchange (EDI) system, a critical component of Turkmenistan's digitalization and public sector modernization efforts. This outcome is focused on providing technical advisory and expert support to ensure successful system deployment and integration with government agencies.

Analysis Against Outcome:

1. **Result 1: Consultation and support for the development and deployment of the pilot EDI system and organization of the EDI system operator.**
   - *1.1.2 Project Support:* The engagement of the Chief Technical Adviser (CTA), Andres Kutt, has been a critical factor in ensuring high-quality technical oversight and guidance throughout the development and deployment phases. The CTA provides vital technical advisory services, including support for quality assurance and the development of key technical components for the EDI

system. His involvement has contributed significantly to ensuring that the system meets UNDP's qualification standards and aligns with national digitalization goals.

- *Indicator:* Successful delivery of advisory support and quality assurance activities.
- *Monitoring:* Regular assessments of the CTA's input and the alignment of technical support with project goals.

o *1.1.3 Study International Experience:* A study visit to Kyrgyzstan was organized from February 26 to March 1, 2024, where the Turkmenaragatnashyk delegation had the opportunity to learn about Kyrgyzstan's experience in digital governance, including the development of interagency electronic interaction systems and digital public services. This exchange provided valuable insights into best practices and lessons learned from Kyrgyzstan's ongoing digitalization efforts. Meetings with key stakeholders, such as the Ministry of Digital Development of Kyrgyzstan and the State Agency for Personal Data Protection, allowed the delegation to deepen their understanding of the legal and operational frameworks necessary for implementing a nationwide EDI system.

- *Indicator:* Completion of the study visit and documentation of key takeaways for Turkmenistan's EDI development.
- *Monitoring:* Feedback from the Turkmen delegation on the lessons learned and the applicability of the experience to the Turkmen context.

o *1.2 Implementation of the X-Road pilot system, which provides technical capabilities for the operation of EDI system (the scope of the pilot system is determined by the terms of reference based on the results of activity 1.1.1):* The contract with Nortal AS, an Estonian company with extensive experience in X-Road platform deployment, was signed on April 22, 2024. Nortal is tasked with delivering the EDI solution based on X-Road technology, which provides the technical capabilities for secure data exchange between government entities.

- *Indicator:* Contract signed with Nortal AS and project kick-off activities completed.
- *Monitoring:* Timely completion of the contractual agreement and the alignment of project activities with the initial scope and timeline.

o *Key Phases:*

- *Inception Phase:* Completed by September 2024, ensuring alignment between stakeholders on the project scope, objectives, and implementation plan. This phase laid the groundwork for the successful execution of the project.
- *Deployment Phase:* Successfully completed ahead of schedule by September 2024, with the installation and configuration of central EDI components. Collaboration between Nortal and the Turkmenaragatnashyk technical team was instrumental in meeting the project timeline.
- *Indicator:* Deployment completed ahead of schedule, with key milestones achieved, such as the installation of two Hardware Security Modules (HSMs).
- *Customization Phase:* Ongoing to address specific branding, language, and user interface modifications to ensure the system aligns with local needs and expectations. The iterative customization process involves direct input from local stakeholders to ensure operational relevance.
- *Indicator:* Progress in customization activities and alignment with local requirements.
- *Monitoring:* Regular review of customization progress and adjustments to the system based on stakeholder feedback.
- *Legal Framework Development:* The development of a legal framework for secure data exchange is a crucial component of the project. This framework is expected to be finalized by the end of 2024, ensuring compliance with national and international data protection standards.
- *Indicator:* Legal framework will develop and finalize by the end of 2024.
- *Monitoring:* Tracking the progress of legal framework discussions, approvals, and alignment with project timelines.

Section 3: Monitoring and Evaluation[1] of activities.

According to UNDP rules and procedures, project implementation is monitored in accordance with the following monitoring and evaluation plans:

Monitoring activities	Purpose	Frequency	Expected action	Partners (when performed jointly)
Track progress	Progress data against the results indicators in the Results and Resources Framework will be collected and analyzed to assess project progress against agreed objectives	At least quarterly	If the progress of implementation is slower than planned, the project management will address this issue	National Partner UNDP
Control and manage risks	Identify specific risks that may threaten the achievement of planned results. Identify and monitor risk management activities using the risk log. This includes measures and monitoring plans that might be required in accordance with the UNDP social and environmental standards. The audit will be conducted in accordance with the UNDP Audit Policy for Financial Risk Management.	At least twice a year	Risks are identified by the project management and measures are taken to manage the risk. A risk log is maintained at all times to track identified risks and actions taken.	National Partner UNDP
Learn	Knowledge, best practices and lessons learned will be collected regularly, as well as actively drawn from other projects and other partners and integrated into the project.	At least annually	Relevant lessons are learned by the project team and used to make management decisions.	National Partner UNDP
Project quality assurance	Project quality will be assessed against the UNDP quality standards to identify project strengths and weaknesses and to make management decisions to improve the project.	Once every two years	The strengths and weaknesses of the project will be analyzed by the project management and used to justify decisions aimed at improving the effectiveness of the project.	National Partner UNDP
Review and make adjustments	Internal analysis of data and factual information following the results of all monitoring activities for decision making.	At least annually	Performance, risks, lessons learned and quality data will be discussed by the project board and used to make	National Partner UNDP

			adjustments to the project.	
Project report	A progress report will be presented to the PSC and key stakeholders. The report will consist of project progress data showing results achieved against predefined annual objectives at the task level, an annual summary of the project quality rating, an updated risk log with mitigation measures, and any evaluation or review reports prepared during the reporting period.	Annually and by the end of the project (final report)		National Partner UNDP
Project Review (Project Steering Committee (PSC)	The Project Management Mechanism (i.e. the PSC) will conduct regular reviews of the project to evaluate its performance and review the multi-year work plan to ensure that the budget is realistic over the life of the project. In the final year of project implementation, the PSC should conduct a final review of the project to capture lessons learned and discuss opportunities for expanding and generalizing the project results and lessons learned with the appropriate audience.	At least annually	PSC should discuss any quality issues or slower-than-expected progress, and management actions should be agreed to address the issues identified.	National Partner UNDP

Section 4: Progress against each output

Project Output 1: Assistance in the implementation of a pilot electronic data interchange system in Turkmenistan		
Output indicators	**Targets**	**Progress against targets**
Indicator 1.1.1 - International experience in building systems of interdepartmental electronic interaction and systems of interdepartmental document management was studied	Baseline: 0 AWP target: 8	Reporting period: 8
Indicator 1.2. A pilot EDI (Electronic Data Interchange) system based on X-Road has been deployed, adapted and implemented,	Baseline: 0 AWP target: 1	Reporting period: 1

including such necessary system components as a central server, trust server and other necessary subsystems		
Indicator 1.3 - A pilot system of EDI based on X-Road is deployed and implemented, including connection to electronic document management systems, in the amount of 10 systems, as they are ready	Baseline: 0 AWP target: 5	Reporting period: 0 Notes: As a result of consultations and workshops with the international experts of Nortal, it was agreed that one change in the scope of work request would be initiated and processed by the project team. Namely, during the project team meeting with the Chairman of Beneficiary it was decided that integration of 10 document management systems of the project beneficiaries with X-road will be replaced by additional five data services deployed on X-Road platform. The reason for this change in scope is to streamline processes and increase the efficiency of the X-Road system. This change will allow more flexibility in managing data traffic flows and reduce the physical load on the system. The agreed change is being processed by the project team.
Indicator 1.5 - An analysis of the architecture of the EDI system is carried out with a focus on the implementation of a pilot project, with a description of all the necessary business processes	Baseline: 0 AWP target:1	Reporting period: 1
Indicator 1.4 - The organizational structure of the EDI system Operator is determined, a list was compiled and trainings were conducted on the necessary competencies for employees	Baseline: 0 AWP target:1	Reporting period: 1

Key Activities:

1. Inception Phase Completion (April - September 2024)

The Inception Phase of the project was successfully completed by September 2024. This phase included a detailed analysis of the technical infrastructure required for the EDI system implementation. Key activities involved:

- Mission 1 and 2 conducted by Nortal experts from April to August 2024 to assess the technical requirements, infrastructure, and scope of the project.

- The Inception Report was finalized, which outlined the necessary business processes and provided detailed descriptions of the system architecture, identifying the key requirements for the successful deployment of the EDI solution.

- These activities directly contributed to aligning all stakeholders on the project's scope, timelines, and the overall implementation strategy, ensuring a solid foundation for future project phases. The successful completion of the Inception Phase is linked to achieving the output of establishing the required technical specifications and project scope.

2. Deployment Phase (September - November 2024)

- The Deployment Phase was completed ahead of schedule by November 2024. This included the installation and configuration of key EDI components, such as Hardware Security Modules (HSMs).

- Two HSMs were delivered and installed per the project timeline, ensuring secure data transmission as part of the EDI infrastructure.

- This phase achieved the output related to system infrastructure installation, which is a critical precondition for further customization and integration. The timely completion of this phase allowed for the project to stay on track to meet its overall target output for the year.

3. Customization Phase (Ongoing)

- The Customization Phase is currently ongoing, addressing specific operational needs, such as modifications to the system's branding, language, and user interface. This phase is essential to ensure that the EDI system is tailored to the operational and cultural context of Turkmenistan.

- Although this phase is not yet completed, its progress ensures that the system remains adaptable and user-friendly for future government users, contributing to the project's goal of improving system usability and ensuring local ownership.

4. *Study Visit to Kyrgyzstan (February 26 - March 1, 2024)*

Visit to the SE "Tunduk" to learn about the EDI implementation

Meeting with the State Agency for the Protection of Personal Data under the Cabinet of Ministers of the Kyrgyz Republic

Evidence:

Специалисты агентства «Туркменсвязь» изучают опыт цифровизации Кыргызстана | Технологии (turkmenportal.com)

Туркменистан и Кыргызстан объединят усилия в сфере цифрового здравоохранения | Технологии (turkmenportal.com)

Делегация «Туркменсвязь» встретилась с руководством Минцифры Кыргызстана (orient.tm)

Кыргызстан и Туркменистан договорились о партнерском продвижении цифрового здравоохранения (orient.tm)

Turkmenistan and Kyrgyzstan Collaborate on Digital Public Services… (bnnbreaking.com)

UNDP organized a study visit of a delegation from Turkmenistan to the Kyrgyz Republic to learn from experience in the digitalization of public services | United Nations Development Programme

C 26 февраля 2024 г. стартовал ознакомительный… - UNDP Turkmenistan | Facebook

Video | Facebook

C 26 февраля по 1 марта 2024 года ПРООН… - UNDP Turkmenistan | Facebook

UNDP Turkmenistan (@undp_turkmenistan) · Instagram photos and videos

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- A key activity that enhanced the knowledge-sharing aspect of the project was a study visit organized to Kyrgyzstan in early 2024. The delegation from Turkmenaragatnashyk visited several key institutions in Kyrgyzstan, including the Ministry of Digital Development, the State Agency for Personal Data Protection, and others. The purpose of this visit was to gain insights into Kyrgyzstan's digital governance policies, including the development of interagency data exchange systems and cybersecurity measures.

- This activity contributed to output achievement by enabling Turkmen officials to learn from international best practices in digital governance and data protection, which will inform the legal and technical implementation of the EDI system in Turkmenistan.

5. *Demo version of the MISP portal at the "Turkmentel-2024":* A major milestone was reached at the "Turkmentel-2024" held from November 14-16, 2024, where a demo version of the MISP portal was showcased. This demonstration highlighted the progress made in the project, particularly the enhanced data exchange and interoperability benefits of the X-Road platform. The expo served as an important platform to raise awareness of the project's achievements and the role of digital transformation in improving public services in Turkmenistan.

Presentation of the Demo version of the MISP portal at the "Turkmentel-2024"

UNDP Project team presents the first result of the EDI project at the "Turkmentel-2024"

Evidence:

https://www.instagram.com/p/DCWYGLfCrGR/?igsh=MWhranQ4MmVtdzhzcA==

Key Results:

1. *Output Indicator 1.1.1 - International experience in building systems of interdepartmental electronic interaction and systems of interdepartmental document management was studied:*

Achievement in Reporting Period: Significant progress was made in studying international best practices. A key milestone was the study visit to Kyrgyzstan, where the delegation from Turkmenistan learned about Kyrgyzstan's

experience in establishing digital government systems and interagency data exchange. This provided critical lessons on technical and legal frameworks for the EDI system.

Cumulative Result: The project has successfully completed the first stage of international benchmarking, achieving 100% of this indicator. The knowledge transfer from Kyrgyzstan has informed the ongoing development of Turkmenistan's EDI system, ensuring alignment with global best practices.

2. *Indicator 1.3 - A pilot system of EDI based on X-Road is deployed and implemented, including connection to electronic document management systems, in the amount of 10 systems, as they are ready*

Achievement in Reporting Period: The Deployment Phase of the EDI pilot system based on X-Road was completed ahead of schedule by November 2024, including the installation of key EDI components, such as two Hardware Security Modules (HSMs), ensuring secure data transmission. This milestone provided the necessary infrastructure for future customization and integration, keeping the project on track. The ongoing Customization Phase is focusing on adapting the system to Turkmenistan's operational needs, such as branding, language, and user interface modifications. Although this phase is not complete, it is critical for making the system user-friendly and culturally relevant. Initially planned to integrate 10 electronic document management systems (DMS), the scope was revised to deploy five additional data services on the X-Road platform to enhance performance and scalability, with integration expected to be completed by May 2025.

Cumulative Result: As of the reporting date, the integration of the five data services is still in the planning and initiation phase. The revised integration is expected to be completed by May 2025. The decision to integrate data services, instead of DMS, is aimed at improving the system's efficiency and scalability.

3. *Indicator 1.5 - An analysis of the architecture of the EDI system is carried out with a focus on the implementation of a pilot project, with a description of all the necessary business processes*

Achievement in Reporting Period: As part of the Inception Phase, an analysis of the architecture for the EDI system was completed, with a detailed focus on the necessary business processes for the pilot project.

The Inception Report has been finalized, describing all the necessary components and technical specifications for successful EDI deployment.

Cumulative Result: This analysis is 100% complete, providing a solid foundation for the system's implementation in future phases.

4. *Indicator 1.4 - The organizational structure of the EDI system Operator is determined, a list was compiled and trainings were conducted on the necessary competencies for employees.*

Achievement in Reporting Period: The organizational structure for the EDI system operator has been defined. Initial trainings were conducted for Turkmenaragatnashyk Agency specialists.

Cumulative Result: The progress towards determining the organizational structure and the competencies needed is on track, with more detailed planning to continue in the next year.

Section 5: Cross-Cutting Integration

The project "Assistance in the Implementation of a Pilot Electronic Data Interchange (EDI) System in Turkmenistan" has been designed to integrate key cross-cutting issues that are essential to ensuring sustainable and inclusive development. Below are the ways in which the project addresses the relevant cross-cutting integration areas:

Human and Social Context:

- **Leave No One Behind:**

The project is aligned with the principle of Leave No One Behind, as it focuses on improving access to public services through digital transformation. By implementing an EDI system, the project enables government agencies to share data efficiently, which enhances the availability of services to citizens, including marginalized or rural communities, by streamlining processes and reducing bottlenecks. This will ultimately lead to more inclusive access to essential services such as transportation, telecommunications, and public health.

- **Human Rights:**

The EDI system respects privacy and confidentiality by ensuring that data exchanges are secure and comply with established data protection standards. This is especially important in the context of public services, where personal information must be safeguarded. The project adheres to the principles of transparency and accountability in the deployment of digital systems, ensuring that citizens' rights to data privacy are respected.

- **Gender Equality and Women's Empowerment:**

The project contributes to gender equality by providing training and capacity-building opportunities that are accessible to both women and men in the participating agencies. Special attention is paid to ensure that the benefits of digital transformation are equally accessible to all genders. By promoting the participation of women in the technical training programs and roles, the project aims to encourage greater representation of women in the ICT sector and public service digitalization.

- **Disability Inclusion:**

While the project's focus is primarily on digital infrastructure and data interoperability, there is a strong emphasis on ensuring that digital systems are accessible to people with disabilities. The user interface and data systems being developed will adhere to accessibility standards, ensuring that individuals with disabilities can access and interact with public services that are made available via the EDI system.

- **Cultural Heritage:**

The project acknowledges the importance of preserving cultural heritage in the context of digitalization. Although not a central focus, the interoperability of data provided by the EDI system could support the digitization and preservation of cultural records and heritage data within government institutions, ensuring that these resources are available for future generations.

Interactions between Social and Environmental Factors:

- **Sustainability and Resilience**

The project "Assistance in the Implementation of a Pilot Electronic Data Interchange (EDI) System in Turkmenistan" indirectly contributes to sustainability and resilience by enhancing the efficiency and effectiveness of government services through the adoption of digital technologies. By improving data interoperability between government agencies, the project ensures better coordination, making it easier to respond to emerging challenges in key sectors such as transportation, communications, and public safety. This increased coordination and efficiency enhance the resilience of the public sector in adapting to external shocks and in addressing long-term development challenges.

The system's ability to integrate data from multiple sectors, including those related to natural resources, climate, and disaster preparedness, makes it a key tool in ensuring that government decisions are based on real-time, reliable data. This empowers the government to anticipate risks, plan for long-term sustainable development, and improve the delivery of essential public services.

Natural Environment:

- **Biodiversity Conservation**

Although the project's primary focus is on the digitalization of public services, it can support biodiversity conservation efforts indirectly. By enhancing data interoperability and enabling seamless communication across government departments (such as the Ministry of Environment), the project can help integrate environmental data into national decision-making. This could support efforts to monitor and protect biodiversity more effectively by improving access to real-time information on conservation areas, endangered species, and other critical environmental data.

- **Sustainable Natural Resource Management**

The EDI system enhances interoperability between government agencies involved in natural resource management, such as those dealing with forests, water resources, and agriculture. By enabling better data sharing on resource use, the project fosters more sustainable management practices. For example, the project can facilitate data exchange between departments that monitor water usage, land degradation, and soil quality, enabling data-driven decisions about resource conservation.

The digital infrastructure can support initiatives like monitoring deforestation, tracking water consumption, and managing agriculture-related emissions, helping Turkmenistan to better balance development needs with sustainability goals in natural resource use.

- **Climate Change**

The EDI system's ability to centralize data across various government sectors plays a critical role in climate change adaptation and mitigation efforts. The integration of climate data, including weather patterns, greenhouse gas emissions, and energy consumption, can help authorities track progress towards national climate change targets. This system could be used to distribute climate-related data among stakeholders, improving decision-making processes and the coordination of climate actions at both local and national levels.

By promoting real-time data exchanges, the system also supports more adaptive responses to climate-related impacts. For example, timely access to drought conditions, flood risks, or temperature shifts can enhance government preparedness, allowing for faster interventions to protect vulnerable communities and infrastructure.

- **Disaster Risks**

The EDI system's most immediate contribution to disaster risk management is its ability to improve data flow and communication during times of crisis. By enabling faster and more efficient sharing of information between relevant government bodies—such as emergency services, public health departments, and weather agencies—the system enhances disaster preparedness and response. This can be crucial in dealing with natural disasters, such as earthquakes, floods, or storms.

The project also contributes to disaster risk reduction by making essential data (e.g., on population density, infrastructure vulnerability, and resource availability) readily accessible, allowing for more effective risk assessments and disaster planning. In the event of a disaster, the improved coordination between agencies ensures that response efforts are timely and well-organized, helping to mitigate the effects of the disaster.

IV.   Partnerships and Sustainability

Partnerships

The "Assistance in the Implementation of a Pilot Electronic Data Interchange (EDI) System in Turkmenistan" project is built on strategic national and international partnerships to ensure successful implementation and long-term sustainability.

- *National Partnerships:* The key national partner, Turkmenaragatnashyk, is responsible for ensuring the project aligns with Turkmenistan's national priorities. The Turkmenaragatnashyk Technical Team plays a critical role in system installation and configuration, ensuring local expertise is integrated. Up to 10 government agencies from the communications and transportation sectors are actively involved, ensuring that the system meets the specific needs of Turkmenistan's public sector.

- *International Partnerships:* Nortal AS, an Estonian IT company, was contracted to implement the EDI solution, leveraging its expertise with the X-Road platform. UNDP provides overall coordination, ensuring alignment with UNDP's regional priorities and the Sustainable Development Goals (SDGs).

- *New Partnerships*: At Turkmentel-2024 in November 2024, the project garnered attention from private sector players and academic institutions, enhancing visibility and creating new avenues for future collaboration.

Impact of Partnerships on Results

Partnerships have been instrumental in ensuring the project's success:

- Government agencies have ensured the project is directly aligned with national objectives, providing the foundation for scalability to other sectors.

- The Turkmenaragatnashyk Technical Team has received extensive training, ensuring local capacity building for long-term sustainability.

Stakeholder Engagement

Stakeholders have been engaged in every phase, from planning to implementation. This has ensured the project is relevant to local needs and that the system's long-term operation is supported by local capacity. Training programs

for local teams have been a key part of the engagement process, building the skills required to maintain the system post-project.

Sustainability

To ensure sustainability, several arrangements have been made:

- *Capacity Building:* Ongoing training ensures that local teams are capable of managing and maintaining the EDI system independently in the future.

- *Integration with National Strategy:* The project is aligned with Turkmenistan's broader digital transformation strategy, ensuring that the system's outcomes are integrated into the national IT infrastructure and future e-government initiatives.

- *Scalability:* The EDI system is designed for future expansion to other government sectors, ensuring the continued growth and adaptation of the system.

Overall, stakeholder ownership, local expertise, and integration with national strategies will ensure the sustainability and scalability of the project beyond its initial phase.

V.   Update on risks and mitigation measures

During the reporting period, the Risk Analysis Matrix was reviewed and updated to reflect changes in the project's risk landscape. Several key risks were reassessed, and new mitigation measures were put in place to address emerging issues. Below is an overview of the changes to the risk landscape, focusing on key risks, their current status, and the mitigation actions taken:

1. *Insufficient Commitment of Partners and Stakeholders in Project Implementation*
   o Risk Type and Category: Organizational, Moderate Level
   o Status Update: This risk remained moderate throughout the reporting period. The project team has worked closely with national partners to ensure consistent engagement and active support. Regular communication and updates were shared to align all stakeholders and secure their commitment.
   o Mitigation Measures: The project team ensured active participation of key national stakeholders in meetings and decision-making processes, which helped foster ownership and engagement. The strong support from the national partner in this period indicates that this risk has been mitigated to a large extent, and its status remains moderate.
2. *Frequent Personnel Changes in National Partner Organizations*
   o Risk Type and Category: Political, Likely
   o Status Update: While there were no major personnel changes during the reporting period, the likelihood of staff turnover remains high. Staff changes in the national partner organizations can affect the continuity of the project and create potential delays.
   o Mitigation Measures: The project team has adopted a flexible approach and has been proactive in engaging with new personnel. Through regular communication and advocacy, the project has managed to minimize the disruptions that could be caused by staff turnover. The risk remains high but manageable with ongoing engagement.
3. *Temporary restrictions to the COVID-19 Pandemic for organizing Study Visits, Field Meetings, and Events in the velayats*
   o Risk Type and Category: Regulatory, Low Level

- o Status Update: This risk was fully resolved by the end of 2023. The Ministry of Health and Medical Industry of Turkmenistan lifted all COVID-19-related restrictions on international travel, and no further obstacles to organizing field meetings or events have been encountered.
- o Mitigation Measures: Since the risk was related to external factors (pandemic restrictions), the project did not need to implement specific mitigation actions. The removal of COVID-related travel restrictions allowed the project to proceed as planned. This risk has been removed from the updated risk log.

4. *Delays in Procurement of required Hardware, Software, and Services or procurement of hardware and software that does not meet minimum specifications and delays in hiring national and international experts*
   - o Risk Type and Category: Operational, Low Level
   - o Status Update: The procurement process proceeded smoothly without significant delays during the reporting period. Hardware, software, and services were procured on time, and the project has not faced any major setbacks.
   - o Mitigation Measures: Close collaboration with the UNDP Operations Unit and proactive preparation of procurement documentation ensured that the necessary hardware, software, and services were procured without delay. The risk remains low, as the procurement process is well-managed, and no significant delays have occurred.
   - o *Lack of Qualified technical and other specialists in the local market and insufficient pace pf training of national personnel*
   - o Risk Type and Category: Organizational, Low Level
   - o Status Update: Recently, international experts have begun the initial training sessions for national experts from Turkmenaragatnashyk and 10 ministries. However, the risk of a lack of qualified local experts remains significant, especially as the project progresses into more technical phases involving these ministries and state agencies.
   - o Mitigation Measures: The project team has initiated preparatory training activities to equip 65 local specialists from Turkmenaragatnashyk and the ministries. In addition, targeted training programs are being planned for the upcoming year to address local capacity-building needs. Ongoing discussions with national partners are focused on identifying and preparing the technical team for these training opportunities. While the risk is currently considered low, it will require continued monitoring and attention in the coming months as the training program is implemented and the project progresses into more technical phases.

Overall, the risk landscape has evolved in response to both internal and external factors. While some risks, such as COVID-19-related disruptions, have been resolved, others, such as staff turnover in national partner organizations and the training of national experts, remain as potential challenges. However, the project has implemented several key mitigation actions, including active communication with stakeholders, flexible management of staff changes, and efficient procurement processes, to minimize the impact of these risks. The updated risk log, attached as an annex, reflects these changes and provides an overview of the current risk status and mitigation strategies in place.

VI.   Key Challenges, Lessons Learned and Recommendations

During the implementation period of the "Assistance in the Implementation of a Pilot Electronic Data Interchange System in Turkmenistan", several challenges arose that impacted project timelines and execution. These challenges provided valuable lessons that can inform the future development of similar projects in Turkmenistan and other regions facing similar constraints.

Legal and Institutional Readiness

The absence of a robust legal framework for data protection, privacy, and electronic transactions posed a significant obstacle to the timely and legally compliant implementation of the Electronic Data Interchange (EDI) system.

Without clear regulations for the secure exchange of data between government agencies, the project experienced delays in its execution. To address this, the project engaged an international legal expert early in the process. This expert worked closely with ministry lawyers to analyze and assess the existing legal and regulatory framework. By making the development of the legal framework a priority, the project aimed to ensure that the EDI system could be implemented securely and in full compliance with national laws and international standards.

Lessons Learned:

The main lesson learned is that legal readiness must be addressed from the outset, particularly in projects that involve data exchange and privacy concerns. Delays in legal approvals can have significant downstream impacts on the project timeline. Future projects should ensure that legal frameworks are developed early and that legal experts are involved from the start. The establishment of clear milestones for legal approvals should be part of the project monitoring system.

Procurement Delays and Vendor Engagement

The procurement process for selecting a vendor was delayed due to the limited availability of qualified vendors and regional constraints. As a result, the project had to engage in direct negotiations with Nortal AS, which had the necessary expertise but was selected outside the typical competitive bidding process. This procurement delay extended timelines. To address this, the project team conducted early market assessments to identify potential vendors and adjusted the contract scope to align with budget and timeline constraints.

Lessons Learned:

The key lesson here is the importance of understanding regional procurement challenges. In regions with limited vendor availability, flexibility in procurement is crucial to avoid delays. Future projects should integrate market assessments early in the planning process and include contingency plans for procurement flexibility. Indicators should reflect realistic procurement timelines and allow for adjustments based on vendor availability.

VII.   Financial Summary

Table 1: Overview of available resources for the project duration

Donor	Opening Balance	Contribution Received	Available Resources
Government of Turkmenistan	$2.469.483.46	$ 0.00	$ 2.469.483.46
Total	$ 2.469.483.46	$ 0.00	$ 2.469.483.46

Table 2: Overview of allocation and utilization per output

Output	Government of Turkmenistan		Total Budget	Total Utilization
	Budget	Utilization		
Activity 1.1: Consultation and support for the development and deployment of the pilot EDI system and organization of the EDI system operator.	1,850,915.86	780,222.45	1,850,915.86	780,222.45
Activity 1.2: Project Management	104,998.77	54,223.34	104,998.77	54,223.34
Total	**1,955,914.63**	**834,445.79**	**1,955,914.63**	**834,445.79**

VIII.   Annexes

Annex I: Progress Review: detailed matrix of activities and results

Output 1	Indicators	Baseline	Annual target	Progress / Milestone
Consultation and support for the development and implementation of the pilot project of EDI system (EDI system will consist of Electronic Data Interchange system and Interagency Document Workflow system), and the organization of the EDI system operator. **Budget:** USD 2,488,861.00 **Expenditure to date (25.11.2024):** USD 847,589.51	• Activity 1.1 Consultation and support for the development and deployment of the pilot EDI system and organization of the EDI system operator	2,235,334.00	1,850,915.86	791,057.31
	• Activity 1.2. Project Management	253,527.00	104,998.77	56,532.20

Activities	Results
Activity 1.1: Consultation and support for the development and deployment of the pilot EDI system and organization of the EDI system operator	The contract with Nortal AS, signed on April 22, 2024, marks the start of the EDI solution project based on the X-Road platform, leveraging Nortal's expertise to meet UNDP's qualifications. The project, consisting of seven phases, has seen significant progress, with the Inception Phase completed by September 2024 and the Deployment Phase finished ahead of schedule by November 2024, including the installation of two Hardware Security Modules (HSMs). The ongoing Customization Phase is addressing specific needs like branding and user interface modifications. A legal framework for secure data exchange is expected by the end of 2024, and integration of 10 data services with ministries and agencies will begin in January 2024,

	with further integration supported by Turkmenaragatnashyk. A major milestone was achieved at the "Turkmentel-2024" expo, where a demo of the MISP portal was showcased, highlighting the project's progress in data exchange and interoperability.
1.1.1 Preparation of terms of reference for deployment of the EDI system based on the X-Road solution	**1.1.1 Preparation of terms of reference for deployment of the EDI system based on the X-Road solution:** The project was launched on February 27, 2023. Two Project Board meetings were held: the first meeting was conducted on February 27, 2023, and the second on November 30, 2023. The main achievements of the project in the 2023 year of implementation were around preparation of the ToR for the implementation of the EDI system based on the X-Road solution. The project team supported by IC-CTA analyzed the IT infrastructure and the national partner's readiness to implement the EDI system. As an outcome of the joint efforts a detailed technical specification with certain milestones and a schedule for their implementation was elaborated. Based on this technical specification, a tender process was launched to hire a consulting company to carry out works on the ground on development and implementation of the pilot project of EDI system.
1.1.2 Project support	**1.1.2 Project support:** The hired CTA assists the UNDP CO in Quality Assurance of the work performed by the company selected to develop and launch this system. The CTA provides independent expertise on system development and deployment, running X-road operator, training of X-road operator team and other issues which are needed for the successful launch

	of the system. CTA performs his duties based on the regular online consultation sessions and field visits.
1.1.3 Study international experience	**1.1.3 Study international experience:** International experience in building systems of interdepartmental electronic interaction and systems of interdepartmental document management was studied. A key milestone was the study visit to Kyrgyzstan, where the delegation from Turkmenistan learned about Kyrgyzstan's experience in establishing digital government systems and interagency data exchange. This provided critical lessons on technical and legal frameworks for the EDI system.
1.2 Implementation of the X-Road pilot system, which provides technical capabilities for the operation of EDI system (the scope of the pilot system is determined by the terms of reference based on the results of activity 1.1.1)	**1.2 Implementation of the X-Road pilot system, which provides technical capabilities for the operation of EDI system (the scope of the pilot system is determined by the terms of reference based on the results of activity 1.1.1):** The contract with Nortal AS, signed on April 22, 2024, marks the start of the EDI solution project based on the X-Road platform, leveraging Nortal's expertise to meet UNDP's qualifications. The project, consisting of seven phases, has seen significant progress, with the Inception Phase completed by September 2024 and the Deployment Phase finished ahead of schedule by November 2024, including the installation of two Hardware Security Modules (HSMs). The ongoing Customization Phase is addressing specific needs like branding and user interface modifications. A legal framework for secure data exchange is expected by the end of 2024, and integration of 10 data services with ministries and agencies will begin in January 2025, with further integration supported by Turkmenaragatnashyk. A major milestone was achieved at the

	"Turkmentel-2024" expo, where a demo of the MISP portal was showcased, highlighting the project's progress in data exchange and interoperability.
1.3 Implementation of the Interagency Document Workflow system based on X-Road (the scope of the pilot system is determined by the terms of reference based on the results of activity 1.1.1)	**1.3 Implementation of the Interagency Document Workflow system based on X-Road (the scope of the pilot system is determined by the terms of reference based on the results of activity 1.1.1):** Reporting period: As a result of consultations and workshops with the international experts of Nortal, it was agreed that one change in the scope of work request would be initiated and processed by the project team. Namely, during the project team meeting with the Chairman of Beneficiary it was decided that integration of 10 document management systems of the project beneficiaries with X-road will be replaced by additional five data services deployed on X-Road platform. The reason for this change in scope is to streamline processes and increase the efficiency of the X-Road system. This change will allow more flexibility in managing data traffic flows and reduce the physical load on the system. The agreed change is being processed by the project team.
1.4 Determination of the organizational structure and training for EDI system operator team.	**1.4 Determination of the organizational structure and training for EDI system operator team:** The organizational structure for the EDI system operator has been defined. Initial training was conducted for Turkmenaragatnashyk Agency specialists.
1.5 Analysis of the integration and architecture of the system, with a focus on the implementation of the pilot project	**1.5 Analysis of the integration and architecture of the system, with a focus on the implementation of the pilot project:** As part of the Inception Phase, an analysis of the architecture for the EDI system was completed, with a detailed focus on the necessary business processes for the pilot

	project. The Inception Report has been finalized, describing all the necessary components and technical specifications for successful EDI deployment.
Activity 1.2. Project Management	
Project staff salary Project management logistics Communication, Internet, workplace rental Banking fees Other administrative expenses	In terms of Project Management activity, key staffing milestones were achieved with the hiring of the Project Manager on October 2, 2023, and the Project Assistant in March 2024. The Technical Advisor was onboarded at the start of the project. Additionally, required office equipment was procured through the LTA and delivered in March 2024, ensuring that the project team had the necessary resources to support its activities.

Annex II: Updated Risk Log

#	Description	Date Identified	Type	Impact & Probability	Counter-measures / Mngt response	Owner	Last Update	Status
1	Insufficient commitment of partners and stakeholders in the implementation of the project.	27.02.2023	Organizational	Project results delivery rate of project P = 3 I =3	The project team maintains close liaison with national partners to ensure their full commitment and contribution at every stage of implementation.	Gulalek Volmamedova	17.11.2024	no change
2	Frequent personnel changes in national partner organizations	27.02.2023	Organizational	Loosing institutional memory of the organization P = 3 I =3	The project team adapts flexibly to new realities and changes. The project team uses the most effective working methods such as communication and advocacy with the national partner to implement the project in the most effective way for the target group and partners.	Gulalek Volmamedova	17.11.2024	no change

| 3 | Delays in the procurement of required hardware, software and services, or procurement of hardware and software that does not meet minimum specifications, and delays in hiring national and international experts (taken from the Risks section of the Project Document. It was not originally included in Annex 2 OFFLINE Project Risk Register Template) | 27.02.2023 | Operational | Delays in implementation of the project activities. P = 2 I =3 | The project team works very close with the UNDP Operations Unit to facilitate the procurement process by preparing all necessary documents and providing all required information that come up during the procurement/ recruitment process. | Gulalek Volmamedova | 17.11.2024 | no change |
| 4 | Lack of qualified technical and other specialists in the local market, and insufficient pace of training of national personnel. (taken from the Risks | 27.02.2023 | Organizational | Institutional memory of the organization P = 2 I =3 | The project team liaises closely with national partners to prepare the relevant technical team for the training. | Gulalek Volmamedova | 17.11.2024 | no change |

section of the Project Document. It was not originally included in Annex 2 OFFLINE Project Risk Register Template)						

Annex III: Annual Work Plan for 2025

Expected Outputs	Planned activities	Timeframe												Planned Budget		
		January	February	March	April	May	June	July	August	September	October	November	December	Funding source	Budget description	Amount (in USD)
Result 1. Consultation and support for the development and deployment of the pilot EDI system and organization of the EDI system operator	1.2. Implementation of the X-Road platform, providing technical capabilities for the operation of the EDI system													Government of Turkmenistan	72140 Service Cost - Information Technology	300,000.00
	Operational expenses/Technical support:													Government of Turkmenistan	64300 Staff management costs 74500 Miscellaneous Expenses	18,000.00 5,424.05
	Total for Result															**323,424.00**
	General Management Service (GMS), 7%:													Government of Turkmenistan	75100 Facilities&Administration	22,639.68
	Total for Result 1 incl. Admin and operational expenses															**346,063.73**
Project Management	Project staff salary													Government of Turkmenistan	71400 Salary: Project Manager 100%*12 m	54,142.00
															Project Assistant 100%*12 m	33,005.18
															Project Analyst 30%*12 m	19,643.00

	Project management logistics														72400 Procurement of equipment	2000.00
	Operational expenses:												Government of Turkmenistan	64300 Staff management costs	18,000.00
														74500 Miscellaneous Expenses	3,000.00
	Total for the Project management															**129,760.18**
	General Management Service (GMS), 7%:												Government of Turkmenistan	75100 Facilities&Administration	9,083.21
	Total for the Project management incl. Admin and operational expenses:															**138,843.39**
TOTAL Government of Turkmenistan																**484,907.12**

Annex IV: Assets List.

ASSET ID	DESCRIPTION	TAG NUMBER	SERIAL NUMBER	CUSTODIAN	COST	CURRENCY	PO ID
	ASSET INFORMATION - PROJECT 01000304						
001	LAPTOP Dell	ITC/TKM/01000304/001	9LJGNX3	Gulalek Volmamedova	1,236.00	USD	10147510
002	LAPTOP Dell	ITC/TKM/01000304/002	2LJGNX3	Eleonora Umbarova	1,236.00	USD	10147510
003	LAPTOP Dell	ITC/TKM/01000304/003	55MGNX	Farhad Artykov	1,236.00	USD	10147510
004	Dell Docking Station	ITC/TKM/01000304/004	74HVHZ3	Gulalek Volmamedova	122.00	USD	10147510
005	Dell Docking Station	ITC/TKM/01000304/005	12BVHZ3	Eleonora Umbarova	122.00	USD	10147510
006	Dell Docking Station	ITC/TKM/01000304/006	70BVHZ3	Farhad Artykov	122.00	USD	10147510
007	Dell Pro Stereo Headset	ITC/TKM/01000304/007	520-AATL	Gulalek Volmamedova	139.00	USD	10147510
008	Dell Pro Stereo Headset	ITC/TKM/01000304/008	520-AATL	Eleonora Umbarova	139.00	USD	10147510
009	Dell Pro Stereo Headset	ITC/TKM/01000304/009	520-AATL	Farhad Artykov	139.00	USD	10147510
010	Dell Ecoloop Urban Backpack 14-16	ITC/TKM/01000304/010	460-BDLF	Gulalek Volmamedova	22.00	USD	10147510
011	Dell Ecoloop Urban Backpack 14-16	ITC/TKM/01000304/011	460-BDLF	Eleonora Umbarova	22.00	USD	10147510
012	Dell Ecoloop Urban Backpack 14-16	ITC/TKM/01000304/012	460-BDLF	Farhad Artykov	22.00	USD	10147510
013	Dell Adapter USB-c to Gigabit Ethernet (PXE)	ITC/TKM/01000304/013	470-ABND	Gulalek Volmamedova	22.00	USD	10147510
014	Dell Adapter USB-c to Gigabit Ethernet (PXE)	ITC/TKM/01000304/014	470-ABND	Eleonora Umbarova	22.00	USD	10147510
015	Dell Adapter USB-c to Gigabit Ethernet (PXE)	ITC/TKM/01000304/015	470-ABND	Farhad Artykov	22.00	USD	10147510
016	Dell USB Slim DVD +/- RW Drive DW316	ITC/TKM/01000304/016	784-BBBI	Gulalek Volmamedova	33.00	USD	10147510
017	Dell USB Slim DVD +/- RW Drive DW316	ITC/TKM/01000304/017	784-BBBI	Eleonora Umbarova	33.00	USD	10147510
018	Dell USB Slim DVD +/- RW Drive DW316	ITC/TKM/01000304/018	784-BBBI	Farhad Artykov	33.00	USD	10147510
019	Dell Premier Rechargeable Mouse - MS900	ITC/TKM/01000304/019	570-BBCB	Gulalek Volmamedova	67.00	USD	10147510
020	Dell Premier Rechargeable Mouse - MS900	ITC/TKM/01000304/020	570-BBCB	Eleonora Umbarova	67.00	USD	10147510

021	Dell Premier Rechargeable Mouse - MS900	ITC/TKM/010003 04/021	570-BBCB	Farhad Artykov	67.00	USD	10147510
022	Dell Premier Collaboration Keyboard - KB900	ITC/TKM/010003 04/022	580-BBDJ	Gulalek Volmamedova	89.00	USD	10147510
023	Dell Premier Collaboration Keyboard - KB900	ITC/TKM/010003 04/023	580-BBDJ	Eleonora Umbarova	89.00	USD	10147510
024	Dell Premier Collaboration Keyboard - KB900	ITC/TKM/010003 04/024	580-BBDJ	Farhad Artykov	89.00	USD	10147510
025	Monitor DELL	ITC/TKM/010003 04/025	GT1KVZ3	Gulalek Volmamedova	162.00	USD	10147510
026	Monitor DELL	ITC/TKM/010003 04/026	H61KVZ3	Eleonora Umbarova	162.00	USD	10147510
027	Monitor DELL	ITC/TKM/010003 04/027	412 KVZ3	Farhad Artykov	162.00	USD	10147510
TOTAL					**5,676.00**	**USD**	

Annex V: Knowledge Generation

The project "Assistance in the Implementation of a Pilot Electronic Data Interchange (EDI) System in Turkmenistan" is actively generating knowledge and integrating valuable insights into its implementation process. A key element of knowledge generation is the ongoing collaboration with Nortal AS, which brings extensive expertise in the X-Road platform and Public Key Infrastructure (PKI). Nortal has shared detailed technical documentation, including the deployment of PKI and the X-Road Centre, which has been instrumental in guiding the installation and configuration of secure data exchange systems. These documents are being actively used by the project's technical teams and will be integrated into future training sessions for government stakeholders.

In addition to the technical insights gained through documentation, the project is promoting knowledge transfer by organizing a series of training sessions focused on critical areas such as Trust Service Infrastructure, Trust Service Operation, X-Road Central Infrastructure Setup, Security Server Setup, and Service Design for X-Road context. These training activities are designed to build the skills needed to operate and maintain the EDI system effectively. To facilitate ongoing learning, Nortal experts have developed specialized software that includes all training materials, tests, and exercises. This software will be installed on the learning platform of the Turkmenaragatnashyk Agency, providing a centralized hub for knowledge sharing and enabling hands-on learning.

Key knowledge products from the reporting period include the Inception Report, which outlines the initial scope, objectives, and key findings, and the deployment documentation provided by Nortal on PKI and the X-Road Centre. These documents, along with the planned training software and resources, are critical for ensuring that local teams and stakeholders have the tools they need to manage the EDI system effectively. The combination of technical documentation, targeted training, and interactive learning tools is ensuring that the knowledge generated by the project is actively incorporated into its implementation, creating a foundation for the system's long-term sustainability.

Prepared by Gulalek Volmammedova, Project Manager

Date: 25.11.2024

DocuSigned by:

Gulalek Volmammedova

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Approved by Lazar Pop Ivanov, Programme Analyst

Date: 25.11.2024

DocuSigned by:

Lazar Pop Ivanov

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