

TERMS OF REFERENCE – PART A

EU Support for Broadband Plan Ukraine

1 BACKGROUND INFORMATION

Ukraine political and economic context

Pursuing the aims of the European Neighbourhood Policy¹ (2015) and the EU Global Strategy², the European Union (“EU”) supports the strengthening of a stable, secure, democratic and prosperous Ukrainian state that contributes positively to national and regional security and economic growth.

To achieve this goal it has been crucial to implement a long-term and comprehensive reform programme rooted in the EU-Ukraine Association Agreement (“AA”), including a Deep and Comprehensive Free Trade Area (“DCFTA”), which entered into force as of 1 September 2017.

The AA comprises a list of commitments taken by the Government of Ukraine, some of them related to the digital economy (e.g. electronic communications, electronic commerce, audiovisual media services, information society and consumer protection). While the AA indicates different forms of cooperation for these areas, the closest form of cooperation – which can lead to internal market treatment – is limited only to electronic communication services, as set out in Appendix XVII-3 and Arts. 115 - 124 of the AA.

While being one of the countries with the fastest growth in Internet penetration at the start of the decade, by the end of the decade the pace of internet adoption in Ukraine has slowed significantly. According to the data from 2018, approximately 55% present of households have internet access. The main disparity factors in access to the Internet continue to be urban/rural location of the population, although according to some reports the digital divide between rural and urban areas continues to narrow.

Digital transformation is crucial in enhancing the efficiency and transparency of public action, fighting corruption, boosting the economy, creating jobs and ensuring social progress. For a successful digitalisation, the government of Ukraine must be able to ensure the deployment of high-speed Internet throughout the country. In addition, a reliable and solid broadband investment plan will also be instrumental to the successful implementation of the commitments enshrined within the AA, and in particular the commitments under Appendix XVII-3.

The purpose of the present document (the “**Terms of Reference**”, “**ToR**”) is to set the contractual basis to support the Ministry for Digital Transformation of Ukraine (“**MDTU**”) and the National Commission for the State Regulation of Communications and Informatization (“**NCCIR**” or “**NRA**”), in the development of Ukraine’s Broadband Plan and make it operational. To achieve this, the Contractor will prepare a gap analysis of the Broadband Plan prepared by Ukraine, determining the broadband objectives and targets, choice of infrastructure type, investment and business models, as well as financing tools. Furthermore, the Contractor will prepare a deployment action plan, including a pipeline of projects. It will contain the costs and revenue estimation of the different phases of deployment, the roles and responsibilities of different stakeholders, the coordination and monitoring mechanisms of the action plan. Such a plan will provide the business cases for different projects for International Financial Institutions (“**IFIs**”) to invest in.

¹ https://ec.europa.eu/neighbourhood-enlargement/tenders/consultation_en_en

² The ENP review and Global Strategy for the European Union's Foreign and Security Policy highlighted the stabilisation and resilience building of neighbouring countries as an important political priority, to be achieved through support to good governance, democracy, human rights and rule of law, economic governance, as well as cooperation on security and on migration and mobility. https://eeas.europa.eu/topics/eu-global-strategy_en

Ukraine's commitments under the EU-Ukraine Association Agreement

In 2014, Ukraine and the EU signed an Association Agreement ("AA"), which entered into force in September 2017. The AA aims, inter alia, to establish a free trade area. Cooperation between Ukraine and the EU covers various fields (e.g. electronic communications, electronic commerce, audiovisual media services, information society and consumer protection).

In August 2018, according to Appendix XVII-6 of the AA, Ukraine submitted a Strategy on the integration of Ukraine into the European Union Digital Single Market (the "**Strategy**") along with an Action Plan on the implementation of the Strategy (the "**Action Plan**"), both together referred to as the Digital Roadmap (or simply the "**Roadmap**").

The Action Plan lists 24 pieces of EU legislation (plus a number of related implementing acts) that Ukraine wants to transpose into its national law and add as commitments under Appendix XVII-3 of the AA (the "**Telecom Annex**").

Following the submission of the Roadmap, the EU launched a multi-stepped process to assess the Roadmap, and to assist Ukraine in its progress in the digital sector. As a result of this analysis, of the 24 pieces of EU legislation proposed by Ukraine in the Action Plan, 13 fall outside of the Telecom Annex. In addition, there are several pieces of EU legislation (plus a number of related implementing acts) not initially listed in the Action Plan. Therefore, the EU and Ukraine are currently in the process of updating the Telecom Annex, under the relevant mechanisms provided for by the AA, with all acts falling within the scope.

Linked activities and studies

The European Commission has over the years supported Ukraine's digital efforts through bilateral and regional support. This includes capacity building in the telecom regulator, improvements to the legislative and institutional framework of cybersecurity, e-government and other areas.

In February 2020, the European Commission adopted a programme on "*EU Support to E-Governance and digital economy in Ukraine*" to focus on key structural issues and build upon Ukraine's policy objectives defined in the Strategy/Action Plan on Digital Economy 2018-2020 and the Strategy/Action Plan on E-Governance 2017-2020. By focusing on crosscutting structural issues, it will leverage the support already provided in sectoral areas such as Public Administration Reform (PAR), decentralization, reform of the judiciary and law enforcement, public finance management and fighting corruption.

One component of the programme will support the enhancement of the capacity of Ukraine's institutions to implement the electronic communications chapter of the AA/DCFTA. In particular, funding is provided to improve the performance of digital economy and interconnection of electronic communications networks inside Ukraine and between the EU and Ukraine; and to enhance the capacities of the main digital actors in Ukraine. This programme provides the funding for the tasks assigned to the Contractor.

In January 2019, the European Commission launched an Eastern Partnership ("**EaP**") regional project on "*Support to the implementation of the EU4Digital Initiative in the Eastern Partnership region*". Building on the work done under the Eastern Partnership Harmonization of Digital Markets Panel and the EU4Digital Networks, the project will implement concrete recommendations and action plans agreed in the key areas of the digital economy and society identified for the EaP region³. The programme focuses on six priority topics: (i) telecom rules and infrastructure; (ii) trust and security in the digital economy; (iii) eTrade; (iv) digital skills; (v) ICT innovation & start-up ecosystems; and (vi) eHealth. Regarding telecom rules and infrastructure, EU4Digital covers inter

³ Eastern Partnership (EaP) partner countries are: Armenia, Azerbaijan, Belarus, Georgia, Moldova, Ukraine.

alia benchmarking of markets, spectrum coordination, reducing roaming tariffs among EaP partner countries and broadband development.

The European Commission, in the framework of EU4Digital, concluded an agreement with the International Bank for Reconstruction and Development (“**World Bank**”) to carry out activities that are part of and support the implementation of the EU4Digital initiative in July 2018⁴. Under this agreement, the World Bank will support the EaP countries in their development and early implementation of national broadband strategies, in line with relevant EU strategies, by providing technical assistance and capacity building support.

The support provided by the World Bank to the EaP countries relates (a.o.) to the mapping of broadband infrastructures and services in the EaP countries as well as to the development or update of their broadband strategies through technical assistance on specific topics, and recommending improvements to their action plans.

In August 2019, the European Union launched a project on “*On-site assessment of the EU-Ukraine Association Agreement commitments on telecommunication services*”. The aim of the project is to assess Ukraine's policy framework, institutional capacity and the current state of play of implementation of the commitments enshrined within Appendix XVII-3 of the AA; and to produce concrete findings that would be helpful for adjusting or improving the current policy framework on telecommunications in Ukraine, based on the results of the assessment.

In September 2019, the European Union launched a twinning project on “*Strengthening the Regulatory Capacity of the National Commission for the State Regulation of Communications and Informatization (NCCIR) in the Areas of Market Access and Quality of Service (QoS Monitoring System)*”. The project is aimed at strengthening the capacities of the telecommunications regulator, in particular to a) monitor the quality of service based on implementation of the Universal Services Directive and b) promote market access and economic regulation based on implementation of the Access Directive.

The European Investment Bank (“**EIB**”) and the World bank are/ will soon be working on a number of broadband projects in Ukraine, among others in rural broadband.

The Contractor is expected to align the requested services and deliverables under this contract with the work being done in the linked activities and studies, avoiding overlaps and maximize the synergy with and inclusion of these results and reports. In particular, the Contractor will avoid overlaps with the technical assistance that the EIB will be developing in the region.

2 OBJECTIVE, PURPOSE & EXPECTED RESULTS

➤ Global objective

The overall objective of the assignment is to support MDTU in developing a Broadband Plan and implement it by December 2021⁵.

➤ Specific objective(s)

The specific objectives of this assignment are:

⁴ Administration Agreement between the European Commission on behalf of the European Union and the International Bank for Reconstruction and Development concerning the Part II Europe 2020 Programmatic Single-Donor Trust Fund (No. TF073114) (EC Contract No. ENI/2018/399-031). This agreement was concluded in the context of the Framework Agreement between the World Bank Group and the European Commission dated 15 April 2016.

⁵ Estimated date for the finalisation of the deliverable corresponding to the final pipeline of projects, but not the overall performance of the contract.

1. To assess the available data, other programmes, concepts and forecasts by MDTU for the implementation of the Broadband Plan, provide resultant recommendations and reports;
2. To assist MDTU and NCCIR in developing legislation and selected no regret projects necessary for the implementation and deployment of the Broadband Plan; and
3. To elaborate, together with MDTU, Action Plans and projects in Broadband and ensure their implementation.

➤ Requested services, including suggested methodology

TASK 1: BROADBAND GAP ANALYSIS

Subtask 1.1. Broadband plan assessment

The Contractor will briefly analyse the Broadband Plan the Ukrainian government is preparing/has prepared⁶, the broadband vision and targets for Ukraine (Annex 1), and other existing preliminary work in this area, such as all relevant studies delivered under the different EU cooperation work streams in the area of telecommunication for Ukraine⁷. This analysis will be updated if the Ukrainian government updates the Broadband Plan during the performance of this contract.

Where necessary, the Contractor will prepare recommendations to improve the broadband plan in different areas, such as:

- infrastructure (*i.a.* which are the best technologies and where);
- spectrum (including spectrum auctions design and deployment conditions to spectrum assignment);
- investment models;
- business models;
- financing (including permit procedures and ways to reduce the costs of broadband roll-out); and
- security (including security of networks and critical infrastructures to protect public and private assets, based, among others, on the EU's 5G toolbox⁸).

Deliverables (described above): Broadband plan assessment

Subtask 1.2. Data sources analysis

The Contractor will assess the data needed and its availability - from sources available to MDTU (*e.g.* World Bank)⁹, from NCCIR, from other initiatives (*e.g.* Ookla, Measurement Lab, Atlas Ripe)¹⁰ or from telecom operators - in order to identify any additional sources of data and potential gaps to determine future areas of intervention in broadband in Ukraine. A list of other potential sources is listed in Annex III.

⁶ The Ukrainian government is in the process of drafting a broadband plan based on recommendations from the World Bank.

⁷ Such as the EU4DIGITAL, twinning projects and on-site assessment.

⁸ See <https://ec.europa.eu/digital-single-market/en/news/cybersecurity-5g-networks-eu-toolbox-risk-mitigating-measures>.

⁹ See analysis prepared for the Ukrainian government by the World Bank.

¹⁰ See <https://www.speedtest.net/>, <https://www.measurementlab.net/>, <https://atlas.ripe.net/>.

The Contractor shall consolidate the data sources available and publish the data and results on a website in Ukrainian and English. Whenever possible the Contractor shall reuse existing websites financed by the European Union in Ukraine.

In addition, and if necessary after the results of the data and gap analysis, the Contractor will identify any missing broadband data, as well as necessary secondary legislation or policy measures (*e.g.* lack of powers to gather data by the Ukrainian NRA - NCCIR or MDTU). The Contractor shall specify the means to obtain and will analyse the missing data.

Deliverables: Data sources analysis

Subtask 1.3. Areas of intervention

Based on the work described above in subtasks 1.1. and 1.2, the Contractor shall draft a report, containing the geographic areas of intervention (white, grey or black, see footnote 22) where there is a need to deploy broadband in Ukraine, indicating the choices of infrastructure, investment model, business models and possible financing.

The Contractor will take into account relevant EU regulations and policy documents (see the Broadband Europe website).¹¹ In particular, the Contractor will use the European Commission's Guide to High-Speed Broadband Investment as a reference.¹²

Deliverables: Areas of intervention and investments models

TASK 2: INTERIM ACTION PLANS

Subtask 2.1. No regret projects

The Contractor will identify those “no-regret” projects (*i.e.* those projects that must be completed regardless of the outcome of the Broadband Plan) that MDTU could start implementing. These selected projects will constitute a pipeline of projects.

The projects selected will be subject to a preliminary assessment. This pipeline of projects will be updated as part of subtask 2.2 and subtask 4.2. The first update of the pipeline of projects is intended to speed up the deployment of broadband in Ukraine. Subsequent updates will update the first list and add new ones.

The Contractor is expected to perform a feasibility analysis/ preliminary assessment of each project and support the Ukrainian government to complete the application for the IFIs, where applicable. For the projects that IFIs may finance, the Contractor shall provide sufficient information for the IFIs to start the appraisal of the different projects.

The Contractor shall follow, at a minimum, the guidelines of the European Investment Bank (EIB) as regards the project cycle¹³ (including the economic appraisal), the Environmental and Social Standards and the guide to procurement¹⁴.

Each project assessment shall contain at least:

- background;
- description;
- technical aspects;
- business model, in particular the ownership model (whether it is private, public or mixed);

¹¹ See <https://ec.europa.eu/digital-single-market/en/broadband-europe>.

¹² See http://ec.europa.eu/newsroom/dae/document.cfm?action=display&doc_id=6908.

¹³ See Annex II and <https://eib.org/en/projects/cycle/index.htm>.

¹⁴ See <https://www.eib.org/en/publications/guide-to-procurement> and <https://www.eib.org/en/publications/environmental-and-social-standards-overview>

- project implementation and management principles;
- security principles (including security of networks and critical infrastructures to protect public and private assets, based, among others, on the EU’s 5G toolbox¹⁵);
- procurement principles;
- operation and maintenance;
- demand for and expected cost-effectiveness of the project;
- project tender documents including evaluation model and grids.

A template is provided in Annex II for reference. The Contractor will indicate the precise methodology it will follow and will take into account relevant EU regulations and policy documents.

Deliverables: Interim Action Plan with the pipeline of “no-regret” projects (*NB: Deliverable intended to speed-up deployment of broadband in Ukraine*)

Subtask 2.2. Pipeline of projects

The Contractor shall update the pipeline of projects resulting from the completion of the areas of intervention deliverable from task 1 above.

The Contractor will perform an assessment of the newly identified projects that form part of the pipeline of projects. The Contractor shall follow, at a minimum, the guidelines of the European Investment Bank (EIB) as regards the project cycle¹⁶ (including the economic appraisal), the Environmental and Social Standards and the guide to procurement¹⁷.

The Contractor is expected to perform a feasibility analysis/preliminary assessment of each project and support the Ukrainian government to complete the application for the IFIs, where applicable. For the projects that IFIs may finance, the Contractor shall provide sufficient information for the IFIs to start the appraisal of the different projects.

Each project assessment shall contain at least:

- background;
- description;
- technical aspects;
- business model, in particular the ownership model (whether it is private, public or mixed);
- project implementation and management principles;
- security principles (including security of networks and critical infrastructures to protect public and private assets, based, among others, on the EU’s 5G toolbox¹⁸);
- procurement principles;
- operation and maintenance;
- demand for and expected cost-effectiveness of the project;
- project tender documents including evaluation model and grids.

A template is provided in Annex II for reference. The Contractor will indicate the precise methodology it will follow and will take into account relevant EU regulations and policy documents.

Deliverables: Update of the Pipeline of projects

¹⁵ See <https://ec.europa.eu/digital-single-market/en/news/cybersecurity-5g-networks-eu-toolbox-risk-mitigating-measures>.

¹⁶ See Annex II and <https://eib.org/en/projects/cycle/index.htm>.

¹⁷ See <https://www.eib.org/en/publications/guide-to-procurement> and <https://www.eib.org/en/publications/environmental-and-social-standards-overview>

¹⁸ See <https://ec.europa.eu/digital-single-market/en/news/cybersecurity-5g-networks-eu-toolbox-risk-mitigating-measures>.

TASK 3: ENHANCING THE ROLE OF THE UKRAINIAN TELECOMMUNICATIONS REGULATOR (NCCIR)

In parallel to the services described in Tasks 1 and 2, the Contractor will identify the existing regulatory and policy gaps for the enhancement of the national telecommunications NRA's role in implementing and enforcing the Broadband Plan. More concretely, this will mean supporting the NRA and MDTU in the drafting of legislation to obtain the necessary information from telecom operators on existing and planned coverage. The Contractor will take into account relevant EU regulations and policy documents.

Deliverables: Report describing support given in drafting secondary legislation for NRA/MDTU

TASK 4: ACTION PLAN

The subtasks described below are contingent (specially subtask 4.1) on the adoption of the new Ukrainian Telecommunications Law, estimated to be in force by January 2021, and other relevant laws specially in regards to additional powers given to the NRA to request information from telecom operators. Should there be delays in the adoption/entry into force of the law, the Contracting Authority may decide to extend the deadline for deliverables of task 4.

Subtask 4.1 Support the NRA / MDTU in gathering data from telecom operators

The Contractor will support the NRA and/or MDTU in:

- identifying the data needed from telecom operators to develop an effective broadband mapping of existing and planned infrastructures in Ukraine;
- gathering the information from telecom operators; and
- consolidating the information and presenting it in the website referred to in task 1 above; and
- establishment of NRA data (about broadband penetration and coverage) as “open by default”.

Deliverables: Updated website (data from operators)

Subtask 4.2. Final pipeline of projects

The Contractor will update the pipeline of projects (task 2 above) based on the results from subtask 4.1 and, if requested by the European Commission, the broadband mapping subtask 5.1.

The Contractor shall perform an assessment of the newly identified projects. The Contractor shall follow, at a minimum, the guidelines of the European Investment Bank (EIB) as regards the project cycle¹⁹ (including the economic appraisal), the Environmental and Social Standards and the guide to procurement²⁰.

The Contractor is expected to perform a feasibility analysis/preliminary assessment of each project and support the Ukrainian government to complete the application for the IFIs, where applicable. For the projects that IFIs may finance, the Contractor shall provide sufficient information for the IFIs to start the appraisal of the different projects.

Each project assessment shall contain at least:

- background;

¹⁹ See Annex II and <https://eib.org/en/projects/cycle/index.htm>.

²⁰ See <https://www.eib.org/en/publications/guide-to-procurement> and <https://www.eib.org/en/publications/environmental-and-social-standards-overview>

- description;
- technical aspects;
- business model, in particular the ownership model (whether it is private, public or mixed);
- project implementation and management principles;
- security principles (including security of networks and critical infrastructures to protect public and private assets, based, among others, on the EU’s 5G toolbox²¹);
- procurement principles;
- operation and maintenance;
- demand for and expected cost-effectiveness of the project;
- project tender documents including evaluation model and grids.

A template is provided in Annex II for reference. The Contractor will indicate the precise methodology it will follow and will take into account relevant EU regulations and policy documents.

Deliverables: Final pipeline of projects (including presentation)

TASK 5: BROADBAND SYSTEM

The Contractor will support the Ukrainian authorities in:

1. Identifying and documenting the requirements for a broadband system that will provide access and participation to all stakeholders in the process of implementing public policy in the field of digital infrastructure, including infrastructure for mobile and fixed broadband development.

The system will:

- be operated by NRA or MDTU;
- have a service-oriented architecture;
- be based on a similar tool being procured by the Polish NRA (UKE) that replaces two previous systems. The tender documents can be found (in polish) here: <https://bip.uke.gov.pl/zamowienia-publiczne/ogloszenie-o-zamowieniu-sprawa-nr-ba-wzp-26-60-2019,353.html>;
- take into account a preliminary analysis –subject to change– prepared by MDTU included in an Annex to this terms of reference (i.e. it will have modules for Infrastructure Map, Coverage and Penetration Map of Fixed Broadband, Coverage Map of Mobile Broadband, Data Submission and Reporting to the State Authorities, Citizens Feedback and Quality Monitoring, Procurement Simplifying in the Broadband field, Comparison of Providers’ Tariffs and Services; and facilitate Interoperability and Open Data);
- serve as an official reporting tool of NRA for providers and operators (separate module);
- present some results in the broadband portal <https://broadband.gov.ua/>;
- follow “security by design” principles; and
- follow state-of-the-art design principles.

The Contractor will develop the technical specifications of the system, including functional and non-functional requirements, in UML, BPMN and/or a better methodology. It will also design the systems architecture of the overall solution, taking into account the NRA’s IT architecture, requirements of TREMBITA interoperability system and the interfaces to all databases and stakeholders. The resulting specifications, architecture and complementary documents should be sufficient for the European Commission, NRA or MDTU to procure independently and for a third company to develop and implement such a system without prior knowledge.

²¹ See <https://ec.europa.eu/digital-single-market/en/news/cybersecurity-5g-networks-eu-toolbox-risk-mitigating-measures>.

- Deliverable:** Technical specifications and architecture of each module of the broadband system
2. Identifying some quick-wins that the MDTU and NRA could develop and/or publish in the Ukrainian broadband portal.

Deliverable: Technical specifications of quick-wins

TASK 6: AD HOC ACTIVITIES

In parallel to the services described above, the Contractor may be requested to perform additional ad-hoc activities, including but not limited to the following.

Subtask 6.1 Broadband mapping

At the request of the Contracting Authority, the Contractor shall support the Ukrainian authorities in performing an infrastructure mapping to identify the white, grey and black areas²². The mapping shall contain, at least, detailed and georeferenced information (*e.g.* using cells of a given size) about the telecommunications companies, location, route, infrastructure type, current use, technology/ies and contact point.

The Contractor shall use, as a minimum, the calculated availability of Service (or QoS-1²³), defined as the theoretical network performance of the existing infrastructure. For wired infrastructure, it will be rely on an assessment, calculation, marketed speeds by the telecom provider, geodata-based simulation models, prediction tools or a better method. For wireless infrastructure, it will be rely on an assessment, calculation via geodata-based simulation models, prediction tools, radio field planning or a better method.

The Contractor will take into account relevant EU regulations and policy documents.

The Contracting Authority will pay particular attention to:

- country coverage;
- cell resolution of the mapping;
- additional types of mapping the Contractor shall perform (service mapping, demand mapping, investment and funding mapping); and
- additional indicators that allow computing of the measured provision of service - excluding end user's environment - (QoS-2) and/or the measured experience of the service - including end user's environment - (QoS-3).²⁴

These ad hoc activities (Task 6) related to broadband mapping will be paid on the basis of lump sums.

Deliverables: Broadband mapping

²² In white areas, no provider of broadband access services currently is operating and there is no such provider to be expected in the coming three years either. In grey areas, there is one provider already active however; another network is unlikely to be developed in the next three years. In black areas there are or there will be in the next three years at least two basic broadband networks of different operators.

²³ See <https://ec.europa.eu/digital-single-market/en/broadband-and-infrastructure-mapping-project>.

²⁴ Ibidem.

➤ Required outputs

List of deliverables	Deadline:
<u>Estimated start of the contract: month X</u>	
1. Broadband plan assessment	X+2
2. Data sources	X+4
3. Areas of intervention	X+7
4. Pipeline of projects. “No-regret” projects	X+5
5. Pipeline of projects. Update	X+10
6. Report describing support given in drafting legislation for NRA/MDTU	X+5
7. Updated (existing and used) website	X+13
8. Pipeline of projects. Final update	X+17
9. Broadband mapping (if requested)	X+14
10. Technical specifications and architecture of the broadband system	X+4
11. Technical specifications of quick-wins	X+6
12. Inception Report	X+1
13. Interim Report	X+10
14. Final Report	X+17

➤ Language of the Specific Contract

The language of the Specific Contract is English. However, the majority of the documents to be used during the implementation of this assignment might be available only in Ukrainian. To the extent that some Ukrainian stakeholders might not have a sufficient command of English. Therefore, translation/ interpretation services should be used, as necessary.

➤ Management Team member presence required or not for briefing and/or debriefing

Presence of the Management Team members, as referred to in art. 6.2.1 of the Global Terms of Reference, is not required for briefing and/or debriefing.

3 LOGISTICS AND TIMING

Please refer to Part B of the Terms of Reference.

4 REQUIREMENTS

Please refer to Part B of the Terms of Reference.

5 REPORTS

Please refer to Part B of the Terms of Reference.

6 MONITORING AND EVALUATION

The performance of the Contractor will be evaluated based on the acceptance of services and outputs by the Contracting Authority.

7 PRACTICAL INFORMATION

Please address any request for clarification and other communication to the following address(es):

DELEGATION-UKRAINE-OPSYS-FWC-CLARIFICATIONS@eeas.europa.eu

The Contractor and all sub-contractors enter into a non-disclosure agreement preventing any disclosure of information received during the performance of this analysis (including all findings of this analysis) that is not generally known to the public without authorization of the Contracting Authority.

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Annex I: Broadband vision for Ukraine

The Ukrainian government recently published the Programme of activity of the Cabinet of Ministers of Ukraine, outlining the vision for digital infrastructure in Ukraine.²⁵ The stated goal is for “Ukrainians have access to broadband in settlements and highways”, and contains three top priorities:

(1) Get service everywhere (full coverage), broadband development, connecting social infrastructure facilities

Purpose: both fixed and mobile broadband is accessible for all citizens.

Targets: 90% of the population has mobile broadband access with speed of at least 2 Mbps; 100% of international and national highways are covered by broadband access with speed of at least 2 Mbps; 80% of households have fixed broadband access available with speed of at least 30 Mbps; 50% of households have fixed broadband access with speed of at least 100 Mbps; 100% connection of social infrastructure facilities; 70% of people with disabilities having BB access.

(2) The minimum price of the service

Purpose: broadband access is financially affordable for all citizens.

Targets / Indicators: percentage of income that households spend on broadband access; 80% of mobile subscribers use broadband access; 70% of households are connected to fixed broadband with speed of at least 30 Mbps; 15% of households are connected to fixed broadband with speed of at least 100 Mbps; 70% of persons with disabilities having broadband access.

(3) Get high quality services

Purpose: stable availability/ accessibility and good quality of BB access services are ensured.

Indicators: number of shutdowns of fixed BB per month; time of shutdowns of fixed BB during the month; time to restore access after a break; Jitter (&) less than 15 ms; data packet loss is less than 0.1% of the amount of data transmitted; RTT less than 50 ms.

Other priorities of the government:

- Introduction of the newest technologies, including the distribution of optical networks;
- Cost reduction, access to infrastructure by non-operators, access to infrastructure by operators, security;
- Harmonization of spectrum and monitoring of its use;
- Reducing the cost of equipment; and
- Development of e-government.

²⁵ See: [https://thedigital.gov.ua/storage/uploads/files/page/Policy_digital_infrastructure_v3%20\(1\).pdf](https://thedigital.gov.ua/storage/uploads/files/page/Policy_digital_infrastructure_v3%20(1).pdf) and <https://program.kmu.gov.ua/meta/ukrainci-mozut-koristuvatisa-visokosvidkisnim-internetom-na-vsih-miznarodnih-avtoslahah-ta-v-usih-naselenih-punktah>.

Annex II. Template for the assessment of a project

For the assessment of each individual project, the contractor shall provide at least the following information:

1. Technical report including
 - a. Principles relating to the technical solution
 - b. Retail service provide obligations and services
 - c. Wholesale service specification
 - d. Intervention area and considerations for reach and phasing
 - e. Deployment strategy
 - f. Procurement lots
 - g. Infrastructure sharing
2. Business model
 - a. Ownership options and description
 - b. Financial appraisal approach
 - c. Non-financial appraisal
 - d. Recommended option
3. Governance model of the project
 - a. Scope of contract governance
 - b. Network build
 - c. Network operation
 - d. Market effectiveness
 - e. Governance model
4. Cost-Benefit Analysis
 - a. Market review and forecasts
 - b. Benefits to the various users
 - c. Impact on the market stakeholders
 - d. Cost estimates
 - e. Cost benefit analysis results (including financial rate of return and estimated economic rate of return) and sensitivity analysis
5. Funding
 - a. Identify funding options: government, IFIs, Private
 - b. Identify public sector financing scenarios
 - c. Develop a funding scenario for the selected ownership model
 - d. Provide recommendations and highlight risks
6. Prepare Project tender documents including evaluation model and grids

Annex III. Initial set of requirements for task 5

This annex contains the initial set of requirements that will serve as a basis for task 5.

1. General System Description

The portal BROADBAND.GOV.UA (hereinafter the Portal) is the public multifunctional platform that provides access and participation of all stakeholders in the process of implementing public policy in the field of digital infrastructure, including infrastructure for mobile and fixed Broadband development. It is developed in accordance with the priority objectives of the Cabinet of Ministers of Ukraine Action Program, Ukraine's international commitments in the field of telecommunications and the needs of the Ukrainian NRA.

The portal should have a service-oriented architecture. The final version of the Portal will include 8 modules, which are described below.

Expectations and results: implementation of government policy in the field of digital infrastructure, effective public investments for connection of social infrastructure institutions to broadband, transparent procurement in the telecommunication sector within the projects of the National Informatization Program, ensuring the possibility of connecting to the broadband in all localities of the country, one-stop-shop for data collecting on quality of the telecommunication services.

2. Target Audience

The Portal's target audience is:

- Core public authorities;
- National Commission for the State Regulation of Communications and Informatization (NRA);
- Telecommunication operators and providers;
- Entrepreneurs that are planning their own business in the sphere of telecommunications;
- Energy companies;
- Service providers;
- Municipalities;
- Subscribers.

3. Data Collection Methodology for the Portal

- Identifying information sources;
- Collecting data;
- Separating data with accurate location data;
- Aggregating information into unique format;
- Determining the frequency of updating data sets;
- Checking the reliability and accuracy of data using different approaches, such as comparing data on the same localities and identifying a more reliable data source;
- Identifying data with the limited access;
- Identifying additional resources for publication.

Features and Description of Modules

4. Infrastructure Map

The infrastructure map visualizes geospatial data on the location of existing and planned telecommunications networks, as well as infrastructure facilities potentially suitable for their establishing. It allows to evaluate a development degree of the backbone networks in a particular region, the development prospects, the availability of alternative networks in the event of damage, etc.

Users:

- The Ministry of Digital Transformation of Ukraine (MDTU);
- National Regulatory Authority of Ukraine - National Commission for the State Regulation of Communications and Informatization (NRA);

- State Service of Special Communication and Information Protection of Ukraine (SSSCIPU);
- Processed data-operators and providers, local authorities.

Data sources:

- NRA's reports, based on commercial operators information;
- Public owners of the networks: Public joint-stock Company "Ukrtransgaz", Public joint-stock Company "Ukrtransnafta", State Administration of Railway Transport of Ukraine "Ukrzaliznytsia";
- Monopoly owners of infrastructure and responsible authorities: Ministry of Energy and Environment Protection of Ukraine (MEEPU), State Agency of Automobile Roads of Ukraine (SAARU).

Displayed information:

- 1) Telecommunication networks:
 - a) network owners;
 - b) connection points of fiber networks;
 - c) cable and equipment specifications:
 - i) throughput;
 - ii) count of fibers (if fiber optic cable);
 - iii) date of establishing;
 - iv) possible lifetime;
 - v) type of installation.
- 2) Energy networks:
 - a) network owners;
 - b) type of pillar;
 - c) the availability of optics along the network.

5. Coverage and penetration map of fixed broadband

The map shows the coverage of fixed Broadband in a certain area, as well as the relevant characteristics of the broadband: technology, speed, etc. Today it is possible to display data at local level (city or village), in the future it is necessary to display by individual house / specific address.

Users:

- MDTU
- NRA;
- SSSCIPU;
- Citizens;
- Operators and providers;
- Potential investors;
- Local authorities;
- Business subscribers.

Data sources:

1. Response of operators and providers to NRA's official request in February 2020;
2. Data of networks' connection with advanced system of departments and institutions:
 - a. MDTU surveys on social infrastructure facilities (educational institutions, medical institutions, libraries, fire/police stations, etc) of 2019-2020;
 - b. IDs of the social infrastructure objects;
 - c. Public joint stock company "Ukrposhta";
 - d. Nova Poshta;
3. Speed measurement data:
 - a. Nperf;
 - b. Ookla;
4. Municipalities survey data of the State Service of Special Communication and Information Protection of Ukraine of the year 2018.

Displayed information (concerning locality):

1. Provider;

2. Provider's ID (National State Registry of Ukrainian Enterprises and Organizations of Ukraine / Individual Taxpayer Identification Number);
3. Provider's contact information and website;
4. Technologies used to provide an access;
5. Maximum connection speed at local level;
6. Number of subscribers with a tariff plan up to 10 Mbps;
7. Number of subscribers with a tariff plan from 10 to 30 Mbps;
8. Number of subscribers with a tariff plan from 30 to 100 Mbps;
9. Number of subscribers with a tariff plan of more than 100 Mbps;
10. Number of subscribers using DOCSIS technology (using coaxial cable);
11. Number of subscribers using FTTx technology (using fiber optic cable);
12. Number of subscribers using xPON technology (using fiber optic cable);
13. Number of subscribers using WiMAX technology (using broadband fixed radio technology);
14. Number of subscribers using xDSL technology;
15. Number of subscribers using other technologies.

№	Provider	Provider's ID	Technologies used to provide an access	Maximum speed	Number of subscribers according to speed Mbps					Number of subscribers according to used technologies					
					up to 2	from 2 to 30	from 30 to 100	from 100 to 1000	from 100 to 1000	DOCSIS	FTTx	xPON	WiMax	xDSL	Other
1.	Provider №1	99999999	PON/GPON, FTTx	1 Gbps	0	0	35	12	0	0	35	12	0	0	0
2.	Provider №2	1231231	DOCSIS	30 Mbps	150	65	0	0	0	215	0	0	0	0	0

Displayed information (for a specific social infrastructure institution)

1. Object name;
2. Object type;
3. Object address;
4. Internet provider' name;
5. Provider' ID;
6. Provider' contact and website;
7. Technology;
8. Connection speed;
9. WiFi availability for visitors.

№	Object name	Object type	Address	Internet provider name	EDRPOU Code/ITIN	Contacts	Access technology	Connection speed	WiFi availability
1	School № 5	Primary and Secondary School	99, Khreshchatyk Street, Kyiv	TOV "Provider"	999999	099999	PON/GPON	100 Mbps	+

2	Library №4	Library	5, Khreshchatyk Street, Kyiv	Individual entrepreneur "Provider"	999999999 9	99999 9	WiMAX	10 Mbps	-
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6. Coverage map of mobile broadband

It allows to evaluate the coverage of mobile broadband, to find out the coverage at a certain point.

Users:

- MDTU;
- NRA;
- SSSCIPU;
- Citizens;
- Operators and providers;
- Potential investors;
- Local authorities;
- Business subscribers.

Data sources:

1. The Ukrainian State Centre of Radio Frequencies (UCRF)' calculated data;
2. Official operators' data provided to State Authorities.

Displayed information:

1. Coverage technology;
2. The company provides coverage.

7. Data submission and reporting to the State authorities

Today, the operators' reporting and its further operating are much more complicated. Technologically, it is impossible to collect coverage data in detail over a locality, which significantly distorts coverage data and prevents informed decision-making. Similarly, there is no possibility to transmit geospatial data on infrastructure. It is necessary to ensure the transmission and operating of such data in the most automated way.

Users:

- MDTU
- NRA
- SSSCIP
- Operators and providers

8. Citizens feedback and quality monitoring

Sometimes, the data displayed on the portal seems not to be true. Getting feedback from citizens on the lack of coverage where it is marked, and available where it is marked with white spots, will allow to update and verify the data. Moreover, it will help assess the demand for services and prioritize the development in certain localities. In addition, today reliable information about the quality of communication is not available for subscriber and the state as well. It is necessary to provide the ability to collect the Broadband users' feedback and verify the service quality, as well as provide such data to the state.

Users:

- Citizens;
- MDTU;
- NRA;
- Operated information - operators and providers.

9. Procurement simplifying in the broadband field

The experience shows the low efficiency of public budgets to provide citizens and establishments with the Broadband, as well as the complexity of control. The tool is intended to standardize the tender procedures and possible connection of facilities, simplify the procurement process for direct contractors, ensure the transparency and competition, unified the control mechanism, automate the process of approval of such purchases by the MDTU (Head of the National Informatization Program).

Users:

- Fund managers;
- Operators, providers;
- MDTU (Directorate for Digital Infrastructure Development and Head / Directorate for the National Informatization Program Implementation, who agrees procurements in the field of informatization);
- Public authorities which control the use of the state budget (Accounting Chamber of Ukraine, State Audit Service of Ukraine, etc.).

Requirements:

1. Data on the connection of the facility and the possibility to inform providers and operators acting in the region when the procurement begins;
2. Standard documentation for each type of social infrastructure object;
3. Opportunity to agree planned procurement within the framework of the National Informatization Program;
4. Interoperability and/or availability of a Prozorro public procurement application;
5. Data on payments made through the State Treasury Service of Ukraine and cash expenditures of the fund managers;
6. Standardized contract data;
7. Confirmation/refusal of connection of facility by the administration prior to the tender (to avoid overlapped financing) and after the tender (to confirm the connection);
8. Periodic speediest results of the connected object.

10. Comparison of Providers' Tariffs and Services

Citizens and businesses should have a convenient and independent tool for comparing the rates and conditions of telecommunication services provided by different providers in the telecommunications market. Relevant information should be up-to-date and accessible, periodically published on the portal based on clear and objective criteria. The creation of such a toll would be in accordance with the provisions of Article 103 of Directive (EU) 2018/1972 of the European Parliament and of the Council of 11 December 2018 establishing the European Electronic Communications Code.

Users:

- MDTU;
- NRA;
- Citizens;
- Operators and providers;
- Business subscribers.

Data sources:

1. Data from operators;
2. NRA reporting.

Requirements:

1. Contact details of providers;
2. Scope and conditions of the offered services;
3. Main features of each service, including the quality of service parameters;
4. Data on tariffs and tariff plans of service providers.

11. Interoperability and Open Data

In order to provide automatic updating of periodic data (e.g. reporting of operators and telecommunication providers), it is necessary to ensure interaction (interoperability) with other state electronic information resources (hereinafter SEIR) by connecting to the Electronic Interaction System of State Electronic Information Resources (Trembita). As some SEIRs, including the reporting system of the National Regulator, are not connected to the Trembita, it is necessary to ensure the interoperability of the Portal and the SEIR, which can be a data source for the Portal.

Besides, public data of the portal should have the status of "open data" in accordance with the Cabinet of Ministers of Ukraine Decree № 835. The application program interface should provide an automatic upload of data to the Unified Portal of Open Data (data.gov.ua). This approach will give an opportunity to develop other useful Internet coverage/penetration services in Ukraine.

Users:

- Citizens;
- Business;
- MDTU;
- NRA;
- NGOs;
- Operators and providers.

TERMS OF REFERENCE – PART B

BACKGROUND INFORMATION

1. Benefitting Zone

Ukraine

2. Contracting authority

The European Union, represented by the European Commission, B-1049 Brussels, Belgium.

3. Contract language

English

LOCATION AND DURATION

4. Location

- **Junior Telecommunications Expert :**

- Normal place of posting of the specific assignment: The location of this assignment is Kyiv, Ukraine. The experts are required to spend at least 60% of their working time in Ukraine. It is expected that the bidder will identify in their proposal the relevant number of working days for home-based work as well as for the work in Ukraine.
- Mission(s) outside the normal place of posting and duration(s):

- **Senior Business Development / Finance Expert :**

- Normal place of posting of the specific assignment: The location of this assignment is Kyiv, Ukraine. The experts are required to spend at least 60% of their working time in Ukraine. It is expected that the bidder will identify in their proposal the relevant number of working days for home-based work as well as for the work in Ukraine.
- Mission(s) outside the normal place of posting and duration(s):

- **Junior Business Development/ Finance Expert :**

- Normal place of posting of the specific assignment: The location of this assignment is Kyiv, Ukraine. The experts are required to spend at least 60% of their working time in Ukraine. It is expected that the bidder will identify in their proposal the relevant number of working days for home-based work as well as for the work in Ukraine.
- Mission(s) outside the normal place of posting and duration(s):

- **ICT Business Analyst and Systems Architect :**

- Normal place of posting of the specific assignment: The location of this assignment is Kyiv, Ukraine. The experts are required to spend at least 60% of their working time in Ukraine. It is expected that the bidder will identify in their proposal the relevant number of working days for home-based work as well as for the work in Ukraine.

- Mission(s) outside the normal place of posting and duration(s):
- **Senior Telecommunications Expert :**
 - Normal place of posting of the specific assignment: The location of this assignment is Kyiv, Ukraine. The experts are required to spend at least 60% of their working time in Ukraine. It is expected that the bidder will identify in their proposal the relevant number of working days for home-based work as well as for the work in Ukraine.
 - Mission(s) outside the normal place of posting and duration(s):
- **Senior Legal Expert on Ukrainian Telecommunication Rules :**
 - Normal place of posting of the specific assignment: The location of this assignment is Kyiv, Ukraine. The experts are required to spend at least 60% of their working time in Ukraine. It is expected that the bidder will identify in their proposal the relevant number of working days for home-based work as well as for the work in Ukraine.
 - Mission(s) outside the normal place of posting and duration(s):
- **Team Leader:**
 - Normal place of posting of the specific assignment: The location of this assignment is Kyiv, Ukraine. The experts are required to spend at least 60% of their working time in Ukraine. It is expected that the bidder will identify in their proposal the relevant number of working days for home-based work as well as for the work in Ukraine.
 - Mission(s) outside the normal place of posting and duration(s):

5. Start date and period of implementation

The indicative start date is 13/09/2020 and the period of implementation of the contract will be 600 days from this date (indicative end date: 06/05/2022).

REQUIREMENTS

6. Expertise

For this assignment, one individual expert must be proposed for each position.

The expertise required for the implementation of the specific contract is detailed below.

- **Junior Telecommunications Expert :**
 - General description of the position: One Junior Telecommunications Expert with experience in designing and executing broadband deployment plans.
 - Expert category: Cat. III (>3 years of experience)
 - Qualifications and skills required: Education at least a Master degree in Telecommunications Engineering or equivalent of 5 years as telecommunication engineer in Ukraine or in a Member State of the EU.

- General professional experience: At least 3 years of experience in telecommunication projects.
- Specific professional experience: Proven experience in designing and executing broadband deployment projects. The different projects shall cover at least one of the parts of the network (first-mile, area and backbone networks) and/or one group of technologies (DSL, cable or fibre) at regional or national level. However, the necessary experience should be demonstrated concretely by reference to concrete mandates or projects (reference to minimum 1 project is required).
- Language skills: Very good command of English and of Ukrainian is required.
- Number of working days: **320** days
- Additional information: One Junior Telecommunications Expert with experience in designing and executing broadband deployment plans.
- **Senior Business Development / Finance Expert :**
 - General description of the position: One Senior Business Development / Finance Expert with in-depth experience in business development in the telecommunications sector in the EU (knowledge of telecommunications sector in Ukraine and/or international financial institutions will be an asset).
 - Expert category: Cat. I (>12 years of experience)
 - Qualifications and skills required: Education at least Master degree in economy or finance or business administration, or equivalent of 15 years of work in the areas of business development or financial management in Ukraine or in a Member State of the EU.
 - General professional experience: At least 12 years of experience in business development, project financing with international financial institutions or strategy in the telecommunications sector in Europe.
 - Specific professional experience: At least 7 years of professional experience that includes a combination of the following (the necessary experience should be demonstrated concretely by reference to concrete mandates or projects): o management consulting or investment banking within a Telecom practice; o business development, strategy, corporate development or corporate finance at a telecom company; and o work with IFIs on the finance of, preferably digital, projects.
 - Language skills: Excellent command in English is required. Knowledge of Ukrainian would be an asset.
 - Number of working days: **95** days
 - Additional information: One Senior Business Development / Finance Expert with in-depth experience in business development in the telecommunications sector in the EU (knowledge of telecommunications sector in Ukraine and/or international financial institutions will be an asset).

- **Junior Business Development/ Finance Expert :**

- General description of the position: One Junior Business Development / Finance Expert with experience in business development in the telecommunications sector in the EU (knowledge of telecommunications sector in Ukraine and/or international financial institutions will be an asset).
- Expert category: Cat. III (>3 years of experience)
- Qualifications and skills required: University degree.
- General professional experience: At least 3 years of experience in business development or strategy in the telecommunications sector in Europe.
- Specific professional experience: At least 3 years of professional experience that includes a combination of the following (the necessary experience should be demonstrated concretely by reference to concrete mandates or projects): o management consulting or investment banking within a Telecom practice; o business development, strategy, corporate development or corporate finance at a telecom company; o work with IFIs on the finance of, preferably digital, projects.
- Language skills: Very good command of English and of Ukrainian is required.
- Number of working days: **160** days
- Additional information: One Junior Business Development / Finance Expert with experience in business development in the telecommunications sector in the EU (knowledge of telecommunications sector in Ukraine and/or international financial institutions will be an asset).

- **ICT Business Analyst and Systems Architect :**

- General description of the position: One ICT Business Analyst and System Architect.
- Expert category: Cat. II (>6 years of experience)
- Qualifications and skills required: Education at least Master Degree in ICT or equivalent of 7 years in ICT.
- General professional experience: At least 6 years in managing projects, deigning/ developing ICT architectures, requirements gathering and testing. The experience may include different projects for private, state or non-governmental organizations or international institutions and organisations. However, the necessary experience should be demonstrated concretely by reference to concrete mandates or projects.
- Specific professional experience: • Proven experience in using UML, BPMN or similar business analysis tools; • Proven experience in using project management methodologies such as PMI, PRINCE2 or PM2.
- Language skills: Excellent command in English and Ukrainian is required.
- Number of working days: **70** days
- Additional information: One ICT Business Analyst and System Architect.

- **Senior Telecommunications Expert :**

- General description of the position: One Senior Telecommunications Expert with in-depth experience in designing and executing broadband deployment plans.
- Expert category: Cat. I (>12 years of experience)
- Qualifications and skills required: Education at least Master degree in Telecommunications Engineering or equivalent of 15 years as telecommunication engineer in Ukraine or in a Member State of the EU.
- General professional experience: At least 12 years of experience in telecommunication projects.
- Specific professional experience: At least 7 years of designing and executing broadband deployment projects. The different projects shall cover different parts of the network (first-mile, area and backbone networks) and/or technologies (DSL or cable, fibre optics – FTTx – and wireless – 4G, 5G, citywide WiFi) at regional or national level. However, the necessary experience should be demonstrated concretely by reference to concrete mandates or projects (reference to minimum 3 projects is required).
- Language skills: Excellent command of English is required. Knowledge of Ukrainian would be an asset.
- Number of working days: **190** days
- Additional information: One Senior Telecommunications Expert with in-depth experience in designing and executing broadband deployment plans.

- **Senior Legal Expert on Ukrainian Telecommunication Rules :**

- General description of the position: One Senior Legal Expert on Ukrainian Telecommunication Rules.
- Expert category: Cat. I (>12 years of experience)
- Qualifications and skills required: Education at least Master Degree in Law or equivalent of 15 years of work as a lawyer either in Ukraine or in a Member State of the EU.
- General professional experience: Qualification as a lawyer in Ukraine and an actively practising lawyer for a total period of at least 12 years, with a focus on the relevant legal area.
- Specific professional experience: At least 7 years of legal counselling on Ukrainian telecommunication law. The experience may include various forms of legal counselling for private clients, state or non-governmental organizations or international institutions and organisations. However, the necessary experience should be demonstrated concretely by reference to concrete mandates or projects.
- Language skills: Excellent command in English and Ukrainian is required.
- Number of working days: **40** days

- Additional information: One Senior Legal Expert on Ukrainian Telecommunication Rules.
- **Team Leader:**
 - General description of the position: One of the senior experts serves as the responsible “Team Leader”. The Team Leader will be responsible for organizing the work, overseeing the work progress of the team and ensuring the full completion of the required tasks. He or she will be the main contact point for the implementation of this contract, including the management of the other experts and the contacts with the Contracting Authority.
 - Expert category: Cat. I (>12 years of experience)
 - Qualifications and skills required: Please, see the requirements either for the profile of Senior Telecommunications Expert or for the profile of Senior Business Development / Finance Expert.
 - General professional experience: At least 12 years of experience in telecommunication projects.
 - Specific professional experience: Please, see the requirements either for the profile of Senior Telecommunications Expert or for the profile of Senior Business Development / Finance Expert.
 - Language skills: Excellent command of English is required. Knowledge of Ukrainian would be an asset.
 - Number of working days: **25** days
 - Additional information: One of the senior experts serves as the responsible “Team Leader”. The Team Leader will be responsible for organizing the work, overseeing the work progress of the team and ensuring the full completion of the required tasks. He or she will be the main contact point for the implementation of this contract, including the management of the other experts and the contacts with the Contracting Authority.

7. Incidental expenditure

The provision for incidental expenditure covers ancillary and exceptional eligible expenditure incurred under this contract. It cannot be used for costs that should be covered by the contractor as part of its fee rates, as defined above. Its use covers:

The provision for incidental expenditure for this contract is EUR 53400. This amount must be included unchanged in the budget breakdown.

If applicable, see part A of the Terms of Reference for more details on the use of the incidental expenditure.

8. Lump sums

1 - TASK 6: AD HOC ACTIVITIES

Subtask 6.1 Broadband mapping At the request of the Contracting Authority, the Contractor shall support the Ukrainian authorities in performing an infrastructure mapping to identify the white, grey

and black areas. The mapping shall contain, at least, detailed and georeferenced information (e.g. using cells of a given size) about the telecommunications companies, location, route, infrastructure type, current use, technology/ies and contact point. Deliverables: Broadband mapping

Number of time the activity should be performed: 1

9. Expenditure verification

An expenditure verification report is required for final payment only.

The provision for expenditure verification covers the fees of the auditor charged with verifying the expenditure of this contract in order for the contracting authority to check that the invoices submitted are due.

Tenderers are required to indicate, in their “Organisation and Methodology”, the name and address of the proposed auditor or audit firm that will be in charge of producing the expenditure verification report(s).

The provision for expenditure verification for this contract is EUR 5000. This amount must be included unchanged in the budget breakdown.

REPORTS

10. Reports and deliverables requirements

Title	Content	Language	Submission timing or deadline
Desk report	Broadband plan assessment; Data sources analysis; Areas of intervention and investments models	English	Within 7 Month(s) after the project start
Final report		English	Within 17 Month(s) after the project start
Desk report	Interim Action Plan with the pipeline of “no-regret” projects; Update of the Pipeline of projects	English	Within 10 Month(s) after the project start
Desk report	Report describing support given in drafting secondary legislation for NRA/MDTU	English	Within 5 Month(s) after the project start
Update website		English	Within 13 Month(s) after the project start
Desk report	Final pipeline of projects	English	Within 17 Month(s) after the project start
Desk report	Technical specifications	English	Within 6 Month(s) after the project start

Title	Content	Language	Submission timing or deadline
	and architecture of each module of the broadband system; Technical specifications of quick-wins		
Broadband mapping	Upon request - These ad hoc activities related to broadband mapping will be paid on the basis of lump sums.	English	Within 14 Month(s) after the project start
Inception report		English	Within 1 Month(s) after the project start
Progress report		English	Within 10 Month(s) after the project start