DISCLAIMER:

Please note that the information contained in this document is an extract of the Terms of Reference (ToR) and does not constitute the integral tendering documentation for this call for tenders.

The full tendering documentation (ToR and annexes) can be downloaded from the *Portail des marches publics* in the link available under the section for this call.

The only official tendering documentation (ToR and annexes) is the one published in the *Portail des marches publics*. The ESPON EGTC cannot be held responsible for any errors that may appear in the ToR published in its website or any other platform than the official *Portail des marches publics*.

In case of interest, you are invited to download the full tendering documentation from the *Portail des marches publics* and submit your tender via the same platform.

CORRIGENDUM:

NEW SUBMISSION DEADLINE: 16 April 2024 at 11h00 CET

Correction of Annex A – ESPD Part IV 1a) and 2a)

Call for tenders

Extract of the Terms of reference

ESPON European Research Project

"Territorial perspectives of digital transition in European regions (DIGIREG)"

ESPON EGTC
20 March 2024

Implementation Framework: The Single Operation within the ESPON 2030 Cooperation Programme implemented by the ESPON EGTC. The ESPON 2030 Monitoring Committee approved the Single Operation on 26 September 2022. The Single Operation is co-financed by the European Regional Development Fund via the ESPON 2030 Cooperation Programme.

This document details both the technical and administrative terms and conditions including its annexes and constitutes the dossier of this call for tenders. Its original is kept in the contracting authority's records and is the only version that is deemed authentic.

Key Information on the Procurement

Title	Territorial perspectives of digital transition in European regions (DIGIREG)
Procedure	EU Open
Contracting authority	ESPON EGTC 11, Avenue John F. Kennedy L-1855 Luxembourg Grand Duchy of Luxembourg
Type of contract	Service contract
Duration	21 months (18 months for contract implementation + 3 months for administrative closure)
Maximum available budget	EUR 800.000,00 (excluding VAT)
Place of delivery	Luxembourg
Lots	This tender is not divided into lots
Variants	Not permitted
Market access	Participation in this tender is open to all economic operators established in the European Union, the European Economic Area and third countries signatories to international agreements in the field of public procurement by which the EU is bound
Tender submission method	Electronic submission via the Luxembourg Public Procurement Portal (www.pmp.lu)
Deadline for sending requests for information And/or reporting errors, omissions, ambiguities, or discrepancies	09 April 2024 at 10h59 CET
Deadline for submission of tenders	**16 April 2024 at 11h00 CET**

Table of contents

1 What is to be done? (Purpose of the contract)

The ESPON EGTC is launching an open call for tenders to further build up ESPON's stock of research and provide new European territorial evidence in the framework of the ESPON 2030 Programme. The call for tenders shall result in a European research project being implemented within the framework of the Thematic Action Plan "Smart Connectivity".

The European research project "Territorial perspectives of digital transition in European regions" aims to provide new evidence on the development and territorial diffusion of digital divides. It shall comprehend the drivers behind and analyse available data at the relevant territorial scales (at least NUTS 3) in order to provide an overview of digital transition trends in different types of European territories. In addition, this European research project shall address socioeconomic impact of digital transition, including on the infrastructure system. The main target groups are national and regional/local level administrations which will be working on digital transition roadmaps in order to achieve targets of the Europe's Digital Decade.

1.1 Context

In 2020, the European Commission adopted its digital strategy 'Shaping Europe's Digital Future" which outlined vision, goals, and actions necessary to promote digital transformation within the EU and ensure Europe's competitiveness in the global digital economy. It encompasses various areas, including digital infrastructure, digital skills, digital economy, and digital rights. Due to the unprecedented acceleration in digitalisation efforts by public administrations, businesses and individuals during the Covid-19 pandemic, the European Commission, in 2021, adopted a follow up strategy "2030 Digital Compass: the European way for the Digital Decade" more clearly setting the digitalisation targets by 2030 and outlining practical steps on how to achieve and monitor the progress. In December 2022, the digital targets and a concrete governance structure were formalised at the EU level with the European Parliament and the Council adopting a decision establishing the Digital Decade Policy Programme 2030. Among many measures the Programme foresees that, for instance, by October 2023, each Member State shall submit to the Commission its national digital decade roadmap, covering the period up to 2030 which where possible shall highlight also the regional dimension.

The "Digital Decade" targets are ambitious, for instance, by 2030 there is 100 % online accessible provision of key public services, all end users at a fixed location are covered by a gigabit network, etc. The first State of the Digital Decade report (2023) presents quite a critical outlook though on achieving the set targets, for instance, noting that at the outset of the Digital Decade, the EU is still far from achieving the Digital Decade connectivity targets. Thus, the report underlines the need of substantial acceleration and a deepening of the EU's and Member States' action. This also means addressing the territorial digital divide as a major obstacle.

As demonstrated by the European Strategy and Policy Analysis System (ESPAS) and the work by the European Committee of the Regions on digital cohesion, digital divide spans across several domains concerning digital skills, infrastructure development, digitalization of public services, etc., and the geography (urban vs rural) is at the heart of it. Moreover, the European Committee of the Regions EU Annual Report on the State of Regions and Cities (2022) shows that despite the fact that COVID-19 accelerated the digital transition, digital divides are still present and are even growing. The State of Regions and Cities 2023 edition reinforced the argument by showcasing how territorial digital divides may become a divisive factor to respond to cyberattacks and building digital resilience. CoR's pioneering Digital Resilience report (2023), for instance, shows in detail a huge variation in the level of digital resilience across European local and regional authorities, this given the fact that local authorities are some of the most vulnerable and preferred targets of hackers.

The OECD flagship publication Digital Economy Outlook 2020 in a similar fashion concluded that COVID-19 accelerated the use of digital technologies, but by no means digital divide is closing. From the perspective of territorial development, all key OECD's publications report a substantial urban – rural digital divide (Bridging digital divides in G20 countries (2021), OECD Regional Outlook 2023, Regions and Cities at a Glance 2022) which most profoundly manifests in the broadband access. The 8th Cohesion report concluded that unless the urban-rural digital gap is closed, the competitiveness of less developed and rural areas is likely to deteriorate, leading to even greater territorial disparities. The newly adopted OECD's Recommendation on Regional Development Policy (2023), thus manifests that reducing the urban-rural digital divide and seizing the opportunities of digitalisation in all places shall be a core principle of any regional development policy.

In other words, the European institutional push for digital transformation is laudable and ambitious, but it seemingly poorly reflects the territorial challenges of digital transition. The achievement of European digital targets in the context of territorial divides raises doubts about the feasibility and potential effectiveness of current approaches. A valid question may be posed – are the Digital Decade targets achievable in all territories and in different types of territories in particular?

Research on digital divide is massive and spanning across decades.[1] Along the way, three types of digital divides have been identified:

1) physical access to digital technologies, like the broadband access (first-level divide);
2) differences in the level of digital skills, modes, and purposes of using digital technologies (second-level divide);
3) wider socio-economic effects of using digital technologies (third-level divide).

Despite the advances in research, surprisingly, the concept of digital divides is still not well elaborated concerning the 2nd and 3rd level divides.[2] For instance, the question if something can be called a "digital divide" is still valid since the territorial context matters, as even in the presence of digital skills, motivation to use digital technologies may be lacking due to various reasons.

The territorial perspective adds another layer of complexity. In spatial terms "territorial digital divide" is mostly understood as urban-rural digital divide and it is vastly researched with a focus on two broad themes of connectivity and digital inclusion.[3] At the EU level the problem is highlighted as well, for instance, the European Commission notes in its EU Rural Vision 2040 that remote rural areas encounter various obstacles, among them a notable digital divide between urban and rural areas. However, research argues that a major shortcoming is that connectivity and digital inclusion have been analysed mostly separately and do not account for specificities of different local communities. Thus, ideally, connectivity and digital inclusion research shall be combined and applied in specific territorial contexts, also with reference to the infrastructure system.

From the perspective of policies targeted to bridge territorial digital divides, the current research, for example, has examined the correlation between local requirements and investment choices in an effort to reduce territorial digital disparities, by analysing data on the allocation of the EU Funds for the 2014-

[1] van Dijk, J. (2020). The Digital Divide. Polity Press. Cambridge. https://www.wiley.com/en-us/The+Digital+Divide-p-9781509534456

[2] Vladimir Korovkin, Albert Park & Evgeny Kaganer (2022) Towards conceptualization and quantification of the digital divide, Information, Communication & Society, https://doi.org/10.1080/1369118X.2022.2085612

[3] Salemink, K., Strijker, D., & Bosworth, G. (2017). Rural development in the digital age: A systematic literature review on unequal ICT availability, adoption, and use in rural areas. Journal of Rural Studies, 54 https://doi.org/10.1016/j.jrurstud.2015.09.001

2020 period.[4] The findings reveal four distinct regional strategies centred on four policy objectives: broadband connectivity, digital inclusion, digital government services, and ICT utilisation in enterprises. Moreover, the results indicate that, unlike the previous 2007-2013 period, the funding allocations for these objectives align more closely with the local ICT context, with regions in greater need receiving higher funding for their specific goals.

Several previous ESPON projects and activities have addressed the digital transition from a territorial perspective. The ESPON DIGISER project (2022) provided relevant insights on the levels of digitalisation of governments and public services in countries, regions and cities across Europe by analysing wider linkages and impacts on society and economy of the digital transition of governments and public service provision. The project piloted a first effort of its kind at carrying out a survey of 250 European cities to gain insights on the key digitalisation indicators in public administrations. It also developed a handbook which provides actionable guidance to local and national policy makers on addressing barriers in using digital innovation to transform governance and public service provision.

During the ESPON bi-annual seminar organized together with the Estonian Presidency of Council of the EU (2017), a wide debate unfolded on the role of digital transition in regional development, a set of policy recommendations and the context of territoriality in digital transition was captured in the post-seminar brief and a policy brief which focused on digital transition of public services.

The ESPON policy brief "Digital Innovation in urban environments" further aimed to help European, national, regional and urban authorities, businesses, academia and citizens to better understand how digitalization and new technologies can be harnessed to support the transformation of cities into open platforms of open innovation and the promotion of digital urbanism. In addition, a thematically focused paper on e-health provided a series of recommendations on how to support, speed up and scale up the digital innovation and organisational change across the EU that are required to transform the way healthcare services are provided.

1.2 Objective

The Digital Decade has set ambitious targets. Hence, the goal of this European research project is to gain a comprehensive understanding of territorial digital divides considering the main aspects of digitalisation: digital skills, e-government solutions, remote working, digitalisation of public services and services and digitalization of infrastructures etc. This understanding will ultimately help in achieving the attainment of the Digital Decade targets at the territorial level. This project aims at primarily informing those decision-makers at all levels who deal with designing, implementing and evaluating policies supporting the digital transition of their territories.

Presently, limited insights can be gleaned regarding digitalisation at the subnational level. Only basic statistical indicators are accessible, and mostly at the NUTS 2 level for comparative analysis. First signs are appearing that at least for the first-level divide (access to digital technologies) a very detailed territorial picture is emerging. The JRC has lately employed Ookla Speedtest data to come up with an analysis at LAU level[5]. The JRC analysis of broadband accessibility spatial patterns demonstrated that urban areas have convenient access to the fastest available broadband, while rural and remote areas often fall short of meeting even the minimum standard of 30 Mbps.

[4] Reggi, L., & Gil-Garcia, J. R. (2021). Addressing territorial digital divides through ICT strategies: Are investment decisions consistent with local needs? Government Information Quarterly, 38(2). https://doi.org/10.1016/j.giq.2020.101562

[5] JRC (2022), Digital connectivity and the urban-rural divide. Exploring the spatial access to high-speed broadband across Europe. In : New perspectives on territorial disparities. See : https://publications.jrc.ec.europa.eu/repository/handle/JRC126033

This European research project offers, in this context, an opportunity to provide a deeper territorial insight on the second level and the third-level divides, given that the connectivity has been so far examined in detail. Apart from the recent JRC analysis, the European Commission has been keeping a close look at the broadband rollout in analysing the Digital Economy and Society Index (DESI) over the years and, for instance, in the latest Broadband coverage in Europe 2022 report. The OECD gathers similar statistics and hosts the Broadband Portal which gathers local level national statistics and provides basis for comparative analysis (e.g. Bridging the rural digital divide (2018) report).

The analysis thus shall provide insights on the main digital trends and characteristics of how the territorial second and third level digital divide is manifesting itself. As the EU member states will be obliged to elaborate their national and regional roadmaps on implementing the Digital Decade, this project - with its distinct focus on digital transition problematics at subnational level – it will be a valuable resource to elaborate their measures and actions that contribute to achieving the general objectives and the digital targets at national level.

It shall serve as a valuable input for the European Commission since the Commission shall annually submit and present to the European Parliament and to the Council a comprehensive report on the state of the Digital Decade. The outcomes of this project shall contribute to the process of informing the key European institutions on the territorial modalities of digital transition and serve the purpose of eventually designing relevant Cohesion Policy targets as well; also, regarding the digitalization of infrastructures and the ways it can contribute to overcoming the territorial gap between urban and rural territories. This project will also contribute to some of the flagship initiatives of the European Committee of the Regions concerning the promotion of the "digital cohesion" and "do no harm to cohesion" principles.

In effect, this European research project shall also help strengthening capacities and skills of policy stakeholders at all relevant levels in harnessing the potential of digital transition.

Here, it is also important to acknowledge the multitude of activities by the European Commission which are aimed at improving connectivity and bridging digital divide, in rural areas in particular. Thus, this European research project shall seek complementarities with existing research and policy activities, for instance, as outlined in the Rural Vision Platform's action plan.

The overall objective of this activity is to receive answers to the **following policy questions**:

- How can the "territorial" digital divide be effectively defined and conceptualised to address the specific challenges and needs of different types of territories?
- What are the main drivers of territorial digital divides, and how can they be addressed to move towards equal access to digital opportunities across all regions? What are the specific challenges and opportunities faced by different types of territories in terms of connectivity, e-government solutions, remote working, and public services?
- What are the key factors hindering the uptake of digital transition solutions for territorial development, such as legislative barriers, skills deficits, digital infrastructure limitations, funding constraints, and data privacy concerns?
- What are the socioeconomic impacts (including negative impacts) of digitalization in different types of territories, for instance, different speed in digital transition, that may cause further territorial inequalities; how to avoid/mitigate such impacts? To what extent digital technologies, including AI, and the digitalization process of the infrastructure system aggravate territorial disparities or, on the contrary, contribute to reducing them?
- How can policies and funding be better aligned to bridge the territorial digital divide and reduce territorial disparities in terms of physical connectivity in order to ensure an efficient digitalization of all territories? What are the best practices and policy approaches in bridging the territorial digital divide, and how can they be adapted to different local contexts?

- How can digital skills and literacy be effectively promoted in isolated and remote areas to enhance digital inclusion and reduce the second-level digital divide? How can stakeholders at different territorial levels enhance their capacities and skills in harnessing the potential of digital transition and implementing appropriate territorial governance mechanisms?
- What indicators can be developed to better measure digital transition trends/progress and capture territorial patterns at various territorial scales, such as NUTS 3 and lower?

The geographical coverage of the study shall encompass all EU member countries and partner states participating in the ESPON 2030 Programme. Where relevant, feasible and data available, the study shall also cover the United Kingdom.

1.3 Description of tasks

In pursuing the objectives and outputs outlined above, the following tasks shall be carried out within the framework of this European research project. Tenderers are requested to describe how they intend to implement the following tasks, to include in their proposal a description of their foreseen organisation and planning, to detail the proposed deliverables and to explain how the necessary resources shall be broken down between the different tasks.

1.3.1 Task 1: Digitalization trends

Analysis of digitalization trends at subnational level

The service provider shall analyse digitalisation trends in European regions, focusing on the second and third level divide. Firstly, the service provider must properly conceptualise the "territorial digital divide" by elaborating what the concept would entail for different type of territories and their actors – public administrations, businesses, individuals and civil society members. Such kind of conceptualisation shall go beyond the mainstream urban- rural divide discourse.

The European Commission has set up Digital Economy and Society Index (since 2023 not a standalone brand but part of the Report on the state of the Digital Decade) which effectively monitors digitalization trends at national levels. Currently, insights on subnational level are lacking, however, there are attempts to produce regional/local level DESI in order to understand territorial dynamics of digitalization. The Urban Agenda Partnership on Digital Transition elaborated two local sub-national DESI methods using Estonia as a case study. There are also some academic attempts along similar lines (for instance, by applying reduced version of the EC DESI at local level and developing a new rDesi, both being applicable to analyse subnational digitalization in Italy).

However, at the same time a concerted effort was made by the European Commission, the European Committee of the Regions and the ESPON Programme in 2020 to provide a comprehensive Local and Regional Digital Indicators (LORDI) framework (see Annex G for the draft framework) which would be applicable at a wider European scale. Whilst not being finalized, the draft framework provides a total list of 170 +potential indicators with elaboration on metadata and data sources. It serves as a valuable starting point for potentially acquiring data and performing analysis beyond the standard NUTS 2 level (see, for instance Digital trends in European regions at NUTS 2).

The service provider shall examine the LORDI framework and work out a list of core digital indicators which are able to capture digitalization trends at the territorial level beyond NUTS 2. Subsequently, the service provider shall ensure data collection and analytical analysis which unpacks the territorial dimensions of the second and third level divide. At all times the service provider can complement the analysis by any other existing territorial data related on digitalization. In addition, an inspiration can also

be drawn from the ESPON Big data indicators project which provided some insights on how to analyse some of the digital transition indicators using private big data platforms.

Importantly, by no means this task shall entail a full-scale data collection by exhausting as many sources as possible, however, inevitably data collection will be needed to establish reliable core digital indicators and provide appropriate analysis. Here, the service provider shall strive for gathering as detailed subnational data as possible; sampling is also permitted, however, samples need to be representative and the service provider must establish clear principles on how many and what types of territories will be included. The service provider is also encouraged to use LORDIMAS (self-assessment data on local digital maturity). The EGTC with the involved partners will continuously work on encouraging local and regional administration to submit self-assessment data via LORDIMAS. However, the EGTC may not have a capacity to fully satisfy the data needs of this project, for this reason, it is expected that the service provider shall take a pro-active role in reaching out to local and regional administrations, in case the LORDIMAS tool is deemed as essential data source.

1.3.2 Task 2: Territorial typologies

Elaborate territorial typologies and analyse drivers behind the territorial digital divides

Based on the analysis of the Task 1, the service provider shall elaborate typologies (this applies to all levels of digital divides) on how to cluster European regions in terms of digitalisation, especially concerning isolated and more remote areas and different types of territories in general. The JRC has already provided elaborated territorial typologies concerning the broadband access (see the study on territorial disparities). A shift in perspective was emphasized regarding the urban-nonurban divide, indicating that even areas classified as non-rural (such as towns and suburbs) lack access to high-speed connections. The service provider is thus encouraged to reveal territorial digital divides by going beyond the simplification of urban vs rural and addressing also mountains, islands and outermost regions. For example, the latest JRC study on remote areas, clearly emphasizes that rural areas can be further classified as strong remote rural areas, intermediate remote rural areas and weak remote rural areas each having their distinct characteristics which will have an impact on the uptake of the digital technologies.

On the one hand, each level of digital divide reinforces the other – access to digital technologies can be considered as the main driver which limits the use of technologies, leading to negative socioeconomic consequences due to inability to capitalize on the use. On the other hand, socioeconomic inequalities contribute significantly to digital divides, as regions with lower income or higher poverty rates encounter difficulties in accessing and affording digital technologies, including computers and smartphones. Consequently, this hampers their ability to participate fully in the digital economy and society. The service provider shall comprehend the drivers behind the territorial digital divides by analysing them in the context of elaborated territorial typologies. The research shall thus shed light on one of the most important aspects of digitalisation – are territorial digital divides a mere extension of socioeconomic territorial disparities?

1.3.3 Task 3: Socioeconomic impact

Analyse socioeconomic impact of digitalization

Digitalisation has dual nature, offering both benefits and challenges. On the positive side, it has the potential to bridge geographical gaps and disparities in Europe, enhancing the quality of life for individuals across all territories. This is made possible by the ability to provide internet access and deliver digital solutions in any location, thereby addressing physical accessibility limitations. The research clearly

suggests that digitalisation albeit being a complex endeavour can serve as the most effective means to improve public service provision, for instance, in sparsely populated areas.[6]

However, one must be also conscious of the socioeconomic impacts of digitalisation, as it can worsen already obvious territorial divides between more developed regions and less connected places, for instance, increasing the gap between the "digital forerunners" and the lagging behind ones – with lower capabilities to make the most of digitalisation. The seminal research by van Deursen and Helsper (2015) on the third level digital divide highlighted many examples of how those who have embraced digitalisation and use of internet are reaping benefits in the realms of economy, social life, health, political participation etc. Similarly, one can also think of digital capital which can be accumulated to consequently boost the offline economic, social and cultural capital. This inevitably may lead to further exacerbation of existing inequalities. On a political level European Parliament has called for attention to addressing socioeconomic consequences of digitalization, highlighting that digitalization can amplify existing inequalities and create new forms of discrimination.

While the concept of the third-level digital divide is fairly well documented, there is little research which looks into the territorial perspective of the third-level divide, encompassing also the socioeconomic consequences of digital transition. For instance, the recently finished HORIZON 2020 project DESIRA (Digitisation: Economic and Social Impacts in Rural Areas) looked at some of the impacts mostly in the agricultural context.

The service provider shall investigate how an uptake of digital technologies is playing out for different types of territories in terms of societal wellbeing, showcasing who wins and who loses from digitalisation and what is the way forward for all territories in order not to have a zero-sum game (win for some territories come at the expense of a loss for others). In addition, a particular complementary angle shall be an exploration on how digital policies and funding are correlating with any evolution of socioeconomic indicators at territorial level.

Since the transport sector plays an essential role for territorial socio-economic development and is currently experiencing a profound technological evolution, the service provider shall also analyze trends connected to the transport and mobility sector in terms of digitalization. The analysis shall investigate how digital transition in the transport sector has conditioned, influenced and modified territorial scenarios in terms of economic and social gaps in areas that present serious and permanent natural or demographic disadvantages, such as internal and rural areas or areas affected frequently by natural disasters.

To accomplish this ambitious task, the service provider shall propose a feasible methodological approach which can combine both quantitative and qualitative elements.

1.3.4 Task 4: Best practices

Provide an overview and analysis of best practices on addressing territorial digital divides

Effectively addressing the drivers of digital divides necessitates the implementation of comprehensive strategies which would enable equal access to digital opportunities across all regions in Europe. By looking into all levels of digital divides, the service provider shall elaborate a pan European overview of best policy practices that addresses obstacles (legislative barriers, skills deficits, digital infrastructure limitations, funding constraints, data privacy concerns etc.) hindering the uptake of digital solutions, especially for regions lagging behind in digital transition, and facing isolation as well as sparse settlement and population shrinkage.

[6] Alexandre Dubois & Franziska Sielker (2022) Digitalization in sparsely populated areas: between place-based practices and the smart region agenda, Regional Studies, 56:10, 1771-1782, DOI: 10.1080/00343404.2022.2035707

The latest research argues that there still there is no systematic European review and taxonomy of best practices in bridging the urban-rural digital divide.[7] Existing solutions have been presented in rather isolated studies and analyses – thus the aim of this task is to fill this gap and provide a comprehensive framework (with structured data) on how policies are being used to reduce and overcome territorial digital divide. The analysis shall take into account the outcomes of task 1 – 3 concerning conceptualization of territorial digital divides and analysis of existing territorial digital trends.

By analysing the context and implementation processes of best practice examples, the service provider shall consequently develop recommendations on how public policies and funding shall be better aligned to bridge the territorial digital divide and reduce territorial disparities, promoting an efficient digitalization in all types of territories. In practical terms it shall result in:

- Selection of concrete best policy examples as showcases, accompanied with a broader overview.
- Guidance on how to better implement national and regional level digital strategies, particularly, in order to bridge the territorial digital divides and gaps in digital transition.
- Guidance on capacity measures to enhance the regional and local public administration's ability to design and implement appropriate interventions at subnational level.

The policy recommendations should respond in particular to the policy questions indicated in chapter 1.2 of the Terms of Reference.

1.4 Expected outputs and deliverables

The outcome of the various analysis resulting from section 1.3 shall be reported in a textual way as well as in maps, graphs and interactive visualisations like storymaps, dashboards, infographics, videos (as agreed with the ESPON EGTC). The tenderer shall provide details on the nature and format of these deliveries already in its technical offer.

The following outputs and deliverables shall be provided covering the tasks of the requested service as specified above in section 1.3.

1.4.1 Expected outputs

The main outputs of the service shall be:

- A list of different typologies which characterise European regions and different type of territories in terms of digital transition.
- Subnational level analysis on European regions uncovering territorial perspectives and challenges related to second-level and third-level territorial digital divides.
- Stock-taking of available data at the respective territorial scales with a focus on how to overcome challenges in cases of limited data availability.
- A set of indicators at NUTS3 or lower territorial scales to measure digital transition trends or capture some specific territorial patterns in different type of territories.

[7] Marek Feurich, Jana Kourilova, Martin Pelucha & Edward Kasabov (2023). Bridging the urban-rural digital divide: taxonomy of the best practice and critical reflection of the EU countries' approach, European Planning Studies, DOI: 10.1080/09654313.2023.2186167

- Overview of and, where possible, structured data on the best policy practices to overcome territorial digital divides.
- Advice (guidelines) on how to better implement national and regional level roadmaps towards achieving the Digital Decade's targets.
- Guidance on capacity measures to enhance the stakeholders' ability to design and implement appropriate interventions at subnational level which shall ensure better uptake of digital transition/solutions, reducing territorial gaps in digital transition.
- Guidance on how to use new technologies as a tool to support transport infrastructure development and improving accessibility, especially of the most vulnerable areas.
- Data and interactive maps and graphs resulting from the research and provided in the format compatible with the environment of the ESPON Portal[8].

1.4.2 Deliverables

The technical offer shall include a description of the format and the content of all deliverables according to the methodological concept the tenderer proposes to implement. The technical offer shall also indicate to which task(s) each deliverable is referring to.

1.4.2.1 Predefined deliverables

The selected service provider is requested to submit at least 4 predefined deliverables, linked to foreseen payments in the contract (3 interim and 1 final payment):

- One inception deliverable
- Two progress reports
- One final deliverable

The table presented in section 1.5 below indicates the time schedule for the predefined deliverables.

1. An inception deliverable containing at least:

- Report (approximately 30 pages, excluding annexes) including:
  - Description of the conceptual framework to be applied
  - Definition of the most important concepts and aspects of the research
  - Overview and evaluation of validity and reliability of data and data sources to be used. A plan for overcoming potential challenges in relation to data collection and missing data.
- Work plan presenting the next steps foreseen in the project's implementation, including meetings and including response to any issues raised during the kick off meeting.
- Description of the format and content of the next intermediary deliverables.

2. A final deliverable containing at least:

- Final main report (40 to 80 pages) including:

[8] https://gis-portal.espon.eu/arcgis/apps/sites/#/espon-hub

  - Final version of the analysis and evidence from the mapping and analysis of digital trends in European regions.
  - Final version of the analysis and evidence from the mapping and analysis of territorial typologies
  - Final version of the analysis and evidence from the mapping and analysis of socioeconomic impacts of digital transition.
  - Final versions of the guidance materials
- Scientific annexes, detailing the methodology and the research results including:
  - Elaborated description of the methodological approach applied, including the data collection process (Task 1, 2, 3 and 4).
  - Additional technical analysis which concerns the analysis of territorial digital divides
- Presentation of the research results in the format and specific form agreed with the ESPON EGTC[9] and – whenever related to maps and other interactive forms of data visualisation - compatible with the environment of the ESPON Portal
- Data, maps and figures:
  - Source files for the maps and figures (incl. map project/design and vector formats).
  - Shapefiles, geodatabase(s), for all the static and interactive web-maps, dashboards or apps.
  - Data gathered according to the ESPON metadata template, corresponding to the principles of ESPON data strategy and integration of the collected data in the ESPON database, in cooperation with the ESPON EGTC.

3. Two progress reports

In addition to the above, the service provider will be requested to submit two progress reports, corresponding to foreseen interim payments in the contract.

Those brief reports (max. 10 pages) shall provide:

- an overview on the progress of the implementation of the project, highlighting the status of the different tasks and the challenges and risks associated for the good achievement of the research.
- the list the meetings held
- the list of the intermediary deliverables submitted since the previous pre-defined deliverable.

The service provider will receive written feedback from the ESPON EGTC on each mandatory deliverable (inception, final and progress reports) including approval or request for revision and/or addressing identified challenges (indicatively within two weeks after receiving them and one month for the final deliverable).

1.4.2.2 Intermediary deliverables

In addition to the predefined deliverables, service providers are expected to provide intermediary deliverables. These can take different forms, depending on the profile and content of the requested tasks. Their exact quantity, format and content shall be proposed in the technical offer, then agreed

[9] *This involves the concise and easy-to-grasp summary of overall research findings in an analogue or digital format by means of (a non-exhaustive list of forms): policy brief, infographics, dashboard, story map, simple video clip, apps, etc.)*

between the ESPON EGTC and the service provider at the kick off meeting. They shall be submitted on a scheduled basis corresponding to the progress of the implementation of the different tasks described above (see sections 1.3).

While leaving freedom to the tenderers to define the intermediary deliverables in their technical offer, the following shall be considered:

1) intermediary deliverables shall be planned throughout the project's life cycle and are expected in between each of the pre-defined deliverables.
2) compulsory element of the intermediary deliverables are: the data resource that shall be steadily acquired processed and submitted to the ESPON EGTC, a detailed overview of the data collection process and data structure, and adjustments related to the data strategy when necessary (see dedicated section about data deliverable process below).

The service provider will receive feedback from the ESPON EGTC on each deliverable.

The technical offer shall indicate the time schedule for all other intermediary deliverables proposed by the tenderer.

During the contract implementation, based on the project's progress, risk assessment, stakeholders' inputs and service provider's performance, the contracting authority may request an adaptation of the time schedule and the content of the proposed intermediary deliverables.

1.4.2.3 Data deliverable process and digital deliverables

Data and data visualisations are an integral part of all the above-mentioned deliverables. When it comes to data deliverables, it is important to document and provide associating metadata and all the data possible that would allow to reproduce the results. It is important to keep the potential reuse of data in mind when collecting and structuring them, therefore, detailed spatiotemporal granularity is important. Visualisations need to be adapted both for static representation in reports as well as interactive web-based content. The project is expected to deliver both static and interactive web-based maps and figures, when relevant also dashboards, applications or similar, suitable for ESPON website and Portal[10].

The delivery of data and (web)maps and/or any other relevant interactive content mentioned above shall be delivered and integrated throughout the implementation of the project as they are completed, finalised and agreed with the ESPON EGTC.

ESPON Portal is built upon a software system for web-based GIS, powering mapping and visualization, analytics, and data management. It is the backbone for creating and running the interactive web-maps, data stories, dashboards and any custom GIS applications the project may propose or what ESPON may request. Hence, all proposed/requested interactive visualisations or solutions must be compatible with the system. Access to the environment can be provided by ESPON.

1.4.3 Common requirements for all deliverables

All deliverables should be delivered in electronic (editable) format and the text – whatever the format of the deliverable, as relevant, should have gone through a thorough language check, preferably by an English native speaker. ESPON EGTC will provide the generic templates for the maps, however, the service

[10] See: https://gis-portal.espon.eu/arcgis/apps/sites/#/espon-hub

provider shall adjust the templates if necessary, depending on the geographic extent or the relevant peculiarities.

1.5 Project management

1.5.1 Mandatory meetings foreseen during the contract implementation

The service provider shall ensure participation (of at least with one team representative) in all mandatory meetings mentioned below. Costs related to these meetings must be included in the Annex B financial offer of this call for tenders. No other expenses will be paid by the contracting authority to the service provider.

Most of these meetings are held online. In case of a physical meeting (up to 4 physical meetings shall be organised during the life time of the project), it will normally take place at the ESPON EGTC's premises in Luxembourg. However, physical meetings may also take place at other suitable locations, upon agreement between the service provider, the involved stakeholders if relevant, and the ESPON EGTC.

Kick-off meeting

It will consist of a general presentation and dialogue regarding the objectives and tasks of the service contract. The kick off meeting will also address more precisely the organisation of the project and the plans for the intermediary deliverables. The service provider will receive guidelines on how to use the ESPON portal interface for data delivery and digital deliverables, on how to design the maps in line with the main elements of the ESPON layout, as well as all relevant information concerning the proper application of the ESPON Corporate Identity.

Coordination meetings

Project coordination meetings are organised to discuss the service contract implementation, the deliverables submitted and to provide related feedback. They take place on a regular basis (e.g. monthly basis or more frequently if deemed necessary) by a common agreement between the service provider and the ESPON EGTC. Their agenda and duration are agreed in advance. Written minutes are prepared by the service provider to document key decision points and shared with the ESPON EGTC after each meeting.

Steering Committee meetings

Partnership and cooperation are central to the implementation of ESPON European research projects and are prerequisites for ensuring useful results and effective policy uptake. The successful accomplishment of the objectives of this project will be achieved by proactive participation between selected stakeholders, the ESPON EGTC and the service provider at every stage of the implementation.

To allow for a framework that facilitates successful cooperation, a Steering Committee shall be established for the lifetime of this European research project. The main purpose of the Steering Committee is to ensure the involvement and active participation of stakeholders in the implementation and steering of the project and to safeguard the policy relevance of project outputs for the stakeholders.

The goals of the Steering Committee meetings are, as follows:

- To closely follow and advise the implementation of the research, making sure that it meets both research objectives and policy demands,

- To discuss and give feedback to deliverables from the service provider and provide guidance for the subsequent steps of the research and service contract implementation;
- To discuss and agree upon how to deliver - at each stage of the implementation – the results of the research to selected target groups.

The composition of the Steering Committee is defined by the ESPON EGTC and communicated to the service provider. It comprises at least stakeholders of the territories for which case studies are expected, the service provider and the ESPON EGTC. Other external stakeholders (e.g. representatives of the ESPON Monitoring Committee) and/or relevant organisations may also take part in the Steering Committee.

Indicatively, four steering committee meetings shall be foreseen.

- The first one shall take place ca. 1 month after the kick-off meeting, preferably as a physical meeting.

The timing and location of the other Steering Committee meetings will be discussed and agreed during the kick-off meeting and may be amended during the project implementation.

1.5.2 Indicative time schedule

The table below presents the indicative time schedule for the predefined deliverables and kick-off and steering committee meetings.

The exact deadlines for the predefined deliverables as well as indicative time schedule for all other intermediary deliverables and for coordination and steering committee meetings will be agreed during the kick-off meeting.

The minutes of the kick-off meeting, containing a record of the agreed dates, will be signed by the representatives of both, the service provider and the ESPON EGTC, and will be subject to article 4 - "Performance of the contract and subcontracting" of the service contract.

Meetings	Predefined deliverables	Indicative deadline[11]
Kick-off		As soon as possible (and normally within 2 weeks) after the award of the contract
	Inception Deliverable	T +1 months
1st Steering Committee		T + 2 months
	Progress report 1	T + 4 months
2nd Steering Committee		T + 7 months
	Progress report 2	T + 9 months
3rd Steering Committee		T + 12 months

[11] The letter "T" in this table stands for the date of the kick-off meeting. Timeframes are indicative.

Meetings	Predefined deliverables	Indicative deadline[11]
	Final Deliverable	T + 16 months
Final Steering Committee		T + 18 months

1.6 Competences and skills required

The service provider must have proven, European/transnational scale research expertise and multidisciplinary experience relevant to the contract subject matter in order to ensure the successful implementation of the service. The competences and experience of the service provider within the fields outlined below shall be clearly demonstrated and documented, as requested in Sections 3 and 4.

- Proven experience in studies addressing territorial development issues, including experience from policy-relevant and comparative analyses, preferably with a European or transnational coverage and including multi-disciplinary approaches.
- At least three of the proposed team members of the service provider shall have at least five years of experience and academic background in analysing digital transition from a territorial perspective in a pan-European context.
- Advanced GIS and web-based GIS, and data visualisation skills (QGIS, ArcGIS or equivalent) to carry out the necessary analytical work on the data resource, configure ESPON mapping templates when necessary, and present the research results in the digital format both in static and interactive manner by means of the forms agreed with the ESPON EGTC (e.g. maps, figures, webmaps, dashboards, story maps, infographics, simple video clips, apps, etc.
- Advanced data management, data quality checking, statistics, statistical programming skills (R, Python or equivalent). ESPON emphasises the importance of data quality, and highlights the complexity of data sourcing, harmonisation, data gap filling, especially when dealing with innovative, non-conventional or multitude of sources.
- At least two of the proposed team of experts shall have at least five years of experience and academic background in the fields of computer science, data collection and management, data quality check, web-based GIS and spatial data analysis.
- At least one member with a communication/journalistic background and experience in visualising and presenting research findings in an easy-to-grasp way.
- Team members shall demonstrate a very good linguistic ability to draft and communicate research findings in high-quality English language.

(...)

End of extract

Consult www.pmp.lu for downloading the full tendering documentation from the Portail des marches publics and submit your tender via the same platform.