

Enabling a data-informed public sector

*From hype to action using the **Big Data Test Infrastructure (BDTI)***

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DG CNECT
Directorate-General for Communications
Networks, Content and Technology

DG DIGIT
Directorate-General
for Informatics



Public Sector Information and the role of Data analytics

Data is everywhere and growing at an unprecedented pace.
Big Data: 3V - Volume, Variety, Velocity



Data is a key ingredient for services, products, and effective policy making.

There is an ambition to create a single European market for data and make more data available through powerful and trustworthy infrastructures and technologies, in line with EU values and regulations, to support citizens, public sector and companies.



What is the Big Data Test Infrastructure (BDTI)?



BDTI: Not **only** for **big data**, but for all **public sector information**



Six months free* of charge service for the EU public administrations



Ready-to-use data analytics stack and support



Cloud platform based on open-source tools



To help the public sector to derive insights from its data and accelerate transition towards data-driven decision making

* The cost of the pilot project must fit within the funding boundaries of the BDTI pilot budget

Big Data Test Infrastructure Objectives

Objectives

- Increase the easy accessibility, interoperability, quality and usability of public sector information in compliance with the requirement of the Open Data Directive
- Boost the re-use and combination of open public data across the EU for the development of information products and services, including AI applications
- High-value Datasets – Open Data Directive
- Testing Business-to-Government (B2G) data sharing collaborations for the public good
- Data Space Support Centre: explore and experiment with your data*
- BDTI provides a safe testing environment to run big data experiments for data space customers

* <https://joinup.ec.europa.eu/collection/semic-support-centre/data-spaces>



About the Big Data Test Infrastructure (BDTI)

The BDTI is funded by the **Digital Europe Programme (DEP)** focused on bringing digital technology to businesses, citizens and public administrations.

The DEP provides strategic funding in five crucial areas:

High performance computing

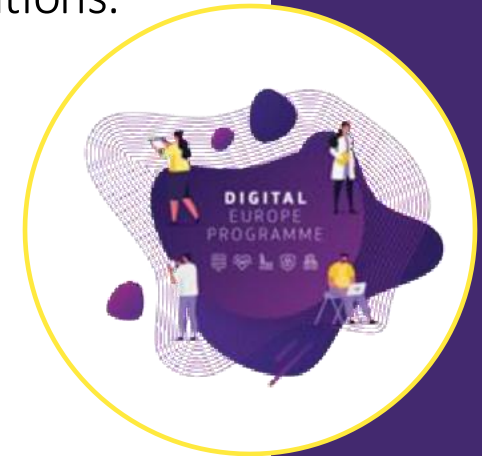
Cybersecurity

Artificial intelligence

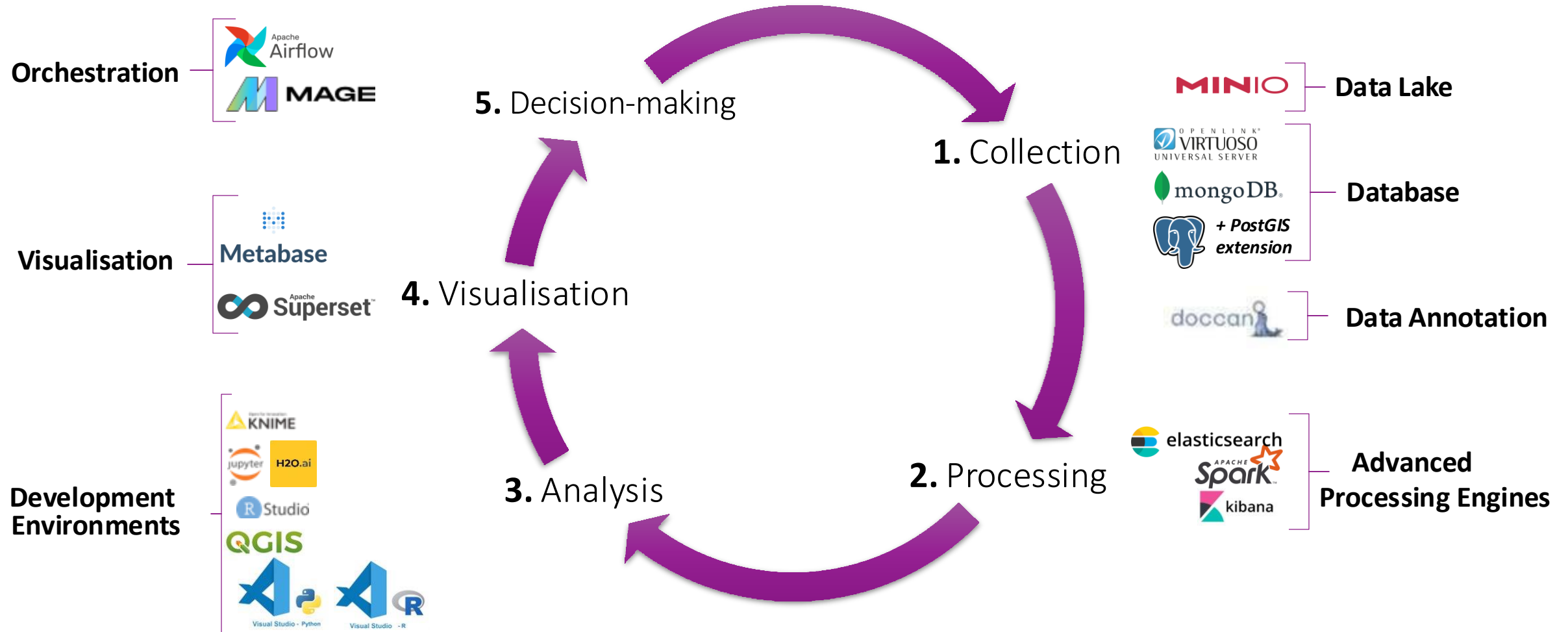
(Cloud, data and AI)

Advanced digital skills

Deployment and wide use of digital technologies



Open-source tools to support your data journey



The BDTI portal



portal.p1.bdti.dataplatform.tech.ec.europa.eu

Welcome

BDTI is a Platform-as-a-Service (PaaS), hosted in the cloud, that offers the necessary managed infrastructure and software frameworks for statistical analysis to data engineers, data scientist, and data analysts for a variety of use cases. The platform enables users to select from different components a deployment suited as a solution for their use case. Standard deployments are readily available, but BDTI allows combining components for a custom solution.

Documentation
[Learn more](#)

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v0.9.4

BIG DATA TEST INFRASTRUCTURE (BDTI)

<https://youtu.be/fdzNCB1CVUM>

Optimisation of Public Lighting - Dún Laoghaire County

The goal of this dashboard is to support you to achieve savings and CO2 emission reduction by turning lighting off when and where the least necessary. By default, lighting is always on between sunset and sunrise.

Daily full-lighting expenses versus projected expenses

| Date | Full-lighting (Euro) | Projected (Euro) | Savings (%) |
|---------------------|----------------------|------------------|-------------|
| Tuesday, April 18 | 22.4k | 17.7k | 17.7% |
| Wednesday, April 19 | 22.4k | 17.5k | 17.5% |
| Thursday, April 20 | 22.4k | 16.9k | 16.9% |
| Friday, April 21 | 22.4k | 16.3k | 16.3% |
| Saturday, April 22 | 22.4k | 19.5k | 19.5% |
| Sunday, April 23 | 22.4k | 16.7k | 16.7% |
| Monday, April 24 | 22.4k | 17.3k | 17.3% |

Projected savings next week: 27.3k Euro

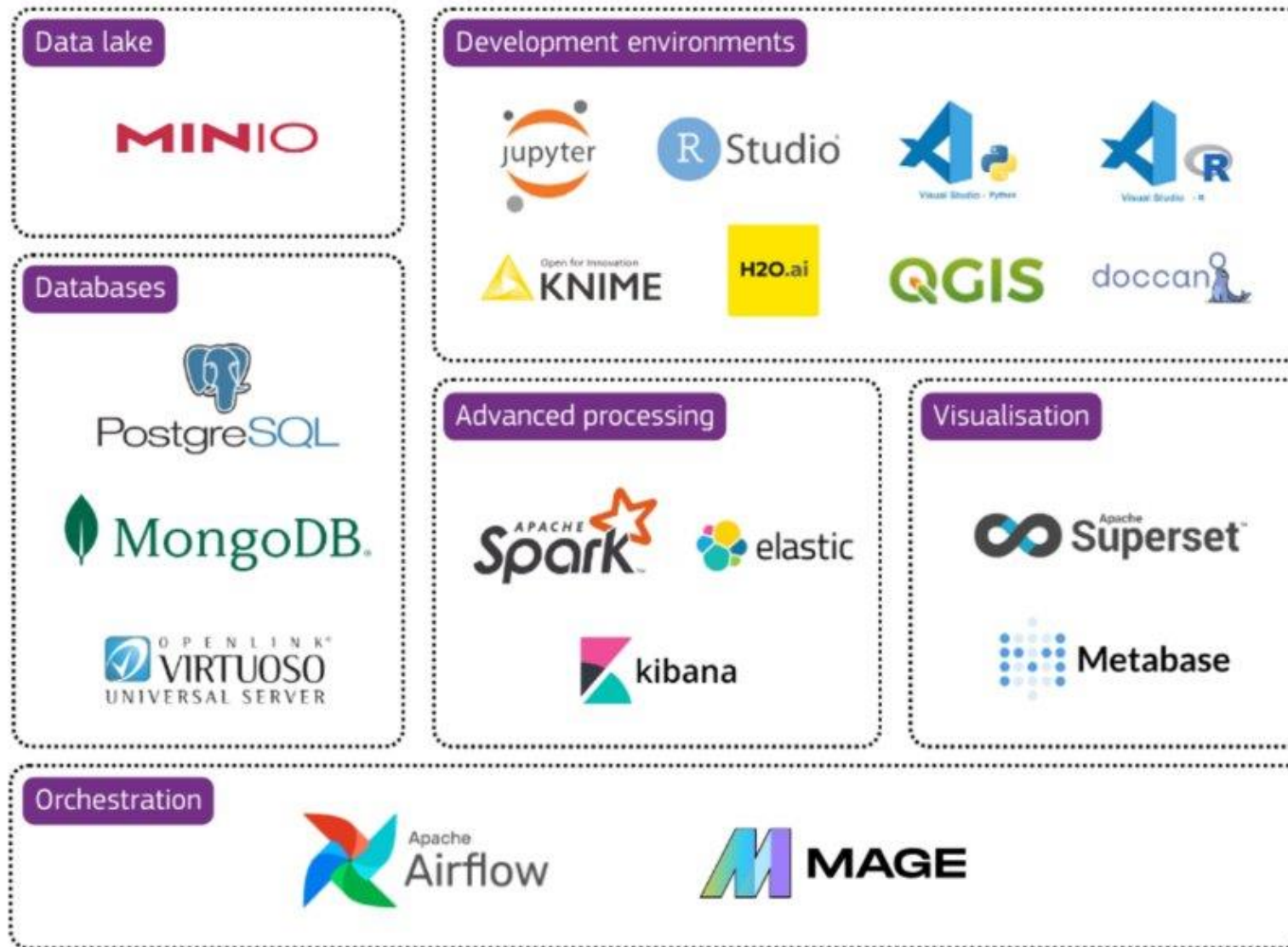
Projected emission reduction next week: 3.36 tCO2

Scenario comparison of projected savings and emission reduction after 1 year *

| Traffic level name | Cumulative emission savings (tCO2) | Cumulative savings (Euro) |
|---------------------|------------------------------------|---------------------------|
| 5 Very high traffic | 170k | 13.4k |
| 4 High traffic | 94.4k | 7.0k |
| 3 Medium traffic | 726.9k | 5.0k |
| 2 Low traffic | 466.0k | 3.7k |
| 1 Very low traffic | 221.5k | 1.7k |
| 0 None | 0 | 0 |

The BDTI portal

100% ❤️
open-source
components



Who is BDTI for ?



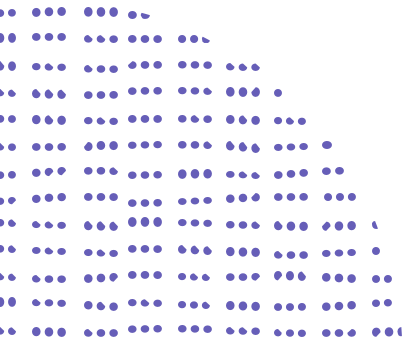
European Public Administrations

All European Public Administrations at **local, regional and national level** can independently apply for a BDTI pilot project



Partnerships with academia and the private sector

Academia (master, PhD students) and startups and companies (GovTech sector) can apply if they are collaborating with a public administration



Why use BDTI?



Benefit of **six months free of charge**, including **advisory and technical support**



Experiment with data analytics using high **performance infrastructure** that leverages the power of the **elastic cloud**



Receive guidance to move from a pilot to a **production-ready** process



Test your idea → Extract value → Create knowledge

Who used it already?



CONSELLERIA DE SANITAT (CS) - Text Mining

Conselleria de Sanitat, the Health Public Administration of the Comunidad Valenciana Regional Government, needed a tool capable of analysing and extracting knowledge from the huge quantity of scientific clinical articles coming from different sources (i.e. PubMed.gov, Covid-19 related clinical articles).

EU CONVALESCENT PLASMA DATABASE – Data sharing

The European Blood Alliance is working together with the European Commission (DG SANTE) to create and manage an **EU-wide open-access platform** that collects data to support a study on **Covid-19 convalescent plasma therapy**. The aim of the study is to assess in which conditions the convalescent plasma treatment is most effective, in order to take data-driven decisions on the therapy and focus the efforts of the research in the most promising directions.

CITY OF FLORENCE – Mobility data

The main goal of the Municipality is to perform a **cross correlation between the multiple datasets** available within the city to understand how people were and are moving between the different districts, to then derive precious insights about mobility and about **how services can be redesigned to foster cultural activities and events**.



Advanced **data visualisation** and **text mining** tools to help **extract knowledge contained in the documents**, supporting clinicians and managers in their clinical practices and day-to-day work.



A ready-to-use, virtual environment in which **data collected through a custom-built website** is ingested and anonymised, to be then analysed with advanced data visualisation and analytical tools. Initially, only donation data was processed, then the scope was increased to capture the **end-to-end of blood plasma, from donation to patient/clinical trial**.

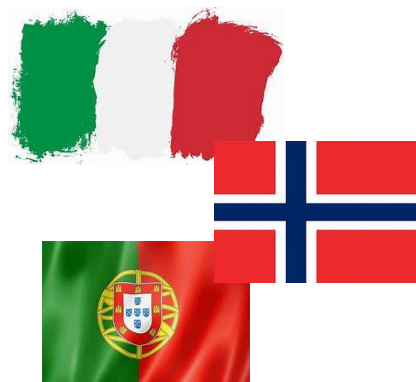


Predictive, descriptive and time-series analysis on multiple datasets collected **before, during and after the Covid-19 pandemic** such as: public Wi-Fi sensors, parking and geo-referenced data of people movements (i.e. tourists).



Italy, Portugal and Norway - E-Procurement data

This e-procurement pilot involved Italian, Portuguese, and Norwegian authorities and centred around providing a scalable virtual environment and analytics routines to work on procurement data and support the creation of the procurement data space. The goal was to develop a common framework using open-source software and infrastructure for monitoring EU public procurement through analytical services and tools based on a common data model.



Predictive time-series analysis and data transformation tools help Italian, Portuguese and Norway authorities develop an EU procurement common framework based on a common data model. It would enable public administration, businesses, and citizens in Europe to benefit from **interoperability and cross-border public procurement services**.

GRNET and University of Macedonia - Linked data

GRNET, together with the University of Macedonia, aimed to transform data from the MITOS API (Greek National Registry of Administrative Public Services, which provides structured descriptions of over 3,000 public services) into Linked Data aligned with EU standards like CPSV-AP and CCCEV. This pilot, called MitosLOD, is periodically collecting data via the MITOS API, transforming them into Linked Data using python and AirFlow and storing them in a Virtuoso RDF store. The aim of the project is also to provide a SPARQL endpoint for data querying and retrieval, with plans to explore data visualisation to assist citizens with public service information.



Advanced data visualisation and transformation tools are being used to convert the data gathered from the MITOS API into Linked Data, aligned with EU standard models such as CPSV-AP and CCCEV. **This transformation improves the accessibility and integration of public service data, enabling better service delivery through linked open data and advanced query mechanisms.**

CITY OF BOCHUM – Urban data

The City of Bochum currently uses five tree sensors to monitor data such as resistivity, temperature, and humidity, along with other weather-related factors. The goal is to first implement a real-time data visualisation system. Additionally, they aim to develop a machine-learning model that combines this sensor data with information from soil moisture sensors to predict the health of trees in Bochum.



Predictive, time-series and data visualisation analysis on multiple datasets collected from five Tree sensors. The team wants firstly to have a system that visualises this data in real time and additionally to create a Machine Learning model that considers the data and, by combining them with additional soil moisture sensors, **to calculate and predict the tree health.**



CITY OF TURKU – Mobility data

The Municipality of Turku, in collaboration with the University of Turku, is working on a pilot to analyse traffic flows and improve public transport efficiency. They are combining various mobility data sources and geodata with BDTI's tools. The long-term objective includes determining suitable locations for dedicated bus lanes and assessing how these changes would impact traffic flow and bus connection speed. The project also aims to address public transport capacity and Park & Ride hotspot locations.



Predictive, descriptive and time-series analysis on advanced data transformation and visualisation, including datasets from public Wi-Fi sensors, parking systems, and geo-referenced movement patterns such as tourist activity, leading to **enhanced mobility solutions in the future.**

CITY OF NAPLES – Mobility data

The Municipality of Naples is using advanced analytics on public space and mobility data to support urban planning. The pilot seeks to redesign public spaces and improve citizen participation in mobility strategies, with a focus on climate resilience, such as relief hubs for extreme heat events. By integrating urban morphology, mobility opinions, and green capital data, it aims to enhance planning decisions. Open data sources, such as OpenStreetMap and Urban Heat Island data, are used to address gaps in unpublished and outdated data.



Predictive, descriptive and time-series analysis on multiple datasets collected related to public spaces and mobility in order to streamline citizens' participation and to build a transportation dataset **tailored for Public Administration** in compliance **with the open data directive.**

How to apply: a fast and simple process



Get familiar with the BDTI service on our [website](#)



Define your data analytics use case using our [BDTI Canva](#) and then fill in the template request form (see [website](#))



Submit your pilot request (template) [by email](#)



Meet with us to elaborate on your use case



Pilot Project is approved if:

- Brings value
- It can be done in 6 months
- Sufficient resources available (skills, team)



Your test environment is set up



You can start piloting and create value!

Thank you for your attention!



Are you working for a public administration in need of infrastructure for data analytics? Get in touch



EC-BDTI-PILOTS@ec.europa.eu

[BDTI website](#)



[BDTI's Joinup page](#)



[BDTI's newsletter](#)



Links and resources



- <https://big-data-test-infrastructure.ec.europa.eu/>
- <https://code.europa.eu/bdti/bdti-demonstrator>
- https://commission.europa.eu/publications/interoperable-europe-act-proposal_en
- https://commission.europa.eu/strategy-and-policy/priorities-2019-2024/europe-fit-digital-age/european-data-strategy_en
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- <https://dssc.eu/wp-content/uploads/2023/03/DSSC-Data-Spaces-Glossary-v1.0.pdf>
- <https://digital-strategy.ec.europa.eu/en/library/staff-working-document-data-spaces>
- https://ec.europa.eu/commission/presscorner/detail/en/ip_22_1113
- <https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=celex%3A32019L1024>
- <https://joinup.ec.europa.eu/collection/egovernment/solution/big-data-test-infrastructure-bdti>