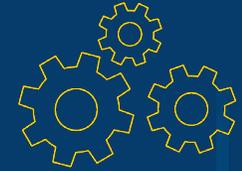




CEF Digital  
Connecting Europe

June 8th - starts at 10:30 AM



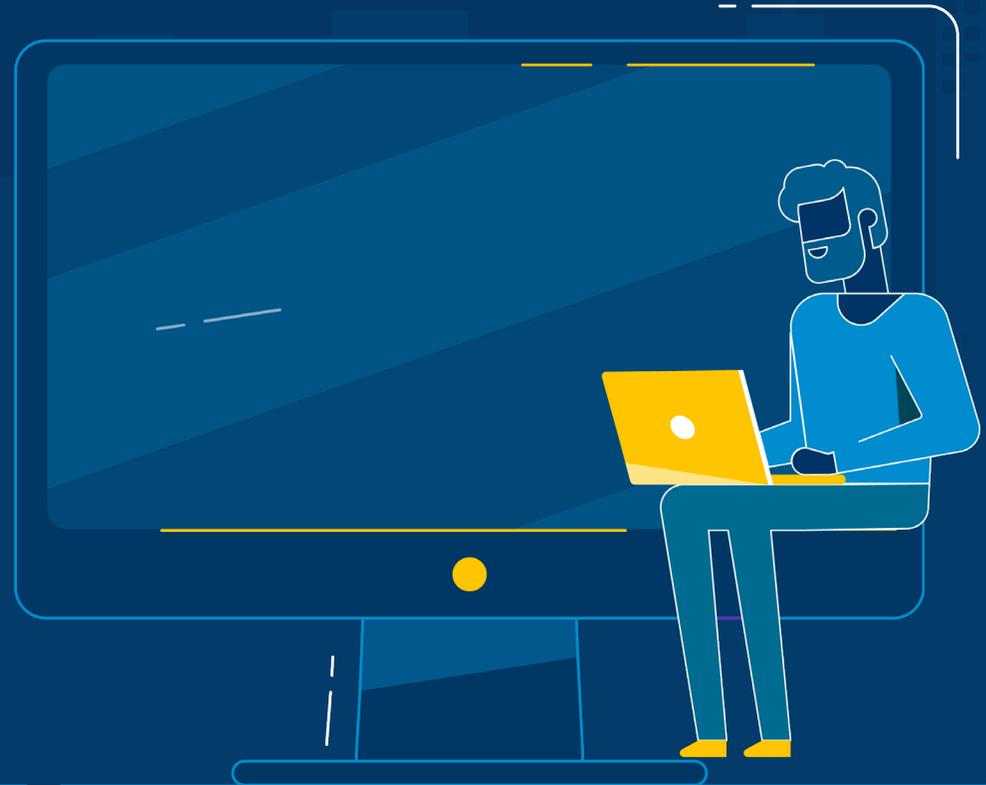
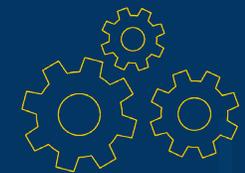
# Big Data Test Infrastructure

## An overview of BDTI



**DIGIT**  
Directorate-General  
for Informatics

**DG Connect**  
Directorate-General for Communications Networks,  
Content and Technology



BDTI

01

BDTI in a nutshell



Andrea Biancini

Project Manager

DG DIGIT

## What is the Big Data Test Infrastructure

The **Big Data Test Infrastructure** will provide a set of **data and analytics services**, from infrastructure, tools and stakeholder onboarding services, allowing European public organisations to **experiment with Big Data technologies** and move towards **data-driven decision making**



# BDTI Initiative drivers

## Problem - Solution



### Lack of Big Data technologies

*Facilitate the prototyping and launching of pilot*

### Lack of Big Data skills

*Facilitate Big Data knowledge in public sector*

### Data sharing among public organisations is not yet a common practice

*Provide built-in connectors/APIs and foster the sharing of data sources to better support policy-making*

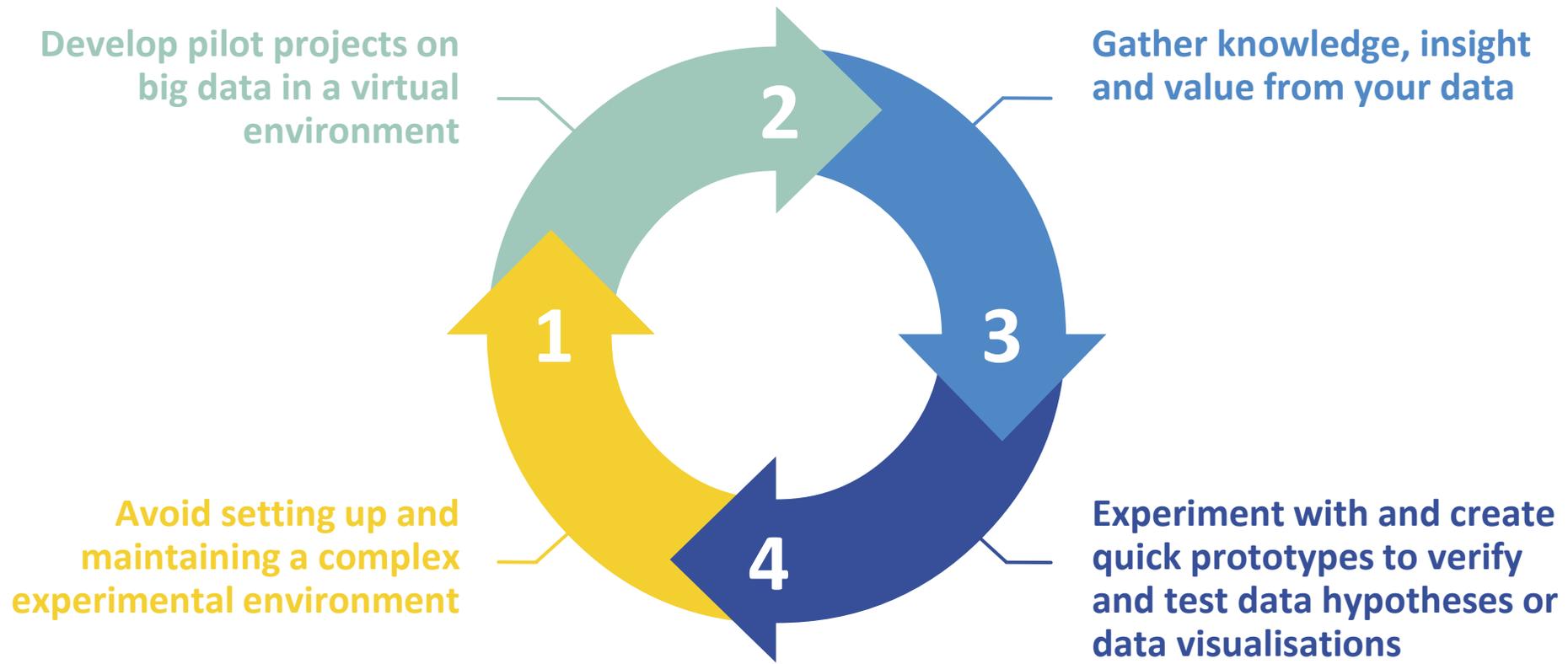
### Risk of replicating the efforts by implementing similar projects

*Support public organisations through the creation of a Big Data community for the sharing of good practices, pilot outcomes, etc.*

## Is BDTI for me?

Yes, if you need to experiment with big data in a safe environment.

### What can we help you achieve?



## BDTI Use Cases (1/2)



### Descriptive Analysis

Use of statistics to quantitatively describe features of a collection of information



### Social Media Analysis

Gather and analyse data from social media to improve business decisions



### Time-series Analysis

Analyse time series data in order to extract meaningful statistics and other data characteristics



### Predictive Analysis

Use statistical techniques that analyse current and historical facts to make predictions about future or unknown events



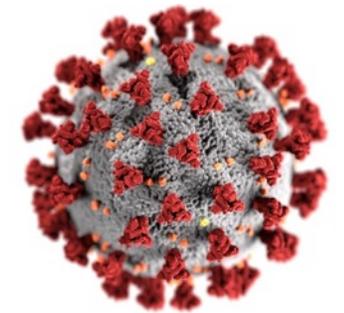
### Network Analysis

Investigate any structures through the use of network and graph theories



### Text Analysis

Use natural language processing to analyse unstructured text data, to derive pattern and trends



### Covid 19 Analysis

Analyse Covid 19 information extracted from a dataset collecting data taken from medical papers

## BDTI Use Cases (2/2)



### Web Analysis (Scraping/Monitoring)

Gathering information from websites, involving data scraping (using both or web-crawler) and data parsing to extract un-organised web data, as well as data from API's, into manageable format.



### Population/Customer segmentation

Dividing a broad population into sub-groups of consumers based on shared characteristics such as common needs, interests, similar lifestyles or even similar demographic profiles.



### Route-Traceability/Flow monitoring

Tracking and detection of objects through the use of sensors (e.g. GPS, mobile phone signals, road cameras) or any other types of data usable for this purpose.



### Image Processing

Computational operations using any form of signal processing for which the input is an image, a series of images, or frames of a video; output of image processing may be either an image or a set of characteristics / parameters related to the image.



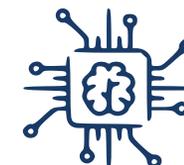
### IoT & Smart City

Gathering relevant information in IoT environments, in a Smart City context.



### IoT Security

Safeguarding connected IoT devices and networks, since security often has not been considered in IoT product design.



### Applying Bioinformatics to genetic data

The use of computational biology, applying data science techniques to understanding/organising biological information and analysing genetic data

## Main Benefits



**Interoperable** environments and tools that use open source technologies, ensuring their integration with other systems



High **performance** due to an environment architecture that easily scales resources needed for dealing with big data.



**Scalability** due to an environment architecture tailored to the required storage size and computing resources



**Reliability** and **availability** during data transfer and data storage



**Modifiability** for using big data evolving tools and technologies



Necessary **security** implementations for safe data experimentation



**Share and re-use data** across policy domains and organisations



Access to a **knowledge base** and **advisory** for the implementation of pilot project



Access to **insights on best practices** with big data projects and other pilots



Implement a **free of charge** pilot project

BDTI

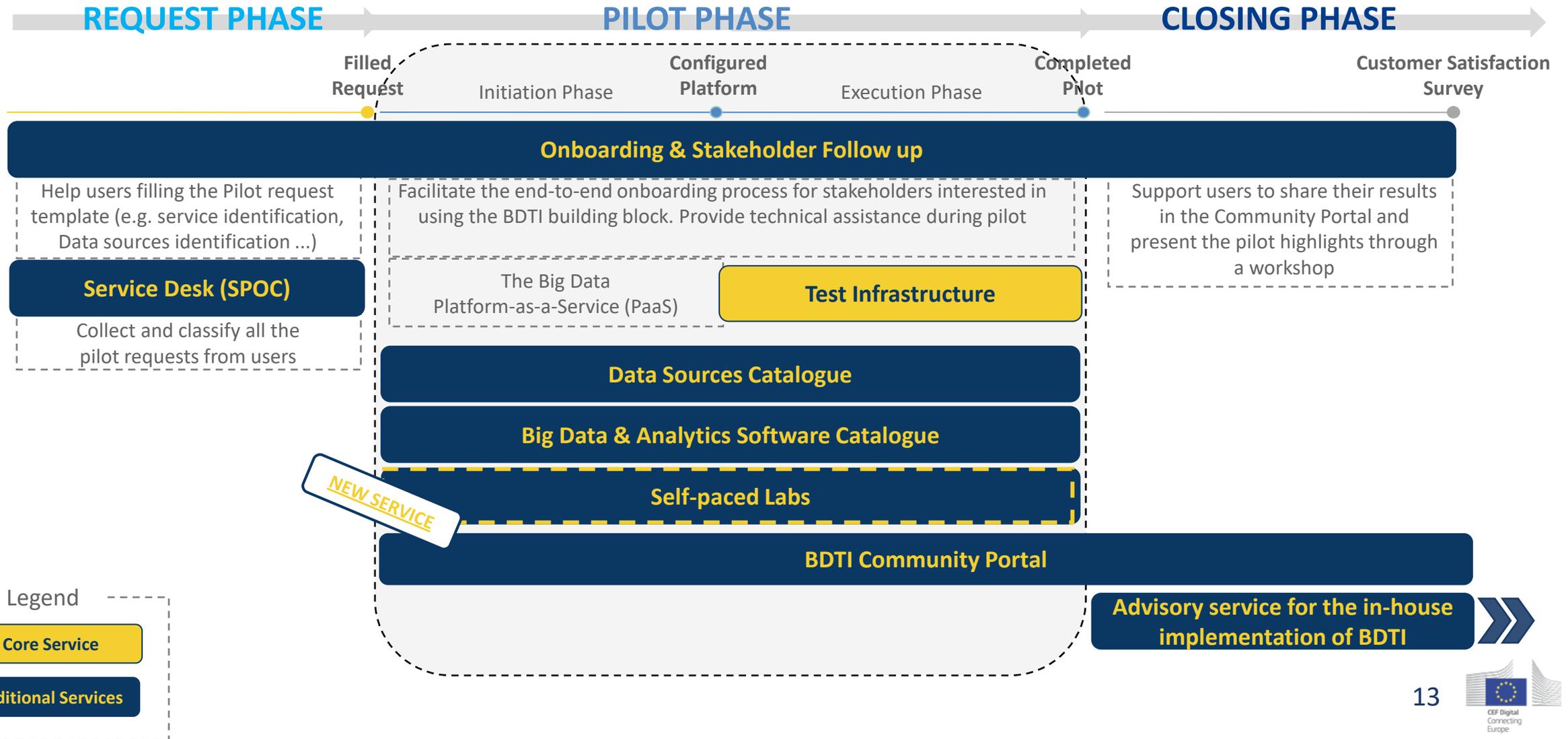
# 02

## BDTI Service Offering and case studies of ongoing pilots



Francesca Vella  
Pilot request Manager  
BDTI Team

# BDTI Service Offering



## Use cases acceptance criteria

### Business criteria

- **Potential users:** Member State or public administration at **national** level, **regional** or **local** level
- **Clear value added:** Business and technical
- **Clear contact point** for the entire pilot



### Functional criteria

- **Pilot duration:** 6 months
- **Pilot use cases:** (only use case in scope)
- **Resource usage limit:** based on CEF budget
- **Skills/Maturity level:** adequate skilled resources and/or level of maturity on the big data subject
- Pilot BDTI **geographical distribution/ resource allocation**

## Case studies of ongoing pilots

### City of Florence

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 the most and the less crowded neighborhoods during and after the lockdowns and about **how services can be relaunched to foster cultural activities and events.**



### How BDTI is helping

BDTI is supporting the City of Florence with predictive, descriptive and time-series analysis on multiple datasets collected **before, during and after the Covid-19 pandemic** such as: public wifi sensors, parking and geo-referenced data of people movements (i.e. tourists).

### Convalescent Plasma Database

The European Blood Alliance (EBA) has worked together with the European Commission (DG SANTE, DG CNECT and DG DIGIT) 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 was 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.



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

# An analytical study pre, during and post Covid-19 - City of Florence (1/2)

## The opportunity

The **Covid-19 emergency** represented for the City of Florence a breaking in their cultural activities and is requiring to completely redefine the **management of tourism**.

The main goal of the Municipality is to perform a cross correlation analysis between the multiple datasets available to understand how people were and are moving between the different city districts, to derive precious insights **about the most and less crowded neighborhoods** during and after the various lockdowns, and **how services can be relaunched to foster cultural activities and events**.

## How BDTI is helping:

BDTI is supporting the City of Florence investigating the economic and social impact of the Covid.19 restrictions on the public and private sector and thus helping the pilot identifying how to relaunch cultural activities.

Thanks to BDTI, City of Florence is analysing **data collected before, during and after the lockdowns** due to the Covid-19 emergency, in order to conduct **predictive, descriptive and time-series analysis**. The results of these analysis will help the pilot in taking data-driven decisions to securely manage and control the citizens' and tourists' flows supporting the reopening of the activities.





# EU Covid-19 Convalescent Plasma Platform (1/2)

## The opportunity

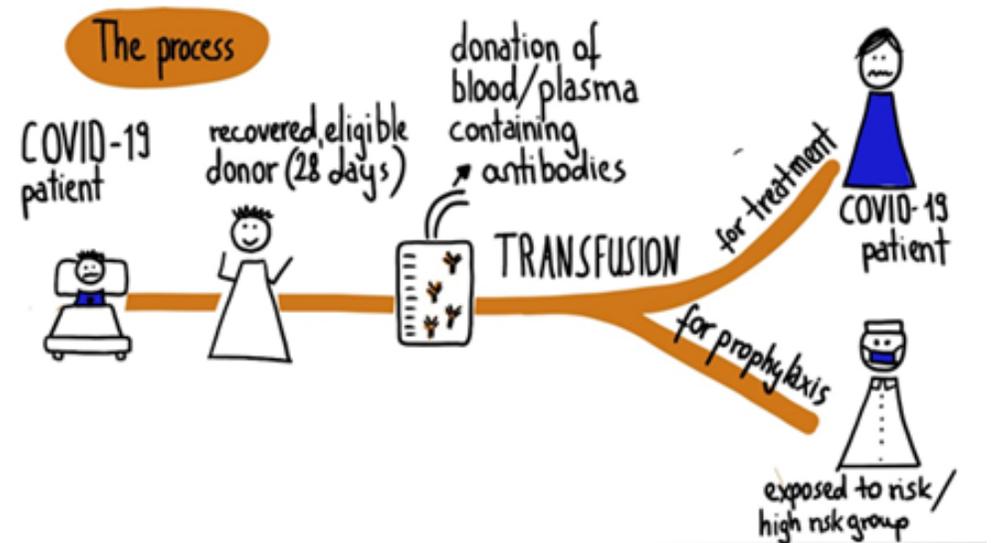
The European Commission has worked together with Member States, the European Blood Alliance (EBA), the European Centre for Disease Prevention and Control (ECDC) and other health professionals to support a study of **convalescent plasma as a treatment for COVID-19 patients**.

This project aimed to **support research** on this promising **treatment for COVID-19 patients** by consolidating EU evidence and providing actionable, data-driven insights into the therapy's safety and effectiveness.

## How BDTI has helped:

BDTI allowed the pilot to quickly design and build a system to collect data on convalescent plasma donations and patient outcomes following transfusions. Thanks to BDTI, all data could be pulled together into a **single EU-wide database**.

BDTI supported the pilot in consolidating EU evidences on the safety and effectiveness of the convalescent plasma therapy through the **ingestion and the analysis of relevant information** regarding the plasma donation and transfusion processes collected in dedicated surveys from the blood services and hospitals.



# EU Covid-19 Convalescent Plasma Platform (2/2)

## The BDTI solution

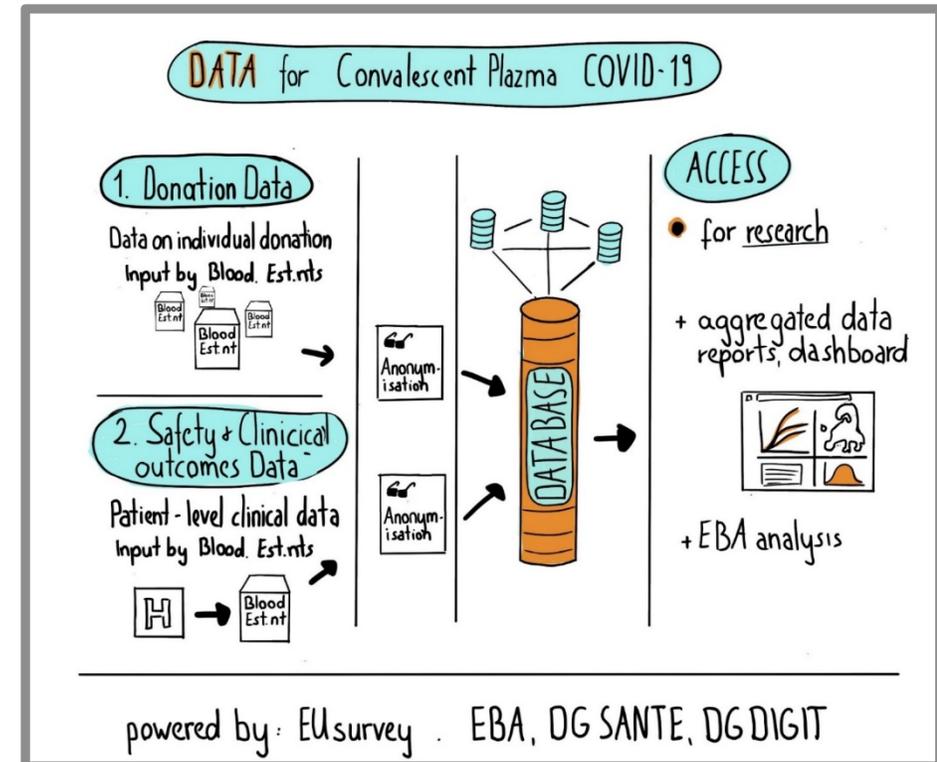
BDTI provided an **open-access database** for gathering and making available data on convalescent plasma donations and patient outcomes following transfusions.

Data collected from **blood establishments** and **clinical trials** include:

- **Donor Data:** age, gender, body weight, time since they recovered, etc.
- **Patient Data:** how they will be treated, how long it is since they got infected, how serious their condition was, etc.

Since today, there have been registered on the system **101 blood services** from around the EU and there have been entered data from **21 countries**.

Nowadays, the pilot has been completed, but the data collection and the analysis are continuing. As there is still a lot of data that will be entered by Member States, the whole pilot has been transferred into an EU-owned data infrastructure.



# Want to learn more?

If you want to learn more about BDTI pilots, please visit our **BDTI Community Portal**:

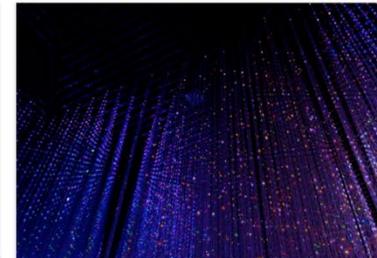
<https://ec.europa.eu/cefdigital/wiki/display/BDUC/Big+Data+User+Community+Home>

...and don't miss out on the next BDTI Webinar on **June 24<sup>th</sup>**!



#### Building a Renewable Energetic Community using data analytics

The increasing decentralisation of energy production is bringing both general changes and challenges to the conventional electricity system. The Municipality of Miglierina needs to optimise energy..



#### Improving eProcurement through open source software solution

The aim of the eProcurement pilot is to develop an open source software solution to help Member States comply with the eInvoicing and the public procurement strategic objectives..



#### Experiments with big data and new ways of collecting statistics

The Eurostat together with the NSIs promoted a challenge on how to modernise statistics with automated data collection and more accurate indicators to better support policy decisions..



#### Building a reference frame of maritime ships through AIS

The aim of this pilot is to use big data on geo-positioning of ships in order to firstly improve the quality and internal comparability of existing statistics and secondly to produce new..



#### Producing statistical estimates of Online Job Vacancies

The aim of the project was to set up a pan-European tool for gathering, analysing and presenting the data for all 28 countries. OJV are considered as the source of valuable info..



#### Improving public procurement processes with data analysis

The objective of the pilot is to develop a value chain from data collection and archiving to data preparation and submission for different statistics and analyses. The value chain will..



# Ready to get started?

Reach out to us to learn more!

Visit us at <https://ec.europa.eu/cefdigital/bdti>

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Drop us a line

[CEF-BDTI-SUPPORT@ec.europa.eu](mailto:CEF-BDTI-SUPPORT@ec.europa.eu)

