

*The Data without Boundaries – DwB – project exists to support equal and easy access to official microdata for the European Research Area, within a structured framework where responsibilities and liability are equally shared.*

## Organizational Architecture for Managing Pan-European Access

As part of its activity, DwB drafted report - based on the existing situation and technology back in 2013 - which suggests a solution to enhance the environment for transnational research in Europe by incorporating and supporting existing and developing data access solutions for national microdata. Researchers need to access many national official microdata for their research projects. Transnational access to data raise additional issues for a pan-European access as these data are located in different countries and cannot be easily transferred across frontiers.

### European Remote Access Network

The existing landscape of separated data access solutions could be improved by connecting them into a European remote access network. There are following advantages of that kind of operating model:

- increased usability of research data in Europe,
- more unhindered access to data for researchers (cost and time expenses),
- one access point to different data sources,
- enhancing comparative research within the European Union,
- cross-country validation of data.

The advantages speak for themselves – a European remote access network would offer a centralized and easy access for the researchers from all over Europe, incorporate the existing remote access solutions and allow other data

providers to join the network. The figure 1 that can be seen in the next page gives a rough overview of the architecture of the network.

From a technical point of view, working with data remotely is only limited by the possibility to use a device providing access to a network, usually the internet. Due to legal restrictions and data protection regulations, some of the current remote access solutions are limited. The European remote access network has to be flexible enough to cover all these solutions and to enable access from each of those three different access points.

Irrespective of the access point, the users must be directed to an account management system that checks their authentication and allows them to use the provided tools, functionalities and data. In the European remote access network this will be done through a Single Point of Access. It is a web portal with underlying services that can be accessed from the internet via a secure connection. An integrated user account system manages the access rights of each user.

The European remote access network should knit different access points together with different storage facilities in Europe. Those data storage facilities are located at existing research data centres. The network needs to access the respective secured data storage servers. At some stage, access to data servers could also be realised via the European remote access network solely. The locations authorized for data storage depend on national law and the disclosure risk of data.

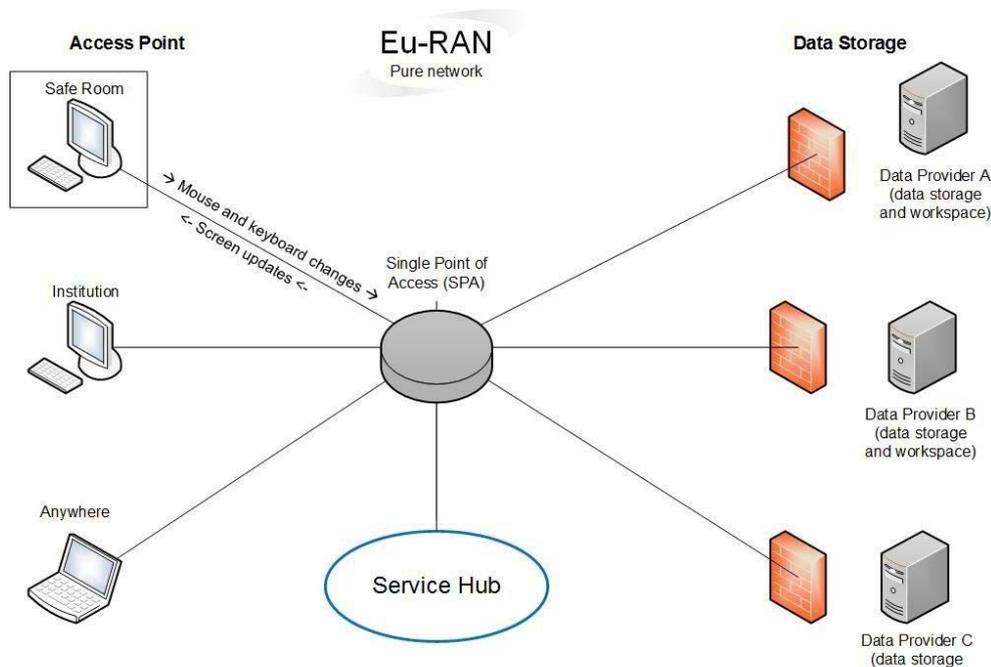


Figure 1. Basic European Remote Access (Eu-RAN) network architecture

According to that, some data must be stored within the facilities of the data provider, and some other data have to stay in the country where they were collected. Less restricted data can be stored within the EU borders.

In addition to the data storage, the remote servers at the existing RDCs will provide analytic processing for the data including some basic software applications that will be needed by researchers.

Security requirements are at the core of such a Eu-RAN infrastructure. For instance Encryption techniques and secure Virtual Private Network (VPN) tunnels will be used for secure data transmission over the internet.

## European Remote Access Network Extensions

There are two extensions to the network which will dramatically improve its usefulness: a Microdata Computational Centre which will permit genuine transnational comparative research to be carried out, and an improved Virtual Research Environment which will standardise the researcher's experiences and permit sophisticated collaboration on projects.

## Outlook

The D4.2 report of the project should work as a starting point for further and more detailed discussions within Data without Boundaries project and with external experts. European remote access network infrastructure must also meet the researchers' needs and that's why the project will carry out a survey about the researchers view. In addition a pilot will proof parts of the concept within a limited network of three partners. The results of both the survey and the pilot will be written to an updated version of the D4.2 report.

The proposed European remote access network will help researchers to carry out transnational research much more easily than today. A fully functional European remote access network is not easy to achieve. Technical, legal and organizational issues have to be discussed and new agreements have to be fixed within the Member States of the European Union.

The full report D4.2 can be downloaded from the list of DwB deliverables:

<http://www.dwbproject.org/about/deliverables.html>