

Panorámica de los nuevos i-Spaces según BDVA y catálogo de infraestructuras de experimentación de Big Data

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Definition

“*European Innovation Spaces (i-Spaces* for short), as defined by the BDVA, are hubs for bringing data, technology and application developments together, catering for development of skills, competence, and best practices in the Big Data domain...”

A wall of concepts

Innovation labs

Catapult centres

Technology Innovation Centres

Prototyping facilities

FFRDCs

Living labs

Multi purpose facilities

Open access facilities

Testbeds

Pilot lines

Technology centres

Tech incubators

Research infrastructures

Regional innovation hubs

Technology infrastructures

Innovation hubs

Shared facilities

Fieldlabs

Technology platforms

Innovation initiatives

Mittelstand 4.0-Kompetenzzentren

Innovation centres

Research and development centres

Digital innovation hubs

Pilot plants

Research & technology organisations

Demonstrators

Pilot facilities

Technology transfer centres

Fraunhofer institutes

Competence centres

Fab labs

Fieldlabs

Centres of excellence

Joint Innovation Centres

Joint undertakings

Matrix of competences

- DIH > ecosystem for innovation/acceleration
- IDP & PDP > conceptual solution for data sharing
- i-Spaces > ecosystem/instrument for data innovation
- CoE & CC > ecosystem/instrument for research

	DIH	IDP	PDP	I-spaces	CoE	CC
Access to infrastructure	X	XXX	XXX	X	X	X
Access to Data	0	X	X	XXX	0	0
Consulting Business	X	0	0	X	0	X
Consulting Technology	X	X	X	X	X	X
Training	X	0	0	X	X	X
Funding	X	0	0	X	0	X
Finance	X	0	0	0	0	0
Research	0	0	0	0	XXX	X
Prototype Development	X	X	0	X	X	XXX
Open Innovation	X	X	0	X	0	X
Stakeholder Engagement	X	X	X	X	0	X
Acceleration	XXX	X	X	X	X	X

0 = not applicable
 X = of relevance/provides services
 XXX = main focus

BDVA i-Spaces



Data Sources – Data Access
Private & Industrial
Open Data
Secure / Confidential Environment

Infrastructures for Data Access

- Hardware
- Platforms (OSS – Proprietary)
- Scientific Personal
- Access and Support for Test/Trials/Validation

Data integration challenges

- Many formats
- Different quality

Network/Federation

- Collaboration
- Best Practices
- Standardization

Skills / Training

- Tools /Methods
- Data scientists = IT & Domain
- Interdisciplinary

Bring Data Owners and Data Innovators together

- in secure, controlled environment
- From „proof of concept“ to „proof of ROI“ to create value

Technical & application services

- Provide infrastructure and assistant on implementation
 - Advice on architecture and security of workspace and tool implementation
 - Offer help-desk support
 - ...
-
- build precompetitive application
 - (visual) analytics tool set for specific domains
 - ...



Business solution & social impact

- Create new data-driven business models
- Identify new business opportunities with already existing data
- Develop proof of ROI
- ...



- support SME uptake in digitization
- services for cultural heritage and local governments
- providing digital solutions for policy development
- ...



Skill development & legal advice

- Train & educate employees to make use of Big Data technologies and build on data
- Provide master level students industrial problems and data
- ...

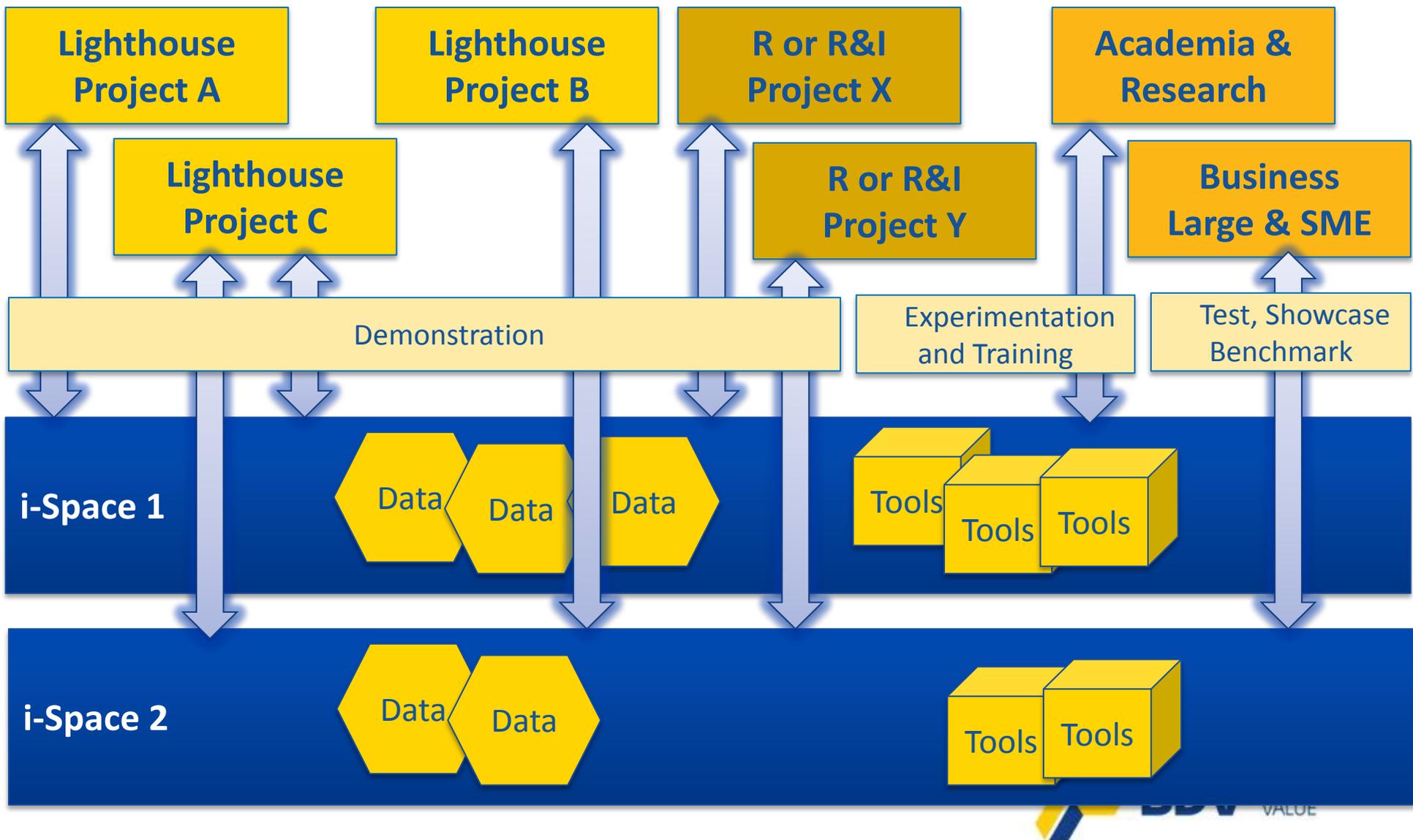
- Provide templates for data provision contracts
- Consult internal secure data management
- ...



BDVA - mechanisms

- › **Innovation Spaces (i-Spaces):** Cross-organisational and cross-sectorial environments – will allow challenges to be addressed in an interdisciplinary way and will serve as a hub for other research and innovation activities.
- › **Lighthouse projects:** These will help raise awareness of the opportunities offered by Big Data and the value of data-driven applications for different sectors and will act as an incubator for data-driven ecosystems.
- › **Technical projects:** These will take up specific Big Data issues addressing targeted aspects of the technical priorities as defined in Section 3.
- › **Cooperation and coordination projects:** These projects will foster international cooperation for efficient information exchange and coordination of activities

Usage of i-Spaces



How to get the Label

BDVA i-Space review METRIC

Basis for overall Label Grant recommendation

- › The i-Space is reviewed in **5 categories** with over **80 single criteria** measured and evaluated. The categories are:
 1. **Infrastructure/Technologies** of i-Space containing criteria to computing power/Storage capacity, access methods as well as tools , policies, standards & certificates.
 2. **Provided Services** of i-Space like technical support, access to acceleration and incubation support skill leverage and provided trainings.
 3. **Projects/Applications** of i-Space per sector ranked by relevance.
 4. **Impact** to Eco-system of i-Space with criteria participation reach, EU-level outreach, enablement model and impact follow up.
 5. **Business Strategy** of i-Space with criteria in strategy, economic sustainability and revenue statements.

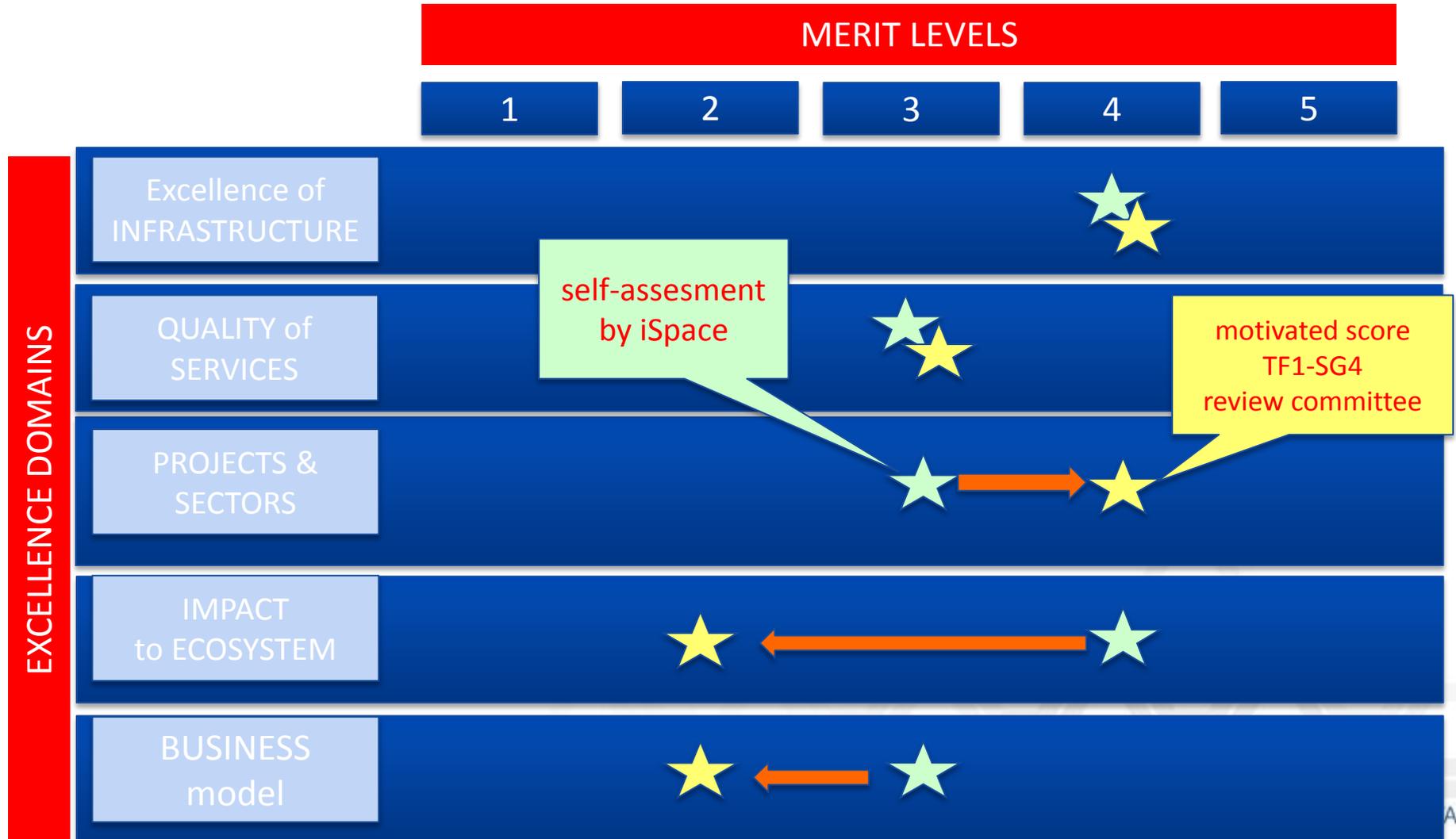
BDVA i-Space review METRIC

Basis for overall Label Grant recommendation

		MERIT LEVELS				
		1	2	3	4	5
EXCELLENCE DOMAINS	Excellence of INFRASTRUCTURE	still in buildup	fits needs	strong investment	Top 5 EU	World Class
	QUALITY of SERVICES	admin only	support at request	elaborate support	co-innovation	EU innovation leader
	PROJECTS & SECTORS	sectors x projects / 5 years				
	IMPACT to ECOSYSTEM	emerging	ambitious	mature	Top potential	EU leader
	BUSINESS strategy	emerging	ambitious	mature	Top potential	EU leader

iSpace review Table

as basis for overall Label-level recommendation



Bronze – Silver – Gold criteria



Gold all 5 domain scores between 3 and 5 



Silver 3+ of 5 scores above 2 



Bronze 3+ of 5 scores above 1  



No Label grant  3+ of 5 scores on 1





2



1



3

Available i-Spaces

BDVA labelled i-Spaces



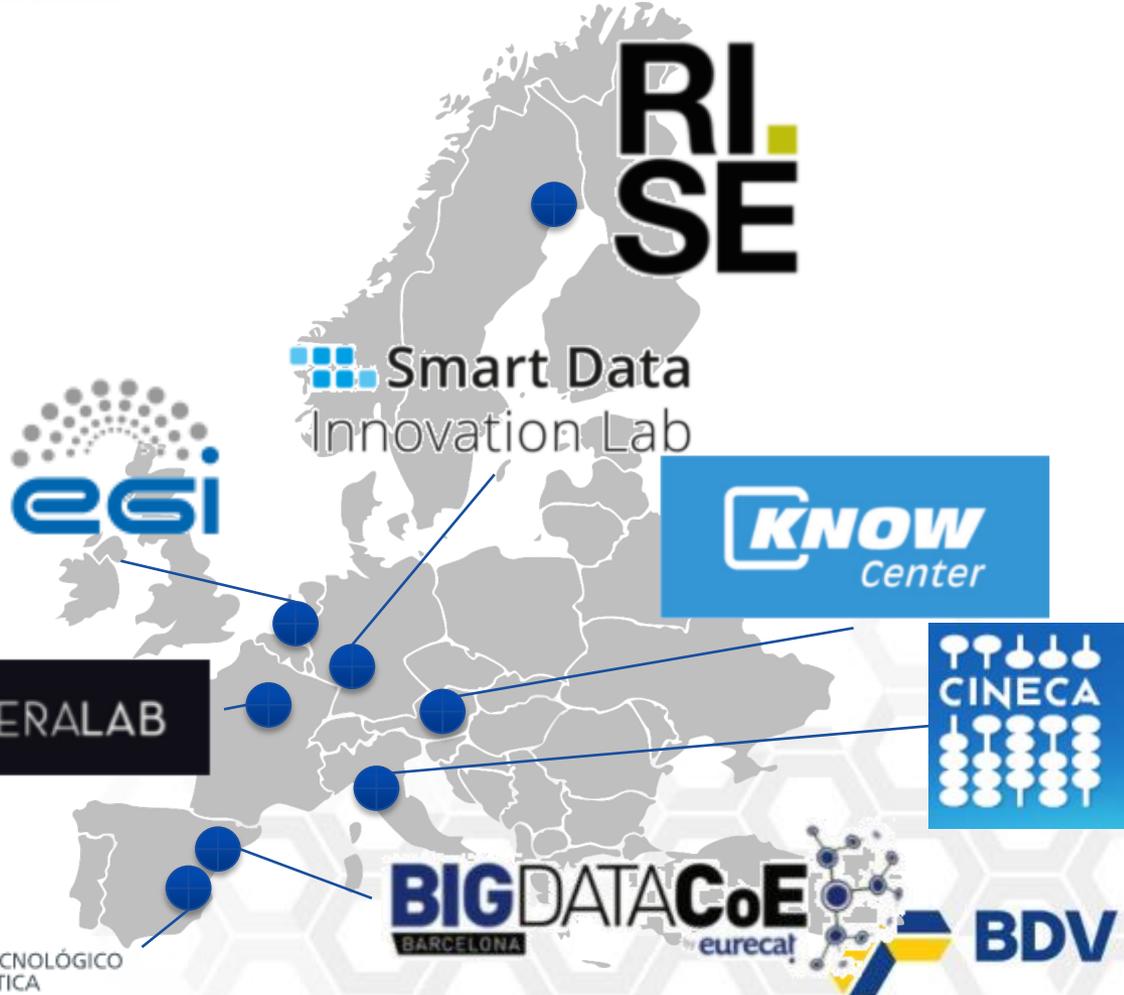
Excellence of
INFRASTRUCTURE

QUALITY of
SERVICES

PROJECTS &
SECTORS

IMPACT
to ECOSYSTEM

BUSINESS
strategy



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General Information



<i>i-Space Name</i>	Smart Data Innovation Lab (SDIL)
<i>Label Category</i>	Silver

The Smart Data Innovation Lab (SDIL) offers big data researchers unique access to a large variety of big data and in-memory technologies. Industry and science collaborate closely to find hidden value in big data and generate smart data. Projects focus on the strategic research areas of Industry 4.0, Energy, Smart Cities and personalized Medicine.

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<i>Web site</i>	http://www.sdil.de/



Platforms

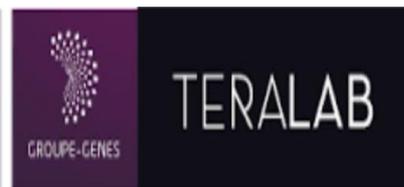
Resource	Value
SAP HANA	Cores: 320 (4 servers with 80 cores each), RAM: 4TB (each server hosts 1TB of RAM, Disk Space: 80TB (each server hosts 20TB of disk space, Network: 10Gbit/s Ethernet. Software: SAP HANA Database System, Predictive Analysis Library, Business Function Library, etc
Software AG Terracotta	Cores: on request, RAM: on request, Disk Space: on request. Software BigMemory Max
IBM Watson Foundation Power 8	Cores: 140 (7 servers with 20 cores each), RAM: 4TB, Disk Space: 300TB, Network: 40Gbit/s Ethernet. Software: IBM Open Platform with Hadoop/Spark, SPSS Modeler, SPSS Analytic Server, DB2 with BLU Acceleration
Huawei FusionInsight	Cores: 356 (13 servers), RAM: 5TB, Disk Space: 362TB, Network: 10Gbit/s Ethernet. Software: Hadoop, Spark, Storm, Hive
System: HTCondor	Cores: $32 \times 4 = 128$, RAM: 1TB, Network: 1Gbit/s Ethernet. Software: RapidMiner, Python, R, Matlab

Services

- › **Infrastructure providing:** The infrastructure, including technical support, is provided **free-of-charge by the SDIL** operation partners to any SDIL project.
- › **Communities:** SDIL provides **access to experts** and domain-specific skills within Data Innovation Communities fostering the **exchange of project results**. They further provide the possibility for open innovation and bilateral matchmaking between industrial partners and academic institutions.
- › **Data curation:** The SDIL guarantees a sustainable invest to all partners by curating industrial data sources, best practices, and code artefacts, that are contributed on a fair share basis.
- › **Data Anonymization:** The SDIL offers various anonymization tools to its projects which are applicable to data from research and industrial sources.

General Information

<i>i-Space Name</i>	TeraLab
<i>Label Category</i>	Silver



Teralab is a Big Data platform developed within the framework of the PIA. It has the role of hosting efforts to enhance the value of industrial data in partnership with laboratories or collaborative projects. It has been operational for more than 3 years and offers state-of-the-art infrastructure and tools. TeraLab's infrastructure is secure, sovereign and neutral. It provides the necessary security guarantees for industrial partners so that they can make available, within a defined framework, their high-value data for research or innovation projects. Beyond the unique technical characteristics of the infrastructure TeraLab facilitates the link between data providers and data scientists thanks to the network formed over the three years of existence. The support of the platform does not stop with the provision of workspaces but according to the requests a help to the formalization of use cases, the choice of tools and design of the architecture, skills On regulations such as the GDPR or the rules specific to health data and more generally on the governance of hosted data. Currently 50 research or innovation projects benefit from the platform. TeraLab is recognized by its technical excellence and its impact in the eco system, both at national level and at European level in the PPP Big Data, in particular by its silver i-Space labelling in December 2016 by the BDVA. It is the only French platform among the 4 European laureates who have achieved this highest level of labelling. In addition, an H2020 project on the PPP call Factory of the Future positions TeraLab as the French competence center for a Digital Innovation Hub (DIH) on sovereignty and cybersecurity. The cost of using the platform depends on the size of the workspace provided and aims to balance operating costs. The platform is non-profit; Break even on operating cost is reached in 2017.

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<i>Web Site</i>	https://www.teralab-datascience.fr/fr/



Platforms

Resource	Value
Max number of cores usable in parallel for one a single project	520
GPU Accelerators	M40 from Nvidia
online storage	400TB
internal network (Gbit/sec)	> 1 Gyte/sec
external network (Gbit/sec)	> 1 Gyte/sec

APACHE Suite, Open source



In Memory analytics

This section features the 'Atos Bull' logo and a performance graphic showing '#1 in performance' with a server rack background. Below it is the 'bullion' logo with the tagline 'Instruments for business'.

Deep Learning

This section highlights the NVIDIA logo and the 'TESLA M40 World's Fastest Accelerator for Deep Learning'. It includes a bar chart comparing '6x Faster Caffe Performance' between CPU and Tesla M40. A table lists the GPU's specifications:

GPU Cores	3072
Peak GF	7 TFLOPS
GPU Memory	12 GB
Bandwidth	188 GB/s
Power	250W

Services

- › The i-Spaces community is growing into a pan European loosely coupled federation with ability to support data innovation across sectors and boundaries.
 - › ability to **perform experiments** on more data-sets from different sectors across EU;
 - › access for industry from any member state to **SotA experiment platforms & tools**;
 - › market-realistic use-conditions to **test & validate new tool concepts** from Academia;
 - › enabling **cross-regional access** to SotA Academic knowhow;
 - › sharing best governance and **incubation** support methods between existing i-Spaces;
 - › wider **access to industry data** and challenges for **education and training** of students.

<i>i-Space Name</i>	Know Center
<i>Label Category</i>	Silver



Know-Center is Austria's leading research center for data-driven business and big data analytics. It conducts applied and interdisciplinary research in the field of computer science in the areas of data-driven business, big data and cognitive computing. To that end, Know-Center works closely with the Institute for Interactive Systems and Data Science of Graz University of Technology.

Specific research topics include search technologies, machine learning methods and knowledge extraction from large data sets, presentation and visualization of massive amounts of information, efficient use of information in social media channels, as well as contextualization and personalization of information.

Our data-driven methods and technologies contribute to value creation and benefits for partners and customers in a sustainable way among various industries and use cases. Through our Cognitive Computing-based approach, which combines the strength of man and machine (=software), we are setting standards within both the local and the international research community. The best example for this is the area "Industry 4.0" (also known as "Smart Production") where our approach makes companies more successful. Here, for instance, our Cognitive Computing Systems consist of integrated sensors in the production facilities, intelligent algorithms for data analysis and interactive systems that allow users to derive action-relevant knowledge and work more efficiently. Our customers benefit from this specific know-how in the form of competitive advantages and innovations directly at the value-creation chain.

Our Business domains are:

- Industrial Data Analytics
- Data-Driven Markets
- Strategic Intelligence
- Data-driven Process and Decision Support
- Learning 4.0
- Digital Life Science

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<i>Web site</i>	https://www.know-center.at and https://twitter.com/Know_Center



Platforms

Resource	Value
CPU cores	360 in 15 servers
RAM	187 TB
Disk	19326 TB
Network:	10 Gbit/s

Services

- › The **Big Data Lab** is Austria's **first point of contact for all questions around Big Data Analytics** and Big Data Management. The Big Data Lab enables partners and companies to quickly and efficiently test data-driven methods as well as to assess the potential and possibilities for a data-driven business.
- › Our offer includes **consultations, data analysis and trainings**. The Big Data Lab offers a simple and direct access to our expertise and infrastructure. In addition to Apache Hadoop, the Big Data Lab is equipped with other big data technologies such as Apache Spark and Apache Storm on its computer clusters. Integrated within an international network around the topic of Big Data and Data Science, the Know-Center provides its partners with access to the latest trends and findings in this area.

General Information

<i>i-Space Name</i>	Big Data Centre of Excellence Barcelona
<i>Label Category</i>	Silver



The Big Data Centre of Excellence in Barcelona is an initiative led by Eurecat which has been launched in February 2015 with the support of the Government of Catalonia, the Barcelona City Council and Oracle. The Big Data CoE constructs, evolves, integrates and makes available to companies differential Big Data-related specialised knowledge, tools, data sets and infrastructures that will allow them to define, experiment with and validate Big Data models and their impact on business, as well as define innovative solutions within a collaborative framework with key agents from the sector.

The goal of the Big Data Centre of Excellence in Barcelona is three-fold:

- To create an innovation space capable of making the value of data tangible for Organizations.
- To integrate the key technological offering in Big Data.
- To create links with other European initiatives and to become an international reference point in this sphere.

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<i>Partner organizations</i>	Catalan Government, Barcelona City Council, Oracle.
<i>Web site</i>	https://www.bigdatabcn.com/ https://twitter.com/CoEBigData

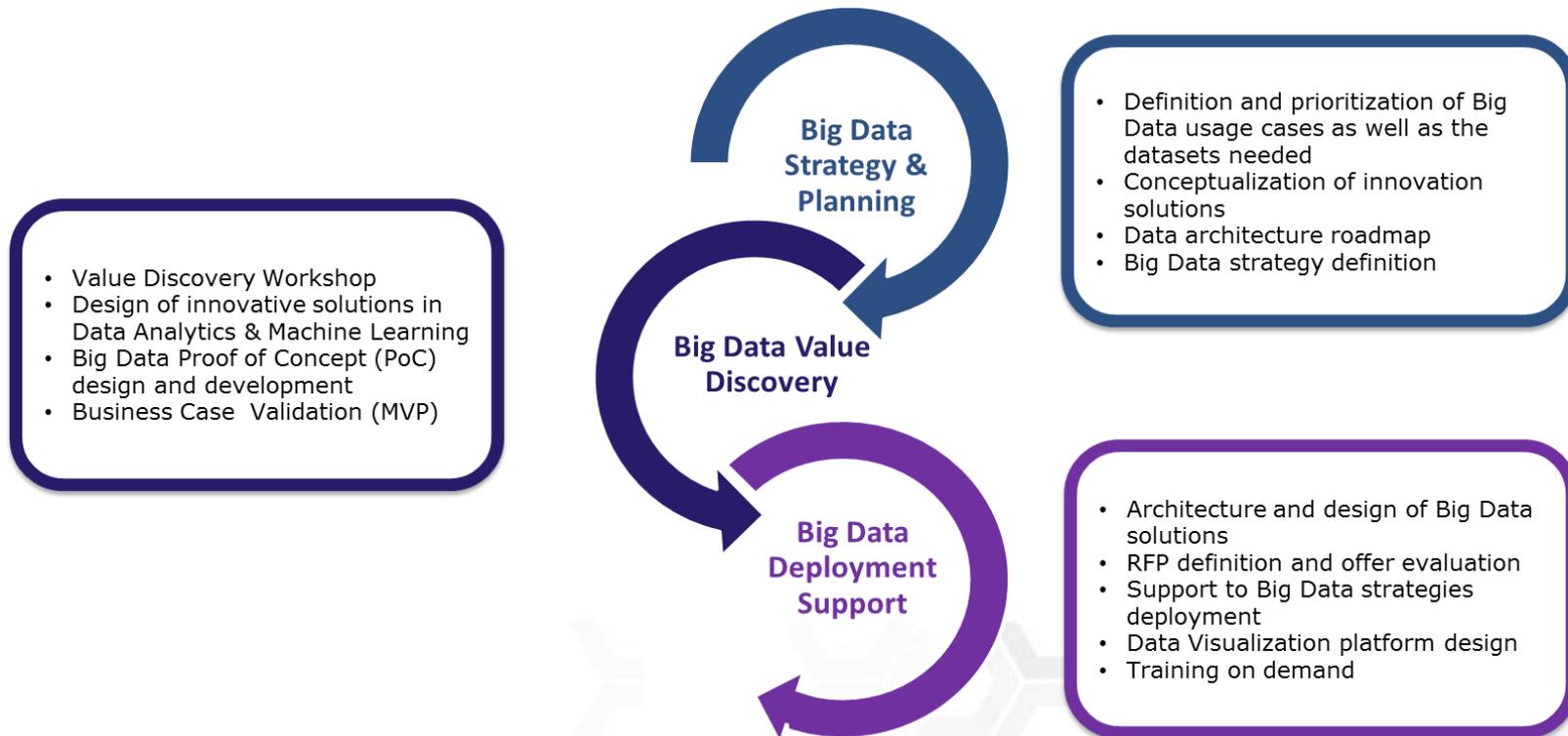


Platforms

- › DATURA is an OpenStack based platform developed by Eurecat capable to provision, configure and deploy a whole Big Data stack through an UI assistant matching different project requirements. DATURA currently allows to deploy Hadoop environment clusters (including HDFS, YARN, Hive, Pig and Sqoop) as well as Spark, Elasticsearch and Kafka clusters.

Resource	Value
CPU cores	308 in 11 servers
RAM	4,48 TB
Disk	585,12 TB
Network	20 Gbit/s

Services



General Information

i-Space Name ITI Big Data Space

Label Category Bronze



ITI

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ITI Big Data Space offers infrastructure, tools and data for research and experimentation with Big Data Technologies. The digital innovation ecosystem around ITI, composed by SMEs, Large Companies and Research organizations is able to use the services of the data space to test new business and technological products.

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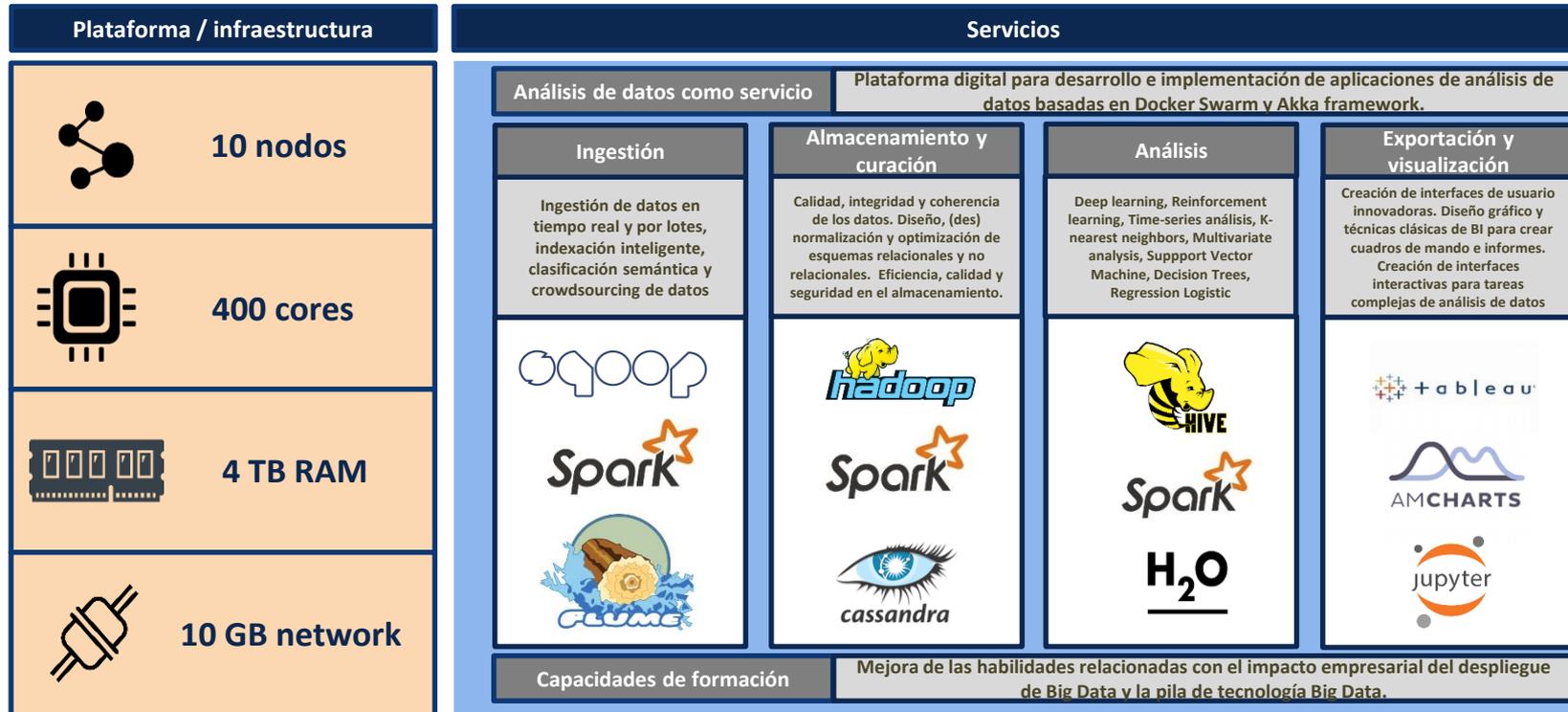
Web site www.iti.es

?



BDV BIG DATA
VALUE

Platform & Services



Sectors



General Information

<i>i-Space Name</i>	ICE datacenter RISE SICS North
<i>Label Category</i>	Silver



The ICE mission is to contribute to Sweden being at the absolute forefront regarding competence in sustainable and efficient datacenter solutions, cloud applications and data analysis. This will be accomplished by increasing innovation capability, helping product and service companies excel, as well as attracting more researchers and companies to Sweden to make the business branch even stronger nationally.

The datacenter is situated in an old storage facility at walking distance from the Luleå University of Technology campus. There are three different modules open for testing and experiments, along with a demo space that can fit 50+ people.

The ICE offer covers all parts of the stack:

- Big data and machine learning – Computing capacity, platforms and tools for handling big data and machine learning;
- IT and cloud – testing and experiment environments for software development, scaling and infrastructure optimization;
- Facility and IT HW – possibilities for testing disruptive innovations concerning the facility and hardware of a datacenter;
- Utility – measurements and research securing a sustainable society with efficient datacenters as a part of the energy system.

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<i>Partner organizations</i>	<i>Luleå University of Technology, County Administrative Board of Norrbotten, Luleå kommun, Region Norrbotten</i>
<i>Web site</i>	<i>http://ice.sics.se</i>

Platforms

- › The platforms, tools and methods provided are primarily a tailor-made data science platform, containing:
 - › HOPS – Hadoop as-a-service;
 - › Tensorflow-as-a-service;
 - › Streaming analytics-as-a-service;
 - › Apache Spark;
 - › Apache Flink;
 - › Customized common development environment.
- › More options can be provided upon request.

Services



- › Big data services for **test and experiments** are available on our platform. The range of what we offer extends from choosing to just use our Hadoop application HOPS, all the way to full service with tool experts, analysts and even the possibility to use the data we own and store ourselves. All of this, safely tucked away in our secure datacenter in Luleå.
- › Example services are:
 - › **Experiment with Hadoop** development before deciding on implementation;
 - › **Refinement of big data analysis** using the HOPS platform;
 - › **Sharing data** between different projects on the same Hadoop cluster;
 - › **Deep learning development** on a GPU accelerated Hadoop cluster;
 - › Run an analytics project with many partner organizations involved.



General Information



<i>i-Space Name</i>	EGI
<i>Label Category</i>	Bronze

EGI is a publicly-funded federation of 300 data and computing data centres spread across Europe and worldwide. EGI has over 48,000 users from a wide range of fields. EGI provides access to over 650,000 logical CPUs and 500 PB of disk and tape storage. EGI offers a wide range of services for compute, storage, data and support.

Over the last decade, EGI has built a federation of long-term distributed compute and storage infrastructures that support research and innovation. This international e-infrastructure has delivered unprecedented data analysis capabilities to more than 48,000 researchers from many disciplines. The federation brings together roughly 300 data and compute centres worldwide. EGI is coordinated by the EGI Foundation and funded through a combination of membership fees, national and EC funding and delivery of professional services such as training and consultancy. Today, EGI provides both technical and human services, from integrated and secure distributed high-throughput and cloud computing, storage and data resources to consultancy, support and co-development. The research supported by EGI is diverse. Examples include the search for the Higgs boson at the Large Hadron Collider particle accelerator at CERN; finding new tools to diagnose and monitor diseases such as Alzheimer's, or the development of complex simulations to model climate change. EGI stimulates research and innovation by:

1. Ensuring a uniform and reliable availability of resources to researchers on local, national and European scale.
2. Enabling faster production of scientific results through collaboration across organisational and national boundaries.
3. Promoting open and collaborative science and ensuring open access to shared resources and expertise.
4. Allowing researchers to focus on their research rather than managing their e-infrastructure needs.
5. Providing effective use of resources in different administrative domains to ensure the most effective return on infrastructure investments.
6. Facilitating the innovation and sharing of solutions by building a thriving ecosystem through community events and collaborative services.

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Platforms

High-Throughput Compute cores	650000
Cloud Compute cores	6600
Online Storage	285PB
Archive Storage	280PB

Services

Compute



Cloud Compute : Run virtual machines on demand with complete control over resources



Cloud Container Compute : Run Docker containers in a lightweight virtualised environment



High-Throughput Compute : Execute thousands of tasks to analyse large datasets

Storage and Data



Online Storage : Store, share and access your files and their metadata on a global scale



Archive Storage : Back-ups for long term and future use in a secure environment



Data Transfer : Transfer large sets of data from one place to another

Training



FitSM training : Learn how to manage IT services with a pragmatic and lightweight standard



Training infrastructure : Dedicated computing and storage for training and education

General Information

<i>i-Space Name</i>	IOP4HPDA – Italian Open Platform for High Performance Data Analysis
<i>Label Category</i>	Silver

Cineca is a non-profit organization, founded in 1969 as a Consortium of Universities. With its High Performance Computing (HPC) facility, and with excellent scientific skills, Cineca supports the world of the public and private research: it is the most powerful supercomputing center in Italy devoted to scientific and industrial research, and one of the most important worldwide. Moreover, Cineca develops IT systems for universities administration offices, for the MIUR, and for companies, health care Institutions, and public administration.

In particular the mission of the HPC department of Cineca is to accelerate the scientific discovery by providing HPC resources, data management and storage systems and tools. It also provides expertise on numerical simulation and data science in an Open Innovation paradigm. Member of BDVA, ETP4HPC, PRACE, core partner in EUDAT and Elixir, partner in Human Brain, Fortissimo2 and I4MS, in 2016 the HPC department of Cineca supported 1140 research projects and directly participated in 31 EU research projects, 40 research agreements and 12 industry projects.

The IOP4HPDA is made available by the HPC department of Cineca, as an environment for Big Data for research and innovation.

The DBGGroup is the research database group at the Department of Engineering “Enzo Ferrari” of the University of Modena and Reggio Emilia and it contributes to the IOP4HPDA with researchers and tools.

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<i>Web site</i>	https://www.cineca.it/ http://www.hpc.cineca.it/ http://www.dbgroup.unimore.it/site2012/

Platforms

- › **Hardware** 20 Pflops performance; 360.000 cores (75.000 servers with 48 cores per server); 80 Nvidia Tesla K80; 200 Nvidia Tesla P100; 4 FPGA Intel DLIA; storage: 30 PB online and 30 PB offline; total RAM 1 PB; network: internal 100 Gb/s OPA 25 Gb/s ETH, external 10 Gb/s.
- › **Software** Big Data Apache suite AAS; Deep Learning: Caffe, Theano, TensorFlow optimized for platform hardware characteristics in collaboration with Intel and Nvidia; Data Analytics: R, H2O, Octave, math libraries, I/O libraries; organized data repository for data deposit, retrieval and preservation; high performance data base PGSQL, MySQL, NEO4J; specific tools for bioinformatics (NGS pipelines) and for visualization.

Services

- › **Exploitation of the Infrastructure**
open access to HPC/HPDA storage and computing resources, Cloud Computing, Computing in batch, interactive and streaming modes
- › **Advanced middleware and software tools**
- › **Data management**
collection, preparation, annotation, curation, linking, security, access control, long-term preservation, post-processing
- › **Data analytics**
Predictive modeling, Supervised and unsupervised learning, Association rules, Sequential patterns, Link analysis, Recommenders, Natural Language Processing, Named Entities Recognition, Information Extraction, Automatic classification, Sentiment Analysis, Semantic metadata generation, Automatic annotation, Speaker segmentation, Automatic Speech Recognition, Video segmentation, Keyframes extraction, Semantic metadata generation from video items, Image recognition
- › **Visualization**
Remote visualization, Computer vision and visual computing, Computer Graphics, 3d modeling and rendering, Immersive device programming, Render farm service, Virtual Reality, Augmented Reality, Virtual museum and exhibition design
- › **User support and Specialist support** covering different scientific fields, technologies, programming languages, and techniques
- › **Training and Education**
Specialized training (workshops on massive data analysis and international summer schools on parallel computing, data analytics and computer graphics), Cooperation with universities (lab activity for master programs, post-doc programs), Knowledge transfer during the projects life cycle
- › **Technology transfer and consulting**
Development of proof of concept and innovation projects for businesses to demonstrate the added value and ROIs

And Others ...

data-pitch

INNOVATION PROGRAMME

- › First Open Call for experiments closed
- › Second call for 2018-2019 in summer 2018

RETAIL

Future-proof retail supply chains

Challenge identifier: DPC1-2017

Data Provided by Sonae Center
Servicos II, S.A.

[Read More](#)

SPORTS & RECREATION

How can we use data to improve visibility and access to physical activities

Challenge identifier: DPC2-2017

Data Provided by imin

[Read More](#)

DATA ANALYTICS

Empowering sales and marketing decisions through company knowledge graphs

Challenge identifier: DPC3-2017

Data Provided by SpazioData

[Read More](#)

TRANSPORT

Changing public transport for the better

Challenge identifier: DPC4-2017

Data Provided by Deutsche Bahn
AG

[Read More](#)

DATA MANAGEMENT

The next generation of customer data management solutions

Challenge identifier: DPC5-2017

Data provided by UniServ GmbH

[Read More](#)

HEALTH & WELLNESS

How can we use data to help people improve their health and wellness and/or make health services more efficient and inclusive

Challenge identifier: SC1-2017

Please suggest your own data source

[Read More](#)

EMPOWERING USERS ONLINE

How can we use data to make the Web more trustworthy and improve personal safety and security online

Challenge identifier: SC2-2017

Please suggest your own data source

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LIFELONG LEARNING

How can we use data to ensure that we have and can further develop the skills we need in the future

Challenge identifier: SC3-2017

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LIVING

How can we use data to improve living standards and lifestyle, and create new accommodation options in Europe

Challenge identifier: SC4-2017

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SMART MANUFACTURING

How can we use data to make manufacturing, logistics and maintenance processes more efficient and able to support new models of use and repair

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TOURISM

Transforming tourism: aggregated travel services and intelligent personal assistants

Challenge identifier: SC6-2017

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OPEN INNOVATION

Harnessing the full power of data-driven innovation

Challenge identifier: OIC1-2017

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