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OPORTUNIDADES EN BIG DATA DENTRO DE HORIZONTE 2020
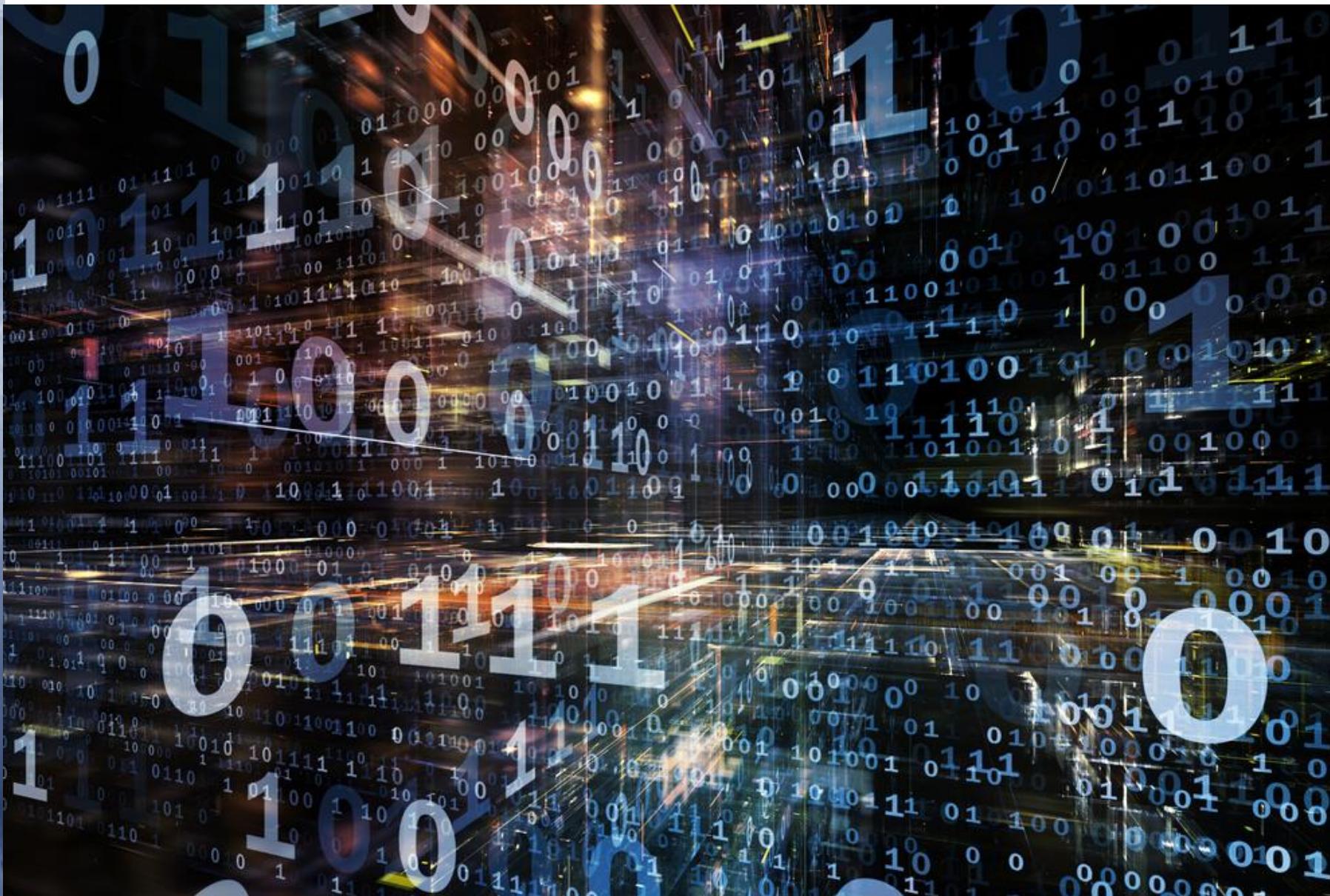
Fernando Martín Galende
fernando.martin@cdti.es
CDTI
Punto de Contacto Nacional para ICT-LEIT

Madrid, 17 enero 2018

El Mundo se ha vuelto Digital…

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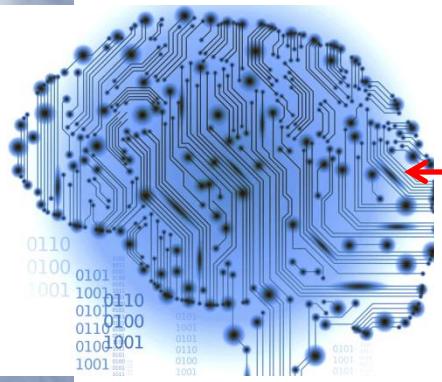
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…y también lo ha hecho la Información…

…y el Conocimiento
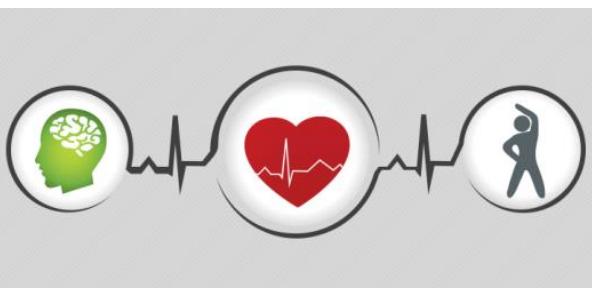
Big Data en el corazón de muchos Retos…
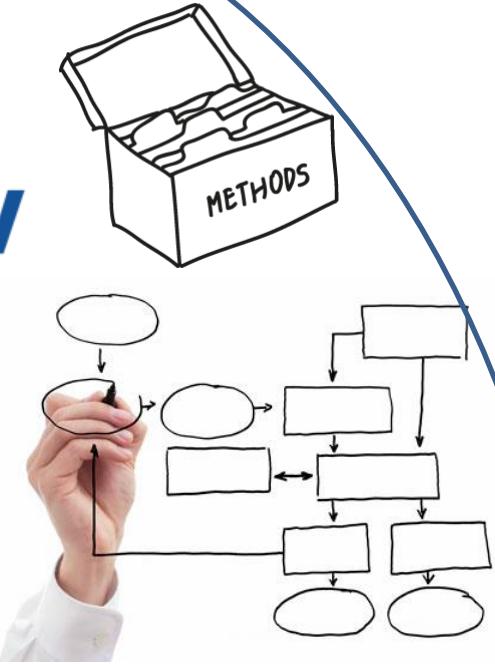
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(16/01/2018)

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…Algunos Tecnológicos…

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...otros no

Big Data

BDV

BUT...

Pensad en Big Data como una Facility...

Pensad en Big Data como una Facility…

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Pensad en Big Data como una Facility...

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Pensad en Big Data como una Facility…

Pensad en Big Data como una Facility...

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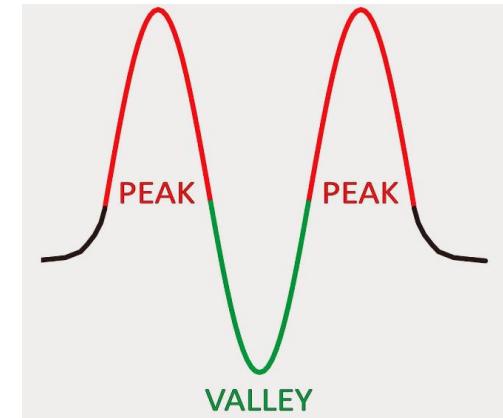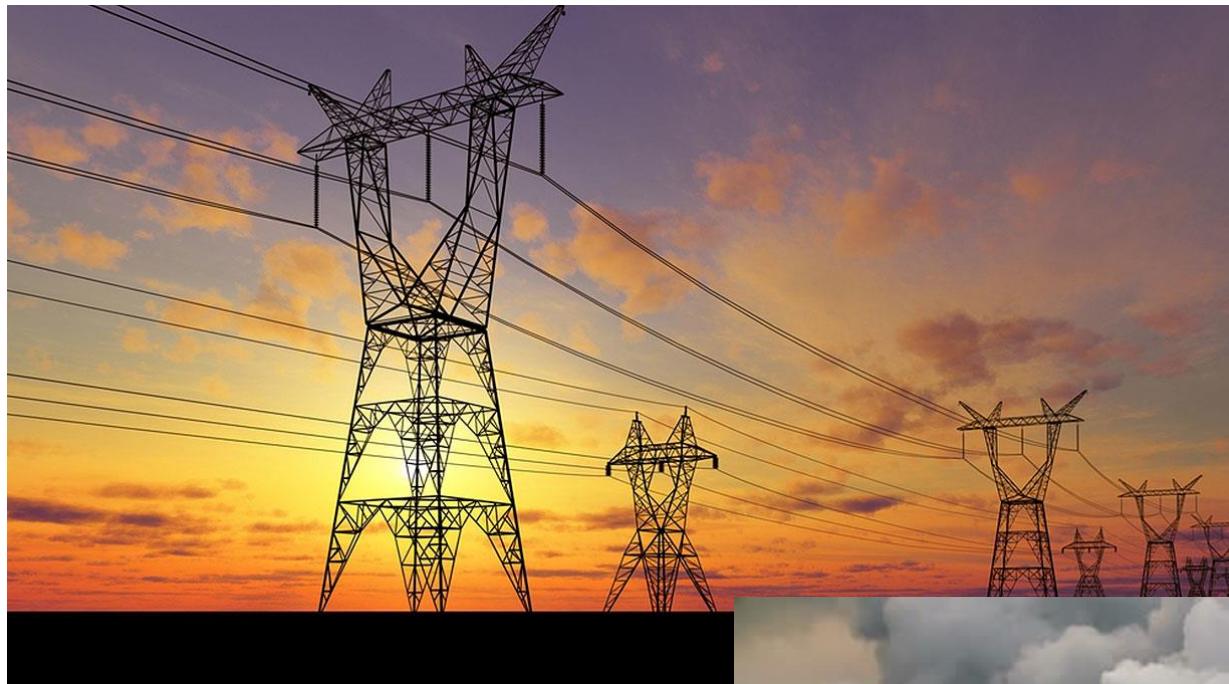
…Tanto en las convocatorias cPPP…

Topic: ICT-11-2018-2019: HPC and Big Data enabled Large-scale test-beds and Applications

Scope: The Internet of Things and the convergence of HPC, Big Data and Cloud computing technologies are enabling the emergence of a wide range of innovations. Building industrial large-scale application test-beds that integrate such technologies and that make best use of currently available HPC and data infrastructures will accelerate the pace of digitization and the innovation potential in Europe's key industry sectors (for example, healthcare, manufacturing, energy, finance & insurance, agri-food, space and security).

Topic: ICT-12-2018-2020: Big Data technologies and extreme-scale analytics

*Scope: Rapidly increasing volumes of diverse data from distributed sources create challenges for extracting valuable knowledge and commercial value from data. This calls for novel methods, approaches and engineering paradigms in analytics and data management. **Research and Innovation Actions** developing new big data analytics methodologies and engineering solutions addressing industrial and/or societal challenges.*

…Tanto en las convocatorias cPPP…

Topic: ICT-13-2018-2019: Supporting the emergence of data markets and the data economy

Scope: The lack of trusted and secure platforms and privacy-aware analytics methods for secure sharing of personal data and proprietary/commercial/industrial data hampers the creation of a data market and data economy by limiting data sharing mostly to open data.

a) Innovation Actions for setting up and operating platforms for secure and controlled sharing of "closed data" (proprietary and/or personal data). The actions should address the necessary technical, organisational, legal and commercial aspects of data sharing/brokerage/trading, and build on existing computing platforms

b) Research and Innovation Actions to advance the state of the art in the scalability and computational efficiency of methods for securing desired levels of privacy of personal data and/or confidentiality of commercial data, particularly when they are combined from multiple owners.

…como más allá de la cPPP…

Topic: ICT-14-2019: Co-designing Extreme Scale Demonstrators (EsD)

Scope: These applications will address Big Data and extreme scale computing challenges combining fast response times, and advanced Big Data analytics and High-Performance Computing techniques.

Topic: DT-ICT-11-2019: Big Data Solutions for energy

Scope: **Innovation Actions** targeting large-scale pilot test-beds for big data application in the electricity sector enabling the integration of relevant digital technologies like IoT, artificial intelligence, cloud and big data services.

Topic: DT-ICT-10-2018-2019: Interoperable and smart homes and grids

Scope: Exploit IoT reference architectures models that allow for combining services for home or building comfort and energy management, based on platforms that enable the integration of relevant digital technologies like IoT, artificial intelligence, cloud and big data services and where applicable, combined with blockchain technologies.

Topic: DT-ICT-05-2020: Big Data Innovation Hubs

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EXAMPLE

Convocatoria INFRA – Protección de Infraestructuras Críticas:

Topic: SU-INFRA02-2019: Security for smart and safe cities, including for public spaces

Scope: The security and good operation of a smart and safe city relies on interconnected, complex and interdependent networks and systems: public transportation networks, energy, communication, transactional infrastructure, civil security and law enforcement agencies, road traffic, public interest networks and services.

Such networks provide with an efficient infrastructure for detection resources and "big data" collection

Convocatoria SEC – Security:

Topic: SU-FCT03-2018-2019-2020: Information and data stream management to fight against (cyber)crime and terrorism [abre los 3 años]

Scope: Large amounts of data and information from a variety of origins have become available to practitioners involved in fighting crime and terrorism. Full advantage is not currently taken of the most advanced techniques for Big Data analysis, and artificial intelligence.

Expected Impact: Medium term: improved support for the work of Law Enforcement Agencies in managing Big Data, i.e. in extracting, combining, analysing and visualising large amounts of structured and unstructured data in the context of criminal investigations;

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EXAMPLE

Convocatoria SFS – Seguridad Alimentaria:

Topic: LC-SFS-03-2018: Microbiome applications for sustainable food systems

Scope: Activities shall optimise the use of pre-existing databases and research infrastructures (including the distributed and virtual ones) and the opportunities granted by big data management tools, thus ensuring interoperability, standard methods and enhanced networking.

Topic: SFS-37-2019: Integrated approaches to food safety controls across the food chain (EU-China FAB Flagship initiative)

Scope: Food safety risks occur along the food chain from a number of biological and chemical contaminants. In addition, malpractices or fraudulent practices could also lead to increased food safety risks. Improving risk assessment and monitoring, including the use of big data, is of major importance. Developing integrated approaches along the entire food chain for detecting, assessing, and mitigating relevant pathogens and contaminant hazards is essential.

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Convocatoria Acción por el Clima, Medio Ambiente, Eficiencia de Recursos y Materias Primas:

Topic: SC5-11-2018: Digital solutions for water: linking the physical and digital world for water solutions

Scope: Actions should develop and test new, robust and cybersecure systems, linking the physical and digital world to ensure tailored, water-smart solutions, to exploit the value of data for the water sector and to foster higher information transparency and accountability.

Topic: SC5-09-2018-2019: New solutions for the sustainable production of raw materials

b) Digital mine (2019): Actions should develop an Industrial Internet of Things (IIoT) platform to significantly enhance the efficiency of mining operations by connecting cyber and physical systems and devices to extract valuable insights from their data, in order to improve the decision-making process, better address customer requirements, and to address health and safety aspects, environmental performance, increased automation, predictive maintenance, resource efficiency and real-time coordination of operations.

…o incluso más allá de ICT-LEIT…

Convocatoria Energía:

Topic: LC-SC3-EE-13-2018-2019-2020: Enabling next-generation of smart energy services valorising energy efficiency and flexibility at demand-side as energy resource

Scope: The use of 'big data' generated by smart meters, equipment, sensors and tools for standardised processes enabling a more accurate and dynamic measurement and verification of energy savings and flexible consumption, also in order to ex-ante identify and develop business opportunities.

Topic: LC-SC3-ES-5-2018-2020: TSO – DSO – Consumer: Large-scale demonstrations of innovative grid services through demand response, storage and small-scale (RES) generation

Scope: The markets and platforms should enable the integration of relevant digital technologies like Internet-of-Things, Artificial Intelligence, cloud and big data services.

Topic: LC-SC3-SCC-1-2018-2019-2020: Smart Cities and Communities

Scope: Projects should also deliver practical recommendations arising from project experience on big data, data management and digitalisation

…o incluso más allá de ICT-LEIT…

Convocatoria Logística:

Topic: LC-MG-1-10-2019: Logistics solutions that deal with requirements of the 'on demand economy' and for shared-connected and low-emission logistics operations

Scope: These actions should clearly provide inputs for the preparation and implementation of sustainable urban logistics plans (SULPs) and/or SUMPs and other planning (private and public side) tools, such as big data and real-time traffic management

Convocatoria Aviación:

Topic: MG-3-1-2018: Multidisciplinary and collaborative aircraft design tools and processes

Scope: Significantly advance user-centric visualisation methods and tools as well as big-data analytics… Development of synergies on visualisation methods and big-data analytics

Convocatoria Sistemas de Transporte Inteligente:

Topic: MG-4-5-2019: An inclusive digitally interconnected transport system meeting citizens' needs

Scope: Merging physical transport assets like infrastructure or vehicles with the digital layer, through the Internet of Things (IoT) and big data applications

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Convocatoria Conducción Autónoma:

Topic: MG-3-3-2018: "Driver" behaviour and acceptance of connected, cooperative and automated transport

Scope: Perform simulations, correlate and analyse driver behaviour/reaction under different scenarios/use cases, including driver distraction/assistance, driver-vehicle interaction technology failures and/or conditions instigating accidents (either by the vehicle itself or by other/external factors), as well as in different operating environments (e.g. urban, rural, multimodal hub) with other users, utilising big data analytics, assessing impacts of traffic flows, schedule reliability and congestions and also developing appropriate mitigation solutions to enhance "driver" behaviour under such scenarios (including using visual and acoustic information).

Topic: DT-ART-04-2019: Developing and testing shared, connected and cooperative automated vehicle fleets in urban areas for the mobility of all

Scope: Develop architecture, functional and technical requirements for ICT technologies, for secure data collection and processing needed for the operation of connected and cooperative automated vehicles. Develop ways to enhance the optimised use of big data in (road) transport for implementing smart and safe mobility solutions, innovative traveller services and (city) traffic management.

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EXAMPLE

Convocatoria Vehículo Verde:

Topic: LC-GV-02-2018: Virtual product development and production of all types of electrified vehicles and components

Scope: Digitalization and optimisation of electrified vehicles and components production processes utilizing virtual tools, big data and connectivity;

Convocatoria TDS – Soluciones Digitales Confiables:

Topic: TDS-02-2018: Toolkit for assessing and reducing cyber risks in hospitals and care centres to protect privacy/data/infrastructures

Scope: Digital technologies such as Big Data, Internet of Things, Robotics, Artificial Intelligence, High Performance Computing, Cloud and Cybersecurity offer new opportunities to transform healthcare systems and delivery, Connected medical devices, in particular if linked to Clinical Information Systems, can bring increased patient safety and efficiency into healthcare system(s).

Development and implementation of innovative methods, tools, guidelines or best practices addressing the need for cybersecurity in hospitals including remote care and homecare settings e.g. for assessing risks and vulnerabilities of hospitals w.r.t cyberattacks.

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EXAMPLE

Convocatoria Espacio:

Topic: SPACE-11-TEC-2018: Generic space technologies

e) Ground systems with massive processing: data processing capabilities of missions for different applications, including ground control stations for remote sensing operations; processing power and speed, post-processing, data fusion, data networks, configuration life-cycle management and operations (particularly for constellations, including mega-constellations), integration of new technologies in ground systems and data processing (big data archiving and retrieval, smart data optimisation, automated data processing, distributed data platforms, artificial intelligence, full automation), distributed data exploitation platform.

Topic: SPACE-16-TEC-2018: Access to Space

b) Launch system advanced manufacturing (e.g. tooling and machines) and modern infrastructures (including ground infrastructures for low cost European launch sites): Activities shall address technologies and processes applied to launch systems development, production, testing and operations such as automation of activities (e.g. automated guided handling tools, automated integration, and inspection, collaborative robots, automated testing), digital technologies to the benefit of quality and costs equipment (digital assistance to operators, big data processing for continuous improvement), advanced materials with accent on low-cost manufacturing processes…

…o incluso más allá de ICT-LEIT…

Convocatoria Espacio:

Topic: DT-SPACE-EGNSS-2-2019-2020: EGNSS applications fostering digitisation

The proposed EGNSS applications may integrate digital technologies like Internet of Things (IoT), cloud computing, big data and robotics.

Topic: DT-SPACE-25-EO-2020: Copernicus big data algorithm factory

…o incluso más allá de ICT-LEIT…

EXAMPLE

Convocatoria Sociedades Innovadoras, Inclusivas y Reflexivas:

Topic: TRANSFORMATIONS-13-2019: Using big data approaches in research and innovation policy making

Scope: To exploit the potential of big data approaches for R&I policy making by providing more timely and in depth information on the performance of the R&I system and its links to productivity growth. Proposals should aim at exploiting the potential of big data to produce information on R&I activity, performance, output and/or impact which has the potential to be available in real time, focusing notably on R&I investments in the private sector, public-private cooperation and technology diffusion between private actors. Proposals should also take into account aspects of data accuracy and data security.

Topic: DT-TRANSFORMATIONS-02-2018-2019-2020: Transformative impact of disruptive technologies in public services

Scope: The challenge is to assess the potential benefits and risks of using disruptive technologies (such as block-chain, big data analytics, Internet of Things, virtual reality, augmented reality, artificial intelligence, algorithmic techniques, simulations and gamification) in Public Admins as well as the social impact, including the impact on public servants, of using them for government processes and governance (e.g. for registers, for archiving, for decision-making processes, etc.).

Big Data integrada en diversas ERA-Nets temáticas

CONVOCATORIAS COFUND (SUBVENCIÓN)

ERAPerMed
Medicina Personalizada
H2020-SC1-2016-2017
ICT & BIG DATA FOR HEALTH

Convocatoria: 12 febrero 2018
22 países | 31,6 M€

www.icpermed.eu/en/services-opportunities.php

Smart Grids Plus ERA-Net REGSYS
Sistemas Energéticos Inteligentes
H2020-LCE-2016-2017
ICT > SMART ENERGY SYSTEMS

Convocatoria: junio 2018
24 países | 38 M€

www.eranet-smartgridsplus.eu

Water Works 2017
"Closing the Water Cycle Gap"
H2020-SC5-2017
ICT > BIG DATA & SMART WATER

Convocatoria: 15 febrero 2018
20 países | 18M€

www.waterjpi.eu

ForestValue
Innovación Forestal
H2020-SFS-2017-1
ICT > FOREST MANAGEMENT

Convocatoria Abierta (!)
19 países | 25 M€

https://forestvalue.org

SusCrop ERA-NET
Cultivos Sostenibles
H2020-SFS-2017-1
ICT > CROP MANAGEMENT

Convocatoria: 15 enero 2018

https://www.suscrop.eu

CONVOCATORIAS CRÉDITO + TNR 33%

manu net
Fabricación Avanzada
H2020-NMBP-2016
ICT > SMART MANUFACTURING

Próxima Convocatoria T1 2018

www.manunet.net

MarTERA ERA-NET COFUND
Tecnologías Marino-Marítimas
H2020-BG-2016-1
ICT > MARINE APPLICATIONS

Convocatoria 2017 en resolución
Convocatoria adicional 2018-2019

Más información…

(http://www.cdti.es/index.asp?MP=7&MS=724&MN=3)

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Big Data integrada en diversas ERA-Nets temáticas

CONVOCATORIAS COFUND (SUBVEN... ...DITO + TNR 33%

ERAPerMed
Medicina Personalizada
H2020-SC1-2016-2017
ICT & BIG DATA FOR HEALTH

Convocatoria: 12 fe...
22 países | 31...

www.icpermed.eu/en/services
opportunities.php

> Área de investigación específica para Big Data *"Data analysis, management and protection – Integrating Big Data and ICT Solutions"*

Fabricación Avanzada
H2020-NMBP-2016
...ACTURING
...a T1 2018
...net

Smart Grids Plus
ERA-Net REGSYS
Sistemas Energéticos Inteligentes
H2020-LCE-2016-2017
ICT > SMART ENERGY SYSTEMS

Convocatoria: ju...
24 países | 3...

www.eranet-smartgridsplus.eu

> Se pretende incluir Big Data en la subtemática de *"Smart Services – Digitalization"* (TBC)

MarTERA
ERA-NET COFUND

Water Works 2017
"Closing the Water Cycle Gap"
H2020-SC5-2017
ICT > BIG DATA & SMART WATER

Convocatoria: 15 fe...
20 países | 1...

www.waterjpi.eu

> Una de las subtemáticas incluye *"use of big data solutions and establishing reliable hydrological standards"*.

...arítimas
...-1
...ATIONS
...esolución
...018-2019

ForestValue
Innovación Forestal
H2020-SFS-2017-1
ICT > FOREST MANAGEMENT

Convocatoria Abierta (!)
19 países | 25 M€

https://forestvalue.org

Más información…
(http://www.cdti.es/index.asp?MP=7&MS=724&MN=3)

SusCrop ERA-NET
Cultivos Sostenibles
H2020-SFS-2017-1
ICT > CROP MANAGEMENT

Convocatoria: 15 enero 2018

https://www.suscrop.eu

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…pero siempre alineados con la BDV SRIA.

- Alineamiento de objetivos.
- Re-utilización de tecnología.
- Mejor uso de los recursos.
- Mayor impacto.
- Mejor conocimiento del
     entorno de aplicación.
- Contribución común a un
     objetivo único.

En el Futuro...

- Prestad atención a las convocatorias BDV PPP.

- Identificad referencias al uso de técnicas de Big Data en otras partes de H2020.

- Evaluad siempre la conveniencia de utilizar Big Data para resolver los retos presentes en los diferentes verticales de los Retos Sociales.

- Prestad atención a iniciativas como la de Digitalización y otras Focus Areas similares que pretenden extender el uso de las TIC en otros sectores.

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En el Futuro...

- Infoday nacional del programa de Seguridad en IFEMA el día 20 de febrero.

- Infoday nacional sobre ERA-Nets en CDTI el día 13 de febrero (provisional).

- Desarrollos concretos a través de otros programas, como los ofrecidos por CDTI y ERA-Nets.

- Consultad siempre con los diferentes Puntos de Contacto Nacional.

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Leadership in Enabling and Industrial Technologies: ICT

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Fernando Martín Galende: Components & Systems. Advanced Computing. Big Data. Photonics. EU-Brazil Actions.
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Enrique Pelayo Campillos: Robotics. Factories of the Future. Digital Contents.
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Fernando Rico Ríos: Future Internet. ICT Cross-cutting Activities. Access to finance, Innovation and Entrepreneurship. EU-Japan, EU-Korea Actions
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Personas de Contacto CDTI

PERMED "Personalised Medicine" (apertura: 12 febrero 2018).

Pre-anuncio: http://www.icpermed.eu/en/era-permed-JTC2018-pre-announcement.php

"Smart Combination of pre-clinical and clinical research with data and ICT solutions; Research Area 2: Integrating Big Data and ICT Solutions"

NCP CDTI: *Juan Luis Romera (juanluis.romera@cdti.es)*

WATER WORKS 2017 "Closing the Water Cycle Gap - Sustainable Management of Water Resources" (apertura: 15 febrero 2018).

Pre-anuncio: http://www.waterjpi.eu/images/documents/JC2018/Water%20JPI%202018%20Joint%20Call_Pre-announcement.pdf

Theme 3 .- "Supporting Tools for Sustainable Integrative Management of water Resources; Use of big data solutions and establishing reliable hydrological standards".

NCP CDTI: *Maria José Tomás (mariajose.tomas@cdti.es)*

SUSCROP   "Sustainable Crop Production" (apertura: 15 enero 2018).

Pre-anuncio: https://www.suscrop.eu/lw_resource/datapool/systemfiles/elements/files/60C3F9747E110E71E0539A695E8617DD/live/document/Pre-announcement_SusCrop_final.pdf

NCP CDTI: *Carlos Franco (carlos.franco@cdti.es)*

SG+ REGSYS   "Smart Energy Systems" (apertura en junio 2018).

Resumen: http://www.eranet-smartgridsplus.eu/regsys/

NCP CDTI: *Gabriel Barthelemy (gabriel.barthelemy@cdti.es)*

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MUCHAS GRACIAS

http://eshorizonte2020.es/