WEBMINAR

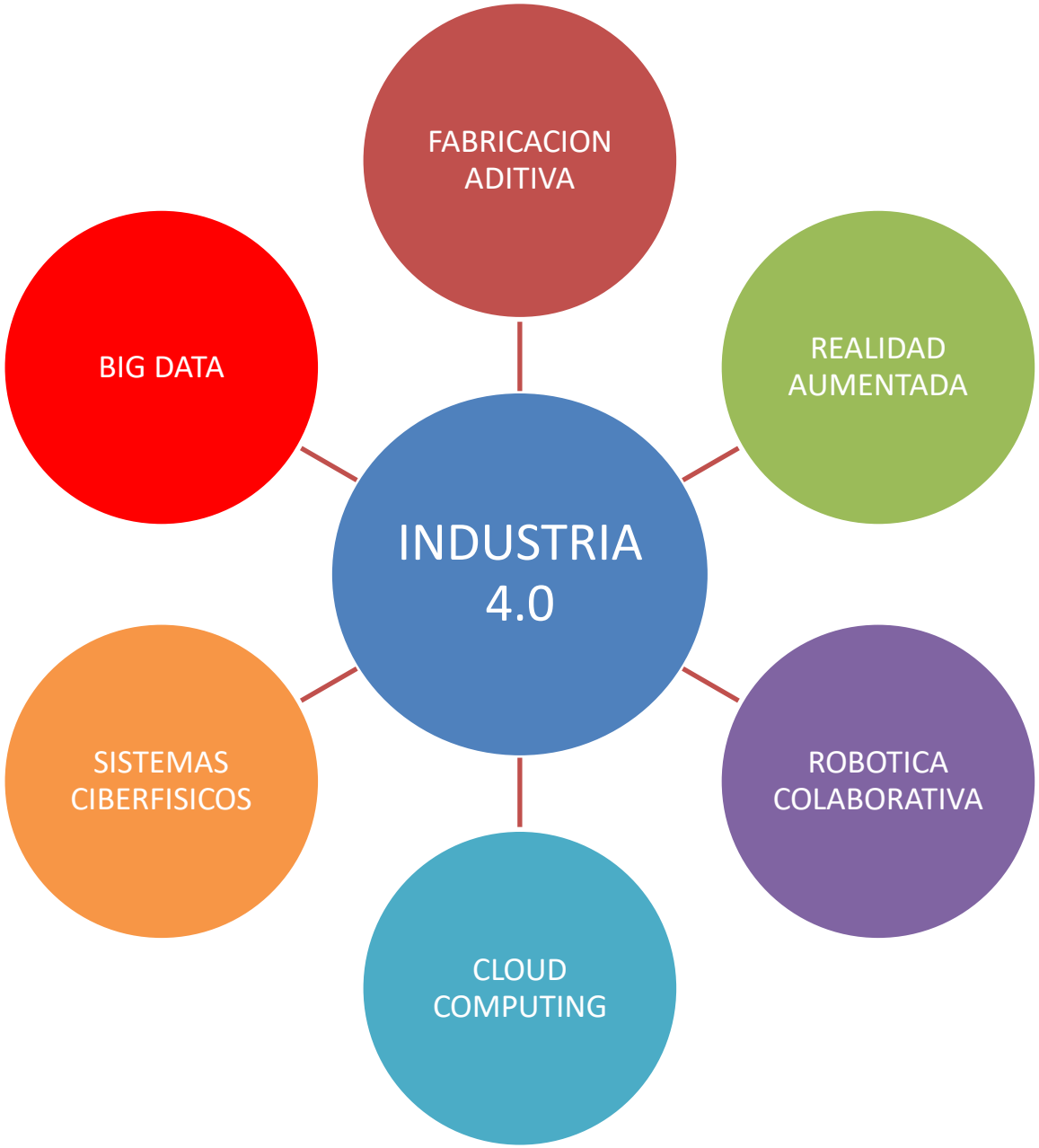
Industria 4.0,
el futuro de la innovación tecnológica

15 junio 2017

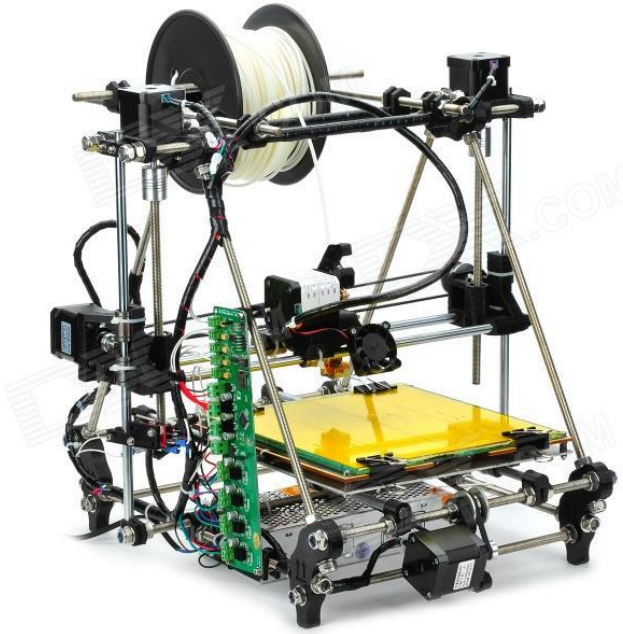
Gian-Lluís Ribechini Creus

Ingeniero Industrial

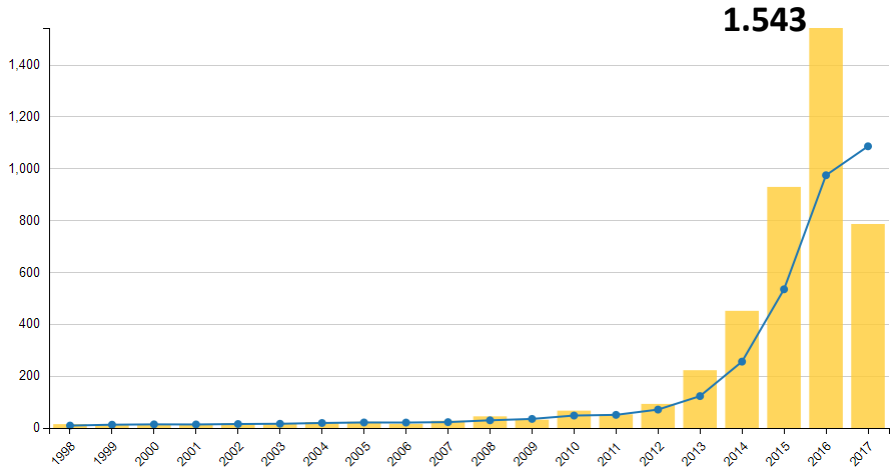
Innogenierum gian-lluís ribechini

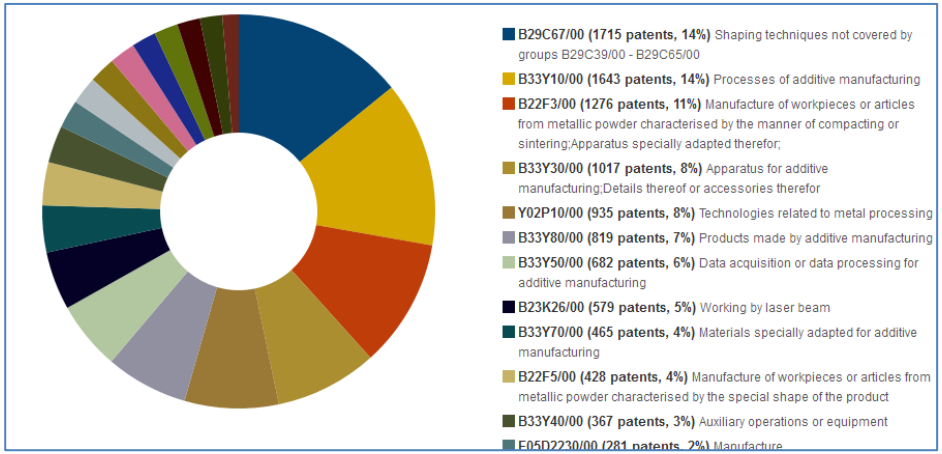

FABRICACION ADITIVA
BIG DATA
REALIDAD AUMENTADA
INDUSTRIA 4.0
SISTEMAS CIBERFISICOS
ROBOTICA COLABORATIVA
CLOUD COMPUTING

FABRICACION ADITIVA



Patentes en **Additive Manufacturing**
(4.478 patentes)





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Innovando con Fabricación Aditiva

Moldes

Prototipos

Seguridad
y
Confidencialidad

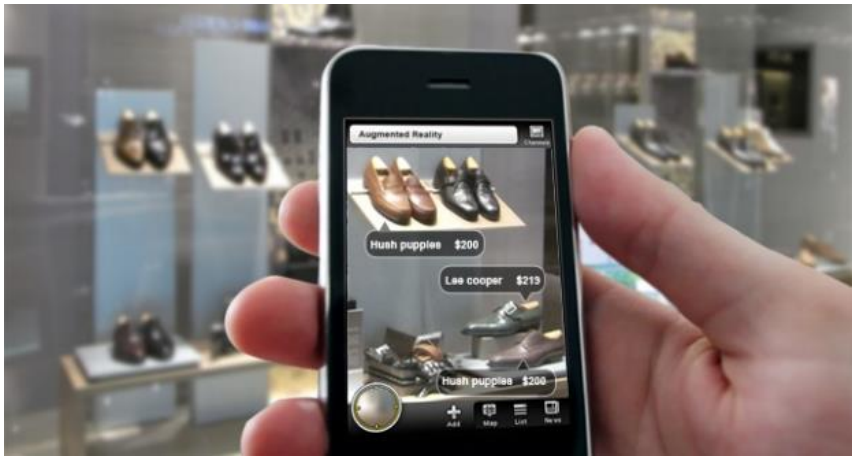
Nuevas geometrías

¿Nuevos negocios?

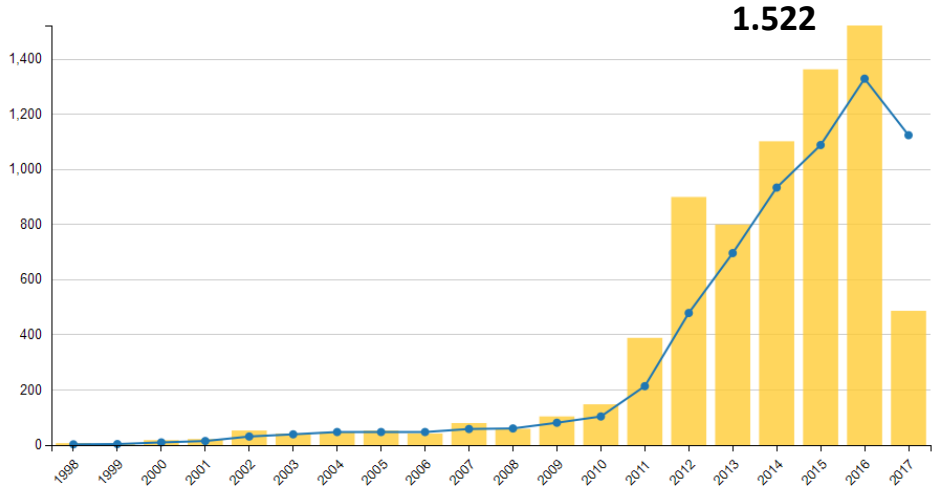
Incertidumbres/Riesgos en Fabricación Aditiva

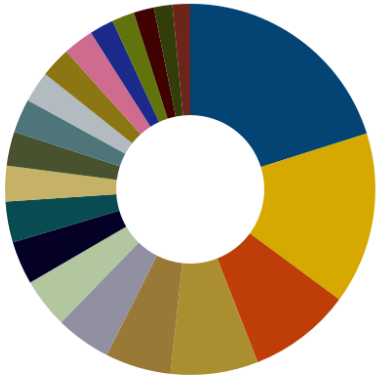
- ¿Cuál es el ciclo de vida de los productos?
- ¿Hay normativa?
- ¿Hay legislación?
- ¿Cómo me protejo de la copia/falsificación?

REALIDAD AUMENTADA



Patentes en **Augmented Reality**
(7.244 patentes)





- **G06T19/00 (2393 patents, 20%)** Manipulating 3D models or images for computer graphics
- **G06F3/00 (1781 patents, 15%)** Input arrangements for transferring data to be processed into a form capable of being handled by the computer;Output arrangements for transferring data from processing unit to output unit
- **G02B27/00 (1064 patents, 9%)** Other optical systems;Other optical apparatus
- **G06K9/00 (909 patents, 8%)** Methods or arrangements for reading or recognising printed or written characters or for recognising patterns
- **G06T7/00 (681 patents, 6%)** Image analysis
- **G06T11/00 (575 patents, 5%)** 2D [Two Dimensional] image generation
- **G06T2207/00 (517 patents, 4%)** Indexing scheme for image analysis or image enhancement
- **G06F17/00 (447 patents, 4%)** Digital computing or data processing equipment or methods
- **H04N5/00 (423 patents, 4%)** Details of television systems
- **G09G5/00 (369 patents, 3%)** Control arrangements or circuits for visual indicators common to cathode-ray tube indicators and other visual

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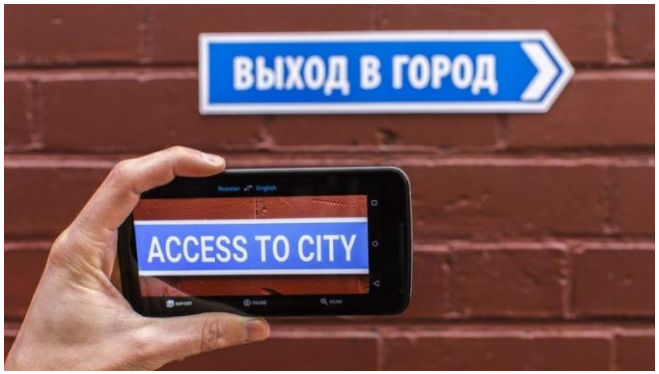
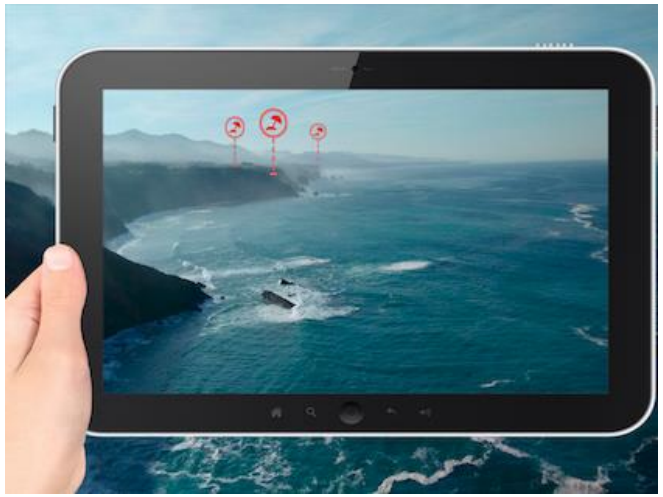
Innovando con Realidad Aumentada





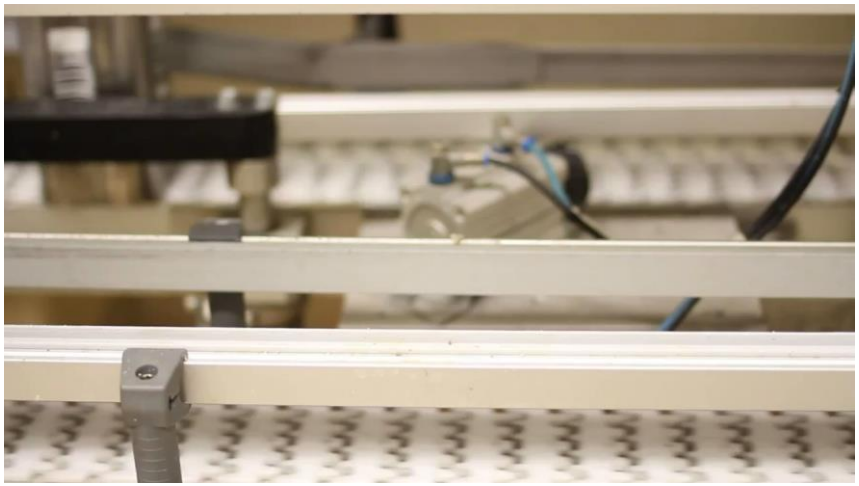
GPS

Brújula Digital

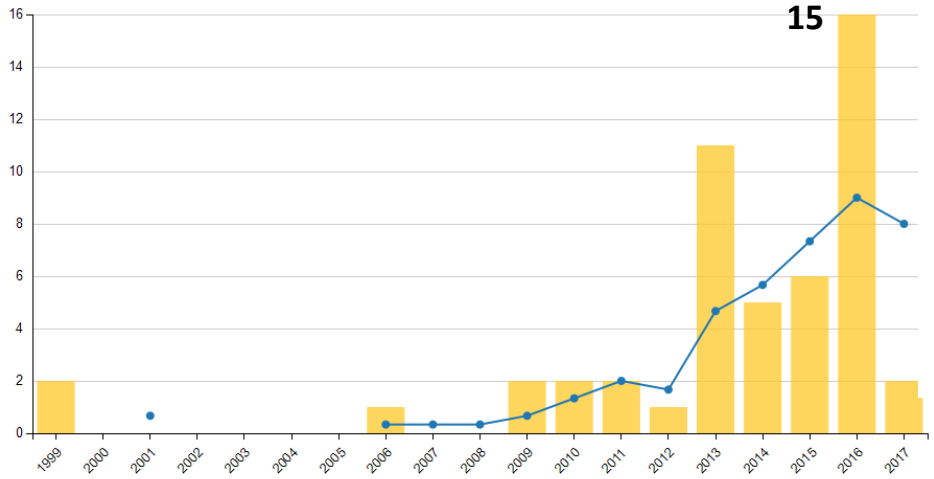
Incertidumbres/Riesgos en Realidad Aumentada

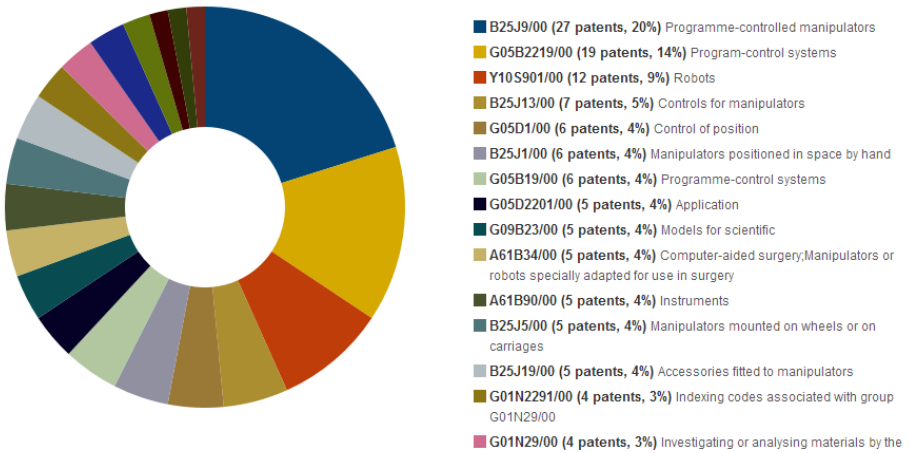
- Confidencialidad.
- Protección de la intimidad.
- Accidentes.
- Fallos de la tecnología (batería,…).

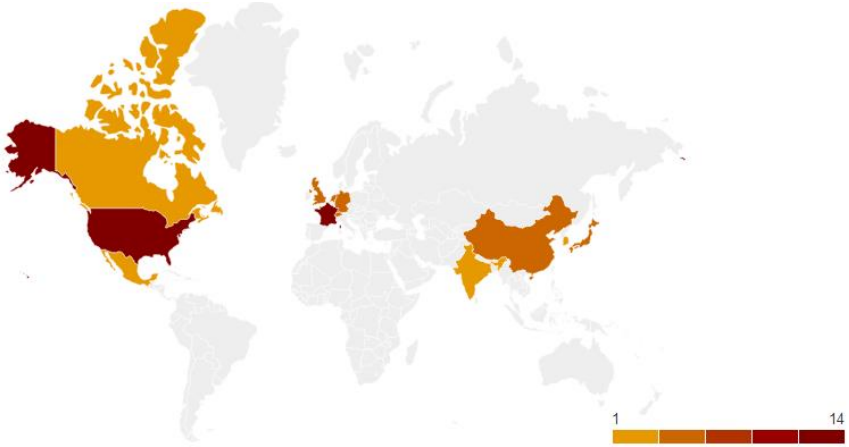
ROBOTICA COLABORATIVA



Patentes en **Collaborative Robotics**
(50 patentes)







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Innovando con Robótica Colaborativa

Incertidumbres/Riesgos en Robótica Colaborativa

- Normativa y legislación.

European Parliament
2014-2019

Committee on Legal Affairs

2015/2103(INL)

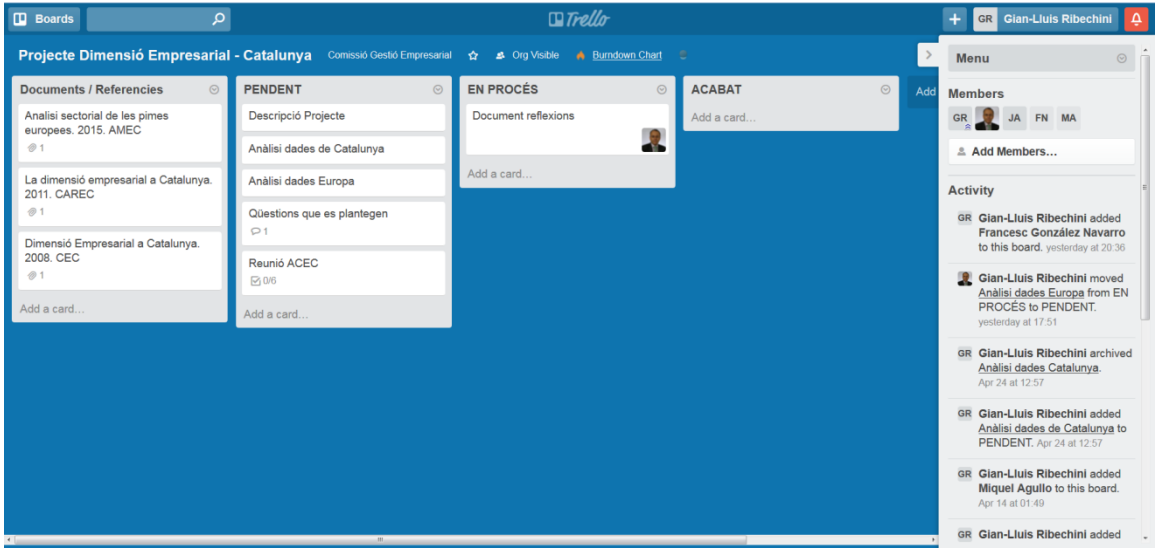
31.5.2016

DRAFT REPORT

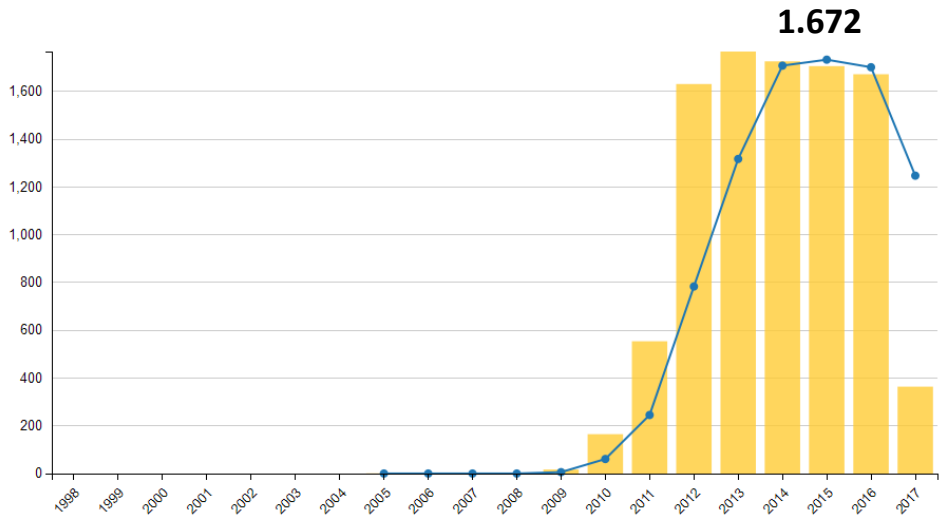
with recommendations to the Commission on Civil Law Rules on Robotics
(2015/2103(INL))

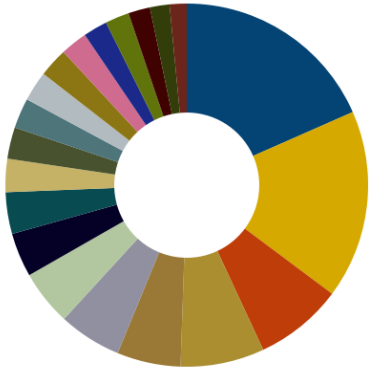
- Empleo y empleabilidad.

CLOUD COMPUTING

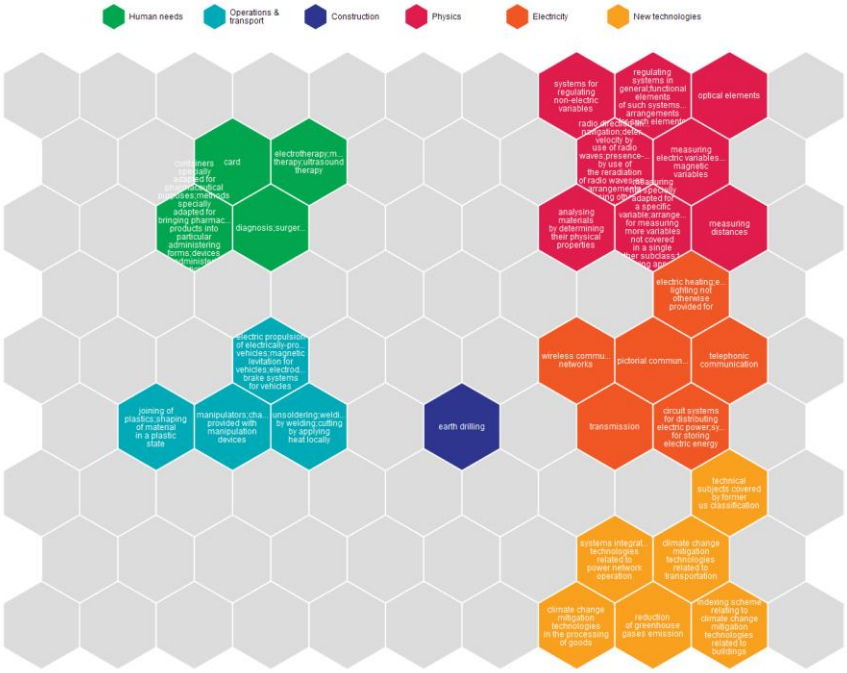


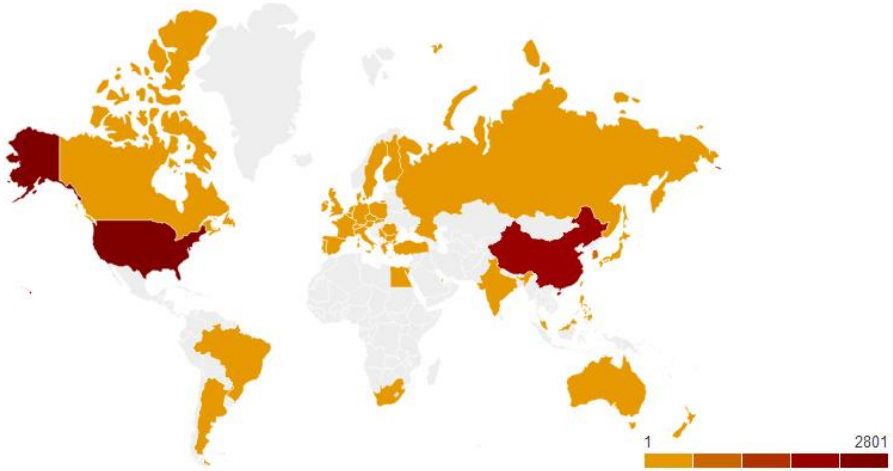
Patentes en **Cloud Computing**
(9.605 patentes)





- **G06F9/00 (1479 patents, 18%)** Arrangements for programme control
- **H04L67/00 (1350 patents, 17%)** {Network-specific arrangements or communication protocols supporting networked applications }
- **H04L63/00 (632 patents, 8%)** {Network architectures or network communication protocols for network security }
- **H04L41/00 (601 patents, 7%)** {Arrangements for maintenance or administration or management of packet switching networks}
- **G06F21/00 (456 patents, 6%)** Security arrangements for protecting computers
- **G06F17/00 (450 patents, 6%)** Digital computing or data processing equipment or methods
- **H04L47/00 (396 patents, 5%)** {Traffic regulation in packet switching networks }
- **G06F11/00 (315 patents, 4%)** Error detection;Error correction;Monitoring
- **G06Q10/00 (298 patents, 4%)** Administration;Management
- **G06F3/00 (238 patents, 3%)** Input arrangements for transferring data to be processed into a form capable of being handled by the computer;Output arrangements for transferring data from processing unit to output unit





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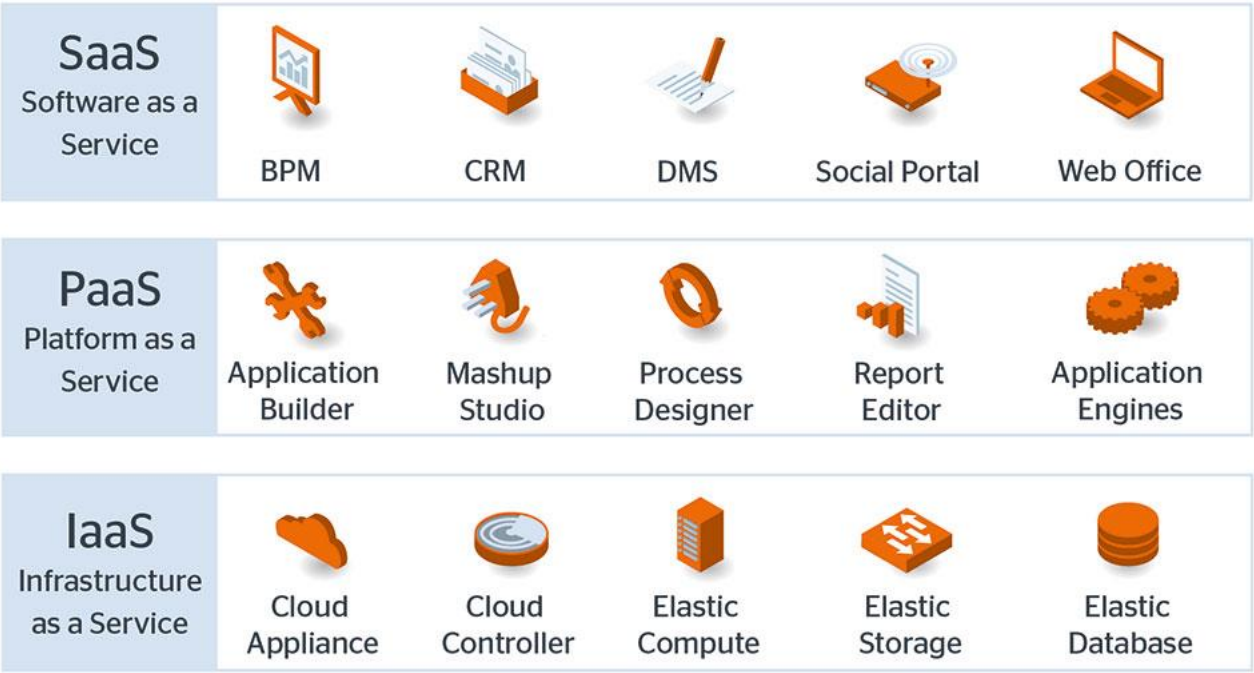
Innovando con Cloud Computing

- ¿Qué nos aporta el Cloud?

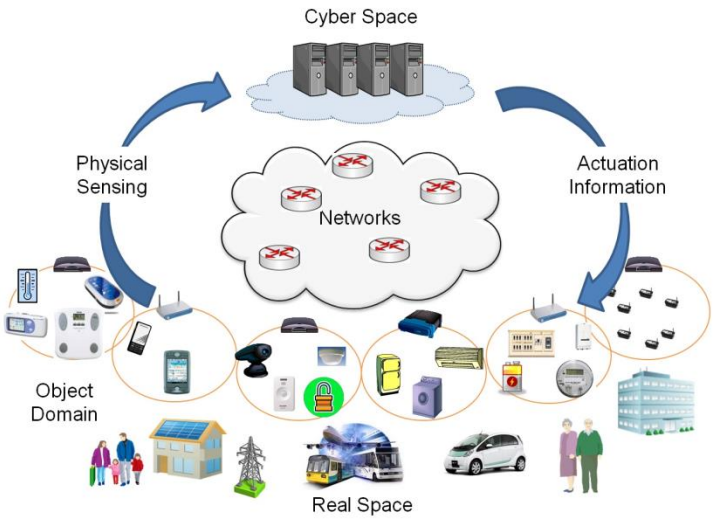
- ¿Qué ofrecemos a nuestros clientes?



Incertidumbres/Riesgos en Cloud Computing

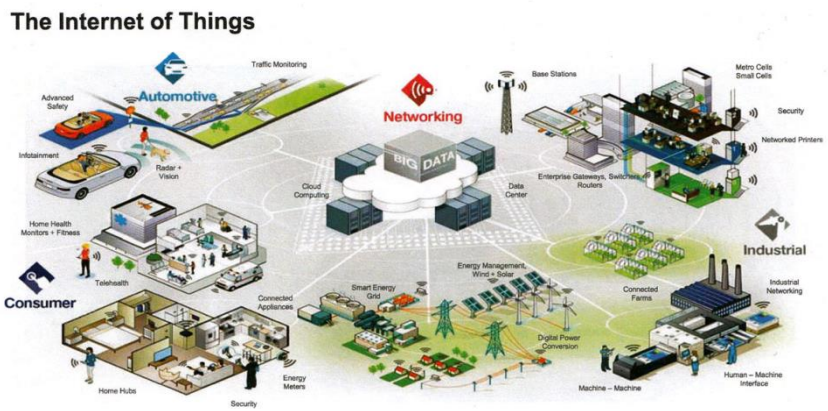
- Ciberseguridad y Compliance
- ¿Cómo evitamos la “fuga de información”?
- ¿Cómo concienciamos a nuestros empleados?

SISTEMAS CIBERFISICOS

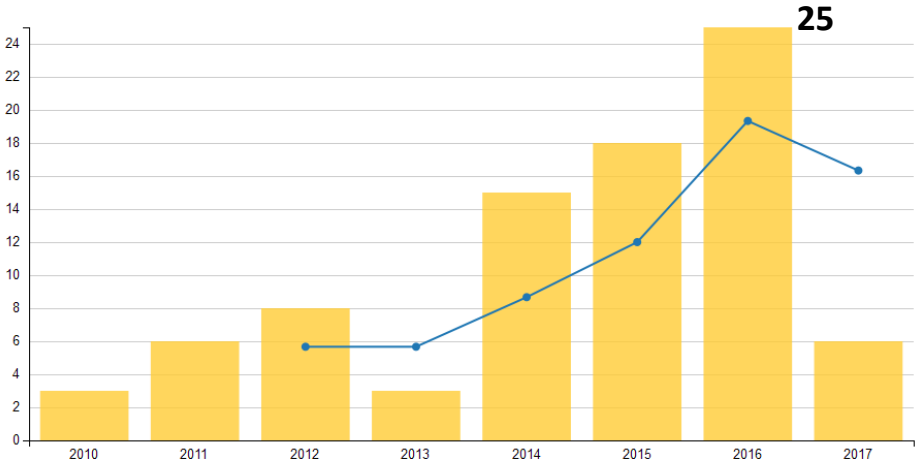


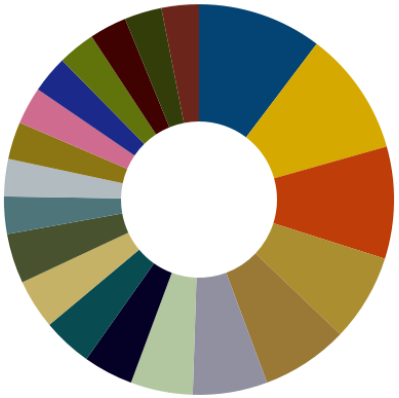
Embedded systems

Internet of Things (IoT)

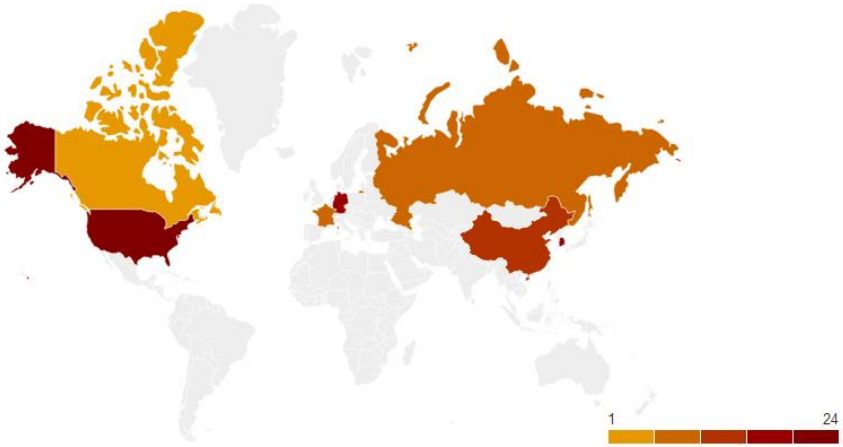


Patentes de **Cyber-Physical Systems**
(84 patentes)





- **G06F17/00 (10 patents, 10%)** Digital computing or data processing equipment or methods
- **H04L63/00 (10 patents, 10%)** {Network architectures or network communication protocols for network security }
- **G05B19/00 (9 patents, 9%)** Programme-control systems
- **G06F8/00 (7 patents, 7%)** {Arrangements for software engineering }
- **G05B2219/00 (7 patents, 7%)** Program-control systems
- **G06Q10/00 (6 patents, 6%)** Administration;Management
- **G06Q50/00 (5 patents, 5%)** Systems or methods specially adapted for a specific business sector
- **G06F2217/00 (4 patents, 4%)** Indexing scheme relating to computer aided design
- **G05B13/00 (4 patents, 4%)** Adaptive control systems
- **Y02P90/00 (4 patents, 4%)** Enabling technologies with a potential contribution to greenhouse gas emissions mitigation
- **G06F21/00 (4 patents, 4%)** Security arrangements for protecting computers
- **H04L67/00 (3 patents, 3%)** {Network-specific arrangements or communication protocols supporting networked applications }



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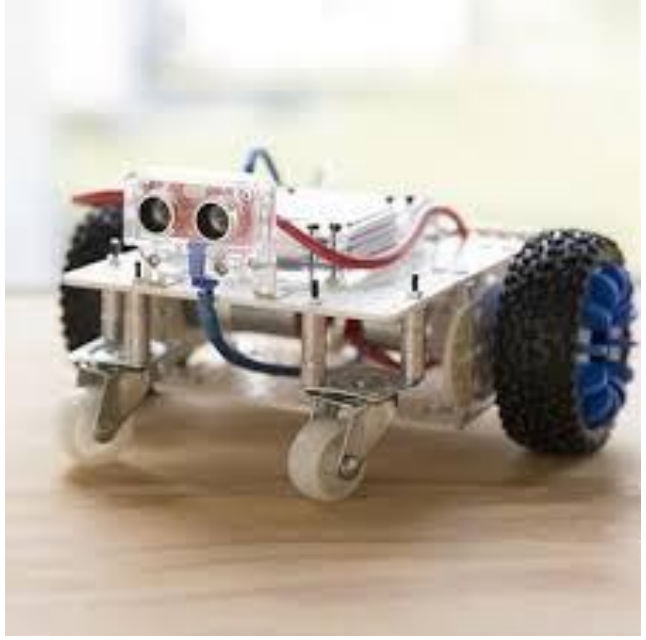
Innovando con Sistemas Ciberfísicos



Incertidumbres/Riesgos en Ciberfísicos

- Ciberseguridad y tecnologías obsoletas.

- Normativa y legislación (Compatibilidad electromagnética)

BIG DATA

Will big data become the world's best doctor?

Published April 23, 2015 by Jon Evans in M2M

63 141 5

the connected health doctor is the doctor who is always in

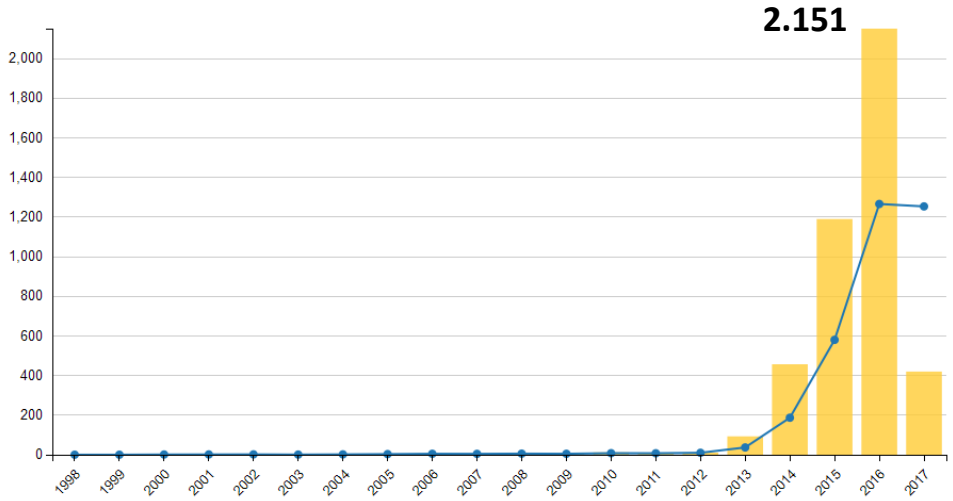
See the infographic

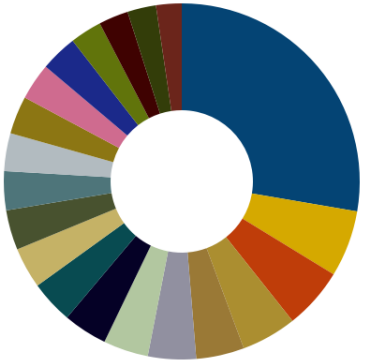
IBM Watson Health Cloud

IBM Watson Health Cloud will bring together clinical, research and social data from a diverse range of health sources, creating a secure, cloud-based data sharing hub, powered by the most advanced cognitive and analytic technologies.

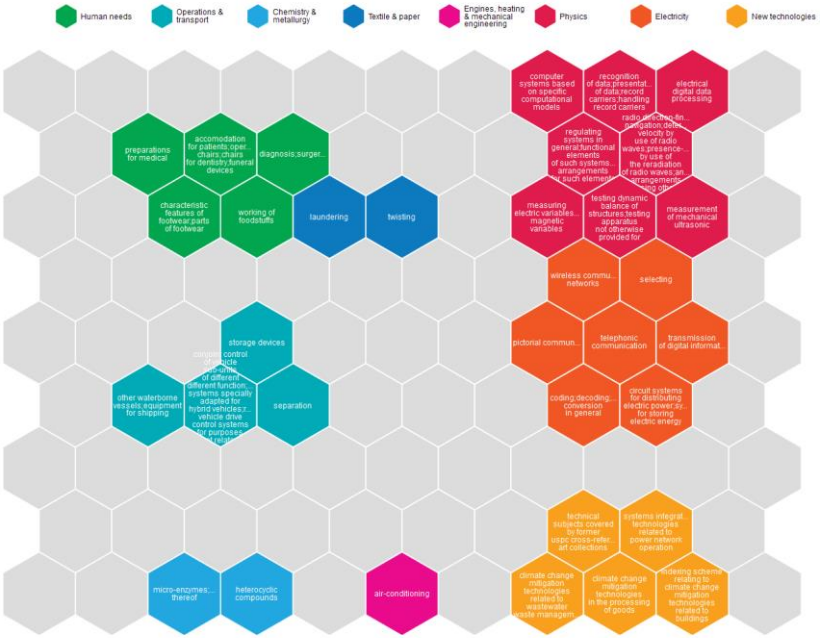
Explorys and Phytel will become part of the Watson Health Cloud. Explorys has compiled one of the largest healthcare databases in the world, derived from numerous and diverse financial, operational, and medical record source systems. Phytel works with healthcare providers' current electronic medical record technologies to reduce patient hospital readmissions and to automate and improve patient outreach and engagement.

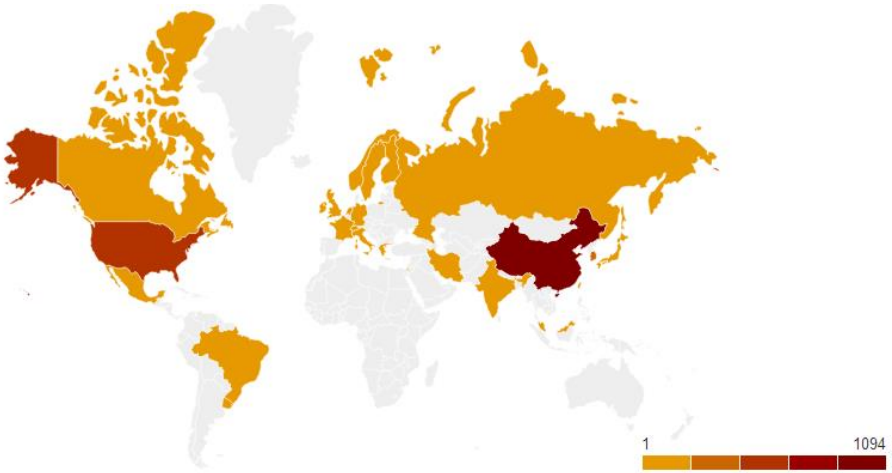
Patentes de **Big Data**
(4.382 patentes)





- **G06F17/00 (298 patents, 28%)** Digital computing or data processing equipment or methods
- **G06N99/00 (65 patents, 6%)** Subject matter not provided for in other groups of this subclass
- **H04L63/00 (60 patents, 6%)** {Network architectures or network communication protocols for network security }
- **G06N5/00 (54 patents, 5%)** Computer systems utilising knowledge based models
- **G06K9/00 (47 patents, 4%)** Methods or arrangements for reading or recognising printed or written characters or for recognising patterns
- **G06F3/00 (47 patents, 4%)** Input arrangements for transferring data to be processed into a form capable of being handled by the computer;Output arrangements for transferring data from processing unit to output unit
- **G06Q30/00 (44 patents, 4%)** Commerce
- **H04L67/00 (43 patents, 4%)** {Network-specific arrangements or communication protocols supporting networked applications }
- **H04L41/00 (42 patents, 4%)** {Arrangements for maintenance or administration or management of packet switching networks}





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Innovando con Big Data

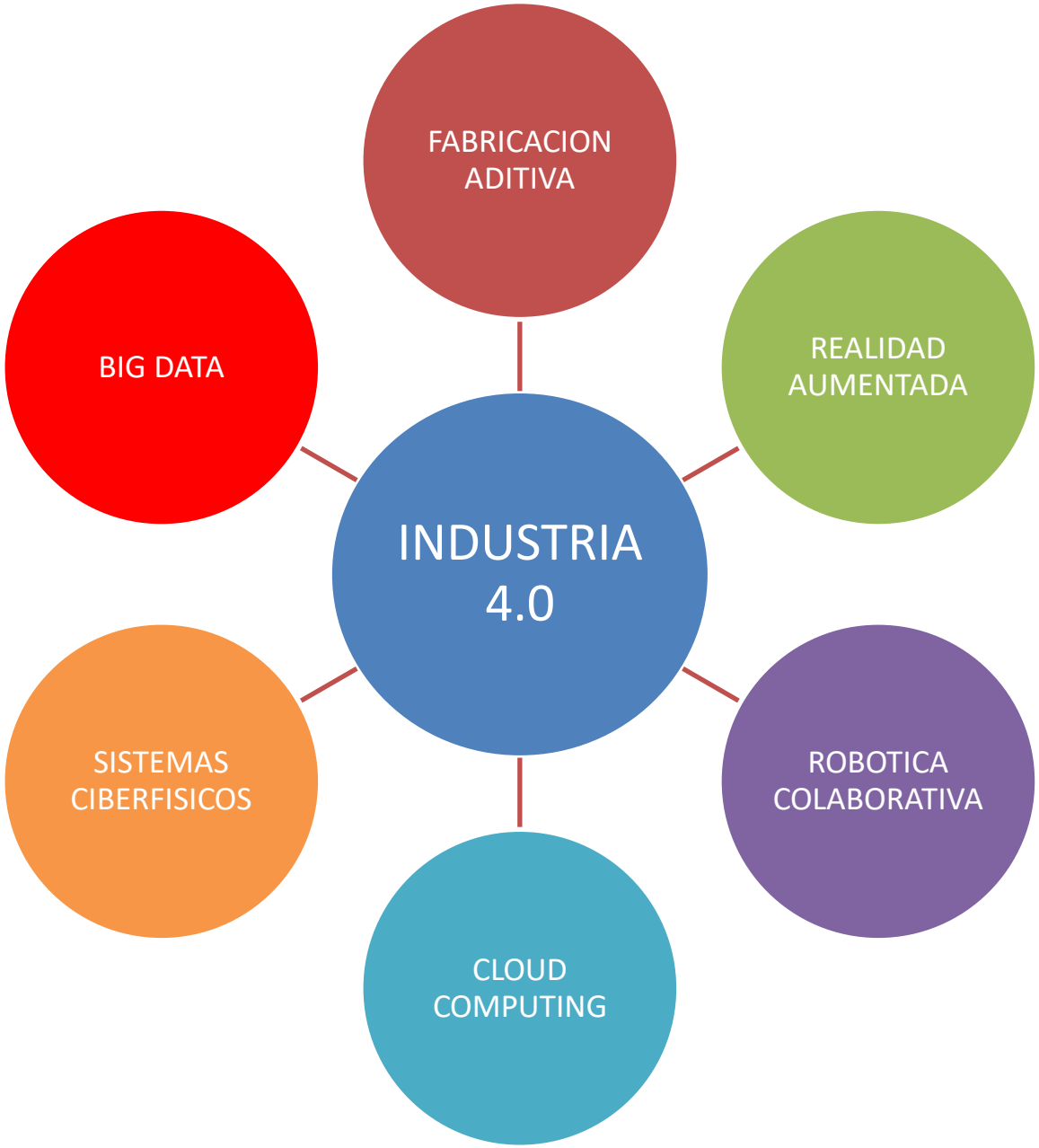
- ¿Qué puedo conseguir con el Big Data?
- ¿Si eres una pyme debes extraer el “Small Data” de tu sistema de Big Data?
  - ¿Por qué es importante ese dato?

¿?

- ¿Conoces las fuentes gratuitas de datos disponibles?

Incertidumbres/Riesgos en Big Data

- ¿Tienes infraestructura y personal para analizar datos?
- ¿Cómo asegurar la fiabilidad de los datos?
- Accesibilidad:
  - *Limitaciones normativas o legislativas.*
  - *Barreras tecnológicas.*
  - *Barreras estratégicas.*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Industria 4.0,
el futuro de la innovación tecnológica

15 junio 2017

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