



Europäisches  
Patentamt  
European  
Patent Office  
Office européen  
des brevets

# EPO approach to Patents and Standards

- “to promote innovation, competitiveness and economic growth across Europe “

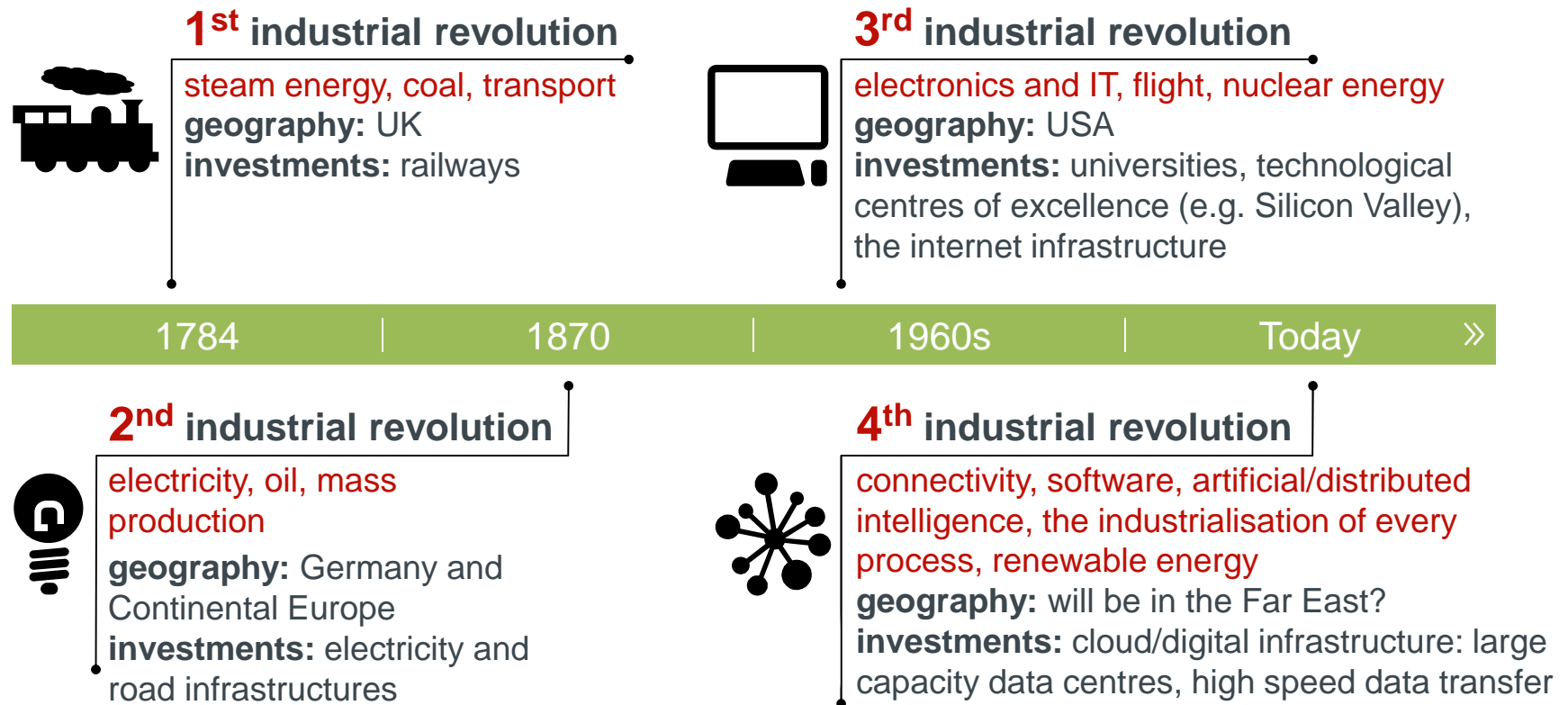


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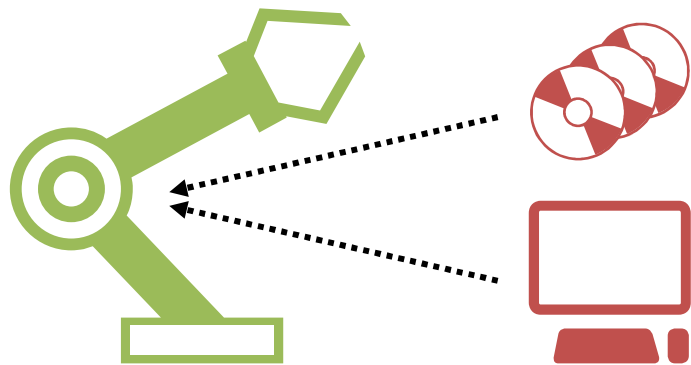
European Patent Office

June 2017

# Industry 4.0 in the industrial landscape



# Industry 4.0: it's all about software

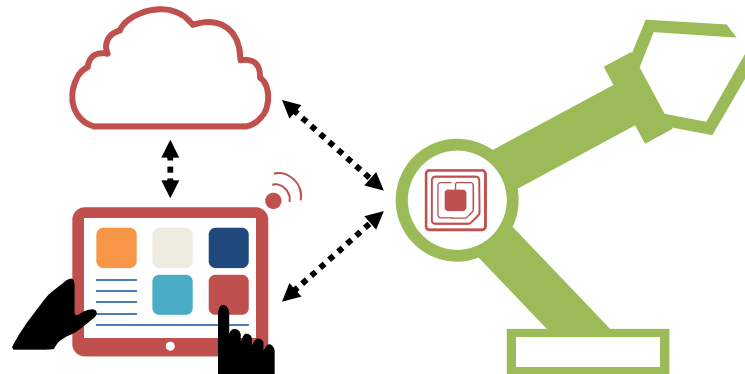


## Today

**Advanced machines using standard software**  
(advances from improving the machine)

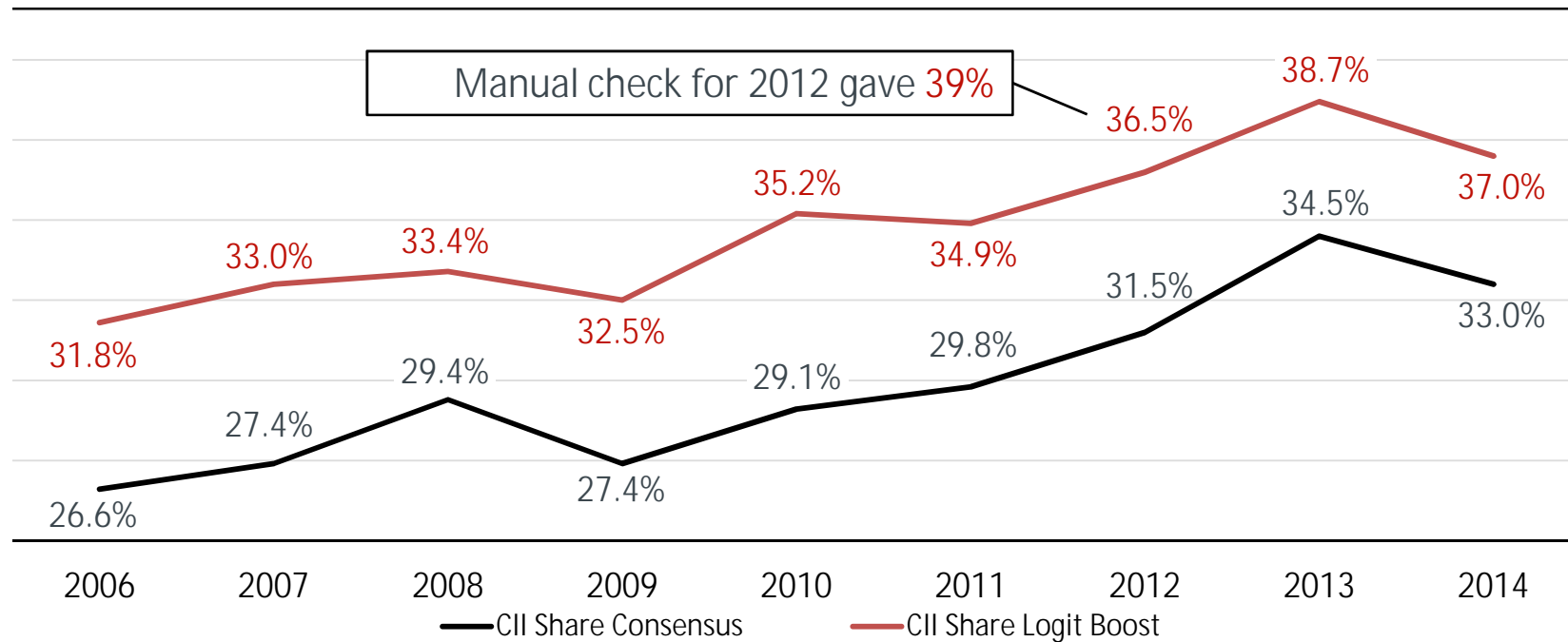
## Industry 4.0

**Advanced software using standard machines**  
(advances from improving the software)



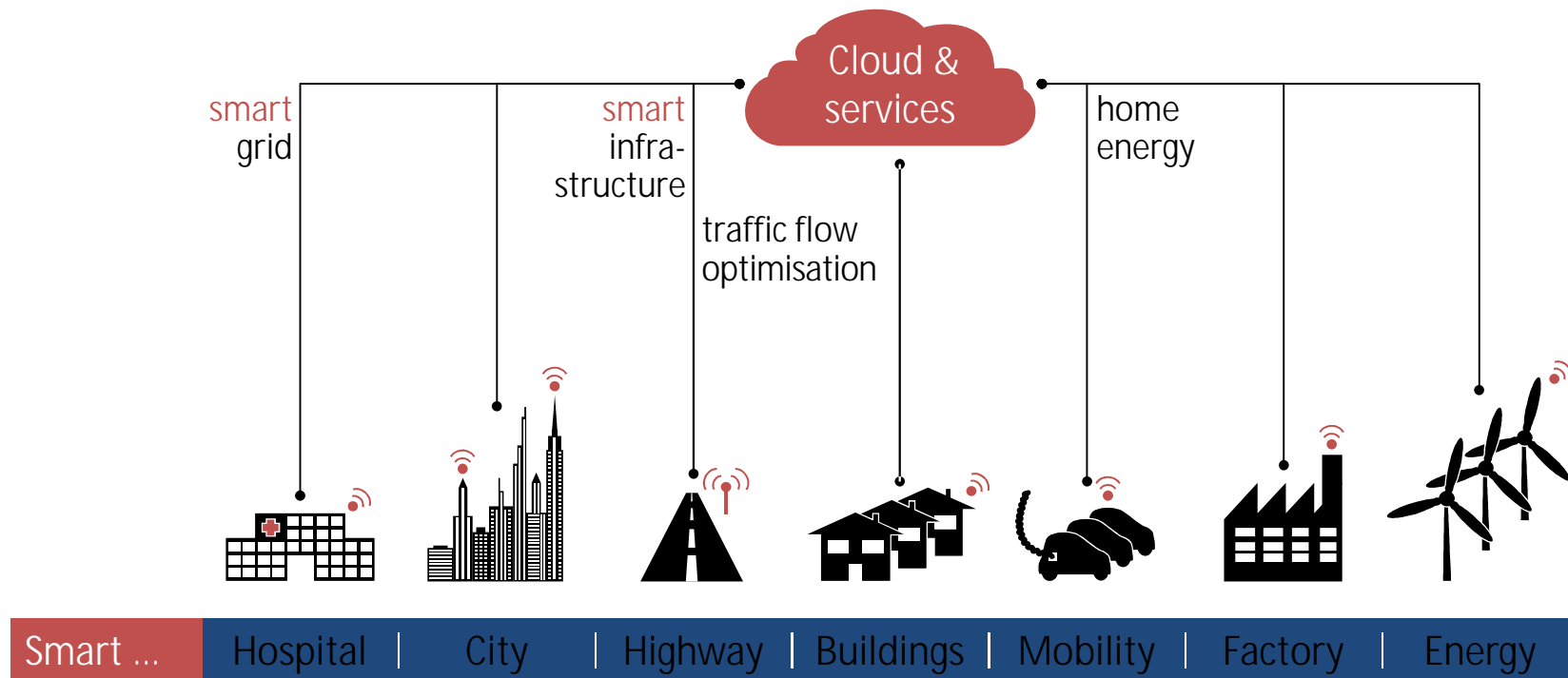
# CII share in medical technologies

Percentage of European patent applications in the field of medical technology claiming a computer-implemented invention – earliest priority year (2006-2014)

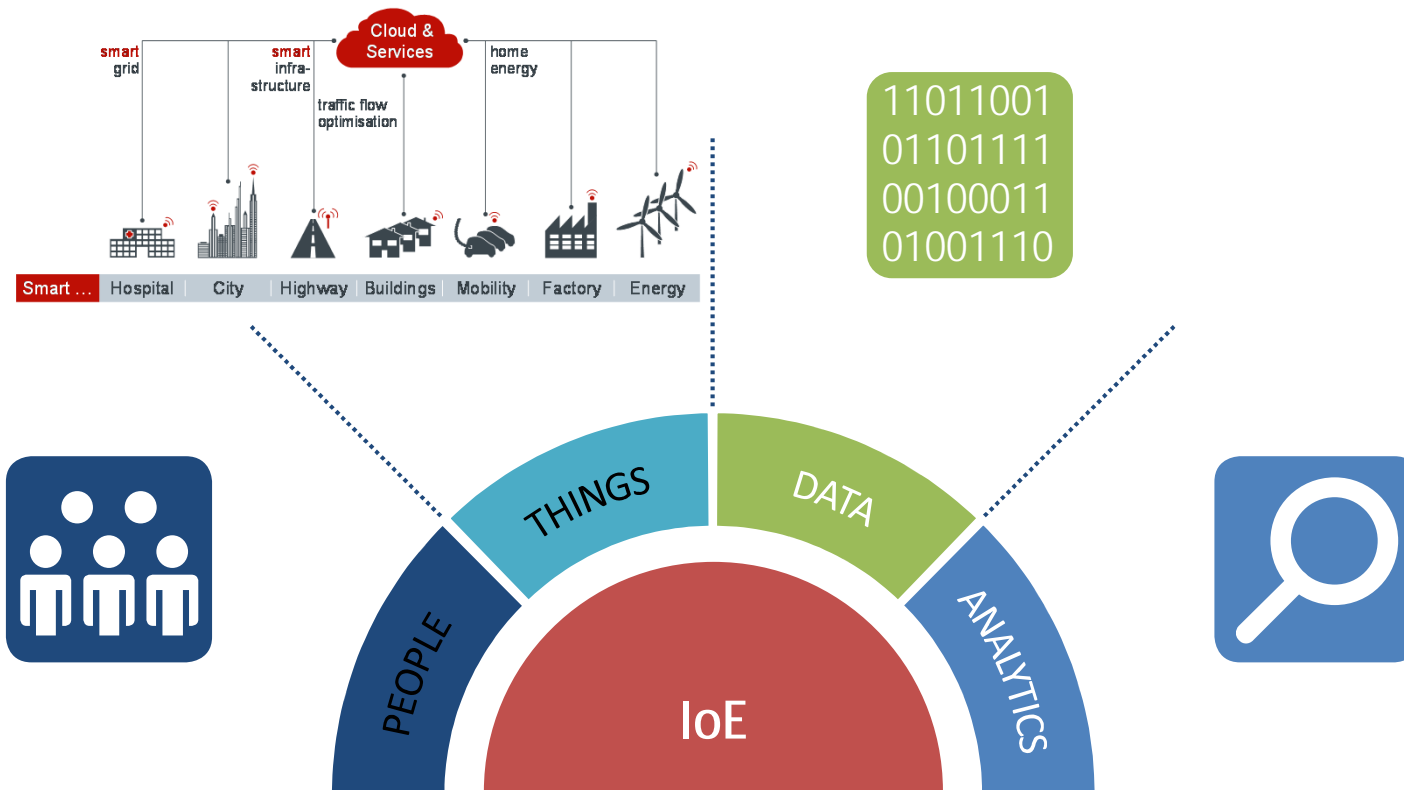




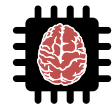
# The Internet of Things (IoT)



# Internet of Everything (IoE)



# Examples of Enabling Technologies/ Areas for Industry 4.0 (all software-driven)



*“Artificial Intelligence”*



*“Drones”*



*“4G / 5G connectivity”*



*“Networked sensors (incl. genetics, biotechnology, nanotechnology)”*



*“Cloud computing”*



*“Personalised medicine”*



*“Radio Frequency ID (RFID)”*



*“3D printing”*



*“SMART” (Self-Monitoring, Analysis and Reporting Technology)  
Factories/ Grids/ Homes”*



# Implications for IP (1)



**Industrial revolution → IP revolution**

**The IP / licensing system today is still adapting to Industry 3.0**

- § Patents and standards, open Source, software, copyright ...
- § Fast development cycles (weeks to months) vs longer granting cycles (months to years). No need for 20 years protection?

**The meaning of fundamental concepts will be challenged:**

- § Concepts such as “industrial”, “technical“, “ aesthetic“, “abstract”, “mental act” will become even more crucial to understand within the patenting process.
- § Who/what is an “inventor” (99% machine invention)?

# “Best practices” in patents and standards !

## § Applicants should be aware of patent law

- Disclosure of technical information in standards development process may be considered as public disclosure
- A patent application, if desired, should be filed before disclosure in the standards development process

## § EPO includes standards-related documentation in "prior art" searches

- prevents granting of patents for already disclosed inventions
- maintains high patent quality

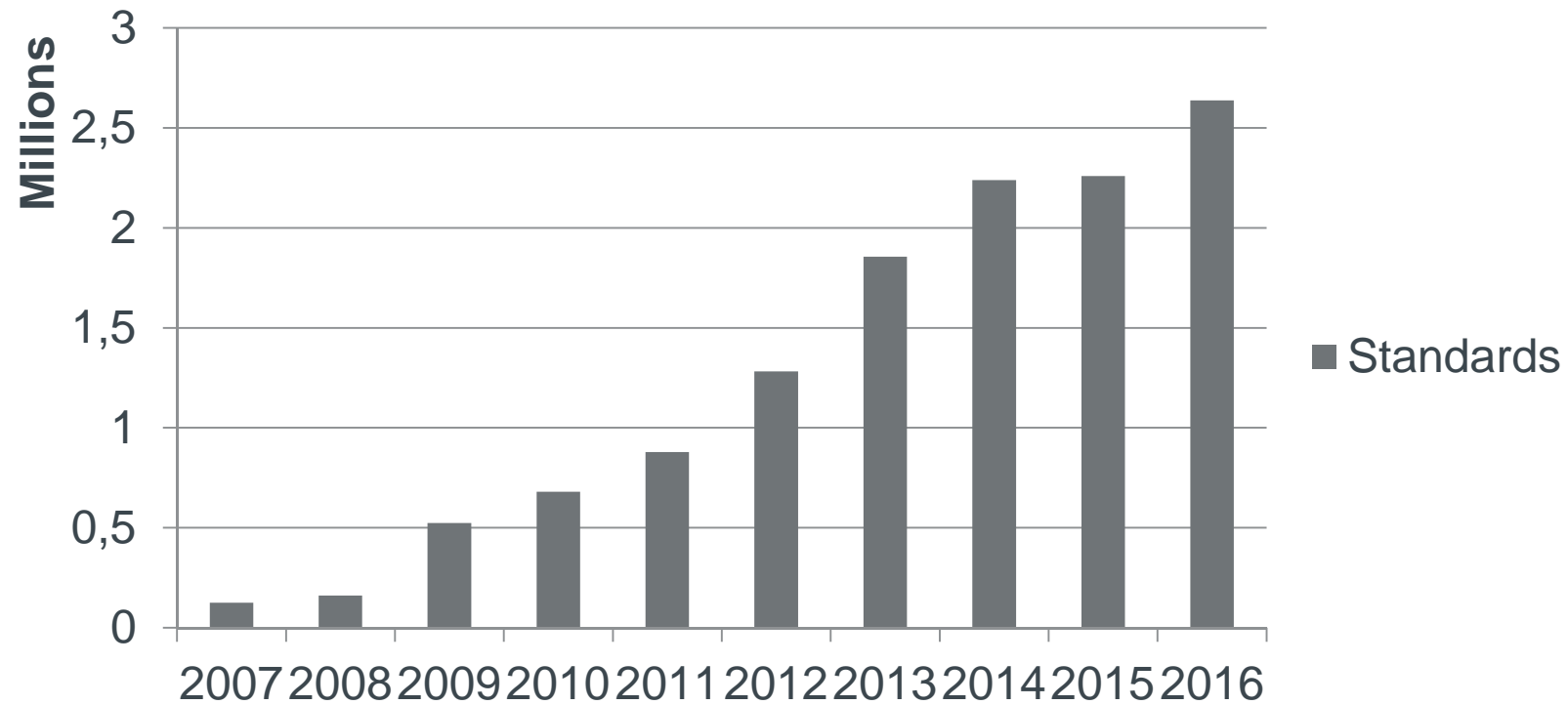
## § IPR policies of Standards Development Organisations

- Patent applicants should declare **Standards Essential Patents (SEPs)**
- Patent rights licensed to all parties on **Royalty-free or FRAND terms** (Fair, Reasonable And Non-Discriminatory )

# Patents and standards

- § EPO uses standard development documentation as prior art
- § Grey zone between *publicly available* (prior art) and *not publicly available* (secret/confidential) information
  - ∅ Normal standards development process “non-confidential” in Europe
  - ∅ Technical disclosure considered “public” and therefore prior art
    - è EPO clarified status through agreements with standards development organisations (SDOs)
- § EPO has 3 million **standards-related documents** in internal databases
  - ∅ Used in prior art patent search and examination
    - è High patent quality in this area

## Number documents present in the standards databases and available to EPO Examiners



# Standards documents available in EPO examination

## § Memoranda of Understanding and agreements between EPO and SDOs

- ∅ Confirm standards documentation as prior art
- ∅ Allow EPO access to the standards documentation
- ∅ Documentation becomes part of EPO's prior art search

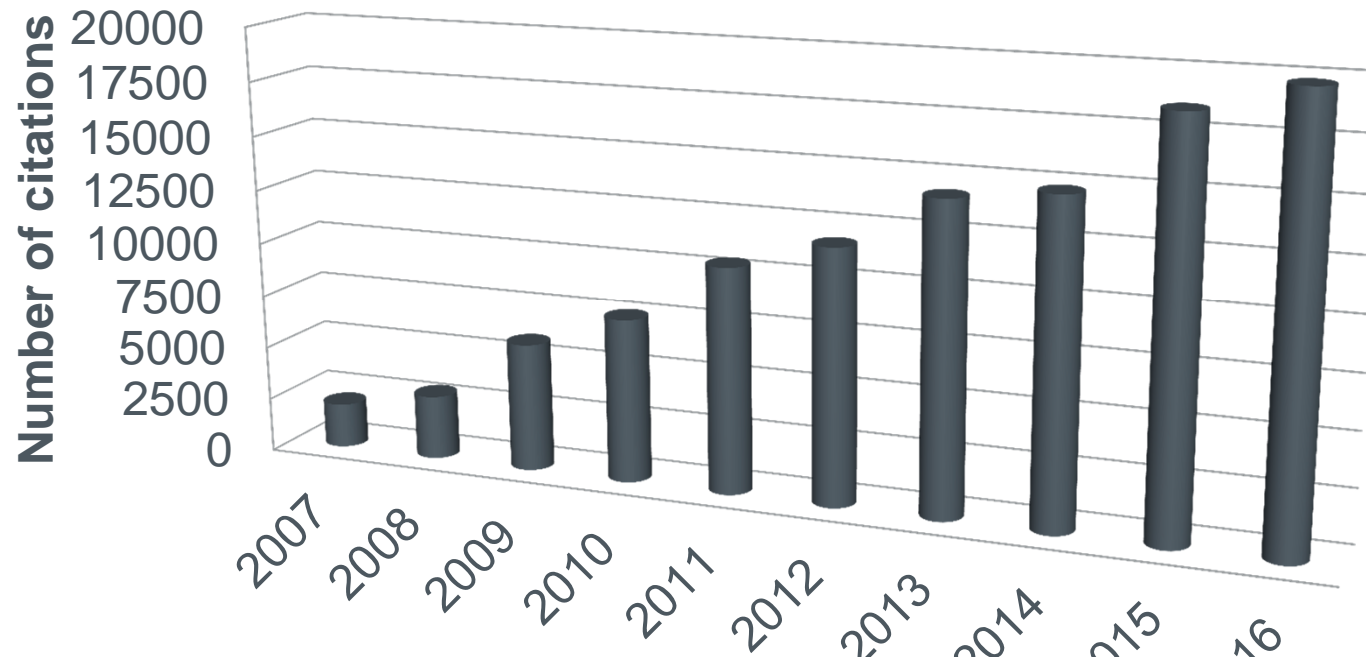
## § Agreements in place with:

- ∅ ETSI, ITU, IEEE-SA, IEC, WorldDMB, BSI...

## § Standards and contributions further include:

- ∅ 3GPP, IETF, MPEG, JPEG, OMA, DVB....

## Standards documents increasing in importance:



§ Up to 60% of search reports in key fields (Wireless Networks, Digital Video Coding and Compression) contain standards documents relevant to the patent examination

∅ nearly 20 000 citations of standards documents in 2016, + 32% over 2014

## “All Prior Art” and “All the Claims”



§ Projects attempting to algorithmically create and publicly publish all possible new prior art, **thereby making the published concepts non-patentable.**

<http://allpriorart.com/about/>

<http://alltheclaims.com/>

## Implications for IP (2)



### Further steps to adapt to Industry 4.0 – major IP issues:

- § Networked / territorial aspects. Where is the innovation produced or put into practice? Need for more regional, global protection.
- § Increasing inventions in virtualised level – disconnected from the physical object
- § Clarity on patenting of software (Computer Implemented Inventions - CII)
- § Multitude of data stakeholders (mining, hosting, reporting, analysing ...)



# The EPO is Prepared for Industry 4.0



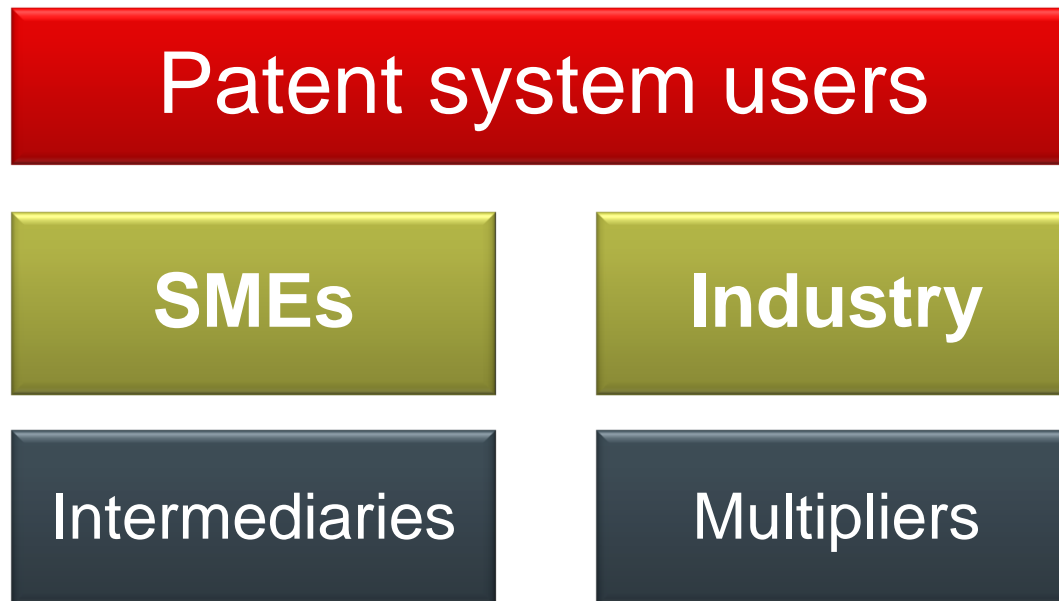
- § Searches delivered within 6 months
- § Examination to be completed within 12 months and opposition within 15 months
- § Interdisciplinary technical divisions of 3 examiners for each application
- § Annual improvements to the CII content of the Guidelines for Examination
- § Re-organisation of ICT area under one management team
- § Creation of specialised Industry 4.0 directorates and teams
- § Focus on CII training throughout the entire EPO operational area
- § Automated pre-search moving towards AI

## Innovation support by EPO Academy: **Target groups**

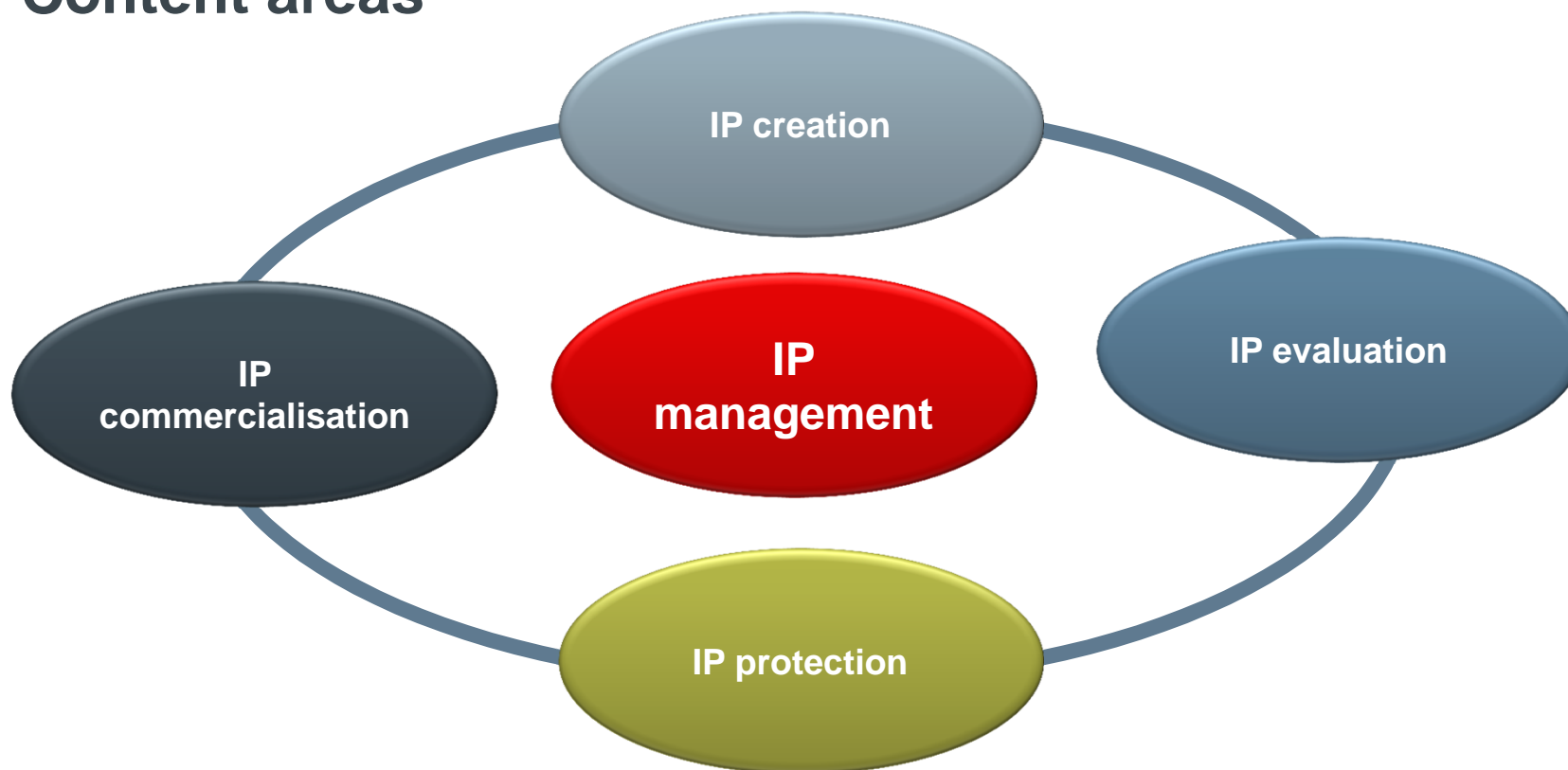
IPR-intensive industries contribute  
26% of employment and  
39% of GDP in the EU.

Industry-Level Analysis Report, September 2013  
conducted by EUIPO and EPO

## Innovation support by EPO Academy: Target groups



## Innovation support Content areas



# Innovation support - Activities

## Training

### Classroom

- § Search Matters
- § Patenting inventions and preparation for the UPP
- § Content support to intermediaries, e.g. LES, EEN ambassadors

### Virtual classroom

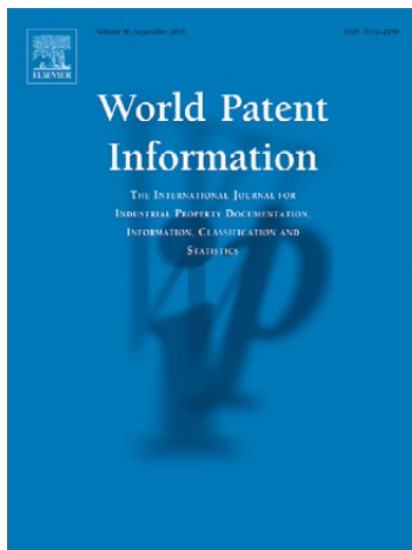
- § Technology commercialisation
- § IP management
- § UPP and SMEs

## Training support measures

### Publications & presentation material

- § Best of Search Matters (*World Patent Information* special issue)
- § SME case studies  
IP strategy & IP management
- § Inventors' handbook - From invention to innovation
- § IP4Business (presentation material like ip4inno.eu)

# Innovation support – Materials and publications



**Best of Search Matters**



**SME case studies**



**Inventors' Handbook**

**THANK YOU**