

### Welcome to our joint IP training series: Patent Protection for EU funding: Digital communication

# Patent protection for EU funding beneficiaries

An IP training series offered by the European Patent Office and the European IP Helpdesk







### Patent Protection for EU funding: Digital communication





### **Agenda**

- Introduction
  - Christian Solltmann, product manager, EPO
- Main aspects of IP management in EU-funded projects
   Michele Dubbini Senior IP Expert, European IP Helpdesk
- Getting to know patents
  - Christian Solltmann, product manager, EPO
- Patentability of new technological developments in digital communications with focus on wireless telecommunications
   Georgia Tseliou, examiner, EPO
- Learning resources
- Q&A

REC



# **European IP Helpdesk**

Stay ahead of the innovation game.

IP in EU funded projects (H2020/HEU)

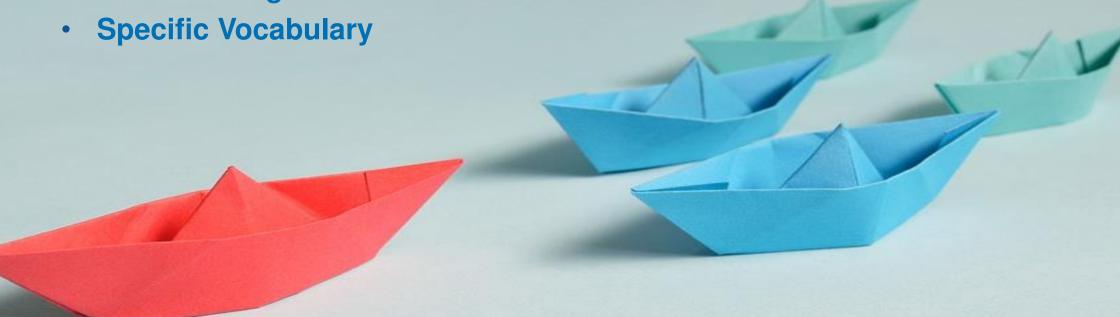
24.10.2023





## Roadmap

Rules and Agreements

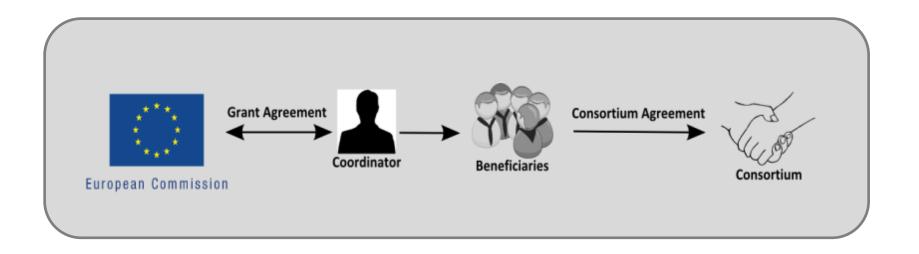






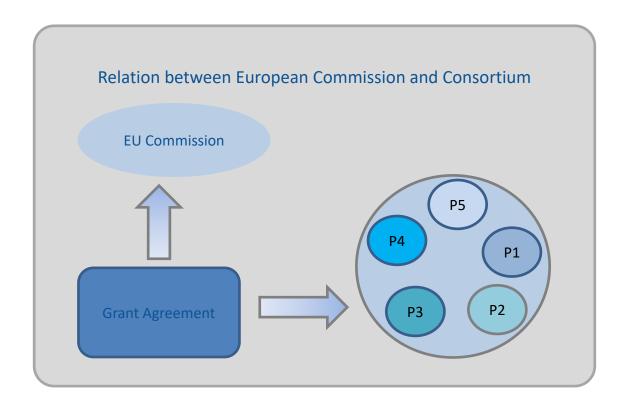


# **Overview: Agreements**



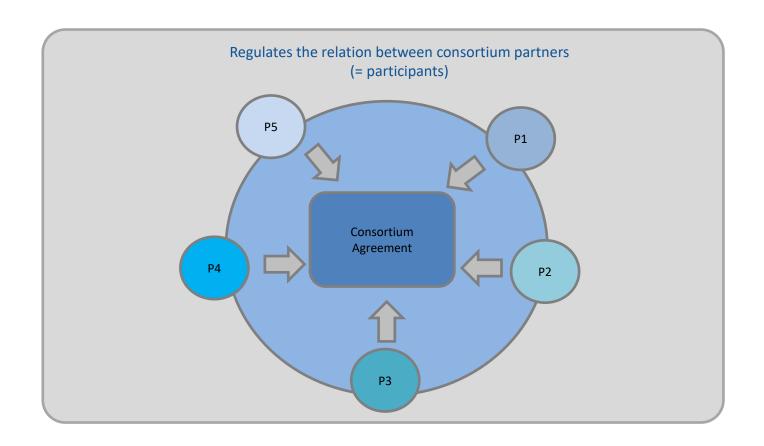


### **Grant Agreement (GA)**





## **Consortium Agreement (CA)**





# **Specific Vocabulary**





### Vocabulary

### **Key terms in the context of Horizon projects are:**

- Background
- Results
- Exploitation
- Dissemination
- Access rights





### **Ownership of Results**

- In Horizon projects, generally the Grant Agreement establishes that the results of the project belong to the participant generating them.
- It is advisable to take appropriate measures to properly manage ownership issues, such as keeping laboratory books or other kinds of documentary evidence (e.g. a properly completed Invention Disclosure Form).

### **Access Rights (I)**

- Each project partner has the right to request access rights to the other project partners' background and results **as long as it needs them** in order to carry out its work under the project or to exploit its own results (these are <u>minimum access rights</u>: additional ones can always be negotiated!).
- To avoid conflicts, it is recommended that beneficiaries agree (e.g. in the consortium agreement) on a common interpretation of what is "needed"
- Shall be requested in writing. Can be granted in any form.
- Are to be requested/granted throughout the duration and up to 1 year (or as otherwise agreed in the CA) after the end of the project for exploitation needs. Once requested, access rights may be exercised as long as they are needed for exploiting the results (e.g. until the background patent expires).

Access rights do not confer the right to grant sub-licences!





### **NEW: Results Ownership List (ROL)**

A new form will be introduced – **Results Ownership List** (ROL) in the final reporting period – This form will detail the final owners of IP after the project is over, and can consist of singular or multiple owners to enable EC follow up of exploitation



### **Tracking of Research Results (TRR)**

- The Tracking of Research Results project (TRR) aims to enable the policy makers in research and innovation to access, analyze and disseminate the outcomes and impacts of the funded research results in a more comprehensive manner.
- The R&I policy context puts ever higher importance on better demonstrating and increasing the impact of EU funded projects
- The long term nature of R&I and the time-lag between the intervention and the occurrence of any (intended, unintended, positive or negative) impact means that any research that ultimately has a significant impact will imp

The EC collection of project data is fit for monitoring only

EC tracks results up to 4 years after project completion



### **Contact:**

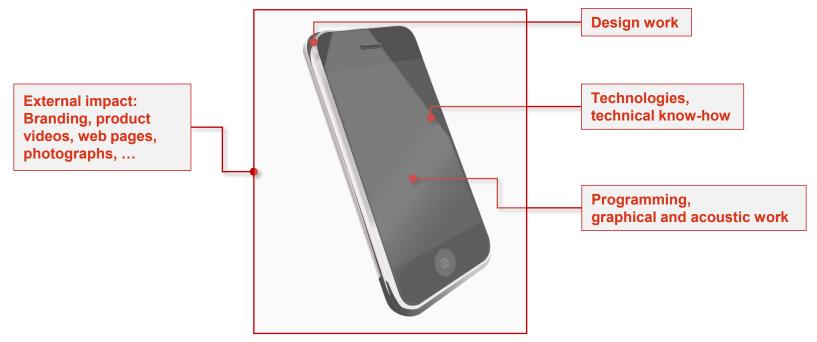
- Website: ec.europa.eu/ip-helpdesk
- helpline@iprhelpdesk.eu
- Twitter @iprhelpdesk
- LinkedIn /european-ipr-helpdesk
- EU IP Helpdesk: IP in HEU https://attendee.gotowebinar.com/record ing/2681978669356886110







# CREATING PRODUCTS AND SERVICES: TO START WITH AN EXAMPLE ...



### **PATENTS AND OTHER IP RIGHTS**

Г	Legal right	What for?	How?		
	Patents	New inventions	Application and examination	10) 10) 10) 10) 10) 10) 10) 10) 10) 10)	
	Copyright	Original creative or artistic forms (literary texts, music)	Exists automatically		
	Trade marks	Distinctive identification of products and services	Use and/or registration	Google	
	Registered designs	External appearance	Registration		
	Trade secrets	Valuable information not known to the public	Reasonable efforts to keep secret	···	

#### **PATENTS: OVERVIEW**

Patent: A legal title which grants the holder the *exclusive* right to prevent others from using the protected invention for commercial purposes without authorisation

Principle of territoriality: Valid in countries for which the patent was granted

Exist for a limited time (up to 20 years)

Exceptions and limitations apply



#### A SIMPLE CONTRACT

Reveal the invention to the public



Confer exclusivity

#### AN INCENTIVE FOR ECONOMIC GROWTH

- Enables patent holders to recoup their development costs
- Makes the latest technological knowledge available to the public
- Inspires further innovation
- Prevents duplication of R&D
- Provides the legal basis for licensing and R&D co-operation
- Attracts venture capital funds and investors

### THREE POSSIBLE ROUTES TO FILE A PATENT

Route	National	European	International
Via	National offices	European Patent Office or national offices	International Bureau or European Patent Office or national offices
Valid in	One country	Up to 39 countries + one extension state + four validation states	Up to 157 countries
In brief	Applications are filed with the relevant national office and are valid for that state only	One single application in DE/EN/FR for all EPC contracting states. Same legal effects as national patents	An international patent procedure, not an international patent. After the international phase, applicants can choose to enter the national/regional phase in various states



# TODAY ... AN AREA WITH SOME 700M INHABITANTS

#### 39 European member states

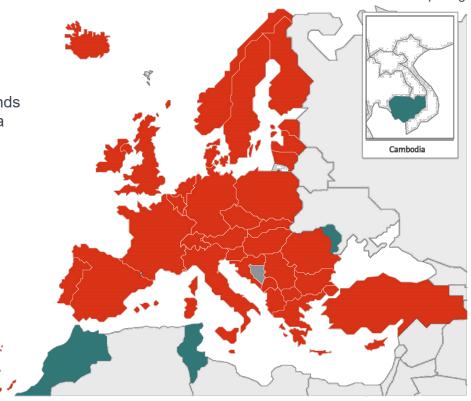
Belgium • Germany • France • Luxembourg • Netherlands Switzerland • United Kingdom • Sweden • Italy • Austria Liechtenstein • Greece • Spain • Denmark • Monaco Portugal • Ireland • Finland • Cyprus • Türkiye Bulgaria • Czech Rep. • Estonia • Slovakia • Slovenia Hungary • Romania • Poland • Iceland • Lithuania Latvia • Malta • Croatia • Norway • North Macedonia San Marino • Albania • Serbia • Montenegro

#### One European extension state

Bosnia and Herzegovina

#### Four validation states

Republic of Moldova • Morocco Tunisia • Cambodia



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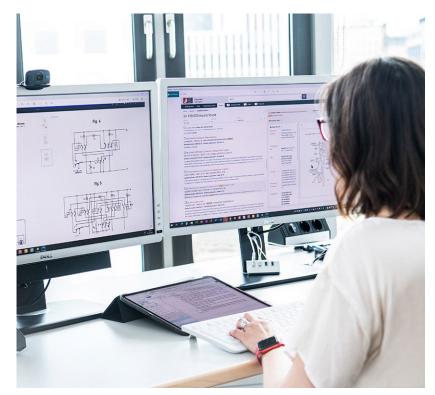
#### **PATENTABILITY**

**Patents** are granted for **inventions** in all fields of technology.

To be patentable, inventions must

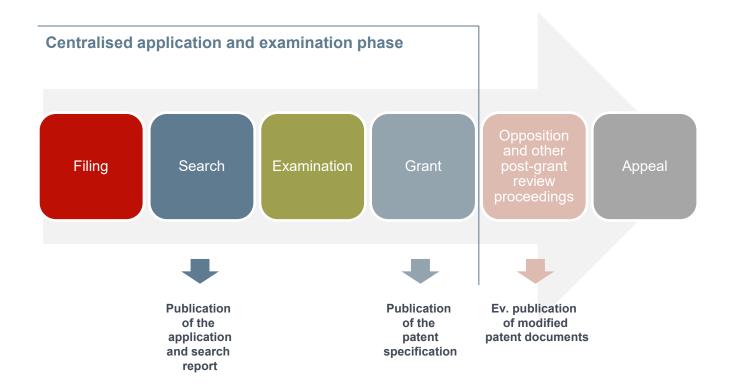
- be new
- involve an inventive step
- **■** be industrially applicable

They must relate to a product, process, apparatus or use.



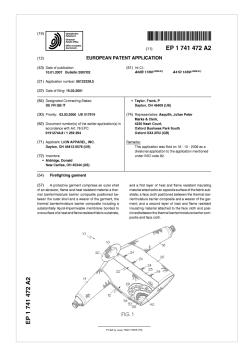


#### BASIC STEPS IN THE EUROPEAN GRANT PROCEDURE



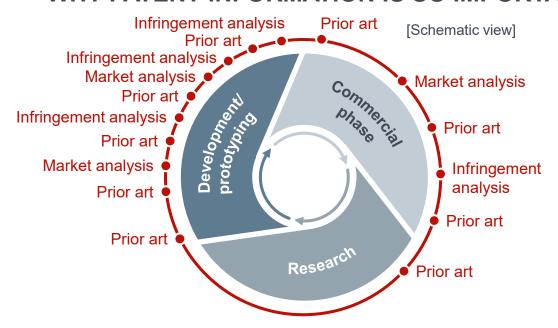
#### WHAT INFORMATION DO PATENT DOCUMENTS CONTAIN?

- Title of the invention, name of the inventor
- Detailed description of the invention: how it is constructed, how it is used, benefits compared with what already exists
- Claims providing a precise definition of what the patent protects
- Drawings
- Abstracts: summary of the invention particularly useful for search engine





#### WHY PATENT INFORMATION IS SO IMPORTANT



#### Patent information helps to

- find out what technology already exists and build on it
- avoid duplication of R&D expenditure
- check where an invention is protected
- avoid infringing other people's patent rights
- keep track of what others are doing
- identify new partners, e.g. for licensing
- **spot trends** in technology or the market
- ... and much more.
- Patent information supports informed decision-making at all stages of the innovation process!
- With that, patent information makes businesses more successful and supports innovation



#### TO SUM UP



Patents help to protect (technical) inventions.



The patent system provides for a balance of interests between patent holders and the public.



There are different routes to patent protection in Europe.



It is important to be aware of the patentability requirements, exclusions and exceptions to patentability.



Patent information is a unique source of technical, legal and business information.



#### **NEED MORE INFORMATION?**

Visit epo.org

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- youtube.com/EPOfilms
- in linkedin.com/company/european-patent-office
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### **OUTLINE**

Motivation

**Technological Evolution** 

Patents in Telecommunications

Patents and Standards

Conclusions





#### **MOTIVATION: WHERE DO WE HEAD?**

Information & Communications Technology (ICT): highly innovative and rapidly changing area

Computing & telecommunications

Developments in emerging technologies, Al

Emergence & convergence of new verticals

5G: largest technology shift in ICT since 2G to 3G





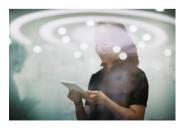


#### **MOTIVATION: WIRELESS OF EVERYTHING**

-2020s -2040s 1980s-2000s Billions of Trillions of Millions of Mobile connected voice users objects Broadband users 2G 3G 5G 4G 6G



Mobile Voice



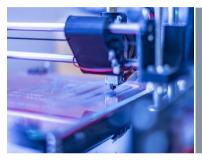
Mobile Broadband



Wireless of everything



#### **BUSINESS CASES DRIVING THE EVOLUTION TO 6G**



- Real time
   data
- EdgeProcessing
- Process Al
- Sensing system
- Machine Vision
- Preference Analytics



**Automated Factories** 

Personal Experiences



- Edge Analytics
- Wireless Sensing
- Machine Learning

- Multi-radio
- Sensor mesh
- Swarm Al



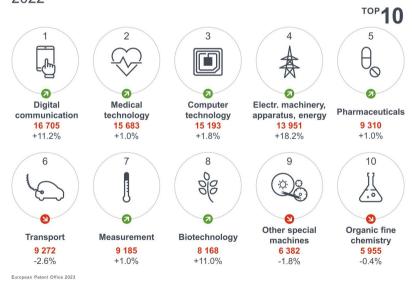
Smart Health Automated Vehicles

5



#### **TOP TECHNICAL FIELDS FOR EUROPEAN PATENT APPLICATIONS 2022**

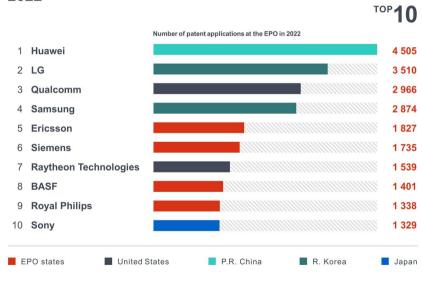
## **Top technical fields for European patent applications** 2022





#### **TOP 10 EPO APPLICANTS 2022**

## **Top applicants for European patents** 2022

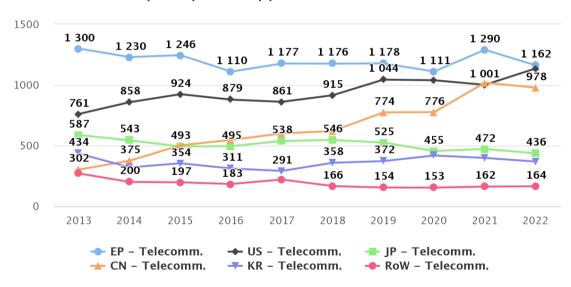


European Patent Office 2023



#### **EUROPEAN PATENT APPLICATIONS**

#### European patent applications 2013 to 2022



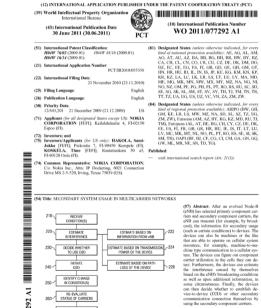


#### WHAT INFORMATION DO PATENT DOCUMENTS CONTAIN?

- Title of the invention, name of the inventor
- Detailed description of the invention:

how it is constructed, how it is used, benefits compared with what already exists

- Claims providing a precise definition of what the patent application aims to protect
- Drawings
- Abstracts: summary of the invention



#### Check Espacenet:

SECONDARY SYSTEM USAGE IN MULTICARRIER NETWORKS

https://worldwide.espacenet.com/patent/search/family/044151820/publication/WO2011077292A1?q=pn%3DWO2011077292A1

**Published Patent Application** 

270 COMPONENT CARRIER



## **HOW DOES A PATENT IN TELECOM LOOK LIKE? (CONT'D)**

Let's have a look at a claim

Claim is a solution to a technical problem

Features should be new and inventive to be allowable under EPC

Industrial application

#### At search stage

1. A method, comprising:

selecting at least one primary component carrier for a cell of a radio network; selecting at least one secondary component carrier for the cell of the radio network;

and

initiating transmission of at least one condition to at least one device, wherein the at least one condition is configured to permit the at least one device to determine whether to use at least one of the at least one secondary component carriers for device-to-device communication with at least one other device.

Check Espacenet:

SECONDARY SYSTEM USAGE IN MULTICARRIER NETWORKS

https://worldwide.espacenet.com/patent/search/family/044151820/publication/WO2011077292A1?q=pn%3DWO2011077292A1

Claim as originally filed



## **HOW DOES A PATENT IN TELECOM LOOK LIKE? (CONT'D)**

#### After substantive examination

#### 1. A method, comprising:

Selecting, at an access node of a radio network, at least one primary component carrier for a cell of athe radio network;

Selecting, at the access node, at least one secondary component carrier for the cell of the radio network; and

initiating transmission of at least one condition from the access node to at least one device (420), wherein the at least one condition comprises an indication of a maximum allowed interference, wherein the at least one condition is configured to permit the at least one device to determine, at a respective device, whether to use at least one of the at least one secondary component carriers for device-to-device communication with at least one other device (430) based on comparing an estimated interference caused by prospective transmission from the respective device in a prospective device-to-device communication to the at least one condition, wherein the at least one condition comprises an indication of a maximum allowed interference.

#### Amended features

Different from the prior art

Not obvious

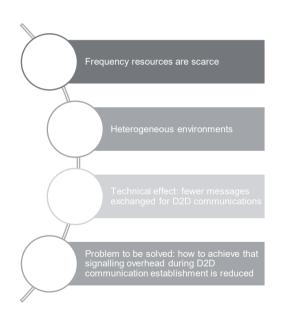
#### Check Espacenet:

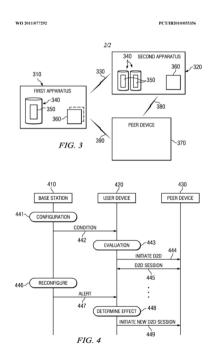
SECONDARY SYSTEM USAGE IN MULTICARRIER NETWORKS

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#### **HOW DOES A PATENT IN TELECOM LOOK LIKE?**





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SECONDARY SYSTEM USAGE IN MULTICARRIER NETWORKS

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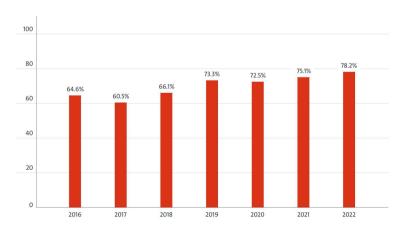
#### **PATENTS & STANDARDS**



# EPO and Patent information contributes actively to **further development of standards**

Standards provide guidelines to manufacturers, vendors, government agencies, and other service providers to ensure the kind of inter connectivity necessary in today's marketplace and in international communications

Percentage of EPO Search Reports with SDO citations in one example technical area; patent class "H04N19/00: Methods or arrangements for coding, decoding, compressing or decompressing digital video signals"



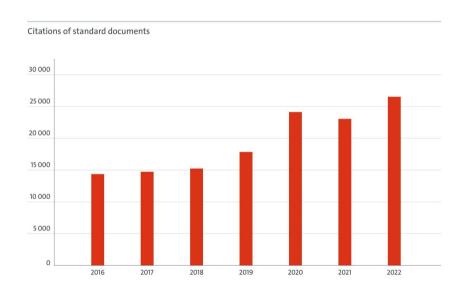


#### STANDARDS AS STATE OF THE ART

Standards documents qualify as state of the art unless they are subject to a clearly established and well-respected confidentiality obligation

To be considered new, the patent applications claiming these technologies must be filed before disclosure in the standards development process

Previously disclosed standards documentation may also be used to determine what is considered "obvious" to the person skilled in the art





#### STANDARD ESSENTIAL PATENTS

Standard Essential Patents (SEPs) are patents that cover essential technologies that are considered an established standard in a particular industry

- Essential technologies :
  - solution described in the patent is mandated by the standard (where it applies)
  - Any standard compliant (certified) product must implement it
- Established standard:
  - <u>De facto</u>: a particular industry has simply chosen to adopt that standard without preexisting agreement (Microsoft Windows)
  - <u>De jure</u>: a government agency (regulator) has imposed that standard
  - <u>Compatibility</u>: adopted by a SDO to which many participants in a particular industry belong to (3GPP specs adopted by ETSI)



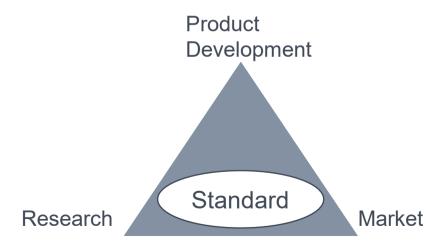
## IMPORTANCE OF SEP FOR THE INDUSTRY

Companies try to make profit via:

Research: creating product ideas and patents

Market: creating opportunities to sell products

Products: creating revenue and market share







## **HOW DO SDOS AND INDUSTRY FORA HANDLE SEPS?**

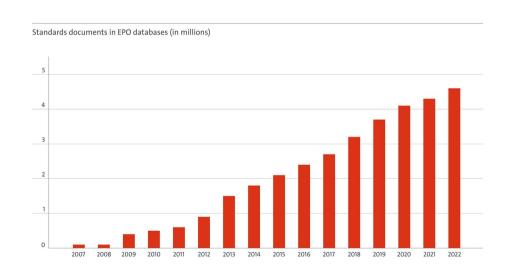
Offer licenses of these IPRs on a FRAND basis

FRAND: Fair, Reasonable & Non-Discriminatory

Ensuring compatibility between patent and standardisation systems

Standards development participants to declare SEPs

The number of patent families declared to standardization bodies as SEP has already reached the tens of thousands



Source: https://www.epo.org/news-events/in-focus/ict/patents-standards.html



### **SOME PATENT BASICS**



Patents can be part of a business strategy



There is no worldwide patent; a patent is limited both in territory and time (valid for maximum 20 years)



If you want a patent, you **must keep your invention secret** until the application is filed



You will only get a patent if the application and the described invention fulfils the EPC requirements



Every procedure in each PO is different and the fina decision is up to the respective PO



#### CONCLUSIONS



Telecom: Highly innovative and rapidly changing field



Innovation is reflected in the patent system



Glimpse on search and examination in this field



Holding IP title vs. Commercialising patented invention



SEPs, their role for industry and the patent system



#### **FURTHER RESOURCES**

- Modular IP Education Framework (MIPEF)
- Espacenet Patent Search
- Patent Index 2022: Statistics and trends
- Intellectual Property Course Design Manual
- EPO resources on Digital Technologies





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Patent Examiner, EPO

## Patent protection for EU funding beneficiaries

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# **LEARNING RESOURCES**

European IP Helpdesk





## **European IP Helpdesk**

- Service initiative of the European Commission
- Addressing current and potential beneficiaries of EUfunded projects, researchers and EU SMEs
- Free-of-charge first-line support on intellectual property (IP)
- Hands-on IP and innovation management support
- International pool of IP experts from various thematic fields
- Unique cooperation scheme with the Enterprise Europe Network: 43 ambassadors from 27 EU countries





individual IP questions





Website

frequent updates from the world of IP and innovation



practical IP knowledge through high-level publications



**Events** 

info point at key networking events and conferences





# European Helpdesk **Training** Calendar

#### **Europa - Upcoming events**

EU - Webinar EPO Coop: Patent protection for EU funding beneficiaries - Digital communication

Live streaming available

Chem-Match: Corporates Meet Startups 2023 "Green & Digital"

Prankfurt am Main, Germany

06 NOV

EU - Webinar: IP in Business collaborations for SMEs and Start-ups

Live streaming available

EU - Webinar & Horizon Results Platform: IP in Business Collaboration for SMEs and Start UPs

Live streaming available

EU - Webinar EPO Coop: Patent protection for EU funding beneficiaries -Biotechnology

Live streaming available

EU - Webinar: IP Commercialisation & Licensing - Advanced

Live streaming available

Training Coop with LES & EPO: Succeeding at technology commercialisation & negotiation

Vienna, Austria

m External event



NOV

EU - Webinar: IP in EU funded projects with a special focus on MSCA

Live streaming available

14

EU - Webinar: Effective IP and Outreach Strategies Help Increase the Impact of Research and Innovation

Live streaming available

16

EU - Webinar: IP Management in ICT Projects

EU - Webinar: Patents and Innovation

Live streaming available

Live streaming available



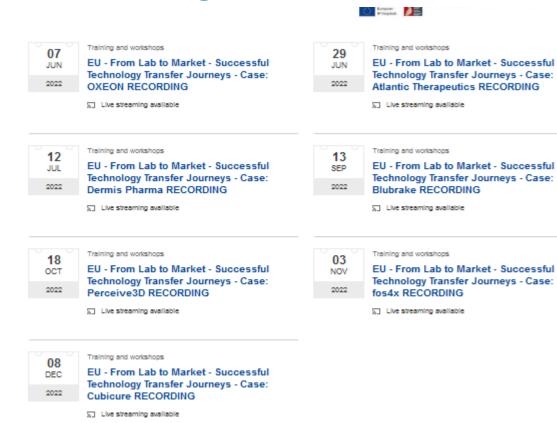
EU - Webinar: IP and Artificial Intelligence -Advanced

Live streaming available





# From Lab to Market – IP & successful TT Training series Recordings





Recordings: <a href="www.ec.europa.eu/ip-helpdesk/lab">www.ec.europa.eu/ip-helpdesk/lab</a> market



# Thank you!

- www.ec.europa.eu/ip-helpdesk
- <u>helpline@iprhelpdesk.eu</u>
- training@iprhelpdesk.eu
- Twitter @iprhelpdesk
- LinkedIn /european-ipr-helpdesk







#### Find out more: <a href="mailto:epo.org/en/learning/European-Patent-Academy">epo.org/en/learning/European-Patent-Academy</a>

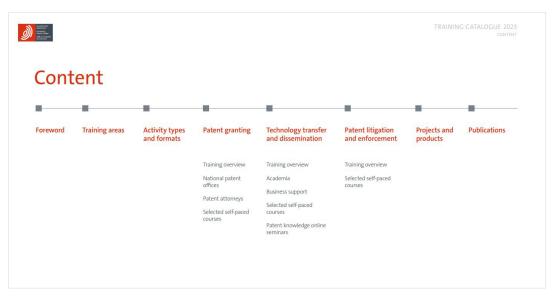
#### **OUR OFFER**

#### Supporting IP awareness and promoting IP education





## **CATALOGUE 2023**



More information is available <u>here</u>.





