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## Facts and figures 2017

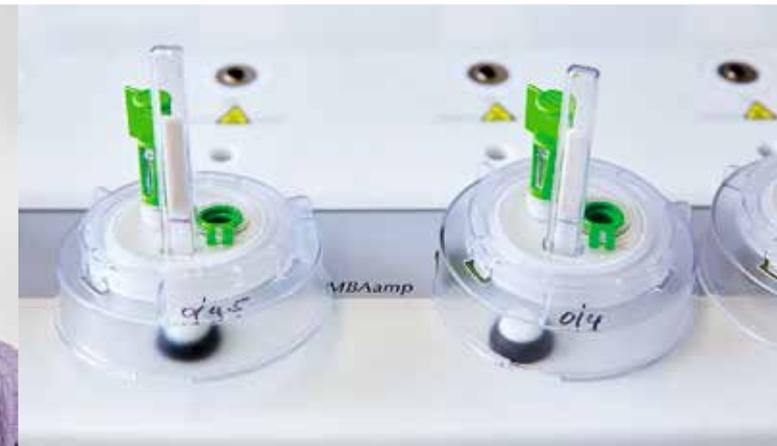
Key figures inside >

Applications at the EPO

Top countries

Top technology fields

Top applicants



### Helen Lee

Winner of the Popular Prize in the European Inventor Award 2016

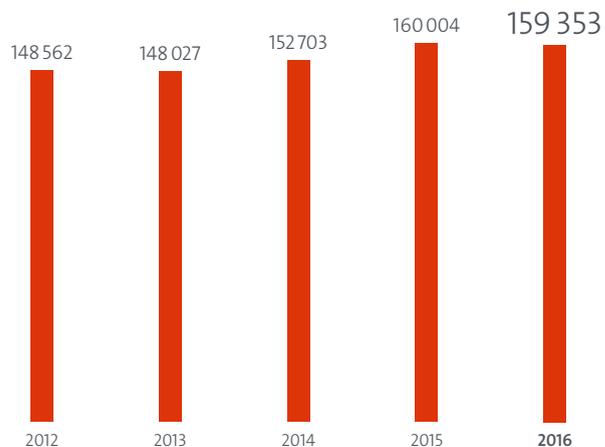
The invention created by researcher Helen Lee at the University of Cambridge is an instant blood diagnostic kit developed for resource-poor regions of the globe, allowing for on-the-spot detection of infectious diseases such as HIV, hepatitis B and chlamydia. Through fast, simple-to-read results, the kits are helping to track and better treat some of the world's deadliest diseases.

- > Learn more about the European Inventor Award: [epo.org/european-inventor](http://epo.org/european-inventor)

## Key figures 2016

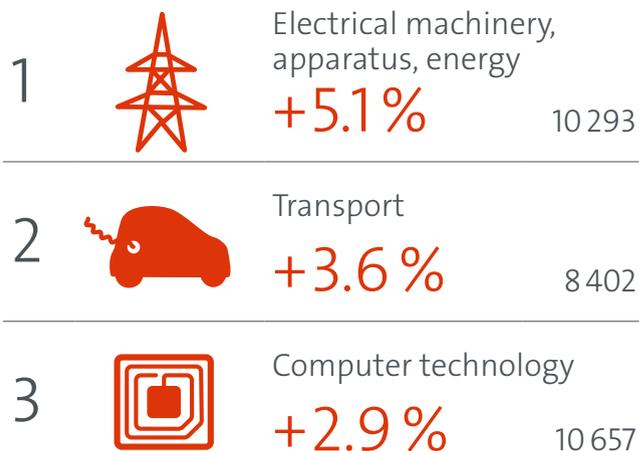
All statistics are based on the first-named applicant.

### Sustained growth of applications<sup>1</sup>



<sup>1</sup> Based on European patent applications filed with the EPO in 2016 (direct European applications filed in 2016 and international (PCT) applications entering the European phase in 2016).

### Fastest growing technology fields<sup>3</sup>



<sup>3</sup> Based on European patent applications filed with the EPO in 2016 (direct European applications filed in 2016 and international (PCT) applications entering the European phase in 2016).



Read more >>>

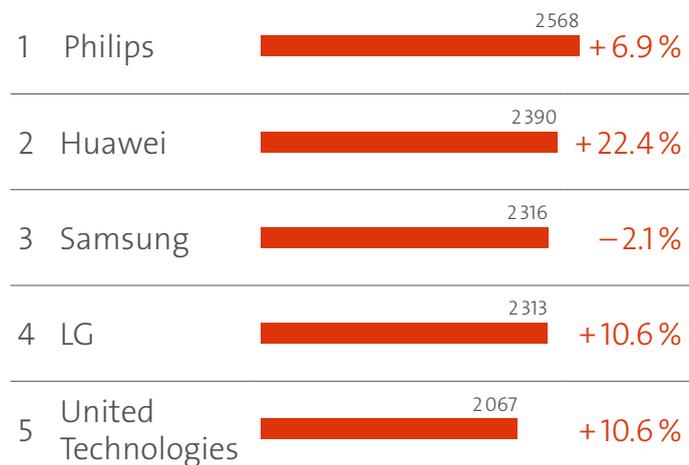
More information on 2016 statistics at [epo.org/statistics-indicators2016](http://epo.org/statistics-indicators2016)

### Applications filed with the EPO<sup>2</sup>

Country	Applications	Change/2015
1 USA	40 076	-5.9%
2 Germany	25 086	+1.1%
3 Japan	21 007	-1.9%
4 France	10 486	-2.5%
5 Switzerland	7 293	+2.5%

<sup>2</sup> Based on European patent applications filed with the EPO in 2016 (direct European applications filed in 2016 and international (PCT) applications entering the European phase in 2016).

### Top applicants<sup>4</sup>



<sup>4</sup> Based on European patent applications filed with the EPO in 2016 (direct first and subsequent European applications and international (PCT) applications entering the European phase in 2016).

# Efficiency

# Grants

# Applications

# Timeliness

# Quality

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Responsible for content

Jana Mittermaier Director External Communications

## Dear readers,

Patents are an important driver of economic growth and employment. A study we published last year with the EU Intellectual Property Office found that more than 40 % of total economic activity in the EU and over a third of all jobs are generated by industries that make above-average use of IP.

At the EPO, we have seen a steady demand for patents in the past five years: In 2016 alone we received nearly 160 000 applications. That is why we have responded to demand and improved efficiency, while maintaining and even enhancing the high quality standards that users have come to expect of us.

As a result, our production and productivity have never been higher. Last year, the EPO delivered a record 396 000 products (such as searches or examinations). We managed to significantly reduce our overall backlog, which means users are benefiting from improved timeliness.

Indeed, in mid-2016, we reached our target of providing all applicants with a report on existing prior art, and a first opinion on the patentability of their invention, within six months of filing an application. In future, we aim to further streamline our work, and improve the quality and timeliness of all our procedures.

We are gearing up for the future. As an organisation working in support of innovation, we must continue to innovate ourselves. That is the best way to continue to serve the needs of inventors, business and society.



Benoît Battistelli  
President



# The European Patent Organisation

Since 1973 the Organisation has grown to include 38 member states, two extension states and two validation states, covering an area with over 650 million inhabitants.

## Member states (38)

Albania	Luxembourg
Austria	Former Yugoslav
Belgium	Republic of Macedonia
Bulgaria	Malta
Croatia	Monaco
Cyprus	Netherlands
Czech Republic	Norway
Denmark	Poland
Estonia	Portugal
Finland	Romania
France	San Marino
Germany	Serbia
Greece	Slovakia
Hungary	Slovenia
Iceland	Spain
Ireland	Sweden
Italy	Switzerland
Latvia	Turkey
Liechtenstein	United Kingdom
Lithuania	

## Extension states (2)

Bosnia-Herzegovina
Montenegro

## Validation states (2)

Republic of Moldova
Morocco



## The EPO at a glance

As the patent office for Europe, the EPO supports innovation, competitiveness and economic growth across Europe through a commitment to high quality and efficient services delivered under the European Patent Convention (EPC).<sup>1</sup>

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### > Structure

The two organs of the European Patent Organisation are the **Administrative Council**, its legislative body, consisting of representatives from the contracting states and overseeing the activities and budget of the Office, and the **European Patent Office**, its executive arm in charge of examining European patent applications.

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### > Patent protection in up to 42 countries

The EPO provides **protection** for an invention in up to **40 European countries** on the basis of a single application. European patents can also be validated in two more countries, namely **Morocco** and the **Republic of Moldova**. In the states for which it is granted, a European patent has the same legal effect as a national patent.

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### > Three official languages

**English, French** and **German** are the three official languages of the EPO. Patent applications may be filed in any of these languages.



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### > Staff

Approximately **7 000 staff** of 34 different nationalities, 4 300 of whom are highly qualified scientists and engineers working as patent examiners in all fields of technology.

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### > Locations

Headquarters in **Munich**, with a branch in **The Hague** and offices in **Berlin, Vienna** and **Brussels**.

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### > Budget

The EPO is the second-largest European public service organisation. It is **self-financing**, covering all its operating, capital expenditure and social liabilities from the fees paid by users for its services. The 2017 budget is EUR 2.2 billion.

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<sup>1</sup> EPO mission statement

## Our products and services

Delivering high-quality products and efficient services is our number one priority.

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### > State-of-the-art searches

#### **Search report and opinion on patentability**

The EPO provides a detailed search report, and a written opinion on an invention's patentability, within six months of filing. To do so, our examiners have access to the world's largest databases of patents, journals, standards documentation and other sources, comprising one billion records from over 100 countries – including 50 million records from Asia. Thanks to the most sophisticated classification, translation and retrieval tools available, our search is truly global and highly reliable.

#### **International searches**

Companies seeking a global market can also file an international ("PCT") application, choosing the EPO as their search authority. The EPO handles the largest proportion of PCT search requests of any patent office worldwide.

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### > High-quality patents on time

#### **Rigorous search and examination of patent applications**

Every patent application is subject to a thorough search and rigorous examination by three trained experts specialised in the relevant technology. A solid legal framework and an ISO 9001-certified Quality Management System applied throughout the entire patent granting process assure consistent high quality, with timeliness already good and steadily improving.

#### **Possibilities for review of decisions**

The EPO has a system of opposition and appeal proceedings allowing the review of its decisions to grant or refuse a patent. Some 4% of our patents undergo an opposition procedure, which enables anyone to contest a European patent within nine months of grant. This procedure establishes final clarity on the scope of protection of an invention and forms an important element of quality assurance in European patents.

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### > Information on the latest technologies

#### **Centralised access to global patent data**

The EPO's public databases – containing over 100 million patent documents with information about inventions and technical developments – are one of the world's most abundant sources of information about technology.

*Search the database at [epo.org/espacenet](http://epo.org/espacenet)*

#### **Translation of patent documents in one click**

Patent Translate, the EPO's free machine translation service, covers 32 languages. It enables automatic translation from and into English, French or German for 27 other European languages (covering all the EPO member states), plus from and into English for Chinese, Japanese, Korean and Russian.

*More information at [epo.org/patent-translate](http://epo.org/patent-translate)*

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### > Training and awareness-raising

The **European Patent Academy** organises training for patent office staff and patent practitioners, and promotes IP awareness among academics and business advisers in the member states. A collection of free e-learning modules on a broad range of topics is available under [epo.org/academy](http://epo.org/academy).

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## Highlights of 2016

Last year we achieved record levels of production and productivity, improved timeliness, and maintained our focus on quality. Meanwhile we continued to work with patent offices around the world to improve services and make life easier for our users.

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### > Boosting performance and quality

The EPO delivered a record 396 000 products (e. g. searches or examinations) last year, up by another 8.5%. We managed to significantly reduce our backlog of pending cases, which means greater transparency for the public on pending European patents, and higher legal certainty for applicants. All of this was achieved without compromising on quality: Our latest quality indicators and independent external surveys show the highest levels of user satisfaction with our services.

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### > Faster services

With our “Early Certainty” approach, we have introduced a range of improvements to our working practices aimed at cutting the time it takes to grant a European patent. In mid-2016 we reached our target of providing all applicants with a search report and written opinion on patentability within six months of filing. Building on this success, in July 2016 we extended the Early Certainty approach to substantive examination and opposition, in order to streamline and improve these stages of the patenting process too.



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### > Working with our partners worldwide

In 2016 we continued our close co-operation with patent offices across Europe to enhance access to patent information through initiatives such as the Federated European Patent Register. We also worked with our IP5 partners (China, Japan, Korea and the USA) to further improve joint tools such as the Global Dossier, a one-stop shop enabling users to access patent applications filed with any of our offices straight from our website. Meanwhile the Cooperative Patent Classification, now used by 25 patent offices worldwide, is on its way to becoming a global standard.

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### > Highlighting the economic impact of IP

In October 2016 we published our second joint study with the EU Intellectual Property Office on the impact of IP on the European economy. The study found that 42% of total economic activity in the EU and 38% of all employment are generated by “IPR-intensive” industries. A comparison of the results of this study with those of the previous (2013) edition revealed that the contribution of these industries to the EU economy has even increased slightly.



*Read more >>>  
More information at  
[epo.org/highlights2016](http://epo.org/highlights2016)*

## Statistics and trends in 2016

The EPO received nearly 160 000 European patent applications in 2016, on a par with the record number reached the year before. The 2016 patent application figures confirmed the positive trend of the past five years. Much of the growth came from China, but European firms also showed strong patenting activity in their home market.



Read more >>>

More information on 2016 statistics at [epo.org/statistics-indicators2016](http://epo.org/statistics-indicators2016)

Technology trends

Efficiency

Quality

Certainty

Annual  
results 2016

### > Filings<sup>1</sup>

European patent filings, which are an indicator of the overall demand for patent protection, grew again in 2016 (+ 6.2%), reaching a new high of more than 296 000.

#### Total European patent filings<sup>1</sup>

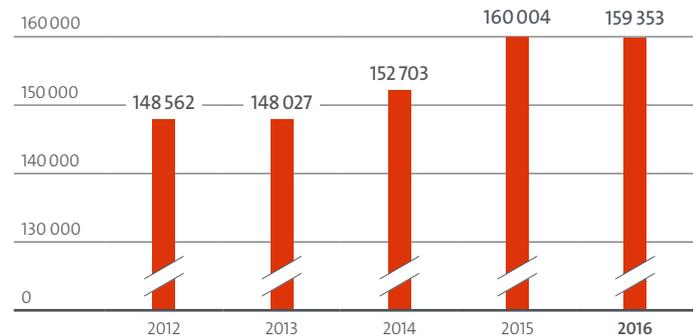
2012	2013	2014	2015	2016	
258 500	265 918	274 367	279 002	296 227	+ 6.2%

<sup>1</sup> Direct European filings under the EPC and international filings under the PCT.

### > Applications filed with the EPO<sup>2</sup>

The EPO received nearly 160 000 European patent applications in 2016, roughly the same level as the record number reached the year before. The total applications included close to 95 000 international Patent Cooperation Treaty (PCT) filings which entered the European regional phase (becoming European applications) in 2016, and some 65 000 European patent applications filed directly at the EPO under the European Patent Convention (EPC).

#### Total European patent applications<sup>2</sup>

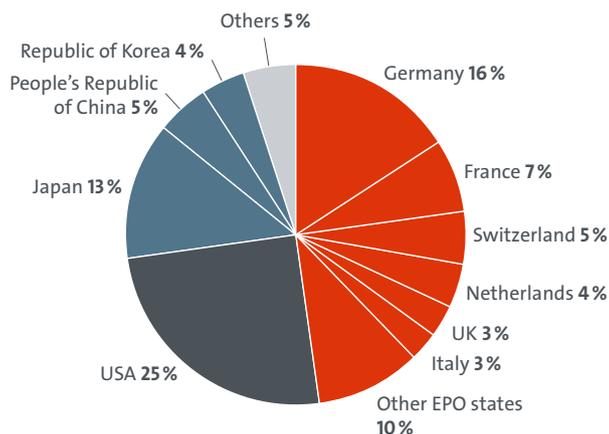


<sup>2</sup> Direct European applications and international (PCT) applications entering the European phase.

## > Origin of applications <sup>1</sup>

Almost half of all European patent applications (48%) came from the 38 EPO member states, followed by the US, Japan, China and South Korea. Applications from Europe were on a par with last year, with marked differences among individual countries. Europe's growth champions were Belgium and Italy. More modest rises came from Austria, Spain, Switzerland and the UK. Demand from Europe's biggest patent applicant, Germany, was stable, while France, the Netherlands and many of the Nordic countries filed fewer applications. Overall, China (and to a lesser extent South Korea) was the main driver of growth in applications at the EPO. Applications from the US dropped considerably (although this was only a correction after the one-off jump in 2015 resulting from a change in US patent law), while Japanese companies filed slightly fewer applications.

### European patent applications per country of origin in 2016 <sup>1</sup>



<sup>1</sup> Direct European applications and international (PCT) applications entering the European phase. Note: statistics are based on the first-named applicant.

## > Measuring inventiveness

The inventiveness of Europe's leading economies is also reflected in the ratio of European patent applications to population. Switzerland (with 892 applications per million inhabitants), the Netherlands (405) and some of the Nordic countries topped the list again in 2016. Japan (166) was the first non-European country in the ranking, with a ratio higher than the EU average (122) and also ahead of South Korea (134), the US (124) and China (5).

### Applications per million inhabitants in 2016 <sup>2</sup>

Country of origin	Applications per million inhabitants
1 Switzerland	892
2 Netherlands	405
3 Sweden	360
4 Denmark	334
5 Finland	331
6 Germany	311
7 Austria	234
8 Belgium	191
9 Japan	166
10 France	157
11 Israel	148
12 Ireland	134
12 Republic of Korea	134
14 United States	124
15 Norway	99
16 United Kingdom	80
17 Singapore	75
18 Italy	67
19 Chinese Taipei	60
20 Slovenia	57

<sup>2</sup> Analysis based on European patent applications filed with the EPO (direct European applications and international (PCT) applications entering the European phase), for countries with at least 1 million inhabitants in 2016. Source of population figures: International Data Base, U.S. Census Bureau.

Note: statistics are based on the first-named applicant.

## > Largest fields of technology

Medical technology was once again the field where the most applications were filed, despite a slight drop in 2016. Among the top fields, the strongest growth came from Electrical machinery/apparatus/energy, followed by Transport and Computer technology. European companies filed the most applications in nine of the ten most active fields of technology, with US companies leading only in Computer technology. Pharmaceuticals and Organic fine chemistry saw the greatest drop in the number of applications.

### Largest technical fields in 2016<sup>1</sup>

	Applications	Growth
1 Medical technology	 12 263	-2.1%
2 Digital communication	 10 915	-1.2%
3 Computer technology	 10 657	+2.9%
4 Electrical machinery, apparatus, energy	 10 293	+5.1%
5 Transport	 8 402	+3.6%
6 Measurement	 7 442	-3.8%
7 Engines, pumps, turbines	 6 301	-0.5%
8 Organic fine chemistry	 6 189	-4.0%
9 Pharmaceuticals	 5 754	-5.0%
10 Biotechnology	 5 744	+0.3%

<sup>1</sup> Based on European patent applications filed with the EPO (direct European applications and international (PCT) applications entering the European phase).

Note: statistics are based on the first-named applicant.

## > Top applicants

Philips filed the most patent applications at the EPO in 2016, the second year in a row. Huawei moved into second place, followed by Samsung, LG and United Technologies. The top 10 was made up of four companies from Europe, three from the US, two from South Korea and one from China.

### Top applicants in 2016<sup>2</sup>

	Applications	Growth
1 Philips	 2 568	+6.9%
2 Huawei	 2 390	+22.4%
3 Samsung	 2 316	-2.1%
4 LG	 2 313	+10.6%
5 United Technologies	 2 067	+10.6%
6 Siemens	 1 871	-1.2%
7 Qualcomm	 1 704	-0.1%
8 General Electric	 1 628	+21.5%
9 BASF	 1 410	+1.9%
10 Robert Bosch	 1 327	-11.1%

<sup>2</sup> Based on European patent applications filed with the EPO in 2016 (direct European applications and international (PCT) applications entering the European phase).

Note: statistics are based on the first-named applicant.

## > Top patentees

Robert Bosch again headed the list of companies with the most European patents granted in 2016, followed by LG and Samsung. Among the ten biggest patentees, five were from Europe, two from the US, two from South Korea and one from China. The majority of them are from the electronics and IT sectors.

### Top patentees in 2016<sup>1</sup>

	Granted patents	Change
1 Robert Bosch	1482	+29.8%
2 LG	1173	+67.3%
3 Samsung	1047	+48.9%
4 Siemens	1046	+48.6%
5 Ericsson	971	+35.4%
6 General Electric	930	+39.4%
7 Huawei	924	+85.5%
8 Philips	872	+43.4%
9 Qualcomm	853	+78.1%
10 Nokia	716	+207.3%

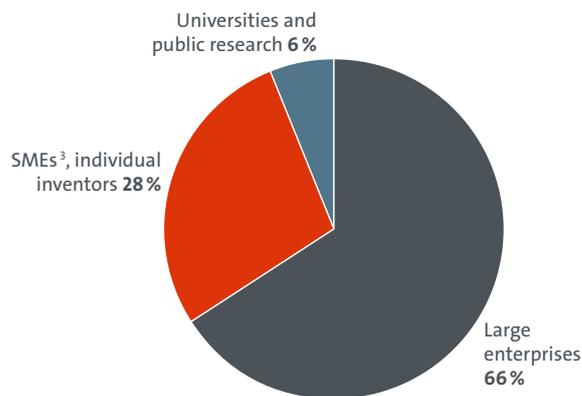
<sup>1</sup> Analysis based on granted patents published.

Note: statistics are based on the first-named patentee.

## > Applicant categories

A breakdown by category of applicants requesting services from the EPO shows that 66% of them were large companies, 28% were SMEs and individual inventors, and 6% were universities and public research institutes. This shows that a significant proportion of applicants at the EPO are smaller entities.

### Shares in patent applications in 2016<sup>2</sup>



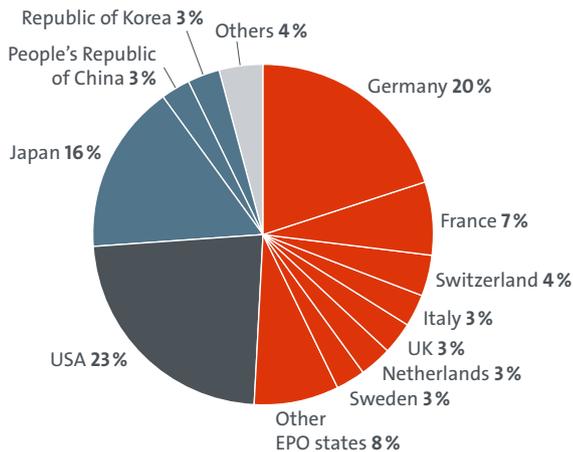
<sup>2</sup> Evaluation based on the analysis of a representative sample of patent applications treated by the EPO in 2016.

<sup>3</sup> This analysis is based on the European Commission definition of SMEs: <http://ec.europa.eu/growth/smes/>

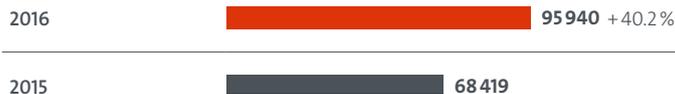
## > Granted patents

The EPO granted approximately 95 900 patents in 2016, an increase of 40 % over 2015, and the highest ever number. This increase was possible following a series of reforms implemented at the EPO to improve the quality and efficiency of our processes, which led to higher productivity. Most patents went to European companies (51%), followed by applicants from the US and Japan. The number of patents granted to Chinese applicants is growing rapidly, albeit from a low number.

### Granted European patents by country of origin in 2016<sup>1</sup>



### Total granted patents

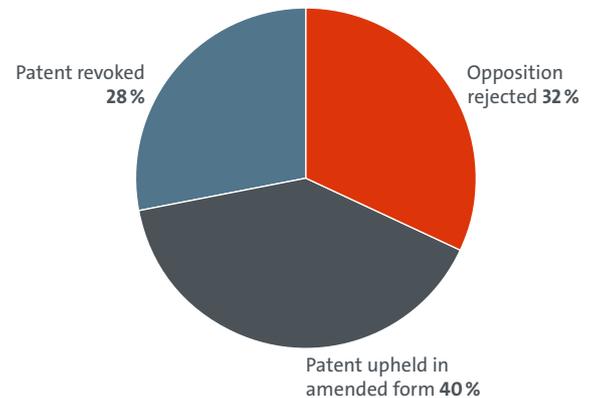


<sup>1</sup> Analysis based on granted patents published. Patents have been allocated to the country of residence of the first-named patentee.

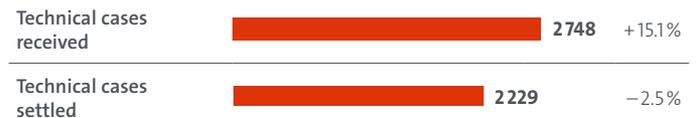
## > Oppositions and appeals

The EPO offers a system of internal legal remedies to review its procedures and safeguard the quality of its patents. Anyone may oppose a European patent within a period of nine months from the mention of its grant. In 2016 the EPO issued some 4 100 opposition decisions, with an opposition rate of 4%. In these cases, 72 % of the patents were upheld either as granted or in an amended form. Decisions reached in examination and opposition proceedings may be appealed before the EPO's boards of appeal. In 2016 the EPO's technical boards of appeal settled 2 229 cases, slightly less than in the previous year.

### Outcome of opposition decisions in 2016



### Technical appeals in 2016





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with the latest  
developments.*

## **The EPO is recruiting engineers and scientists to work as patent examiners.**

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