Executive summary

Co-operation has been crucial to the success of the EPO since its foundation. Today's patent system faces rapidly evolving demands and IP offices around the world must work closely together to ensure the patent system continues to meet users' needs. Co-operation has been a cornerstone in the EPO's Strategic Plan 2023 (SP2023) and will remain a focal point in the preparation of the EPO's Strategic Plan 2028 (SP2028). This annex is the second annual report on co-operation and aims to give a holistic insight into the Office's co-operation activities. By reviewing progress made in 2022, the report highlights where joint efforts are helping to build a stronger, more harmonised patent system in Europe and beyond.

Since the adoption of SP2023, the EPO's geographical coverage has increased substantially, reaching a total of over two billion people at the end of 2022. Through the European Patent Network (EPN), the Office now connects 39 member states (with some 700 million inhabitants), with one European extension state and four validation states (Cambodia, Moldova, Morocco, and Tunisia). This large IP network enables the facilitation and exchange of IP knowledge and expertise. Beyond Europe, the EPO continues to extend its geographical coverage through new validation agreements and reinforced partnerships. In addition to the 44 countries in which EPO patents can be validated, there are an additional 42 countries where corresponding EPO search and examination results are re-used in the national/regional phase. This network is sustained through a total of 39 bilateral co-operation agreements and 85 international co-operation agreements (memoranda of understanding and work plans) in force.

2022 saw the accession of Montenegro to the European Patent Convention and further growth is expected following the invitation to the Republic of Moldova to accede. Beyond member states, the Office continues to build on established relationships through initiatives such as the geographical outreach programme, as well as close co-operation with international organisations and user associations. Annual work plans are in place with partners such as WIPO and EUIPO and include activities in the area of the PCT system, data exchange, classification, automation procedures, and patent information.

The EPO has also sought to ensure co-operation efforts go beyond systemic improvements and that we are agile in offering support to those in need. A key example in 2022 was the signing of a reinforced partnership with the Ukrainian patent office where action was taken to support the office, its infrastructure, and its staff, during times of conflict. 2022 also marked the first year of the EPN Dialogue meeting and the establishment of the EPN Online Forum. This forum aims to regularly update the EPN and ensure a swift, co-ordinated response to crises.

Alongside large-scale co-operation activities, the EPO has a long tradition of supporting member states in areas ranging from increasing technical expertise to developing soft skills. As in 2021, training was provided by the European Patent Academy. The Academy's training catalogue is co-created with member states and experts from 19 national patent offices (NPOs), allowing therefore an early alignment between the needs of the member-states and the training offer of the Academy.
The increasing demands of digitalisation have intensified the need for technical support and the provision of tools and expertise to strengthen the patent network. A network of over 360 patent information centres (PATLIBs) helps local users and potential patent applicants to better understand and access the patent system. This growing network not only provides first-line support to users but also boosts technology transfer across member states. Further efforts to harmonise the patent system have seen working groups meet to discuss and minimise diverging practices between NPOs and the EPO. Moreover, Front Office, a decentralised filing system for deployment in NPOs, was launched in January 2022 in both Lithuania and Spain. In both countries the platform was integrated with the corresponding national office payment providers, enabling end-users to pay online via the platform. It sets a strong precedent for a smooth and rapid implementation of Front Office for all interested member states.

Co-operation activities also extended to organising events to raise awareness, as well as training and conferences. Under the IP Outreach to foster innovation project, the EPO provides support to NPOs in their efforts to increase awareness of IP and understand the benefits for innovative small and medium-sized enterprises (SMEs), research organisations, and universities. In 2022, the Office supported six such events either financially or by providing EPO speakers. Some of these events had a particular focus on the Unitary Patent system.

None of the progress made since the last annual report on co-operation would have been possible without the efforts and input of the EPO’s valuable partners. The best indicator of what can be achieved together is perhaps seen in the historic progress of the Unitary Patent and Unified Patent Court in 2022. Joint efforts at various events organised and co-organised by the EPO, as well as the NPOs, have helped bring this forward. This milestone has been reached through joint endeavour. Reflecting upon this achievement and others described in this report sets a hopeful and ambitious tone for continued success in the future.
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1. Co-operation at the EPO

Since its founding, the European Patent Office (EPO) has sought to serve the citizens of the member states of the European Patent Organisation. In its unique role it is empowered to grant European patents valid in all 39 member states, as well as one extension state and four validation states. This provides inventors with a cost-effective and efficient way to protect their inventions in multiple countries. A cornerstone of the success of the European patent system is the tight network of co-operation which is built into the European Patent Convention (EPC).

Figure 1 – Co-operation at the EPO

"Co-operation is the cornerstone of a thriving patent system, and the EPO’s commitment to it has yielded significant results in 2022. The European Patent Network continues to grow with Montenegro as its newest member and the Republic of Moldova expected to follow soon. Collaboration with member states on data exchange, IT and systems and training has paved the way for the biggest reform to the European patent system in 50 years. Meanwhile, our support for Ukraine is reinforcing economic stability and our strides towards enhanced knowledge transfer to Africa are widening access to IP, helping to mobilise innovators from across the continent, driving economic growth and development."

António Campinos, President of the EPO

This system encompasses all areas of co-operation, from joint activities with the European Patent Organisation's 39 member states, international partners, users, intellectual property (IP) agencies and institutions and academia to the three-member examining divisions. The present report is articulated mainly around European and international co-operation initiatives, which form the backbone of the EPO's outreach strategy under the Strategic Plan 2023 (SP2023).
Within this framework, the EPO continues to strengthen its co-operation efforts, aiming to proactively adapt to changing needs and circumstances and to stay ahead of trends. Given the fast pace of technological advancements, it is crucial for IP offices and other IP stakeholders to work together effectively. Open and collaborative co-operation leads to higher-quality examination and an improved system for safeguarding and promoting innovation.

2. Emerging from the pandemic towards a more sustainable approach to co-operation

Implementing lessons learned from the pandemic has meant a prompt reorganisation of internal processes and activities at the EPO in a collaborative effort with member states. The journey started in 2020 with the launch of a consultation on the New Normal policy framework, which concluded in May 2022 with the entry into force of the EPO’s New Ways of Working (NWoW) guidelines.

Under this NWoW framework, several EPO policies were redesigned to make the EPO a more sustainable, accessible, transparent and resilient organisation fit to face future challenges and opportunities.

2.1 Hybrid communication and new digital skills for co-operation fit for the future

In 2022 the majority of working-level meetings were held online and high-level meetings, including conferences and other events, were planned with a conscious effort to ensure sustainability. A total of 40 events took place in an online-only format. In line with the EPO’s NWoW framework, participants are now given the opportunity to attend and actively engage in events from wherever they are. The considerable increase in the use of videoconferencing reflects the growing acceptance of its suitability as a tool for co-operation. It is a positive sign that, despite the absence of the in-person component, the EPO successfully organised and conducted regular events with stakeholders without compromising on the quality of discussions and communicated messages.

The use of videoconferencing has brought the EPO and its partners closer together. Geographical distance and the need to travel are no longer a hindrance to regular and constructive exchange. Indeed, the technological transition has contributed to consistent cuts in the EPO’s carbon footprint with emissions from air travel dropping by 84% between 2020 and 2022.
2.2 A resilient community, responsive to challenges

The EPO also aims to leverage the lessons learned during the pandemic to create a more resilient patent network. The EPO and its member states are now better equipped than ever to react swiftly to common threats and challenges. Key examples from 2022 include the conflict in Ukraine, the ongoing climate crisis and the push to successfully implement the Unitary Patent system.

In the framework of the European Patent Network (EPN) responsive network, the first EPN dialogue meeting took place in April 2022 to discuss the impact of the conflict in Ukraine, co-operation with the Ukrainian patent office and the effect of the European sanctions on Russia and Belarus. The focus of the discussion was to explore how events would affect the patent granting process of the EPO and member states. In response, the EPN online forum was launched to centralise and distribute information about measures taken in support of Ukraine.

In a similar way the Select Committee, in co-ordination with the EPO, launched the Unitary Patent exchange platform on 18 October to facilitate the communication and exchange of best practices between member states on the Unitary Patent.

3. European co-operation

With 39 member states, the European Patent Organisation is amongst the biggest intergovernmental organisations on the continent. European co-operation is therefore crucial to managing relations with the organisation’s member and extension states and aiding the smooth functioning of the EPN. The European co-operation team at the EPO also co-ordinates relations with European and national user associations as well as co-operation with the European Union Intellectual Property Office (EUIPO) and European Commission. The tight links between regional partners, the EPO and member states help to ensure a cohesive and strong network.
The importance of European co-operation was clearly marked in SP2023 under Goal 4: build a European patent system and network with a global impact. In a competitive global environment, the strength of the European patent system is key to ensuring the region remains a globally attractive market with a robust IP rights system.

![Figure 3 – The new co-operation policy](source: EPO)

### 3.1 Our partners in Europe

Since the inception of the European Patent Convention (EPC) 50 years ago, the central mission has remained the provision of high-quality patent-related services to the users of the patent system, with a particular focus on fostering innovation within European industry through the strength and accessibility of the patent system. The EPO's network covers the length and breadth of Europe.

Within Europe, the EPO's partners can be broadly divided into four categories:

The organisation currently has 39 member states, comprising all the Member States of the European Union together with Albania, Iceland, Liechtenstein, North Macedonia, Monaco, Montenegro, Norway, San Marino, Serbia, Switzerland, Türkiye and the United Kingdom. Following Montenegro’s accession to the EPC in 2022, there remains one active extension agreement with Bosnia and Herzegovina.

With their focus on nurturing the next generation of engineers, researchers, managers, entrepreneurs, lawyers and judges, Europe's universities and higher education institutions are the ideal place to raise awareness of IP. Through the European Patent Academy, the EPO offers training materials which can be used in almost any subject area, by universities as well as by research centres and technology transfer offices. The flagship graduate scheme, the Pan-European Seal Programme Young Professionals Programme, has been a key framework for strategic co-operation between Europe's leading IP offices – the EPO and EUIPO – and the now over 100 European universities that are members of the programme.

The success of the patent system relies heavily not just on service providers, but also on the users. Exchange with user associations is a key part of the EPN and

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the EPO continues to strive to engage with users of the European patent system to improve the quality and efficiency of products and services. In 2022 the EPO met with user associations on 26 occasions, including bilateral meetings and within the Standing Advisory Committee before the EPO working parties.

The EPO also works closely with other major European institutions and agencies, including the EUIPO and the European Commission, to raise awareness of IP rights and improve services to businesses using Europe's IP system.

3.2 Co-operation with member and extension states

Primary amongst European partners are the European Patent Organisation's own member and extension states. The year 2022 was one of expansion, and the Organisation was delighted to officially welcome Montenegro as the 39th member state. The 172nd meeting of the Administrative Council in October 2022 opened with the Council and the President of the EPO warmly welcoming Montenegro as the 39th member state of the European Patent Organisation. A flag-raising ceremony was held outside the EPO's buildings in Munich and The Hague, the first new flag since the accession of the Republic of Serbia to the EPC in 2010.

This means that as of 1 October 2022, European patent applications have included the designation of the new contracting state Montenegro. The EPO has now also taken over the functions of a Patent Cooperation Treaty (PCT) receiving Office and acts as a PCT International Search and Examination Authority on behalf of Montenegro.

"Montenegro is pleased and privileged to become a new member state of the European Patent Organisation, which will significantly contribute to the enhancement of the system for patent protection in Montenegro. Membership of the European Patent Organisation makes Montenegro an integral part of the family of developed European countries that prioritise the effective protection of inventions."

Mr G. Đurović, Minister of the Montenegrin Ministry of Economic Development and Tourism

In December 2022, the Administrative Council also decided to extend an invitation to the Republic of Moldova to accede to the EPC. Moldova is expected to become the 40th contracting state to the EPC.

The Republic of Moldova has a long history of close co-operation with the European Patent Organisation. In 2013, the European Patent Organisation and Moldova signed a validation agreement that became effective on 1 November 2015. The extensive co-operation between the EPO and the State Agency on
Intellectual Property of the Republic of Moldova under the framework of the validation agreement paved the way for the invitation for the Republic of Moldova to accede to the EPC.

Before acceding to the EPC, the Republic of Moldova will need to enact national legislation to facilitate its implementation and application. The EPO will fully support Moldova during this process, while also taking a number of procedural and administrative steps prior to the accession, which will take place in accordance with a timetable mutually agreed by both offices.

The continued growth in membership of the European Patent Organisation is a positive sign of a thriving network that relies on close and constructive work happening at both the national and international level.

3.3 Co-operation framework and progress made on implementation

Under SP2023 a revised framework for co-operation was set out in the new co-operation policy. This is implemented via bilateral co-operation agreements between the EPO and each member state so that activities can be tailored to best fit the needs of each office. Since the inception of the co-operation policy, 39 such agreements have been signed.

In 2022, there were two rounds of bilateral co-operation meetings to ensure that co-operation agreements were enabling and reflecting current activities. Evaluations were sent out in the final quarter to facilitate an analysis of the impact of projects over the year.

Each pillar can be divided into individual projects, with each project in turn assigned appropriate KPIs for measuring success. Further activities are planned under SP2023 in the final year of the strategy, with all targets due to be met over the course of 2023. A number of longer-term projects can be expected to run beyond the end of the current strategic plan to allow time for implementation.
1. **Knowledge and quality** – This pillar aims to level up the IP capabilities available in the member states. There is a particular focus on capacity-building at the national patent offices (NPOs) and other IP stakeholders, with the contribution of the NPOs, as well as initiatives that seek to ensure consistent patent quality.

2. **Convergence of practices** – In Europe, applicants seeking patent protection are at times confronted with diverging practices between NPOs and the EPO. This pillar of co-operation activities aims to reduce, or even overcome, these differences. Through regular working groups, member states collaborate to share and define best practices in areas where a more uniform approach would be beneficial for users and NPOs alike.

3. **Work-sharing** – Activities organised under this pillar aim to reinforce the cohesion of the EPN to contribute to building a modern, efficient and high-quality patent system in Europe. The core of this work is the development of a more attractive search co-operation framework that avoids the duplication of work by reusing work results of other offices. This pillar also includes joint efforts between the EPO and member states in IP outreach activities to foster innovation.

4. **IT co-operation** – Recognising the importance of IT capabilities in a fast-paced and modern patent system, this pillar seeks to improve the IT capabilities available across member states. In particular, the IT co-operation programme aims to develop and improve the tools available to NPOs in order to deliver better service for users.

Under SP2023, the bilateral agreements between the EPO and member states are reviewed each year and help track the implementation of Goal 4 of SP2023. Alongside the regular online meetings between the European Co-operation team and counterparts in member states, two rounds of bilateral co-operation meetings were scheduled in spring and autumn to review progress and ensure the agreements were still fit for purpose. In total, NPO participation in co-operation projects reached 80% in 2022, thus meeting the set target.

The following sections in this chapter provide the results of progress in each project and showcase activities from 2022.
3.3.1 Pillar 1: Knowledge and quality

Build expertise at NPOs and related institutions

“Our patent examiners and other employees engaged in patent-related issues are very satisfied with the Academy seminars. Seminars cover all the current topics, and they are precisely organised to cover topics separately, so that each employee can choose exactly what they need. We do not have any additional requests.”

Representative of the Intellectual Property Office of the Republic of Serbia

In 2022, the preparation of the 2023 catalogue was the result of co-creation with the member states, involving an ad hoc working group of experts in education from 19 NPOs to ensure all training requests were included. The 2022 training on offer for the staff of NPOs consisted of 27 EPO-organised activities and an additional 10 activities organised with third parties, all implemented online. It also supported different projects in the EPN – for example there was a training course for the PATLIB network and a new “train-the-trainers” programme. For a more detailed account, please refer to CA/T 3/23.

In 2022, the Academy’s educational activities in the area of patent granting that specifically addressed NPOs were as follows:

Figure 5 – The Academy’s educational activities in 2022

Source: EPO

In 2022, the Academy’s educational activities in the patent granting area that specifically addressed NPOs consisted of 27 training activities with 1,504 registered participants, with staff from 36 member states having enrolled in at least one of the training activities. These 27 training activities corresponded to 376 training hours.
Language training and support

"LPO staff use the opportunity offered to master foreign languages in the respective language training courses because this helps in seminars, meetings, business trips as well as written communication."

Representative of the Patent Office of the Republic of Latvia

The project remained attractive to the NPOs in 2022. Of the 39 agreements signed, 26 NPOs showed interest in and included a language training activity. Of these, 24 NPOs implemented the activity, thereby increasing the participation rate to 92%, compared to the 71% participation rate in 2021.

As a result, 442 NPO staff benefited from language training in 2022, of which 78% was held for English, 13% for French and 9% for German.

Determining the systematic demand for e-learning and training

In 2022, the new IP Calendar project was nearly completed. In 2023, the integration of the e-knowledge portal and interface with the Single Access Portal will be developed to allow an automated process to fetch and upload data on national events. During 2022 the information provided by the participating NPOs was added by the Academy and published on the EPO’s IP Calendar, thereby increasing the visibility of national training activities.

PATLIB 2.0

"The Spanish PATLIB network has been working actively and successfully during 2022. Participation in the EPO initiatives has been fruitful. A good example of this would be the organisation of two Espacenet courses. Around 30 representatives from the 13 Spanish PATLIB centres participated in these two courses."

Representative of the Spanish Patent and Trademark Office

Under SP2023, the language training programme was revamped, with the goal of enhancing the language abilities of NPO management and staff in the three official languages of the EPO. The aim is to enable effective and seamless communication by removing language barriers between organisations.
PATent LiBrary (PATLIB) is a network of 323 IP centres in 37 member and extension states, offering a range of services including patent analysis, business analysis and technology transfer services. In 2022, several milestones were achieved to strengthen the PATLIB network, including expanding the learning on offer, preparing in-house training modules and giving centres the opportunity to suggest activities that better fit their training needs. The EPO also became an observer in the Technology Transfer Offices Circle.

Figure 7 – Distribution of PATLIB centres across the member states (as at 31 December 2022)

Source: EPO

Figure 8 – Breakdown of PATLIB network

<table>
<thead>
<tr>
<th>Host organisations</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>University</td>
<td>39%</td>
</tr>
<tr>
<td>NPO</td>
<td>17%</td>
</tr>
<tr>
<td>Institute/association</td>
<td>17%</td>
</tr>
<tr>
<td>Chamber of commerce</td>
<td>14%</td>
</tr>
<tr>
<td>City library</td>
<td>8%</td>
</tr>
<tr>
<td>Other</td>
<td>6%</td>
</tr>
</tbody>
</table>

Source: EPO
In addition, an initiative to transfer IP-specific knowledge from the PATLIB network to African universities was started under the PATLIB 2.0 umbrella as a proof of concept in 2022. The ultimate objective of this initiative is to transfer knowledge acquired by the centres to strengthen the capabilities of participating African institutions to run services independently, facilitating access to the IP system and boosting economic growth. PATLIB experts played a crucial role in implementation, acting as mentors for their respective group of universities. Furthermore, the first individual development plans for universities were finalised at the end of 2022. They address needs, set goals and include the expected measurable impact of successful completion.

A similar initiative with Ukraine is envisaged to support innovation and technology transfer. Meetings took place in July and August with the Ukrainian Intellectual Property Institute, and the PATLIB team aims to begin the initiative in 2023 as soon as the newly set up Ukrainian National Office for Intellectual Property and Innovations indicates its readiness.
European qualifying examination support (Candidate Support Project)

Under the project, 20 tuition places are available to each eligible country. Subsequently, 10 extended support places are awarded per year, for which material support is available.

![Figure 10 – Students qualified via the Candidate Support Project](image)

In 2022, the project was opened to Montenegro upon its accession to the EPC, bringing the total number of participating countries to 24. Since the project started in 2012, 193 students have been admitted and to date 114 have passed all examinations and qualified as a European patent attorney.

3.3.2 Pillar 2: Convergence of practices

"We think it is fair to say that the convergence project breathed a breath of fresh air into what had seemed to be 'settled' regulations and led to a revision of the national approach. The idea of establishing such a platform where we could exchange experiences and share knowledge on the topics related to patents has proven to be highly valuable."

Representative of the Polish Intellectual Property Office

In 2022, the two working groups 5 and 6, "Claim drafting and structure" and "Examination practice of computer-implemented inventions and artificial intelligence", both adopted a recommendation for a common practice on which the Committee on Patent Law gave a favourable opinion. They were subsequently approved by the Administrative Council in March 2023.

Regular updates on the progress of the work in both working groups were given in the Standing Advisory Committee before the EPO (SACEPO). Moreover, on 5 October 2022, the third virtual platform on convergence of practice took place, covering the topics of working groups 5 and 6.
Given the recognised benefits and the positive feedback from member states and users, the EPO together with the NPOs of the member and extension states will continue the convergence programme. To that effect, a new convergence cycle will start in 2023 with six new topics that have been agreed upon by the Administrative Council.

The first pair of topics will be: "Allowable features in drawings" (topic 1) and "Issuing and accepting electronic priority documents" (topic 2) (2023/2024). The two corresponding working groups have been set up. As in the past, they will be chaired by the EPO. The second pair of topics (2024/2025) will be: "Observations by third parties" (topic 3) and "Practices concerning assignment" (topic 4). Finally, the third pair of topics (2025/2026) will be "Broad claims" (topic 5) and "Double patenting" (topic 6).

User organisations are again participating in the working groups as observers. Following its request, the World Intellectual Property Organization will participate as an additional observer of the meetings. The member and extension states which are not part of a working group will be kept informed about the discussions via dedicated events. Furthermore, regular updates will be provided to users via SACEPO.

As regards the implementation of the common practices, although it is the goal that as many offices as possible implement an adopted common practice to reach a true harmonisation in the chosen practice areas, any such practice will be implemented on a voluntary basis only. Nevertheless, a more systematic monitoring of the implementation of the adopted common practices with the different offices will take place in order to increase transparency, which will particularly benefit the users of the patent system.

3.3.3 Pillar 3: Work-sharing

Policy related to the working agreements on search co-operation

2022 was the second year in which the new policy on working agreements on search co-operation\(^2\) applied. Under this policy, a single search fee for national searches carried out by the EPO was introduced for all existing and future working agreements. In addition, increased support for small entities through an 80% reduction of the search fee for national searches conducted by the EPO has been made available.

\(^2\) Approved by the Administrative Council in December 2020, CA/51/20.
In 2022, a total of 28,947 national searches were carried out by the EPO for 12 of the 15 NPOs that had signed a working agreement on search co-operation. This constitutes an increase of 6% compared to 2021. A total of 2,232 search fee reductions were granted under the small entities support scheme, which is 20% more than in 2021. This represents a positive sign that the revised framework is attractive to member states and provides effective support to small entities.

In December 2022, Austria became the 16th member state to sign a working agreement on search co-operation with the EPO after the Administrative Council had approved the conclusion of two new working agreements with Austria and Portugal in June 2022. One further NPO has expressed an interest in signing a working agreement on searches in the near future.
Utilisation implementation scheme

After the successful conclusion of testing and data transfer, on 3 October 2022 the EPO President’s decision exempting applicants claiming the priority of a first filing made in the Czech Republic from filing a copy of the search results under Rule 141(1) EPC entered into force. The Czech Republic joins the utilisation implementation scheme together with six more European Patent Organisation member states.

The goal of the utilisation implementation scheme is to improve efficiency by sharing the results of search, examination and classification from NPOs with the EPO before the applications are published, with the aim of eliminating duplicate work. Additionally, it will also help to lower the burden for applicants in terms of compliance with Rule 141 EPC.

Source: EPO

IP Outreach to foster innovation

In 2022, the EPO supported six IP outreach events either financially or by providing EPO speakers, with some events having a particular focus on the Unitary Patent system.

Furthermore, as a new activity in 2022 and in preparation for the launch of the Unitary Patent system, the EPO shared Unitary Patent-related information and promotional materials developed by the EPO and the possibility of financial support for translation of these materials into the national languages has been offered.

Discussion platforms between the EPO and NPO examiners on patenting procedures in certain technical fields were organised with four offices in 2022. These events serve to exchange information and disseminate knowledge on the latest developments in patenting practices and procedures.

In the IP Outreach to foster innovation project, the EPO provides support to NPOs in their efforts to increase awareness of IP and improve understanding of the benefits and impact of IP protection among innovative SMEs, research organisations and universities.
3.3.4 Pillar 4: IT co-operation

"Participation in the IT co-operation programme’s Search Working Group, working alongside colleagues from other national offices as well as the EPO, has been a very rewarding experience. It has provided a genuine opportunity to contribute to the development of the EPO’s next generation of patent search tool, the benefits of which I now look forward to sharing with the rest of my office."

Representative of the UK Intellectual Property Office

In the course of the IT co-operation programme, the EPO has engaged in a modernisation of a series of IT services towards its member states. Under the umbrella of the Single Access Portal (SAP), users from NPOs, professional organisations or associations have direct access to documentation, tools and help resources. Support requests can be submitted using a single page on ServiceNow.

The Front Office project has grown from one pilot NPO to three member states implementing the development in their own infrastructure.

The number of implementations around the classification of patents using the Cooperative Patent Classification (CPC) led to an increase in member states adopting the scheme, and to the inclusion of the CPC on EP publications.

A further alignment of the Search project with ANSERA led to the inclusion of non-patent literature, among other features. Wide-ranging security consultations on data protection have also taken place.

Further information on the individual projects of the IT co-operation programme can be found in the following sections.

Front Office

"We would like to express our appreciation for the great, most desirable and very tangible result of our bilateral co-operation in the area of IT – the Front Office for Patents… [The] creation of a modern system for applying for patents was our long-lasting goal for many years, since this was one of our users' expectations. We are very glad and very much appreciate that after launching SP2023 such an opportunity arose."

Representative of the State Patent Bureau of the Republic of Lithuania

The platform was launched in January 2022 in both Lithuania and Spain. In both countries the platform was integrated with the corresponding NPO payment providers, enabling end users to pay online via the Front Office platform.

A first version was also released in Greece which enabled end users to familiarise themselves with filing functionality for EP validations, with the remaining procedures to be implemented in 2023.

The Front Office project sets out to enable end users to file national patent applications, PCT applications and EP applications and subsequent actions via the national office.
Another major focus has been on setting up the processes for implementing the Front Office smoothly and rapidly for all member states. A key part of this process is knowledge transfer, which enables NPOs to independently maintain and extend the Front Office where needed.

Further initial implementations are set to start in 2023, in North Macedonia, Iceland, the Netherlands, Belgium, Luxembourg and Finland.

Data Quality

In 2022 the Data Quality project focused on improving data quality criteria and supporting data transfer automation among member states. As part of the EPO’s efforts to improve data quality on data deliveries, regular bilateral meetings and training have been organised. One example is the online training on the production of prior-art full-text data for NPOs in, for example, Bulgaria, Latvia and Malta, which was conducted in co-operation with the World Intellectual Property Organization.

Improving the analysis of authority files was advanced with the delivery of a detailed quality report to the offices of Bulgaria, Sweden, Germany, Norway, Monaco and Finland.

The EPO is aiming to fix remaining completeness issues and enhance data collections by triggering corresponding backfile operations. In 2022, a series of backfile operations were completed in the Danish and Czech offices. Other offices completed the evaluation phases and are scheduled for backfile operations in 2023: Italy (phase 4), San Marino and Türkiye.

The data transfer automation part of the project has been complemented by the integration of the national search request module. Thanks to both a common API architecture design and a common transfer approach, it was possible to complete all developments simultaneously by the end of 2022. Delivered platforms are now running in production.

After the conclusion of the pilot phases, the project moved to its final implementation phase. Working group members were provided with training, documentation and further support. These support measures were also extended to all other member states.

By the end of 2022, an additional six offices (Albania, Austria, Croatia, Latvia, Lithuania, Portugal) started to use the data exchange platform to deliver their national search requests. The first two search requests were recently invoiced, concluding the end-to-end process. The tool is currently in use in Ireland, with five other offices (Czech Republic, Norway, Latvia, Italy, Bulgaria) well advanced in implementing the solution using a machine-to-machine approach.
Co-operation Search

"The Swiss Federal Institute of Intellectual Property is taking part in the Search Working Group. From the Swiss perspective the project so far has exceeded expectations. Support has always been quick, professional and effective. Even complex topics like the NPOs’ specific non-patent literature access have been addressed in a timely manner. The current prototype provides features in accordance with the projected timeline. As such the whole project is currently on track. We thus look forward to the implementation of a 'next-level search tool' and to resolving the remaining challenges, like data export needs."

Representative of the Swiss Federal Institute of Intellectual Property

The Co-operation Search project released two versions of the Search tool with continued improvements of features and datasets, including access to non-patent literature (NPL) in accordance with licences negotiated by NPOs with NPL providers. This means that for the majority of NPOs, Search is now suitable for broad use.

A first business analysis has been carried out on import/export facilities for easing the integration of Search into NPO IT systems.

Three working group meetings took place over the year, with members providing the project with continual input, ideas and feedback. The Search tool is currently being piloted by over 250 examiners in 20 member states plus Ukraine.

These examiners use the tool in their daily work, often relying fully on Search. The NPO examiner training was provided via the online European Patent Academy platform using a combination of written material, recorded videos and live classroom training. Knowledge sharing with, and between, users is currently taking place via two routes: via the Single Access Portal as well as facilitated by a forum on the European Patent Academy learning platform.

In terms of security, multifactor authentication and confidential computing have been implemented for all users and at each application level.

The objective of the Co-operation Search project was to deliver a new search tool that would eventually replace EPOQUE Net. The project provides patent examiners with up-to-date, modern search tools and subsequent data to enable them to carry out assessment work for new patent filings.
Quality Management and Process Mapping

"Continuous improvement, which is one of the foundations of quality, requires monitoring of the processes, sharing of quality measures and harmonisation of practices."

Representative of the Turkish Patent and Trademark Office

The project was finalised with the delivery of the modelling and mapping of the key patent processes for each NPO participating in the dedicated working group. Additionally, support was provided to some NPOs active in the Co-operation Search project.

The project edited a "blueprint" containing all mapped processes which highlights best practices and distinguishes key differences between the different NPOs. The relevant analyses have been compiled in process books published on the Single Access Portal (technical co-operation module).

On the quality management side of the project, a quality book blueprint on patent grant processes has been drafted. This "Quality hub" has helped create a community of quality practice.

Modular Back Office

In 2022, the project benefited from a strong working group of countries with development experience who contributed with detailed documentation and architecture maps of the solutions put in place at NPOs. This helped to identify means of mutual support and build a "blueprint" that could be used by any office starting a back office-type project.

The project has led to the founding of a knowledge exchange network at the technical level for the joint drafting and maintenance of dedicated back office documentation.

Cooperative Patent Classification

"CPC is another project we would like to highlight. CPC is important for search speed and quality. The Cooperative Patent Classification project has achieved a significant result. The CPC Implementation Manual has been composed; it should encourage offices to join the CPC. An excellent job has been done with the External Classification Portal. The Portal offers all the necessary services to users; it is logical, easy to navigate and really user-friendly. All relevant documents and information you may need can be found in one place."

Representative of the Estonian Patent Office

In the course of 2022, the Cooperative Patent Classification (CPC) was adopted as the internal classification system of a further four European offices (Belgium, Monaco, Italy and Luxembourg) as well as Peru. The Polish Patent Office also
started exchanging CPC data with the EPO. Several CPC training courses took place throughout the year in co-operation with the European Patent Academy. These included online collective training events open to all CPC offices and allowing for direct online interaction between EPO experts and examiners of CPC offices.

Three CPC working group meetings were organised as well as a CPC workshop at the Technical and Operational Support Committee meeting in spring 2022. Input received from usability testing and CPC working group sessions resulted in the creation of a classification portal fitted to users' needs.

The External Classification Portal (ECP) was launched within the Single Access Portal with two initial services: the contact information service and CPC reclassification service.

A series of additional services were developed and tested including CPC coverage reports and widget, an artificial intelligence-powered CPC text categoriser and CPC News. There are plans in 2023 for a quality monitoring service as well as a CPC statistical mapping service between the CPC, File Index and International Patent Classification systems to complement the current ECP services.

In quantitative terms, efforts to further harmonise classification practices are progressing well. To date, 258 subclasses have been harmonised or partly harmonised. This represents about 40% of the whole CPC scheme.

**Single Access Portal**

"The Single Access Portal is a new, modern, sustainable means of co-operation and interaction between the national offices and the EPO. It started in 2021 with the Partnership Agreement builder and has now grown into a powerful tool, a single portal through which we efficiently conduct a bundle of different tasks and projects."

Representative of the Hellenic Industrial Property Organisation

In 2022, the Single Access Portal (SAP) project expanded to host a series of new services and repositories. This makes it a powerful hub for all co-operation activities.

A Multilateral Co-operation module has been added to host public websites such as those for the IP5 and Trilateral, as well as a page enabling NPOs to exchange views and best practices on topics of current importance. For more detailed information, see section 3.4.3 Platforms launched in 2022.

Other services are now being finalised, including further online support for the post-grant validation process, SACEPO, geographical outreach and additional geographical services. The development of additional tools in the SAP including the management of events in the Learning area as well as the area of Reimbursement has begun.
3.4 EPN strengthening: EPN responsive network

3.4.1 Key co-operation meetings in 2022

The 16th annual meeting on co-operation with member states took place virtually on 4 May 2022, attended by 23 NPOs. The NPOs were represented by a total of 77 participants, including 22 heads of office. The three main objectives of the meeting were to review the accomplishments of the second year under the new co-operation framework, to gather feedback on certain initiatives like the EPO Observatory on Patents and Technology and the professional mobility package, and to provide information on recent changes such as the restructuring of DG 1 operations, the certification for European paralegals and patent administrators (EPAC) and the new EPO data policy and its benefits for users.

On 29 April 2022, NPO-nominated experts from 38 member states gathered for the first time to discuss support for Ukraine (Ukrainian patent office and Ukrainian applicants) and the effects of European Union and European Patent Organisation member state sanctions against Russian and Belarusian individuals and entities. The meeting provided updates on the measures already taken in support of Ukraine, such as humanitarian aid and suspension of co-operation instruments, and offered a forum for discussion on the interpretation and impact of sanctions on the operations of the EPO as an international organisation.

3.4.2 Key national events in 2022 of special importance to the EPN

Following the pandemic, the EPO resumed high-level meetings in person in 2022. The meetings offered the chance to reconnect and to inform member states about the EPO's latest operational results, major reforms, internal projects, the implementation of SP2023 and preparation for the Strategic Plan 2028. The EPO President will continue to do so in 2023, paying due consideration to the EPO's sustainability policy and goals.

The EPO President attended a number of noteworthy events at national level, such as:

- The conference on "Hydrogen technologies in transport" in Bratislava on 17 and 18 May 2022. At this conference, the EPO President referred to a study prepared and published jointly with the International Energy Agency in 2021, which revealed that over the previous three years there had been an increase in patents for low-carbon energy technologies and a decrease in patents for fossil energy. The significance of patent documents and data in providing business intelligence, including on sustainable technologies, on which other inventors can build to advance the state of the art, was also highlighted.

- The Industrial Property Lusophone Conference in Lisbon on 23 June 2022. The EPO President attended the first Jornadas Lusófonas da Propriedade Industrial (Lusophone Days of Industrial Property) at the Lisbon premises of the Community of Portuguese Language Countries (CPLP). The two-day conference paved the way for an exchange of best practices among a host of IP offices within the Portuguese-speaking community, touching on enhanced co-operation with CPLP as well as the benefits of the Unitary
Patent system. At this conference, the EPO President reaffirmed a clear commitment to developing a solid patent system in the Lusophone community through modular, competency-based training within NPOs in the CPLP, collaborating with educational institutions to maximise the impact of patent information, harmonising working methods and guidelines, expanding the activities of the PATLIB network and providing the means for more cost-effective, simpler and efficient patent protection thanks to the Unitary Patent system.

- The opening of the 29th edition of the Magister Lvcentinvs, Master in Intellectual Property and Digital Innovation of the University of Alicante on 12 September 2022. The EPO President delivered a speech encouraging the students to fully embrace and exploit the potential of IP to create additional social and economic value in the world of tomorrow. The opening ceremony was followed by the meeting of the Magister Lvcentinvs Scientific Board, chaired by President Campinos as the Board President.

- The 9th Annual IPR Conference ("IPRs Day") organised by the Danish Patent and Trademark Office in Copenhagen on 3 November 2022. The conference, which was aimed at national stakeholders, mainly business representatives and users, focused on how IP rights (IPRs) contribute to creating innovation, growth and jobs. Participants debated how current IP reforms affect the competitive position of both large and small companies and dived into the approach of various successful companies to IPRs when the goal is to grow. The EPO President delivered a keynote speech on the topic "Towards a stronger Europe with a high-impact patent system".

- The high-level conference dedicated to the Unitary Patent system jointly organised by the Belgian government together with the EPO and with the support of the European Commission in Brussels on 17 November 2022. For further details, see section 3.5 Unitary Patent and Unified Patent Court.

- The Golden Book Inscription Ceremony hosted by the President of the Republic of Bulgaria, Mr Rumen Radev, and organised by the Patent Office of the Republic of Bulgaria (BPO) in Sofia on 18 November 2022. This ceremony celebrated the lifetime achievements of three renowned Bulgarian inventors. The Bulgarian Minister of Economy and Industry and the Bulgarian Minister of Education and Science paid tribute to the event and the national inventors recognised. Key topics of the event included how patents can foster innovation and economic growth and more specifically the role IP plays for innovative SMEs, university researchers and individual inventors. Following the ceremony, the EPO President met with the Bulgarian head of state, Mr Radev, who highlighted the importance and essential contribution of the EPO and the EPN to the development and strengthening of the innovation ecosystem and to facilitating the transfer of technologies in Europe. During discussions with the BPO President, bilateral co-operation was also highlighted as an important element for achieving a more sustainable patent system, for supporting innovation and for job creation locally and at the European level.

- A conference in Ljubljana on 1 December 2022, jointly organised by the EPO together with the Slovenian Intellectual Property Office and the Slovenian Chamber of Commerce to mark the 20th anniversary of Slovenia's accession to the EPC and the introduction of the Unitary Patent system. For further details, see section 3.5 Unitary Patent and Unified Patent Court.
3.4.3 Platforms launched in 2022

EPN online forum Ukraine

At the first EPN dialogue meeting, member states reached consensus on establishing the EPN online forum, a digital platform integrated into the Single Access Portal. The purpose of this platform is to centralise and distribute evidence-based public information about measures taken in support of Ukraine and lists of sanctioned Russian and Belarusian persons/entities, so that the EPN can stay informed and up to date.

Unitary Patent exchange platform

The smooth implementation of the Unitary Patent system is crucial and involves multiple components. As a result of several discussions with member states to support the implementation of the Unitary Patent, a digital platform called the Unitary Patent exchange platform has been established. This platform centralises and distributes documents and technical specifications related to the Unitary Patent and provides a forum for member states to share views and implementation strategies across five areas: IT, legal, financial, communication and training, and procedural and operational. The platform is part of the EPN environment and can be accessed through the Single Access Portal.

3.4.4 Support measures in 2022

Information security working group

Following last year’s EPN cloud event, the EPO established the information security working group in 2022. The purpose of the information security working group is to address IT security-related concerns of member states, with a particular focus on the EPO’s use of cloud computing technology in the new and improved Search tool. During 2022, three working group meetings took place, in which nominated national experts from 24 member states participated.

In the first meeting several members noted that they had recently implemented information security-related projects. A presentation on the infrastructure and application security controls of the Search tool was given and common threats to the safety of the EPO and member states’ information systems were discussed.

In the second meeting the EPO presented several potential solutions to providing additional security measures for data submitted to the new Search tool. The EPO’s data protection regulations were also presented.

The most recent meeting focused on the investigation, and in some cases implementation, of additional technical security measures (confidential computing) to improve the security of confidential data in the Search tool.

Additional encryption technology is now being explored where keys used to encrypt the data in the Search tool are stored and managed outside of the Google cloud computing environment using a third-party provider.
IT implementation support

The implementation of the IT co-operation tools at the NPOs is supported by the same EPO project teams that are working on the development and pilots. In a limited number of cases, external experts have been deployed to give local support. These deployed technical experts have been used in specific cases where appropriate and mutually agreed.

3.5 Unitary Patent and Unified Patent Court

Several key milestones were reached during 2022 on the path to implementation of the long-awaited Unitary Patent (UP) and Unified Patent Court (UPC). Participating Member States joined forces with the EPO to bring the preparations forward in various areas, including data exchange, training and IT. In many respects, the start of the UP/UPC system represents a step into new territory, and at the same time it must be designed so that it can properly interact with the existing European patent system.

To ensure that the systems will fit together, many experts worked together throughout the year, in particular those from Member States, the EPO and the first staff of the UPC. The EPO President met twice with the chairpersons and representatives of the UPC’s governing bodies, and of the Select Committee, in January and July 2022, committing the necessary resources and support to the final effort before the start of UP/UPC operations. Experts from Member States involved in the project gathered twice for workshops in the context of the Communication Correspondents Network, with a focus on dissemination of communication products to the widest possible audience. Joint preparations also took place in the IT field with the finalisation and end-to-end testing of the software required for the implementation of the UP at the EPO as well as the data exchange platform linking together the databases of the EPO and the UPC.

Two high-level events attracted particular attention in the second half of 2022:

Firstly, a conference jointly organised by the Belgian government, the EPO and the European Commission was held in Brussels on 17 November. Both the newly appointed judges as well as high-level representatives of Member States were in attendance and lively exchanges took place. On the margins, the EPO President met with the President of the UPC’s Court of Appeal, Klaus Grabinski, to sign an agreement on the exchange of data between the EPO and the UPC. A legal basis was thus created for facilitating the exchange of data between the European Patent Register and the UPC’s register and for support from the EPO for the UPC’s training framework.

“The UPC is pleased to co-operate with the EPO on the necessary exchange of register data and on the training of UPC judges.”

Klaus Grabinski, President of the Court of Appeal of the UPC

Secondly, a conference organised by the Slovenian Intellectual Property Office, the EPO and the Slovenian Chamber of Commerce and Industry took place in December 2022. This event – which also marked the 20th anniversary of Slovenia’s accession to the European Patent Convention – offered a first
opportunity to reach out to Slovenian users and listen to their expectations. Broader territorial protection, lower costs, less red tape and more efficient enforcement of patent rights are the main advantages expected by Slovenian users. Indeed, this expectation is shared by users in a number of member states that joined more recently on which the future of Europe's prosperity so largely depends.

"As part of our efforts to advance the UP system and Slovenia's participation in it, all preparatory measures for the local division of the Unified Patent Court and the Centre for Arbitration and Mediation for Patents in Ljubljana were commenced. These include the preparation of information material, the adaptation of our IT system for the necessary exchange of technical data and the promotional event jointly organised with the EPO and the Slovenian Chamber of Commerce and Industry. The Slovenian Intellectual Property Office remains committed to ensuring that this process is smooth for all stakeholders involved."

Representative of the Slovenian Intellectual Property Office

All preparations for the start of the UP system were finalised by the end of 2022. The transitional measures implemented by the EPO to enable early uptake of the UP by users started on 1 January 2023. The start of UPC operations commenced with the "sunrise period" on 1 March 2023. This marked the opening of the UPC's Registry for direct operational interaction with users (notably for the filing of opt outs and the registration of representatives). On 1 June 2023, the UPC Agreement entered into force.

With the advent of the UPC, judicial enforcement will also become much simpler, with actions brought before a new dedicated central patent judiciary for the participating European Union Member States that has jurisdiction to hear disputes over infringement or revocation in particular. This will end the need for litigation in different countries and enhance legal certainty through harmonised case law in the area of patent infringement and validity for the benefit of all users of the patent system in Europe.

3.6 EPO's new data policy

In December 2022, the Administrative Council adopted the EPO's new data policy (CA/77/22 Rev. 1). The aim was to group together the EPO data policy principles, currently spread over multiple legal instruments, in a single document, and to simplify the pricing system of search.

The CA document focused on policy aspects. It provided a framework in support of the EPO's business goals for the acquisition of and/or access to patent data and related information in and outside Europe for NPOs and industry. Particular consideration was given to SMEs and the general public, in order to stimulate innovative activity, through the NPOs and other entities. In this context the newly proposed policy aspects aim to improve the accessibility of patent data by increasing the range of data made available at no cost.

On the basis of this policy, the EPO will continue to provide a diverse range of publications, data and services in support of the business value proposition. The
EPO will maintain this portfolio of publications, data and services so as to evolve dynamically over time, as in the past, to meet user needs. There are typically synergies between the portfolio elements, which lead to information being presented conceptually under more than one portfolio category. Further services may dynamically create data sets tailored to each user's needs (e.g. a search query, download). A number of the portfolio elements are the product of collaboration between the EPO and NPOs/other entities.

3.7 Enhancing co-operation with European institutions and user associations

The EPO works to boost innovation and competitiveness in Europe by sharing its technological expertise and involving stakeholders in informed discussions and decision-making. It closely collaborates with users of the European IP system by considering their feedback to improve communication, tools, products and services, and raise awareness of IP rights. This overview highlights the EPO's co-operation with government and non-government organisations in Europe as of 2022.

3.7.1 Memorandum of understanding and work plan with the EUIPO

The EPO continued the implementation of the 2022-2023 work plan with the EUIPO, pursuing the co-operation objectives stipulated in the renewed memorandum of understanding from 2019:

- enhance the effectiveness of the European IP system and improve its accessibility for users
- promote a modern IP culture in Europe
- achieve stronger protection of European businesses abroad

The EPO and the EUIPO published the fourth edition of their joint report on the contribution of IPR-intensive industries to the European Union economy. It covers all major IP rights (patents, trademarks, designs, copyright, geographical indications and plant varieties), identifies which industries make above-average use of them, and quantifies the contribution of these IPR-intensive industries to major macroeconomic variables (employment, GDP, wages and trade) in the European Union Member States as well as Switzerland, Norway, Iceland and the UK. The study provides comprehensive and robust data, as well as a solid evidence base for policymakers.

In addition, the EPO and the EUIPO jointly held a series of online seminars, and co-organised the second meeting of NPO contact persons for IP learning matters. Participation in each office's expert working groups on a variety of technical topics continued. Online knowledge sessions and co-ordinated activities also continued within the Communication Correspondents Network.

3.7.2 Co-operation with the European Commission

The EPO and the European Commission agreed on the terms of the working arrangement provided for under Article 14 of Regulation (EU) No 1257/2012
implementing enhanced cooperation in the area of the creation of unitary patent protection. The document, signed in January 2023 by the EPO President, aims to establish close co-operation between the two international organisations in the fields covered by this regulation and in particular on the issue of renewal fees and their impact on the budget of the European Patent Organisation, for which a regular exchange of views will take place.

In addition, on 12-13 May, the EPO held its second online PATLIB conference in co-operation with the European Commission. The conference had 1 332 registrants and was themed: "PATLIB in a European context".

3.7.3 User associations

The EPO continues to strive to engage with users of the European patent system to improve the quality and efficiency of products and services.

In 2022 the EPO met with user associations on 26 occasions, including bilateral meetings and within the SACEPO working parties.

For more details, please refer to section 5 below as well as the Quality Report 2022.

3.7.4 Co-operation with other European agencies and institutions

In March 2022, the administrative arrangement between the EPO and the Community Plant Variety Office (CPVO) was renewed for another period of five years. In light of the experience gained in the course of the previous arrangement (2019-2022), co-operation will be maintained and improved and will mainly consist of the continuation of the existing joint activities, which include bilateral participation in meetings, technical meetings between the organisations mainly held by videoconference and use by the EPO of the data provided by the CPVO. A workshop and a bilateral training event are envisaged for 2023.

The EPO and the European Institute of Innovation & Technology signed a memorandum of understanding on 28 April 2022, followed by a first annual work plan in May. The collaboration agreement covers activities in various fields of common interest such as education and training, business support, technology trends, economic studies and awareness-raising and promotion. The objective of this co-operation is to support innovators and entrepreneurs in turning their ideas into products and services, promote a modern IP culture, achieve stronger protection of European businesses' interests and increase patent valorisation and commercialisation in Europe.

On 1 June 2022, the EPO President held a virtual meeting with the President of the European Central Bank, Christine Lagarde. Their discussions covered a wide range of pressing global issues such as innovation for economic growth in Europe, new sustainable technologies to combat climate change, diversity and inclusion, and digital transformation and new forms of work. Finally, possibilities for closer co-operation in the future were discussed.

The EPO and the European Innovation Council and SMEs Executive Agency joined forces to ensure the right support for key technologies. The letter of intent
signed by the two parties refers to a pilot activity in which EPO experts provided a non-binding opinion on the technological novelty, inventive merit and proposed future IP strategy of European Innovation Council transition proposals shortlisted for a jury interview following the call for proposals, which ended on 28 September 2022. The pilot initiative aims to leverage the EPO’s expertise and unique position in the European innovation ecosystem. Considering the positive outcome of the pilot project, it is envisaged that it will be extended for the year 2023.

In 2022, the EPO and the European Space Policy Institute, in collaboration with the European Space Agency, prepared and published a new patent insight report highlighting that the number of patent applications (2001-2021) in the field of space-borne sensing and green applications has increased significantly. This study focuses on remote sensing data applications that can help to mitigate climate change. These include weather forecasting, detecting pollution, protecting biodiversity and monitoring the environment.

Another patent insight report prepared and published by the EPO and the International Renewable Energy Agency uses patent statistics to show the trends and dynamics in the field of hydrogen that can be produced from renewable energy sources. Hydrogen from renewable energy sources can be used in the chemical industry and as a fuel. It is abundant and can be obtained by the electrolysis of water in the presence of electrocatalysts. This makes hydrogen very attractive as a green energy source, provided its production is also environmentally friendly.

In addition, the EPO and the European Investment Bank published a joint report on deep tech innovation in smart connected technologies, identifying unique obstacles small businesses face in developing advanced digital technologies in the European Union (EU). Cloud computing, the internet of things, 5G networks and artificial intelligence are often described as fourth industrial revolution technologies and form an important part of deep tech. Following the digital revolution, the fourth industrial revolution refers to how these new technologies are blending the physical, digital and biological worlds. The new report offers recommendations to further spur the growth of EU firms and foster deep tech innovation in the EU.

4. International co-operation

The attractiveness of the European patent system is explained primarily by two factors: the quality of the products and services delivered by the EPO under the EPC and their geographical reach. SP2023 includes two related programmes under Goal 4 ("Build a European patent system and network with a global impact") that address the attractiveness of the Patent Cooperation Treaty (PCT) procedure at the EPO and the coverage of the EPO's search and examination products.

The PCT is a key procedure at the EPO with Euro-PCT applications entering the European phase representing nearly 60% of all EPO filings. Furthermore, as the main tool for applicants seeking patent protection for their inventions in multiple jurisdictions, it is a vital procedure for users.
As part of SP2023, it was decided to implement and reinforce a three-tier co-operation framework based on the pillars of technical co-operation, reinforced partnership and validation.

4.1 Broadening our global connections

The EPO's innovation support through co-operation expands beyond Europe. The broader the geographical reach of the European patent system, the greater the benefits it can deliver to its users. Technical co-operation is the basis for co-operation activities as it facilitates the institutional exchanges that improve the quality of the patent process. The technical co-operation framework is indispensable for establishing common search, examination or classification practices; it is also instrumental in creating the foundations for a more strategic form of future co-operation: a reinforced partnership or a validation agreement.

Users of the European patent system benefit substantially if they can reach a larger geographical area based on their application with the EPO. In parallel, they also benefit from the high quality and legal certainty provided by the EPO patent grant process and can obtain a high-quality patent in a region otherwise not covered by the EPC.

Consequently, it is of strategic interest that the EPO further enhance its geographical outreach, particularly through validation agreements and reinforced partnerships, which extend the EPO's coverage beyond Europe and provide for the dissemination of European best practices, tools and quality standards globally.

Validation agreements pursue the extension of the geographical coverage of European patents and offer the most advanced strategic co-operation model for both the EPO and the partner country. The EPO's centralised granting procedure reduces the administrative and financial burden for applicants, who can easily obtain patent protection in a non-European country by simply requesting the
validation of the granted European patent instead of repeating the whole patent procedure in a new office using the Paris or PCT route. Shifting foreign second filings from the national route to the validation route allows the validation country to focus its tasks on national first filings – should its national patent system envisage the substantive examination of national applications – and support local innovation.

The EPO’s reinforced partnership programme seeks to establish deep and wide ranging partnerships with the IP offices of the world’s emerging innovation hubs. The aim is to further integrate and strengthen the global patent system by extending the network of partner offices, which increase their capacity, productivity and quality through systematic use of the EPO’s work products (search and examination), tools and practices. The programme thus offers better conditions for applicants filing patent applications internationally and fosters innovation by supporting partner offices in providing improved services to local applicants.

Since the adoption of SP2023 in June 2019, the European Patent Organisation’s geographical coverage has increased substantially, reaching a total of over two billion people at the end of 2022, through 39 member states, 1 extension state, 4 validation states and 12 reinforced partnership offices.

Beyond Europe, the EPO continues to extend its geographical coverage in particular through new validation agreements and reinforced partnerships. In addition to the 44 countries in which EPO patents can be validated, there are an additional 42 countries where, through a reinforced partnership or Patent Prosecution Highway agreement, corresponding EPO search and examination results are reused in the national/regional phase.

A total of 85 international co-operation agreements (memoranda and work plans) are in force: 20 in the area of technical co-operation, 18 in the context of reinforced partnership, 8 concerning validation, 3 in multilateral co-operation, 18 Patent Prosecution Highway agreements (17 bilateral and one with the IP5), 10 CPC agreements (with non-member states) and 2 agreements relating to the strategic partnership with China.

### 4.1.1 Technical co-operation

The building blocks of technical co-operation programmes with partner offices are usually data exchange in various forms; the use of common practices and tools for classification, search and examination, such as the CPC and EPOQUE Net; the exchange of best practices on key topics of mutual interest; and work-sharing schemes such as the Patent Prosecution Highway (PPH). Promoting the EPO as a PCT Authority among users from these jurisdictions is also a general objective.

Operational actions in co-operation have adapted to the requirements of virtual events. High-level bilateral and multilateral interactions have been maintained at a good pace and virtual exchanges, which were already in place, have been extended to a broader spectrum of activities. Most co-operation partners swiftly adopted services to conduct virtual co-operation and the implementation of technical co-operation continued to pave the way for greater schemes. In line with the adoption of the EPO’s New Ways of Working framework, the online format
has been enhanced with a mixed online-and-in-person format, i.e. hybrid exchanges.

On 1 March 2022, the EPO made a decision to freeze all co-operation activities with the NPOs of the Russian Federation and Belarus, as well as putting on hold co-operation activities with the Eurasian Patent Organization, in full solidarity with all those affected by the ongoing military action in Ukraine. It is worth mentioning that the EPO has taken appropriate humanitarian measures, including facilitating the schooling of Ukrainian children at the European School Munich, in accordance with its mandate.

As of 17 May 2022, the EPO stopped receiving new incoming data from the Russian Federation (RU) and the Eurasian Patent Organization (EA) in its prior art databases and EPOQUE Net users were duly informed.

The EPO has also put in place three sanction-related measures:

- stay of proceedings for applications from sanctioned individuals and entities on the European Union and United Kingdom lists
- suspension of reimbursement of fees to sanctioned individuals or entities and freezing of any deposit accounts in their names
- suspension of requests for registration of the transfer of rights, licences and other rights

In 2022, following the signature of the Memorandum of Understanding on the implementation of the Cooperative Patent Classification at the Moroccan Office (OMPIC), the EPO gave the corresponding general and advanced training to all OMPIC examiners.

Technical co-operation with the Association of Southeast Asian Nations (ASEAN) offices proceeded with the completion in December 2022 of the ASEAN Common Guidelines for Patent Examination, which have been approved by the ASEAN Working Group on IP Co-operation.

The traditional examiner exchanges between the EPO and the Japan Patent Office were conducted in virtual format in February 2022.

Co-operation with the United States Patent and Trademark Office (USPTO), implemented in the framework of the first bilateral co-operation memorandum of understanding between the two offices signed in 2019, remained very active. Several meetings between the respective teams of experts took place in 2022. The two offices were able to exchange experiences and good practices in the areas of training programmes, quality management and the use of artificial intelligence for classification and in other digital transformation endeavours. This first bilateral co-operation memorandum of understanding yielded positive outcomes, as acknowledged by the two offices, and consequently the EPO and the USPTO agreed in February 2023 to extend this close co-operation for a further period of three years, until the end of 2025.

4.1.2 EPO-CNIPA International Searching Authority pilot

In December 2020, the EPO and the China National Intellectual Property Administration (CNIPA) launched a pilot project in which the EPO acts as International Searching Authority (ISA) for Chinese applicants. In the scope of
this pilot, nationals and residents of the People’s Republic of China can select the EPO as their ISA when filing their PCT applications in English with the CNIPA or the International Bureau of the World Intellectual Property Organization as receiving Office.

The pilot project has been extended until 30 November 2023.

Both Chinese and international entities based in China have actively participated in this pilot. By the end of 2022, more than 320 different companies had selected the EPO as ISA within this pilot, with about 2 000 applications.

The EPO and CNIPA are working together to improve the conditions of the pilot, starting by making it possible to pay the international search fee in renminbi at the CNIPA and to receive e-notifications within this pilot. The EPO and CNIPA will also discuss the next steps.

In 2022, a new memorandum of understanding and a new work plan on the CPC were also signed with the CNIPA. Dedicated field-specific training sessions for CNIPA examiners were held.

4.1.3 Bilateral co-operation with the World Intellectual Property Organization

Co-operation with the World Intellectual Property Organization (WIPO) was renewed at the operational level with the signature of the annual work plan in July 2022, covering the period until July 2023. The annual work plan consists of activities in the areas of the PCT system, data exchange, classification, automation procedures and patent information, in line with the memorandum of understanding signed with WIPO in November 2021.

Most activities in the annual work plan are progressing according to plan and deliver benefits which further develop the international patent system.

In the area of filing tools, the EPO and WIPO jointly implemented the integration of ePCT in the Front Office tool developed by the EPO for the national offices of the European Patent Organisation member states. This activity followed the successful integration of ePCT in the EPO filing tool Online Filing 2.0 for the filing of PCT applications with the EPO.

Another important outcome of EPO-WIPO co-operation in 2022 was the launch and implementation of a streamlined approach with respect to the exchange of PCT data. By year end, six flows representing two-thirds of the total volume of PCT data exchanged between the two organisations had been moved to a web service solution similar to the one implemented for data flows between the EPO and national offices in Europe.

In 2022, the EPO continued to lead the PCT MIA Task Force on PCT Minimum Documentation in close co-operation with the USPTO, which leads the particular topic of non-patent literature, and WIPO. The aim is to enhance and streamline PCT search processes. The EPO and the USPTO presented a joint package of regulatory changes for consideration at the PCT Working Group of October 2022. Discussions will continue in 2023.
4.1.4 Participation in regional IP activities

In the context of IP Key Latin America implemented by the EUIPO, the EPO conducted a two-day virtual workshop on its examination practice in the areas of computer-implemented inventions and artificial intelligence. This workshop was attended by more than 100 examiners from 14 patent offices in the region.

The EPO also partnered with the Economic Commission for Latin America and the Caribbean, the National Institute of Industrial Property of Brazil and the EuroClima+ programme of the European Union in a three-day capacity-building event on green technologies for patent examiners in Latin America and the Caribbean.

The EPO is spearheading an initiative to establish a sustainable platform to ensure that countries in the Community of Portuguese Language Countries (CPLP) co-operate systematically and in a co-ordinated manner on IP matters. In this regard, the EPO and CPLP Secretariat agreed to proceed with the signing of a memorandum of understanding and a work plan in 2023 with concrete activities to be implemented.

In May and June 2022, the EPO together with WIPO organised training for the National Institute of Industrial Property of Brazil and the National Institute of Industrial Property of Chile in the area of the PCT. More than 150 examiners were trained on International Searching Authority/International Preliminary Examining Authority responsibilities as well as on the updated PCT International Search and Preliminary Examination Guidelines and related practice, from an EPO practice point of view.

4.1.5 Reinforced partnership

In many countries, the share of non-resident applications is extremely high: over 80% in some cases. Most non-resident applications are filed in more than one country and claim the priority of an earlier application. Although corresponding foreign applications may contain different claims and the substantive patentability criteria differ from country to country, prior-art searches and decisions to grant or refuse from other countries often provide valuable information for search and examination.

The crux of a reinforced partnership is to distinguish operationally between national first and second filings. IP offices generally need to prioritise first filings in terms of resource allocation, as a first office action is ideally issued within six to nine months of the filing date. Furthermore, first filings usually require examiners to carry out a full search and arrive at their own conclusions on patentability as there are no corresponding applications to consult. In the case of second filings, examiners are able to consult and, where applicable, reuse the work products for the prior filing, either partially or, in some cases, completely.

The EPO and the partner office agree to implement a scheme for the systematic reuse of EPO work products, enabling the partner office to enhance and expedite the processing of national/regional patent applications with the same priority date. The partner office is expected to reuse EPO work products to the maximum extent practicable under its applicable legal framework. The main EPO products to be reused are the European search opinion, the written opinion of the EPO as
International Searching Authority, the international preliminary examination report and the decision to grant.

In contrast to other work-sharing arrangements that are applicant-driven, requiring the submission of additional forms and sometimes the payment of fees, the reuse scheme is office-driven and occurs by default. The reuse of EPO work products is embedded in a streamlined workflow and examination practices are standardised as far as possible. It is therefore particularly effective in assisting the partner office to increase its search and examination capacities by avoiding unnecessary duplication of work, thereby maximising its quality and efficiency.

A new reuse tool called GeO was released for testing in October 2022 and will be available to partner offices in the Single Access Portal. The tool provides examiners with seamless access to the EPO's work products, thereby facilitating the reuse and eliminating the need for several clicks to access the relevant information through the European Patent Register or Espacenet. Developed in particular for reinforced partnership offices to support their reuse in terms of utilising search and examination results from the EPO, the tool could in principle be useful for any national office processing PCT national phase applications.

A total of 32,121 reuse cases were reported by the reinforced partnership offices in 2022, bringing the total since the launch of the programme in 2021 to 131,148. It should be noted that these extraordinary results are in part due to an effort from the partner offices in dealing with some historical backlogs.

Following the conclusion of a reinforced partnership with the Ukrainian patent office, actions have been intensified in order to support the office, its infrastructure and its staff in times of conflict.

Mexico, the African Regional Intellectual Property Organization (ARIPO), Malaysia and Indonesia are already fully operational in terms of providing regular reuse data and participate very enthusiastically in the regular expert review meetings. To be highlighted is the exceptional success of the review meetings with the Mexican Institute of Industrial Property, where on average more than 100 examiners attend and participate actively. In total, 12 expert review meetings were organised in 2022, reaching around 400 patent examiners across all reinforced partnership offices.

In 2022, the implementation of the reuse process commenced with the IP offices of Saudi Arabia, Peru and Colombia.

Intensified co-operation with partner offices in Africa, under the scope of reinforced partnership agreements, includes the EPO-ARIPO Regional Patent Examination Training (ARPET) programme. The ARPET programme is a joint initiative between ARIPO and the EPO aimed at enhancing the skills and competencies of examiners in ARIPO member states and observer states Angola and Ethiopia. Thirty-seven participants have completed Modules A and B, with the Module B training delivered in hybrid format in July 2022. Modules C and D will be offered virtually through online workshops. After the programme, trainees will form groups to customise training materials in accordance with their local law and practice, incorporating the reuse of the EPO's work products.
"We believe that building sustainable capacity in science, technology transfer and innovation is essential to support local industries to flourish in today’s increasingly integrated and knowledge-based economy."

António Campinos, President of the EPO

The EPO President and the ARIPO Director General launched the University IP Outreach Training Programme on 31 March 2022. This was a pilot programme with 25 universities from ARIPO member states and Angola, Ethiopia and Nigeria, aimed at establishing a basic understanding of IP and patent systems and training participants to use patent information search tools. The programme will be rolled out again and expanded to include more universities from additional African countries.

In December 2022, the EPO President embarked on a visit to South Africa, Zimbabwe and Cameroon. During his visit to South Africa, he met with industry representatives and the Commissioner of the Companies and Intellectual Property Commission (CIPC) of South Africa and signed the 2022-2024 biennial work plan. Additionally, he held discussions with local patent attorneys on CIPC EPO co-operation and the latest developments regarding the Unitary Patent.

While in Zimbabwe, the EPO President took part in a bilateral meeting with the ARIPO Director General and participated in a seminar focused on the future of the Knowledge Transfer to Africa initiative. In Cameroon, he spoke at the 62nd regular session of the African Intellectual Property Organization (OAPI) Administrative Council and discussed the validation agreement with the members. He also met with ministers of Guinea-Bissau and Equatorial Guinea to explore capacity-building initiatives on IP in these Lusophone countries.

### 4.1.6 Validation agreements

The OAPI is pursuing the necessary steps towards a validation agreement: after the entry into force of the revised Bangui Agreement at the end of 2020, the OAPI is now actively preparing for the introduction of a new search and substantive examination procedure to replace the current registration system. The EPO is supporting the OAPI by providing dedicated training to the five OAPI examiners, which in 2022 covered advanced patent examination and included a study visit of four OAPI examiners to the EPO in Munich in October.

Regarding Cambodia, and after the renewal of the five-year validation agreement in January 2022, the EPO and national IP authorities rekindled co-operation and initiated the drafting of a new bilateral work plan.

By way of support to all validation offices, the EPO continued to offer different train-the-trainer schemes to an audience of IP operators. Regarding specifically co-operation with each validation office, the EPO was particularly active once again in Morocco, Tunisia and the Republic of Moldova. In more detail:

With the Moroccan Office of Industrial and Commercial Property (OMPIC), activities are designed to address the promotion of innovation at local universities and research centres (Knowledge Transfer to Africa initiative, in connection with the PATLIB network). Emphasis is put on the support for SMEs and green
technologies, as well as the ongoing modernisation of OMPIC's IT capacities. OMPIC's examination capacity was supported with specific coaching on additive manufacturing, a key topic for the country. A joint initiative was launched to better understand the behaviour of users of the validation system and foster its use.

OMPIC recently joined the CPC system (agreement with the EPO signed on 22 September 2021) and is very active in putting it in place to its full extent.

The EPO worked together with the National Institute for Standardization and Industrial Property of Tunisia on enhancing data exchange, which is to be resumed after several months of interruption. A two-day seminar on patent drafting for an audience of 50 people from the innovation field was held, contributing to building further capacity in the country. The country also takes part in the Knowledge Transfer to Africa initiative, with the involvement of local universities and the PATLIB network.

Concerning the State Agency on Intellectual Property (AGEPI) of the Republic of Moldova, the work plan aims to develop patent processing capacity and infrastructure through a wide range of activities developed based on the results of a joint analysis of the innovation landscape in the country. The EPO contributed to the celebration of the 30th anniversary of AGEPI, an important milestone for the office. Measures now aim to prepare for Moldova's accession to the EPC, a process on which co-operation activities will focus over the coming months.

For Morocco, Tunisia and the Republic of Moldova, the use of the validation package (a budget aimed at modernising the infrastructure of the offices and at supporting investments in the fields of IT, data exchange, data publication, teaching and information material) is about to be completed. This enables delivery of state-of-the-art services to users and optimises interoperability between IP offices, thereby fostering sustainability in the global patent system.

4.2 Multilateral co-operation

Through ongoing multilateral co-operation efforts in which the EPO has played a leading role since 1983, the EPO has been able to eliminate unnecessary duplication of work and align procedures among the world's largest patent offices. Under SP2023, the EPO aims to build on its success; to this end, it has dedicated a programme to fostering multilateral co-operation under Goal 4, "Broaden the European patent system and network impact". This will help the EPO develop an efficient and effective global IP system and ensure a positive impact for European users and the EPO.

4.2.1 Fostering the impact of multilateral co-operation

The EPO's strategic programme aspires to improve the functioning of the global patent system through technical and procedural convergence and by seeking joint responses to global challenges, such as new emerging technologies and artificial intelligence, via the IP5 co-operation frameworks.

The EPO stands to benefit from this programme in a number of ways. Efficient multilateral co-operation with major IP offices will help the EPO master the challenges of growing volumes of prior art, obtain access to global patent information, disseminate this data and offer users more services. Aligning
practices will bring significant gains in the quality and validity of patents, and in the predictability of the granting process.

Developing synergies in multilateral co-operation in the field of patents will help the EPO and partner offices advocate a strong pro-IP agenda. For examiners, increased co-operation will foster further procedural alignment with other leading IP offices and open up new work-sharing opportunities.

4.2.2 IP5 co-operation

Under the umbrella of IP5 co-operation, the annual IP5 high-level events were hosted by the EPO in virtual format in June 2022. In their meeting the heads of office endorsed progress across all areas of IP5 co-operation. Despite working in a virtual environment, the offices achieved significant results. In particular last year saw:

- the implementation of a global alerting system covering patent prosecution changes in all five offices, which was met with very positive reactions by users
- continued progress in the implementation of the IP5 NET/AI Roadmap with the launch of new projects, which will eventually optimise internal processes at the IP5 through the use of new emerging technologies (NET) and artificial intelligence (AI), and promote legal certainty and transparency in applicable patent practices
- the publication of the "IP5 safe format" of allowable features in drawings at the IP5 offices, i.e. a table of common allowable features including the lowest common denominator, which concludes the first stage of the relevant project

The IP5 heads of office confirmed that a project management approach is essential to support transparency, facilitate better decision-making processes and improve the efficiency of IP5 co-operation. They agreed that a review of the catalogue of IP5 projects should be launched to ensure efficient allocation of resources and timely results.

A separate meeting between the IP5 heads of office and IP5 Industry, i.e. the user associations from the IP5 regions, focused on the role of IP in promoting the United Nations Sustainable Development Goals. Overall, this discussion demonstrated the potential of IP as an engine for socio-economic prosperity and growth, in particular in the post-COVID-19 recovery environment, and laid the groundwork for a possible longer-term approach towards the integration of sustainability in future IP5 policy agendas. In 2019 the IP5 heads of office and IP5 Industry had agreed to jointly promote a strong pro-IP agenda.

This meeting marked ten years of working together with IP5 Industry, an initiative launched by the EPO. A commemorative video showcased the accomplishments of IP5 co-operation, the value of continued exchanges with users and their importance for the continued success of the IP5 co-operation framework.

The 2023 IP5 heads of office and surrounding meetings will be hosted by the USPTO in mid-June in person, for the first time since 2019.
4.2.3 Tri-lateral co-operation

"I'm excited about our new direction for Trilateral co-operation, which aligns with the USPTO's mission to expand innovation – including in key technologies and in traditionally underrepresented and under-resourced communities. We each committed to innovating our collaborative approach and doing more together to create jobs, foster economic prosperity and solve world problems."

Kathi Vidal, Director of the USPTO

"It is amazing that the Trilateral Offices have held 40 annual heads meetings to date. This fact itself proves that such international co-operation is extremely important in the field of intellectual property, and we will continue seeking the realisation of an ideal IP global ecosystem through our co-operation."

Koichi Hamano, Commissioner of the JPO

"The key to the success and longevity of Trilateral co-operation is our shared understanding that global challenges demand global solutions. We know that innovation, supported by a strong and high-quality IP system, can offset the threat to sustainability. We also know that high-growth-potential SMEs have a big role to play in driving many of these world-changing innovations – but are sometimes prevented from doing so because of barriers to access. This is where Europe's soon-to-be-launched Unitary Patent can be a real game-changer for businesses from the Trilateral regions."

António Campinos, President of the EPO

In 2022 the Trilateral Offices celebrated 40 years of successful co-operation with a conference organised by the USPTO. The theme of this meeting was enhancing access to the innovation ecosystem for SMEs to drive economic growth. The event focused on the offices' efforts to advance digitalisation and their respective endeavours to make the patent system more inclusive, particularly for smaller enterprises, micro-entities and start-ups.

The offices agreed to continue to pursue possible IT improvements aimed at simplifying and streamlining processes to improve efficiency and reduce costs for all innovators. Among the topics addressed were artificial intelligence-based tools, elimination of physical signature requirements and improvements in prior art search capabilities.

5. Partnership and dialogue with users

The EPO has a long history of actively engaging with representatives from all regions of the IP5, including business associations and patent professional groups. While the EPO prioritises discussions with European user associations, the advanced use of digital communication methods has allowed for more regular and diverse discussion with users around the globe.

The aim of these discussions is to gather feedback and insights that will help improve the EPO’s products and services. Regular meetings allow for
consultation on topical issues and ensure the EPO reacts swiftly to an ever changing global environment.

In 2022, the EPO held meetings with the epi and BusinessEurope, ensuring that the voices of European industry and users were heard. The EPO also had a series of online meetings with international user associations including the leading associations for IP practitioners from Japan and the United States of America.

The SACEPO Working Party on Quality continues to play a key role in this ongoing effort. Comprising 75 experts from across the globe, it ensures a forum in which the EPO can engage in constructive dialogue with users and where proposals for improvements to European patent law and practice can be discussed.