



TISCs and  
TTOs Report  
2022

# Strengthening local innovation capacities to accelerate knowledge and technology transfer

# Contents

<b>Foreword</b>	<b>3</b>
<b>Key developments</b>	<b>5</b>
<b>TISC/TTO network developments</b>	<b>7</b>
Continued increase in demand for TISC services	12
Expanding the depth and range of innovation support services	13
Training and awareness raising: supporting local innovators	14
TISCs as catalysts for filing patent and other IP rights applications	17
Regional initiatives scale up worldwide impact and reach	18
<b>WIPO resources supporting TISCs and TTOs</b>	<b>19</b>
<b>Digital platforms and tools for access to information and knowledge</b>	<b>19</b>
Access to Specialized Patent Information (ASPI)	19
Access to Research for Development and Innovation (ARDI)	20
WIPO INSPIRE	21
Patent Database Reports Portal	22
Patent Register Portal	22
Patent analytics	22
Technology transfer and institutional IP policies	22
eTISC knowledge-sharing platform	23
<b>Training to expand knowledge and skills</b>	<b>23</b>
National and regional training for TISCs	24
Training on technology transfer and IP commercialization	24
Training on institutional IP policies	25
International Knowledge and Technology Transfer Leadership Summit	26
Distance learning	27
<b>Publications to support training and reinforce learning</b>	<b>30</b>
Publications in the area of technology transfer	30
Publications in patent analytics	31
<b>Special feature: strengthening local capacities to accelerate knowledge and technology transfer for sustainable economic recovery after pandemics</b>	<b>33</b>
<b>Looking ahead</b>	<b>36</b>
<b>TISC program milestones</b>	<b>38</b>
<b>Useful links</b>	<b>39</b>

# Foreword

Technology and Innovation Support Centers (TISCs) and Technology Transfer Offices (TTOs) in developing countries, least developed countries (LDCs) and transition countries play a key role in enabling local innovators to reach their innovation potential.

Typically located in patent offices, universities, research centers, and science and technology parks, TISCs enable researchers and inventors to get local support in accessing and using technological information from more than 140 million published patent documents and scores of scientific and technical publications. In recent years, many TISCs have started developing additional innovation support services in patent analytics, technology transfer, intellectual property (IP) management and commercialization to adapt to the needs of innovators.

TTOs and other technology transfer structures, such as techno-parks and IP hubs, reinforce local innovation ecosystems and facilitate connections between innovation stakeholders by bridging the gap between research and practice and by supporting the transfer of knowledge and technology from academia to industry.

Created and managed by the IP for Innovators Department (IPID) in the World Intellectual Property Organization's (WIPO) IP and Innovation Ecosystems Sector (IES), the TISC program and technology transfer projects support WIPO's mission to help member states develop their IP and innovation ecosystems and to support researchers and innovators in using the IP system for innovation promotion, technology transfer and economic growth.

“I see the role of WIPO at two different levels. The first one is the international policy level, where WIPO facilitates an international dialogue on technology transfer. At the second level, WIPO develops tools, manuals and guides to help actors of the innovation ecosystem such as universities, technology transfer offices and public research organizations do their daily work. This two-level work will allow us to actively engage in helping both innovators and creators take their ideas from the lab to the market.”

**Marco Alemán**

Assistant Director General, IP and Innovation Ecosystems Sector

# Key developments

In 2022, the IP for Innovators Department (IPID) made significant contributions to the World Intellectual Property Organization's (WIPO) COVID-19 response, which was launched in 2021 to assist member states in strengthening their capacities to accelerate knowledge and technology transfer for sustainable economic recovery after pandemics through effective use of the intellectual property (IP) system.

In this context, the IPID started developing a package of resources and capacity-building programs to support Technology and Innovation Support Centers (TISCs) and technology transfer structures in strengthening their capacities in identifying and supporting the rollout of innovations and inventions for combating pandemic diseases, in particular in the area of patent and technology searches and licensing in the areas of prophylactics, therapeutics, bio-analytics and bioinformatics for communicable diseases. A new patent landscape report (PLR) was published on COVID-19-related vaccines and therapeutics, providing preliminary insights on related patenting activity during the pandemic.

The WIPO INSPIRE global digital knowledge center, which provides a unique blend of information and knowledge for innovators, entrepreneurs and patent professionals on patent databases, patent registers, patent analytics, technology transfer and institutional IP policies, continued to expand with the addition of new resources. In the area of patent analytics, in addition to the new PLR on COVID-19-related vaccines and therapeutics, a second PLR was published on patenting activities and related developments in the field of hydrogen fuel cells in transportation. Other resources were developed and implemented in 2022, such as the creation of the IP and technology transfer webpage, which is the first single source of information on technology transfer developed by WIPO. In addition, a comprehensive survey involving 800 professionals from five continents was organized to collect data on the motivations of researchers and technology transfer professionals to be involved in technology transfer activities.

With new challenges posed by a growing network of 90 national TISC networks and over 1,400 operational TISCs worldwide, three initiatives were also launched in 2022 to strengthen and support the effective management of TISC networks:

- the piloting of a TISC Project and Performance Management Platform (TPPM) to support TISC coordinators in managing national projects;
- the development of a TISC host institution assessment tool to support TISC coordinators in identifying the main strengths and needs of institutions in their network; and
- the launch of a WIPO TISC staff certification program to standardize TISC operations, raise the quality of services across TISCs and improve career development pathways for TISC staff.

Special projects to strengthen technology transfer structures were also implemented, which led to the establishment of a Baltic States Technology Transfer Office (TTO) Network. Its aim is to support the development of technology transfer professionals and their practices and ultimately to promote knowledge and technology transfer among research and development institutions, businesses and the public sector in the region.

In 2022, WIPO hosted the International Knowledge and Technology Transfer Leadership Summit, organized in cooperation with the Association of University Technology Managers (AUTM). Thirty-six technology transfer leaders from 29 countries and territories gathered at WIPO's headquarters in Geneva on October 13 and 14, 2022, to discuss global perspectives on knowledge and technology transfer, diversity and inclusion across the innovation ecosystem, and models of government funding for technology transfer activities. WIPO enabled five technology transfer leaders from developing countries to participate, which enriched the exchange of information and practices among technology transfer professionals worldwide.



Photo: WIPO/Martin

WIPO-AUTM International Knowledge and Technology Transfer Leadership Summit, WIPO headquarters, Geneva, October 13 and 14, 2022

# TISC/TTO network developments

TISCs and technology transfer structures play an important role in strengthening the innovation ecosystem where they are established, by fostering innovation and encouraging technology transfer.

In 2022, the global TISC network continued to grow, and there are now more than 1,400 TISCs in 90 countries. TISCs provide a diverse range of services to researchers, inventors and entrepreneurs in these countries, supporting them at different stages in the innovation cycle – from assistance with using patent databases and performing patent searches to advice on IP management and commercialization.

“Being part of WIPO’s TISC system has allowed us to take full advantage of the center’s resources and to make smarter decisions when using the patent system”.

**Zhibo Yao**  
Qingdao Aibo Detection Technology Co., Ltd.

**Figure 1. Number of TISCs providing different types of services**

Source: TISC Directory, 2022

Since the TISC program was launched in 2009, 90 countries, of which 32 are least developed countries (LDCs), have signed service-level agreements (SLAs) with WIPO to develop national TISC networks. There are also three regional TISC networks for member states of the **African Regional Intellectual Property Organization (ARIPO)**, the **Association of Southeast Asian Nations (ASEAN)** and countries in **Central America and the Dominican Republic (CATI-CARD)**. In 2022, two additional countries – Cabo Verde and Sierra Leone – joined the TISC program, and three countries – Brunei Darussalam, the Sudan and Tajikistan – initiated the steps to sign an SLA with WIPO. TISC networks also continued to expand during 2022 and are becoming increasingly sustainable.

**Algeria:** The Algerian National Institute of Industrial Property (INAPI), focal point of the national TISC network, signed 11 agreements with higher education and scientific research institutions and welcomed 14 new TISCs to the network in 2022, bringing the total number of TISCs in Algeria to 108.

**China:** A total of 101 TISCs have been established in China across 31 provincial administrative regions.

**Colombia:** In 2022, the TISC network was composed of 10 regional TISCs, 19 TISCs in universities, two TISCs in research and development centers, and two TISCs in chambers of commerce.

**Congo (the):** The reform of the Office Congolais de la Propriété Industrielle (OCPI) in 2022 as the administrative structure of the Direction de l'Antenne Nationale de la Propriété Industrielle,



focal point of the TISC network, with an enhanced mission to promote the use and protection of IP in the Congo, is expected to strengthen TISC activities.

**Costa Rica:** The process was initiated to establish a new TISC in the Faculty of Economic Sciences of Costa Rica (Colegio de Ciencias Económicas de Costa Rica).

**Ecuador:** From 13 TISCs in 2021, the national network grew to 14 in 2022 with one new member, the public Universidad Técnica de Manabí (UTM). Five additional institutions signaled their interest in joining the network and initiated the process to establish TISCs within their institutions. To encourage exchanges and networking, the National Service of Intellectual Rights (SENADI), focal point of the TISC network, organized an online meeting for all TISCs in April.

**Gambia (the):** The University of the Gambia (UTG) formalized its intention to establish a TISC and join the national network. The launch of this new TISC is expected to coincide with the launch of the university's institutional IP policy, which will be the first of its kind in the Gambia.

**Jordan:** The TISC network grew from 18 to 19 members, with four additional institutions in the pipeline.

**Kazakhstan:** The TISC network grew significantly, with 16 new TISCs established in 2022 since the launch of the network in 2021. Most of them are in higher education institutions and will aim to provide services to support the commercialization of scientific and technical research results from these institutions.

**Madagascar:** The TISC network continued to grow, from 73 institutions in 2021 to 76 institutions in 2022, with the addition of two new universities and a business and industry support institution.

**Niger:** Five new TISCs were established in the universities of Agadez, Diffa, Dosso, Tahoua, and Tillabéry.

**Pakistan:** Two new research institutions joined the TISC network in 2022, bringing the total number of TISCs in Pakistan to 36.

**Peru:** Since the launch of the TISC network in 2018, 51 institutions have joined the network, covering 19 out of the 25 regions in the country. Seventy professionals have been trained on patents and patent searches since then, and act as TISC staff. New TISC staff benefit from an accelerated learning scheme to become operational and to benefit from more advanced training with the rest of the network.

**Philippines (the):** In 2022, the TISC network in the Philippines comprised 77 TISCs (or ITSOs, as they are known in the Philippines), of which 50 are state universities and colleges, 22 are private higher education institutions, two are research and development institutes, and three are support institutions.

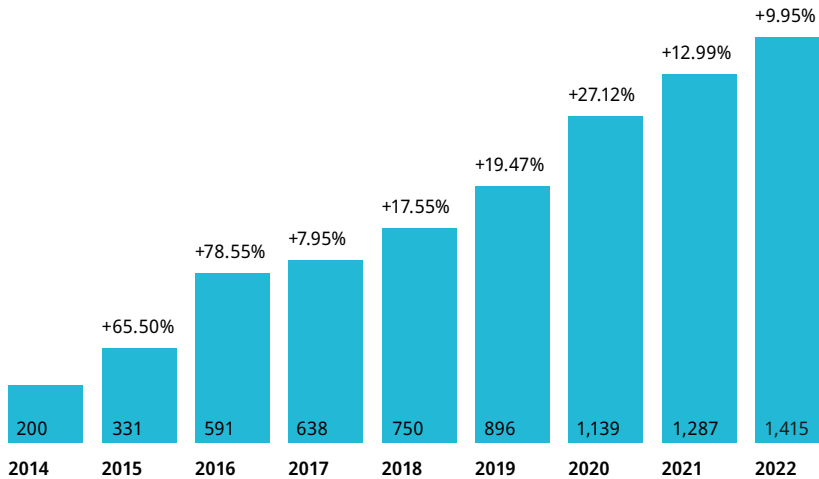
In 2019, the IP Office of the Philippines (IPOP), focal point of the national TISC network, launched the ITSO 2.0 program, followed by the launch of a clustering scheme in 2020, which groups TISCs based on their service offerings into four categories (bronze, silver, gold and platinum) to promote and stimulate TISC performance. To qualify as bronze, which is the minimum requirement, TISCs must provide at least 12 IP education services, two patent search assistance services and one patent drafting service. To become silver, TISCs must provide 24 patent search services. To qualify as gold, TISCs must file and draft at least six patents. Finally, to reach the platinum level, TISCs must file and draft at least seven patents and successfully commercialize a technology or creative product. In 2022, 40 ITSOs qualified as bronze, 30 as silver, 26 as gold and 17 as platinum. All clusters witnessed significant growth (between 50 and 75 percent increase in each of the silver, gold and platinum clusters) from 2021 to 2022.

**Russian Federation:** The network was composed of 182 TISCs in 2022, established in its eight federal districts. The Federal Institute of Industrial Property (FIPS) in the Federal Service for

Intellectual Property (Rospatent), focal point of the network, concluded agreements with 12 new institutions and renewed 13 agreements.

**Uganda:** Three new TISCs were established in 2022 at Gulu University, the Islamic University in Uganda and Lira University, bringing the total number of TISCs in the national network to 32.

**Figure 2. Number of TISCs and growth over time**



Source: TISC Directory, 2022

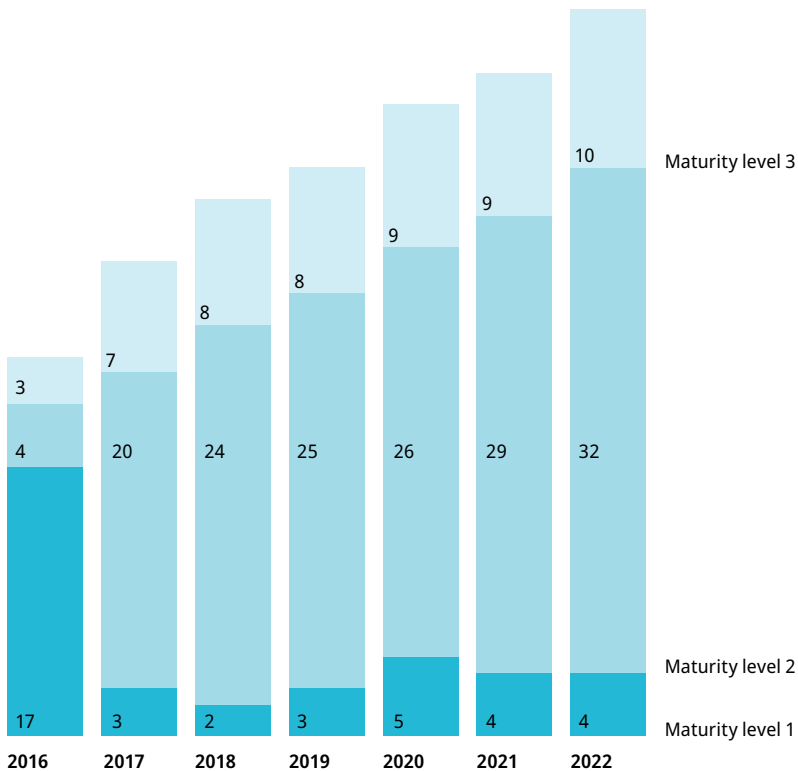
Because sustainability and the impact of national TISC networks is critical to their continuous development, maturity levels have been defined to reflect each national network's development status and the level of services it provides. These levels also provide insights into future development requirements to increase impact. The levels are as follows:

- **Maturity level 1:** Countries that have signed an SLA with WIPO, have signed institutional agreements at a national level between the TISC national focal point and TISC host institutions, and report at least annually on national TISC activities.
- **Maturity level 2:** Countries that meet maturity level 1 standards and that provide basic patent information searches, e.g., state-of-the-art patent searches.
- **Maturity level 3:** Countries that meet maturity level 2 standards and that provide value-added IP services, e.g., drafting PLRs.

Ultimately, TISCs are financially and technically self-supporting institutions to which WIPO provides advice on demand.

Out of the total of 90 TISC national networks, 46 were considered to have reached at least maturity level 1 at the end of 2022. This comprised four networks at maturity level 1, 32 networks at maturity level 2 and 10 networks at maturity level 3.

Figure 3. TISC networks by maturity level



In 2022, technology transfer structures also continued to grow worldwide and to play an important role in fostering innovation and technology transfer. WIPO’s support in this area led to the establishment of a **Baltic States TTO Network**. This was the result of a WIPO regional project on reinforcing the IP commercialization capacity of innovation stakeholders of Baltic States to support their competitiveness and economic growth. To ensure the sustainability of the results achieved in the project, including the establishment of a pool of IP commercialization professionals, a memorandum of understanding (MoU) was signed by WIPO with the Baltic States TTO Network on October 27, 2022, confirming WIPO’s determination to continue supporting the network through customized programs and projects, such as a mentoring program for network professionals to enhance the creation of spin-offs and startups.



Photo: WIPO

Signature of MoU between WIPO, Estonia, Latvia and Lithuania for the establishment of the Baltic States TTO Network, Vilnius, October 27, 2022

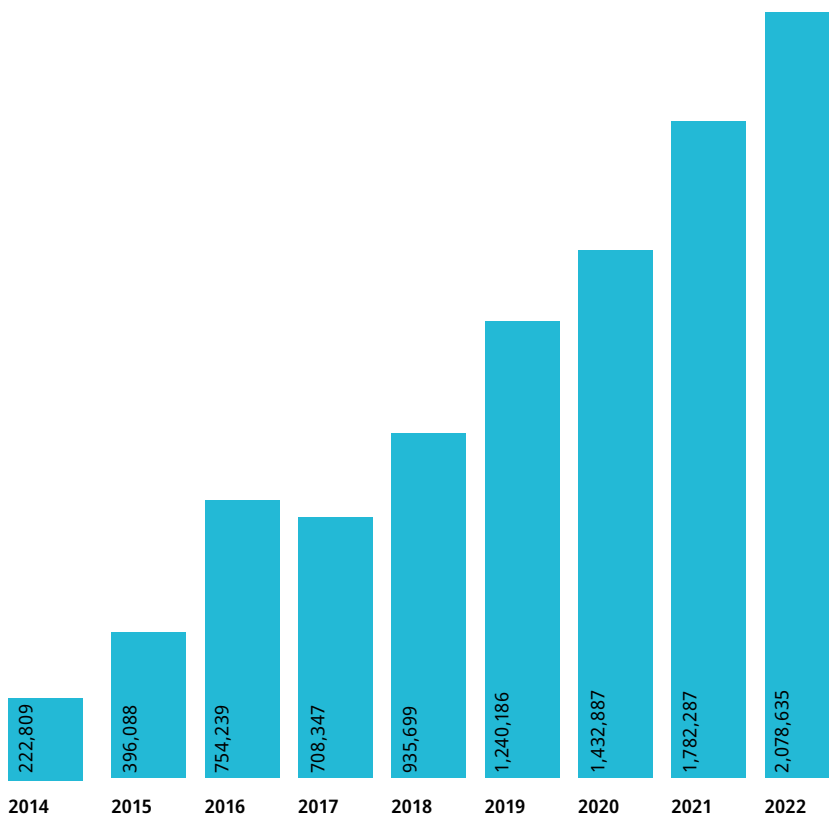
Projects on upgrading IP commercialization capacities were also implemented in other regions, such as the **WIPO-Eurasian Patent Organization (EAPO) project** on enhancing the IP commercialization capacities of techno-parks in EAPO member states. In addition, capacity-building was delivered for the League of Arab States (LAS) to support techno-parks in the Arab region.

## Continued increase in demand for TISC services

The worldwide growth of TISC networks and their increasing maturity and sustainability has been accompanied by a surge in demand for TISC services. This has come from local researchers, inventors and entrepreneurs, who are the main beneficiaries of TISC support.

Following the annual end-of-year survey completed by TISCs around the world, TISCs received over two million inquiries in 2022, an all-time record.

**Figure 4. Number of inquiries received by TISCs**



Source: Questionnaire on Progress and Needs Assessment, December 2022

**China:** TISCs provided more than 270,000 free-of-cost search and consulting services on IP and issued more than 12,000 informative reports to support researchers, inventors and entrepreneurs in their innovation activities. The network also offers access to more than 650 online IP information databases and platforms, which received over 147 million visits in 2022.

**Colombia:** TISCs continued to receive an increasing number of requests in 2022 compared to previous years. It responded to 13,456 requests for assistance on industrial property matters, most of which concerned trademarks (79 percent). TISCs also conducted 677 technology searches (of which 53 percent were state-of-the-art searches and 33 percent were novelty searches) and provided guidance on IP protection for 617 projects. Most beneficiaries (91 percent) were entrepreneurs.

**Costa Rica:** TISCs responded to over 16,600 requests for technical assistance, the majority of which were on trademarks (14,566 requests). While most of the requests were received over the phone or online, the network reported an increase in onsite visits in November and December 2022.

**Cuba:** TISCs provided 835 different services, ranging from assistance and advice on IP protection and management to patent and specific technology searches.

**Dominican Republic (the):** TISCs carried out 59 patent searches, including state-of-the-art and novelty searches, for different projects. Of these, 30 were carried out by the main TISC located in the National Office of Industrial Property (ONAPI), and 29 by other TISCs in the national network. The network also responded to 257 requests for assistance on patentability and patent drafting.

**Ecuador:** TISCs responded to 286 requests, carried out 134 patent searches, and supported 11 patent, two utility model and five industrial design filings in 2022.

**Egypt:** On average, the TISC network received 720 visits per month.

**Kyrgyzstan:** TISCs provided 580 services to local inventors, researchers, students, and small and medium-sized enterprises (SMEs).

**Mongolia:** TISCs provide IP training and patent search services for students, researchers and professors at universities and for the public. In 2022, TISCs delivered nearly 900 patent searches.

**Peru:** Since the launch of the network in 2018, TISCs have provided 27,372 innovation support services, of which 5,247 were in 2022. Seventy percent of TISCs provide basic patent information services and 57 percent also provide value-added IP services.

**Sri Lanka:** TISCs responded to over 400 requests from visitors and conducted 120 prior art searches.

**Uzbekistan:** TISCs provided nearly 4,800 consultations during 2022, largely in the form of advice on drafting and filing patent applications, support for searching and understanding patent documents, and other legal aspects. A significant number consisted of providing advice on and support to the conclusion of licensing agreements.

## Expanding the depth and range of innovation support services

With the demand for TISC services continuing to grow, TISCs have been expanding their range of services to help local inventors and entrepreneurs better exploit their innovation potential.

**China:** In addition to basic search and consulting services on IP, about 75 percent of TISCs provide information on IP to local policymakers and decision-makers to support regional economic development and industry development planning. In 2022, TISCs supported more than 8,400 projects where they facilitated the transfer of knowledge and technology and helped bridge the gap between academia and industry.

**Costa Rica:** TISC staff received training on WIPO's mediation and arbitration center dispute resolution options to be able to respond to requests in this area from local users and advise them on the available options and mechanisms.

**Egypt:** Twenty-three TISC host institutions received support in drafting their IP policies, which will help to provide a clearer framework for IP management, ownership and technology transfer issues in these institutions.

**India:** TISCs have been active in establishing and supporting the development of 36 new intellectual property rights (IPR) cells, extending the reach of the TISC network and its ability to identify inventions with the potential for patent protection and deliver IP services including

assistance in patent filing. With help from the Gujarat Council on Science and Technology, a TISC host institution in India, a high school student and her teacher were able to successfully file and were granted a patent for a herbal handwash.

**Kyrgyzstan:** In cooperation with Rospatent, Kyrgypatent, the focal point of the TISC network, succeeded in providing selected TISC host institutions with access to additional commercial databases from the FIPS, in addition to access to the Eurasian Patent Information System (EAPATIS) and other patent and IP rights search systems.

**Pakistan:** With the expansion of new TISC services in IP and technology commercialization, TISCs supported the commercialization of 23 products, technologies and designs in Pakistan in 2022.

**Philippines (the):** The IP Management and Technology Transfer Division of the Documentation, Information and Technology Transfer Bureau (DITTB) in IPOPHL, the unit responsible for the operation of the TISC network, developed a course module on IP valuation designed to upskill the ITSOs (TISCs) and prepare them to provide IP valuation as part of their IP commercialization service strategies. Training on IP valuation was also extended to other public research institutions outside of the TISC network to increase program awareness and reach. In 2022, 26 ITSOs also successfully supported the commercialization of IP assets. A total of 49 IP assets were commercialized, and the most common modality adopted for commercialization was licensing.

**Sri Lanka:** TISCs are increasingly aiming to build their capacities and services in the area of technology transfer and IP commercialization. The TISC network also aims to increase its IP outreach to young innovators.

**Ukraine:** A catalogue of 52 inventions and 105 utility models owned by institutions hosting TISCs was developed in order to promote their further commercialization.

## Training and awareness raising: supporting local innovators

In addition to expanding their innovation support services for local users, TISCs continued to dedicate significant resources to self-development and awareness-raising activities, indicating increased levels of sustainability and maturity.

**Bhutan:** Five IP awareness-raising activities were carried out by TISCs under the guidance of the Department of Media, Creative Industry and Intellectual Property, reaching over 500 students, researchers and entrepreneurs. TISCs have been established at the Royal University of Bhutan, in the College of Science and Technology and Jigme Namgyel Engineering College, and at the Thimphu Tech Park, where they deliver general information on IP laws and on IP filing, management and strategies, as well as assistance in searching patent and scientific and technical databases.

**Burkina Faso:** Three workshops were organized in 2022 on the protection of IP rights and on how to access and use patent, scientific and technical databases for research and development. The workshops reached 242 participants.

**Cameroon:** The Directorate of Technological Development and Industrial Property in the Ministry of Mines, Industry and Technological Development (MINMIDT), focal point of the TISC network, visited 10 TISCs in the network to support them in the development of their services and raise awareness of TISC services among local students, inventors and entrepreneurs.

**Chad:** The newly established TISC network (2021) met in February 2022 to discuss the development of the network. The meeting resulted in the establishment of a mechanism to encourage collaboration among universities and research centers in the implementation of the TISC project.

**China:** TISCs conducted over 2,400 awareness-raising and training events and reached more than 850,000 people, making an important contribution to reinforcing IP awareness and building an innovation culture in China.

**Colombia:** The TISC network organized 444 industrial property, technology and patent information awareness-raising activities, reaching over 12,000 participants. It also organized 161 events to promote TISC services, reaching over 5,500 people in the country. TISC staff also received additional training on trademarks and industrial designs to support requests in these IP areas.

**Comoros (the):** The University of Comoros organized a three-day workshop on the use of Research4Life resources for research, in which over 200 science students took part. It also participated in a seminar organized by Intellectual Property Rights and Innovation in Africa (AfrIPI) for the development of university–business innovation platforms in member states of the African Intellectual Property Organization (OAPI).

**Costa Rica:** Fifty-two online training events were organized by the national TISC focal point, the Registry of Intellectual Property. Of these, 14 focused on patents, 14 on copyright and 15 on trademarks. The other four TISCs in the national network organized an additional 44 training events. To support wider access to IP information and knowledge, in particular to inventors and entrepreneurs living in remote areas, the TISC network will be increasing digital content that can be disseminated at low or no cost. TISC staff also received 17 training sessions on various IP topics including IP management, IP licensing, arbitration and mediation, patents and trademarks.

**Côte d'Ivoire:** The Ivorian Office of Intellectual Property (OAPI), focal point of the TISC network, developed a three-dimensional operational structure to increase IP awareness in schools and higher education institutions, composed of a technology database access center, an IP awareness-raising and training center, and a technology transfer center. In 2022, training sessions were provided to 216 teachers and education professionals and 180 students and researchers.

**Cuba:** Eighteen TISC staff successfully completed advanced distance learning courses offered through the WIPO Academy on trademarks, patents, patent drafting, patent information searches, IP management, and medical technologies and innovation, despite connectivity challenges encountered by some TISCs in regions outside the capital.

**Dominican Republic (the):** The National Academy of Intellectual Property (ANPI) and the national TISC focal point in the ONAPI organized 205 seminars and workshops (81 on industrial property in general, 82 on trademarks, 36 on patents and six on industrial designs). The events reached 6,217 participants from the public and private sectors, with a high proportion of women (over 56 percent). On World IP Day 2022, which celebrated IP and youth, an event was organized to promote innovation management in universities, with representatives from 14 higher education institutions. To educate youth on IP, the ONAPI and ANPI also organized a number of workshops for school students and young entrepreneurs.

**Egypt:** To address staff turnover issues, a mentorship program was created so that experienced TISC staff could support new and less experienced TISC staff, with training and support from the Egyptian Patent Office.

**Ethiopia:** TISC host institutions received training on IP, patent drafting, technology transfer and IP commercialization, which resulted in a better understanding of IP in these institutions. The Ethiopian Intellectual Property Authority (EIPA), focal point of the TISC network, plans to encourage additional institutions to join the network to increase collaborations and IP awareness in academic and public research institutions in the country.

**Gabon:** TISC staff in the newly established TISC network (2021) started training on IP through the WIPO Academy's general distance learning courses, with the intention to move on to more advanced courses on patents and patent information searches in 2023.

**Guinea:** A hybrid workshop was organized to support the development of the knowledge and skills of TISC staff in May 2022, with a focus on how to search for patent information as well as non-patent literature available through the Research4Life program, and how to search for trademarks using WIPO's global databases.

**Honduras:** The TISC focal point in the Directorate General of Intellectual Property (DIGEPIH) organized two training sessions on patent searches and on trademarks and copyright for a total of 33 TISC staff from two host institutions, and carried out visits to many of the other TISCs in the network to identify their needs and establish action plans for the upcoming year. Workshops on patents were also organized as part of a hybrid event to celebrate World IP Day on April 26, with the participation of 127 people.

**India:** TISCs carried out over 300 IPR awareness-raising programs, including seminars, workshops and webinars on topics including patent searching and patent protection, with one webinar being attended by over 1,000 participants.

**Jordan:** The TISC network supported the organization of an industrial design competition for young innovators aged 10 to 17 in conjunction with World IP Day 2022, the theme of which was “IP and Youth: Innovating for a Better Future.”

**Kazakhstan:** On November 29, 2022, over 50 representatives from new and prospective TISC host institutions met at the first large-scale event in Kazakhstan since its establishment to discuss the development of the national TISC network.

**Madagascar:** The TISC network participated in the annual Science Hack Day event organized by the Scientific and Technical Documentation and Information Centre (CIDST), focal point of the TISC network. In 2022, the event brought together 20 inventors, scientists and researchers over 48 hours to collaborate on innovative projects that aimed to meet sustainable development goals, followed by a series of workshops offered by the CIDST to support participants further in the development of their projects. The workshops included training on project management, business models, marketing and IP rights management. TISC staff also continued to dedicate time to developing their knowledge and skills by participating in distance learning courses, webinars and “Ask the Expert” sessions offered by WIPO.

**Mongolia:** In 2022, TISCs organized 20 training events in cooperation with the IP Office of Mongolia. The TISCs at the National University of Mongolia (NUM) and at the University of Internal Affairs also actively promoted IP awareness and technology transfer through events and competitions, including the NUM Startup 2.0 event and the “Innovation 2022” competition.

**Nigeria:** The Patents and Designs Registry, focal point of the TISC network, established a yearly program within the context of the TISC project to raise IP awareness among youth. It also coordinated a workshop to support the further development of the network, which was attended by 50 participants.

**Pakistan:** IPO Pakistan, focal point of the national TISC network, organized 28 capacity-building sessions on various aspects of IP rights, including patent information, with different TISCs across the country.

**Peru:** To strengthen the capacities of TISCs to provide additional value-added innovation support services such as support to technology transfer, IP management and IP commercialization, the WIPO Academy’s advanced distance learning course on IP management (DL450) has been added to the list of compulsory courses as part of TISC staff training (which includes advanced courses on patents, patent information search and patent drafting).

**Philippines (the):** IPOPHL, focal point of the national TISC network, continued to conduct workshops on IP curriculum development, helping more universities to integrate IP into their academic curricula. As a result, a greater number of TISCs now offer IP as either a three-unit subject or a full course. As of 2022, there were 33 TISCs that had integrated IP in their curricula, a 57.14 percent increase from 21 ITSOs in 2021. Recognizing the importance of an IP policy in guiding the creation, protection and commercialization activities of universities, IPOPHL also provided training to members of the TISC network on IP policies, drawing on the WIPO IP Policy Toolkit.

**Russian Federation (the):** The Ninth TISCs Congress, entitled “Integration of TISC Resources for the Technological Development of the Regions,” took place in Saransk. The congress focused on how to strengthen the role of TISCs in building IP management systems within their institutions



and how to strengthen regional cooperation among TISCs, technology transfer centers, and scientific and educational centers in the Russian Federation. One-hundred and ninety-six participants attended the congress. Nine workshops were organized for TISCs in 2022, reaching a total of 2,094 participants. The eTISC platform is also an important tool for the TISC network in the Russian Federation and supports networking and communication. The platform is used by TISCs mainly for cooperation and information exchange, access to IP rights search systems of FIPS, Rospatent and the All-Russian Patent and Technical Library, coordination of activities, and reporting.

**South Africa:** TISCs continued to engage in IP training and awareness-raising activities across the country. One example is the Innovation Festival organized by the TISC at the University of South Africa (UNISA) in December 2022 to engage students, innovators and industry experts in a conversation about innovation, commercialization and entrepreneurship in general.

**Sri Lanka:** The TISC network organized 64 IP awareness-raising events and 27 activities on innovation and IP commercialization.

**Ukraine:** TISC staff participated in a series of trainings within the framework of the WIPO IP Training Institutions (IPTIs) project, which aims to equip local trainers with the teaching and technical skills needed to deliver IP training through the National IP Training Center, a focal point of the TISC network. TISC staff also participated in online trainings in the area of IP protection and enforcement and in an international conference organized in cooperation with the Polish Patent Office.

**Uzbekistan:** Fifty-five training events were organized in 2022, both onsite and online, to further develop the knowledge and skills of TISC staff. In November, the first national conference brought together TISC staff from 30 TISC host institutions to reflect on the results of the network since its establishment in 2017 and discuss its further developments.

## TISCs as catalysts for filing patent and other IP rights applications

Many TISC networks reported a steady growth in patent applications filed with the support of TISCs, thanks to the increased number and quality of services provided to local researchers and innovators.

**Algeria:** Thanks to the support researchers and inventors received from TISCs in 2022, including 45 awareness-raising days and 13 specialized training sessions for over 6,000 researchers and project leaders, the number of patent applications filed by residents doubled. An estimated 63 percent of the total applications were filed with the support from TISCs.

**Colombia:** Thanks to the support and guidance provided by TISCs to local innovators and entrepreneurs, 3,249 IP protection filings were reported in 2022, of which 207 were patent applications, 266 industrial design registrations and 2,776 trademark registrations.

**Cuba:** Innovation support services provided by the TISC network contributed to the registration of two industrial designs, five trademarks and five patent applications through the TISCs in Camagüey and Santiago de Cuba.

**India:** TISC host institutions filed 134 patent applications and 136 other IP applications and succeeded in licensing or commercializing 53 patents for technologies ranging from augmented reality to building materials to treatments for psoriasis.

**Kyrgyzstan:** TISCs supported the filing of 17 patents and utility models, and five applications for software, copyright protection and trademarks.

**Mali:** The establishment of the TISC network has led to significant improvements in the quality of scientific research, thanks to a better understanding of how to search and use information contained in patent databases and access to academic and professional peer-reviewed journals and books available through the Research4Life program.

**Pakistan:** Out of 376 patent applications filed by indigenous inventors in Pakistan, 167 were filed with support from TISCs.

**Philippines (the):** The year 2022 saw an overall increase in IP filings from TISCs as compared to 2021 for: patents (+8.1 percent); utility models (+1.6 percent); industrial designs (+89.6 percent); trademarks (+29 percent) and copyright (+181.7 percent). With an aggregate total number of IP filings of 1,854 generated by TISCs in 2022, a number which surpassed its all-time pre-pandemic record high in 2019 (of 1,624 IP filings), it appears that TISCs have rebounded remarkably post-pandemic.

**Sri Lanka:** A total of 40 patent applications were filed with support from TISCs, and 20 patents were granted.

**Uganda:** Forty-five percent of utility model applications and 18 percent of patent applications in 2022 were filed with the support of TISCs in the national network.

**Uzbekistan:** TISCs provided guidance on the filing of 407 patent applications.

## Regional initiatives scale up worldwide impact and reach

Regional cooperation has been important in strengthening national TISC networks and increasing their impact and reach. Initiatives facilitating the exchange of experiences and best practices to help TISC networks become more efficient and deliver targeted services have flourished globally.

**Regional networks have been established in Africa, Asia and the Pacific, and Latin America and the Caribbean**, which provided important inputs to a TISC staff certification scheme launched in 2022, ensuring that the certification scheme is adapted to the situation and needs of TISCs worldwide.

In the Central American region, member states of the Secretariat for the Economic Integration of Central America (SIECA) met in Guatemala in October 2022 to discuss IP-related issues in the region. They emphasized the importance of prioritizing the revival of TISC networks in SIECA member states that have a national network (all members except Belize) to support the further development of the regional TISC network in **CATI-CARD**.

Exchanges also took place among TISC networks in specific regions, with more advanced networks supporting the development of newer TISC networks, including through an exchange of experiences and training. In **Kazakhstan**, the national TISC focal point of **Kyrgyzstan** and the coordinator of the TISC hosted at Osh Technological University, Kyrgyzstan, shared their experiences and lessons learned with the newly established Kazakhstan network on the development and management of national TISC networks and TISCs.

In **Viet Nam**, the IP Business Services and Development Division within the DITTB in IPOPHL, focal point of the national TISC network of the **Philippines**, which has expertise in patent searches and patent analytics, conducted patent search training for members of the TISC network of Viet Nam, in line with the objective of the ASEAN regional TISC network to increase regional collaboration and efforts to support and mentor TISC staff.

# WIPO resources supporting TISCs and TTOs

As TISC and TTO networks expand and provide more services to local innovators, WIPO continues to support them with knowledge and learning resources as well as effective management resources.

WIPO has developed a range of initiatives and resources to empower TISCs and technology transfer structures. These include public-private partnerships to facilitate access to technological information and the WIPO INSPIRE open digital knowledge center, which provides researchers and innovators with access to a unique blend of information and knowledge in the area of IP and innovation, in particular on patent databases, patent registers, patent analytics, technology transfer and institutional IP policies.

For the first time, WIPO has created a dedicated [IP and technology transfer webpage](#), which offers a unique reference point for information and knowledge on technology transfer and institutional IP policies to support the technology life cycle, from inception to market diffusion and commercialization. It also provides access to the [WIPO database of institutional IP policies](#) with links to existing IP and related policies (such as policies on consulting, copyright, conflict of interest, software, open access and spin-offs) of universities and research institutions worldwide.

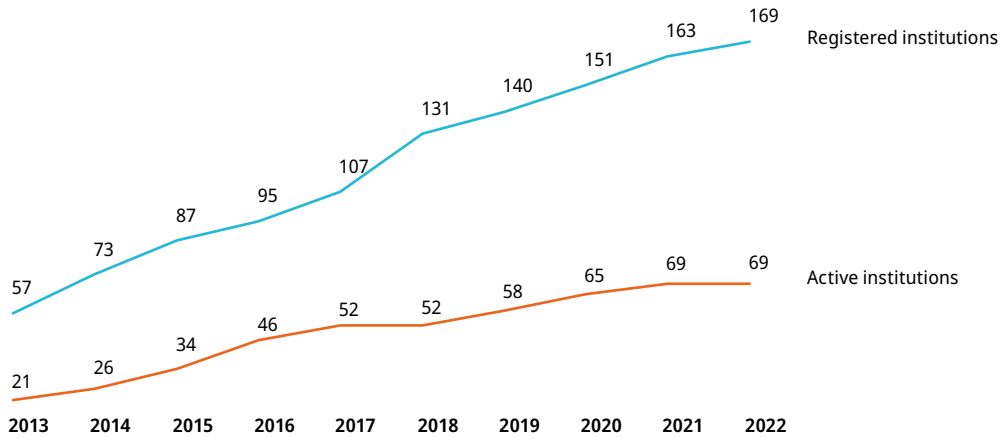
To support the growing global TISC network in managing national TISC networks more effectively, and especially to help TISC coordinators manage their national projects, coordinate and report on activities, the TPPM was developed and piloted from 2022. Once rolled out, the TPPM will also enable WIPO to follow up on TISC projects worldwide to assess and respond effectively to TISC network needs for assistance and capacity building.

In parallel, a TISC host institution assessment tool was developed to support TISC coordinators in identifying the main strengths and needs of the institutions in their network and to help ensure that TISC staff receive the training they need. The tool has started to be tested in a number of TISC networks and will continue to be rolled out in 2023.

## Digital platforms and tools for access information and knowledge

### Access to Specialized Patent Information (ASPI)

ASPI enables institutions in developing countries to obtain free or low-cost access to commercial patent database services that offer advanced tools and services for retrieving and analyzing patent data. It is made possible through a unique public-private partnership, with nine leading patent database providers.

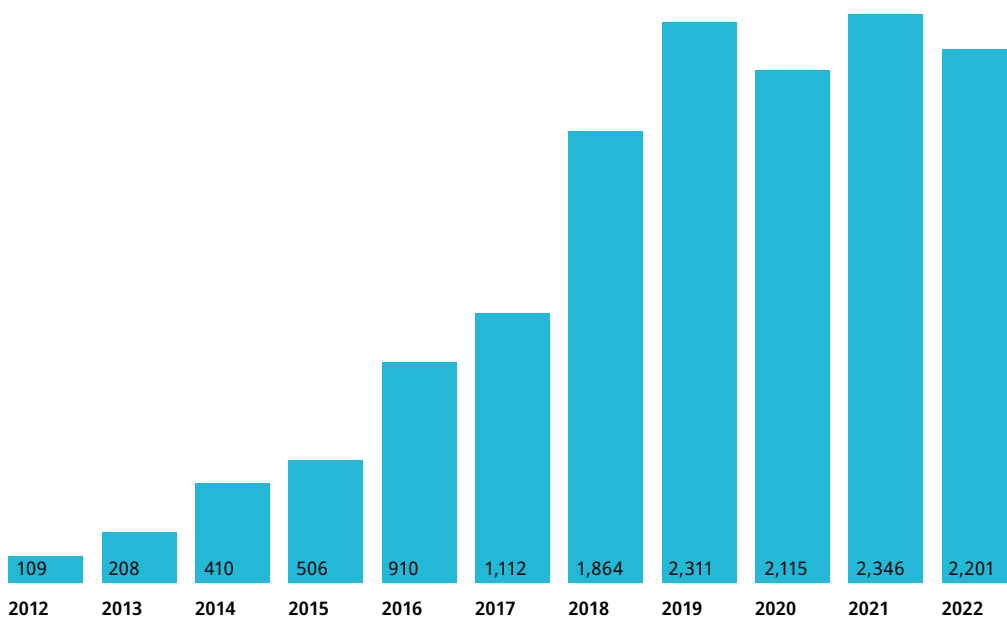
**Figure 5. Number of registered and active institutions in ASPI**

Source: ASPI database

### Access to Research for Development and Innovation (ARDI)

Through a partnership with the publishing industry, ARDI strives to bridge the knowledge gap by increasing the availability of scientific and technical information for eligible institutions in developing countries and providing them with free or low-cost access to academic and professional peer-reviewed content including journals, books and other information resources in diverse fields of science and technology. In 2022, ARDI provided free or low-cost access to over 60,000 resources.

The program is also part of [Research4Life](#), a partnership of several United Nations agencies, private-sector enterprises, non-governmental organizations and academic institutions. Research4Life provides researchers in 125 developing countries and LDCs with free or low-cost access to up to 203,000 journals, books and other information resources in the fields of health, food and agriculture, the environment, applied sciences, law and social sciences. More than 11,000 institutions were registered in 2022.

**Figure 6. Number of ARDI logins**

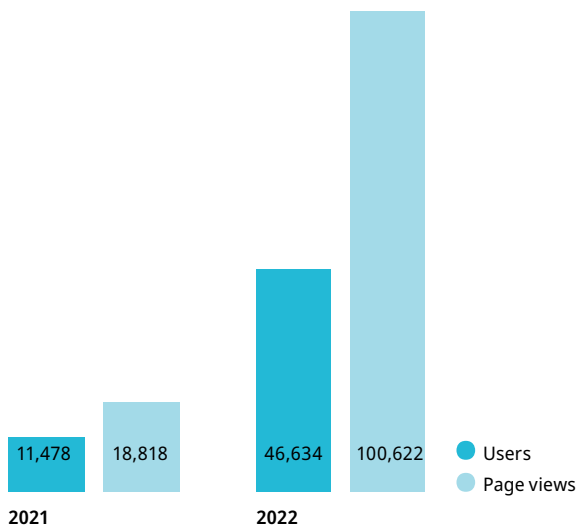
Source: Research4Life

WIPO INSPIRE is a global knowledge platform to assist innovators, entrepreneurs, patent professionals, TISCs and TTOs in their innovation support activities.

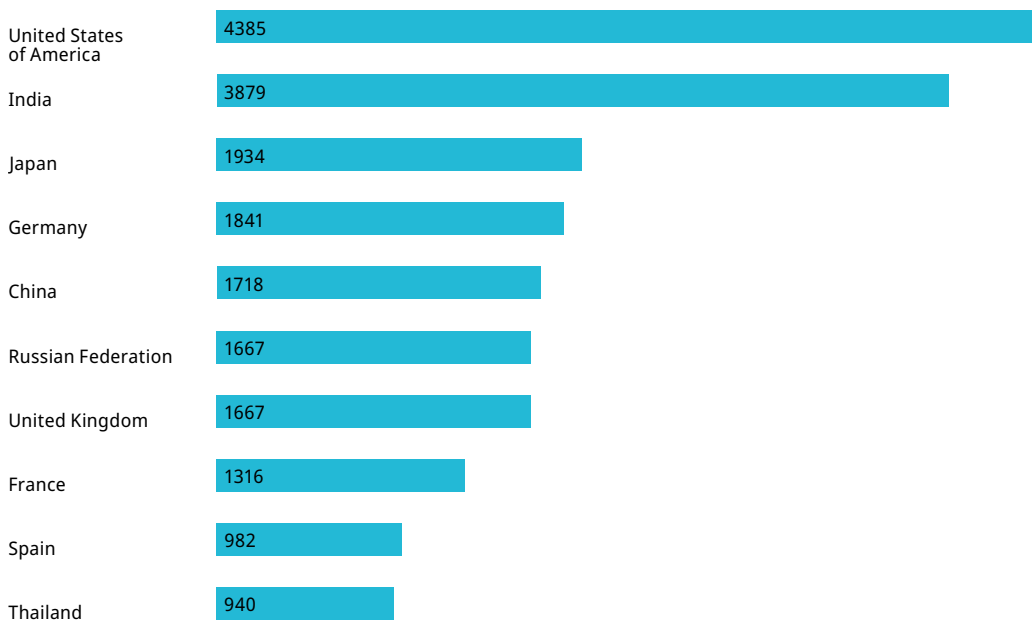
It is a one-stop platform that provides a unique blend of information and knowledge on patent databases, patent registers, patent analytics, technology transfer and institutional IP policies, combining reference data with expert insights into resources, tools and good practice recommendations. The platform is now responsive, enabling it to be read on a range of devices.

WIPO INSPIRE was accessed by over 46,000 users in 2022 in comparison to 11,478 users in 2021, representing a 300 percent increase in usage.

**Figure 7. WIPO INSPIRE usage**



**Figure 8. Top 10 countries with the highest number of visitors to WIPO INSPIRE in 2022**



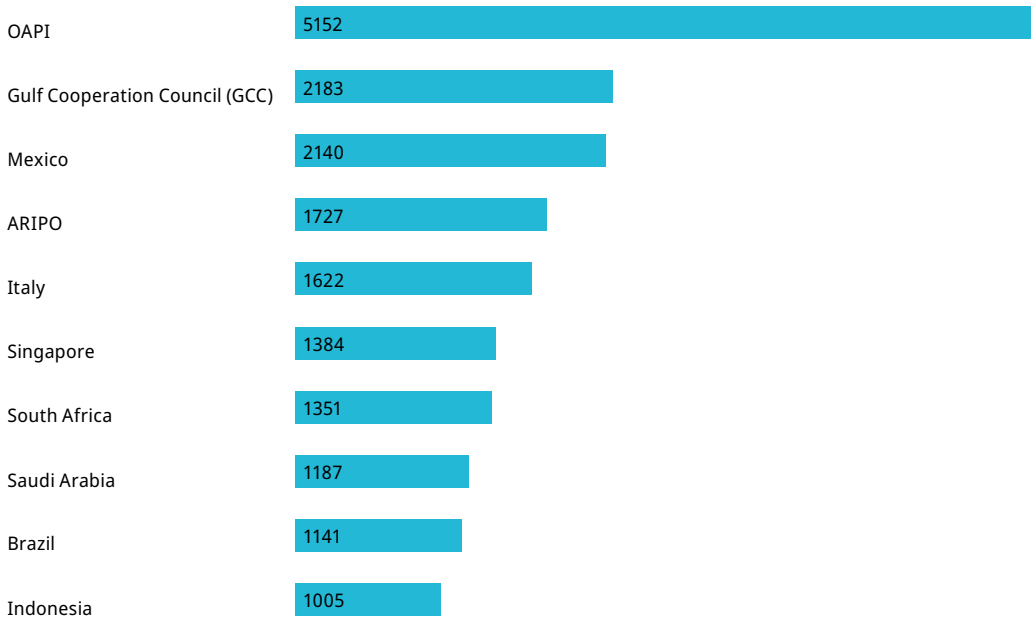
### Patent Database Reports Portal

The Patent Database Reports Portal in WIPO INSPIRE provides access to the reports on national and commercial patent databases and their features. Innovators, researchers and patent professionals can find clear, accurate and unbiased information about patent databases and assess which database is best for their needs. In 2022, there were 41 detailed reports on the content and features of a wide range of patent databases. These reports were accessed by 7,640 users.

### Patent Register Portal

The Patent Register Portal in WIPO INSPIRE is an interactive directory of online patent registers and gazettes to guide users to relevant sources of legal status information when researching the validity of a patent. As a gateway to legal status-related information from over 200 jurisdictions and patent information collections, the Patent Register Portal contains a searchable map and table as well as detailed jurisdiction files with useful legal-status-related information and search tips. In 2022, the portal was accessed by over 27,600 users, and the detailed jurisdiction files were downloaded more than 66,000 times.

**Figure 9. Top 10 jurisdiction file downloads from the Patent Register Portal**



### Patent analytics

WIPO INSPIRE also offers a reference point for access to patent analytics resources, in particular PLRs and WIPO Technology Trends (WITT) reports, which track the development of technologies through the analysis of data on innovation activities that help inform policy discussions, strategic research planning and technology transfer. Through the platform, users can access 18 PLRs prepared by WIPO and 265 PLRs prepared by other organizations, as well as the WITT reports on artificial intelligence (AI) and assistive technology, which were downloaded more than 146,000 times between 2019 and the end of December 2022.

### Technology transfer and institutional IP policies

Specific activities and resources on technology transfer and institutional IP policies are accessible through WIPO INSPIRE on a dedicated [IP and technology transfer webpage](#).

## eTISC knowledge-sharing platform

Through WIPO INSPIRE, users can access eTISC, a virtual knowledge-sharing platform that provides a dedicated space for the TISC community and IP professionals to interact and share knowledge and ideas.

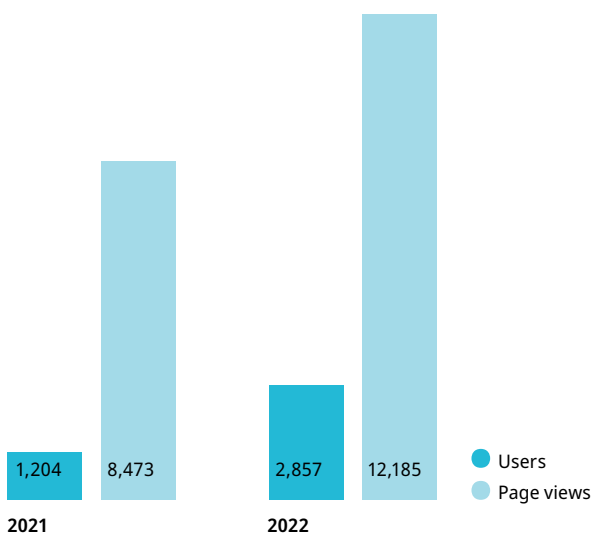
Main features of the platform include:

- “Ask the Expert” sessions for interacting with experts in fields such as patent information and technology transfer;
- group and forum discussions for sharing knowledge and experiences; and
- news and events to help users stay up to date with the latest IP information.

In 2022, a thematic series of “Ask the Expert” sessions was organized on IP management, IP licensing, IP valuation and technology transfer in the context of the increasing expansion of TISC services into these areas of work. eTISC users also received regular news relating to a wide range of IP matters relevant to TISCs, as well as innovators and IP professionals.

During 2022, eTISC was accessed by 2,857 users in comparison to 1,204 users in 2021 (i.e., a 137 percent increase).

**Figure 10. eTISC usage**



## Training to expand knowledge and skills

To increase the capacities, knowledge and skills within TISCs and technology transfer structures, WIPO provides training through onsite and online workshops, WIPO Academy distance learning courses, and specialized learning resources on patent searches, including state-of-the-art, novelty and freedom-to-operate searches, patent analytics and technology transfer.

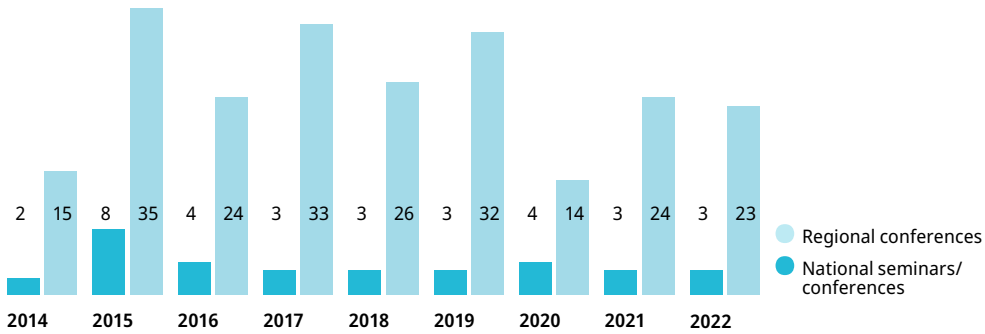
In the area of IP management and commercialization, training programs focus on the development of human capital regarding pillars of the innovation ecosystem, such as institutional IP policies, the establishment and management of technology transfer structures, and capacity-building in the area of IP marketing, IP licensing and IP valuation.

In 2022, training and capacity-building activities were delivered mostly digitally, and new modes of delivery continued to be explored with hybrid meetings and the gamification of training. A “serious game” on patent analytics that can be played either in person or in a digital board game environment is expected to be piloted in 2023. A course on introductory patent analytics was developed and is expected to be offered as a distance learning course through the WIPO Academy’s platform in 2023.

### National and regional training for TISCs

To support TISCs in developing the technical skills needed to provide high-quality innovation support services to local innovators, 23 workshops were organized for national TISC networks in 2022, and three regional meetings were organized for ARIPO and ASEAN member states and for TISC networks in the Arab region.

**Figure 11. Number of national and regional conferences organized for TISCs**



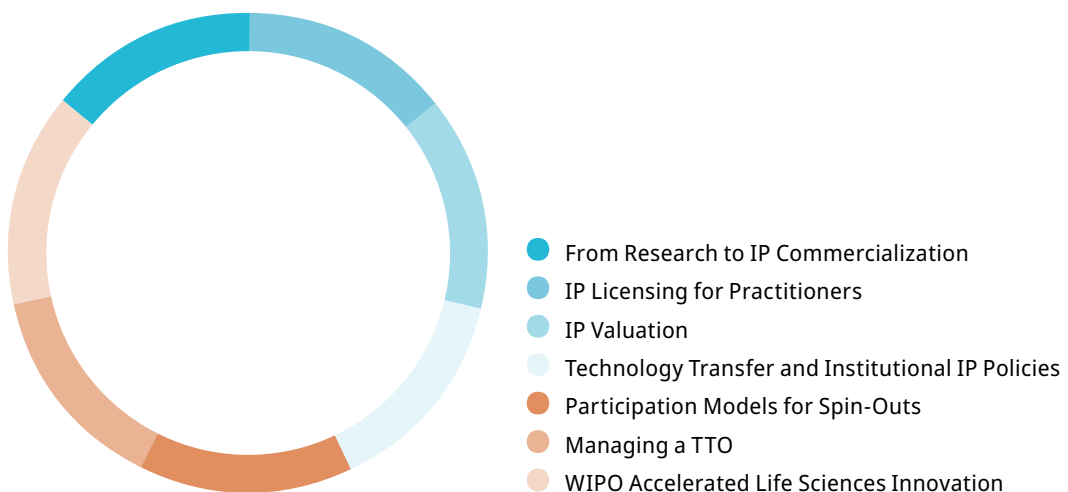
Source: WIPO IPID, 2022

To increase the standardization of TISC operations, raise the quality of services across TISCs and improve career development pathways for TISC staff, a WIPO TISC staff certification program, which aims to establish a curriculum-based professional certification for TISC staff, was launched in 2022. TISC networks worldwide were invited to submit formal expressions of interest to participate in the pilot session, which will start in 2023.

### Training on technology transfer and IP commercialization

In 2022, 16 training sessions were organized specifically for technology transfer structures with the objective of enhancing the knowledge of researchers, TTO staff and managers in different aspects of technology transfer and IP commercialization, reaching over 400 participants worldwide. Hands-on training sessions were organized on the practical application of IP valuation methods in different contexts (licensing, valuation of equities, litigation) and for specific sectors (Biotechnology & Pharma, Agroindustry) to reinforce the capacity of innovation stakeholders to recognize risks and opportunities in technology transfer negotiations and to be able to value their intangible assets.

**Figure 12. Training topics for technology transfer structures**





To help TTOs develop and negotiate technology transfer agreements, training was also offered based on the *Successful Technology Licensing Manual* in developing countries (Algeria) and the use of WIPO models of technology transfer agreements accompanied by guidelines for customization that focus on challenging issues for TTOs (e.g., how to set up guarantees and warranties or audit sublicensing revenues). Specific advisory services on technology transfer legislation, policies and strategies were also provided, such as for Ethiopia, Nigeria and Panama in 2022.

The project on enhancing IP commercialization capacity of techno-parks in the region of EAPO member states is a customized regional program responding to IPR management challenges and the need for professional IP collaboration among innovation stakeholders. The project was launched in 2022, where project partners (WIPO, EAPO, regional IP offices and beneficiary institutions) agreed on the project concept, the content of the modules and the roadmap of planned activities for the project's implementation over a period of two years starting in March 2023.

The National Project on Enhancement of IP Commercialization Capacity of TTOs and TISCs in Egypt started with the first capacity-building program from September 27 to 29, 2022, where the beneficiaries (academic institutions and companies from the public and private sectors) were provided with practical explanations on the fundamentals of technology transfer and the particularities of technology transfer procedures and practices in Egypt. The program also included a session on institutional IP policies that helped to create new institutional IP policies and examine and improve IP policies of the beneficiaries who already had one. A series of in-person IP training events as well as a meeting with the top management of the beneficiary institutions is envisaged in 2023 as a continuation of this project.

In the Arab region, a virtual Arab Regional Meeting on IP, Innovation Incubators and Techno-Parks was also organized in cooperation with the LAS on November 30 and December 1, 2022, with the participation of LAS representatives, incubators and techno-parks from the region. The meeting provided an opportunity to share best practices in the development and management of innovation incubators and techno-parks in the region and elsewhere (Belgrade Science and Technology Park, Serbia) to create business connections and network opportunities.

### **Training on institutional IP policies**

For more than 10 years, WIPO has provided specific support to universities and research institutions to help them create institutional policies for effective IP management and technology transfer. The IP Policies for Universities and Research Institutions initiative has three main components, as follows.

**The WIPO IP Policy Toolkit** was created as the starting point for universities to help them deal with issues such as ownership of IP and rights of use, IP disclosure, IP management, IP commercialization, incentives for researchers, recording and accounting, and conflicts of interest. The toolkit comprises an IP Policy Writer's Checklist, an IP Policy Template for Academic and Research Institutions, and Guidelines for the Customization of the IP Policy Template. In 2022, a draft Policy Template for Use of Copyrighted Works at Universities and Public Research Institutions was developed to complement the toolkit. The template is expected to be available in 2023.

**National customized versions of the WIPO IP Policy Toolkit** have been created in 11 countries, with additional versions in development. The national versions integrate local laws, regulations and practices, and facilitate the adoption of IP policies on the institutional level and their harmonization for coordinated academic and industry collaboration. They can be downloaded from the WIPO IP Policy Database. In 2022, WIPO supported the creation of national versions for Algeria, Jordan and Panama, as well as for El Salvador, where the project is ongoing.

**WIPO also provides project-based coaching and technical assistance to individual universities/institutions** to support them in the formulation of effective IP policies calibrated to the local context, needs and mission. Since its establishment, the IP Policies for Universities and Research Institutions initiative has assisted more than 600 institutions in formulating IP

policies. In 2022, support was provided to Belarus (11 institutions), Egypt (22 institutions), Jordan (11 institutions), Sri Lanka (four institutions) and Viet Nam (four institutions).



**Belarus:** In the framework of the national project on IP policies in Belarus, Darya Lando stressed the importance of WIPO's support in the development of institutional IP policies: "Policy formation is an important step, but its process can vary from country to country. It is good if the institutions concerned are supported by WIPO experts because this avoids a number of mistakes at the first stage. Thanks to the WIPO national project on IP policies in Belarus, new policies were also introduced in institutions that were not involved in the project" - Darya Lando, Associate Professor in the Civil Law Department, Law Faculty, Belarusian State University.

**Egypt:** "The new IP policy empowered the university to work effectively with industry to commercialize inventions, negotiate agreements and share profits with inventors. The university has also become involved in the start-up process and has become a hub for hosting and launching start-ups" - Noha Afifi, Manager, Center of Innovative Technology (CINTECH), Egypt-Japan University of Science and Technology (E-JUST).

WIPO's project in Egypt resulted in the adoption of IP policies in 22 universities and research institutions.

**Jordan:** "The IP policy has empowered the university in its relationship with industry, as it granted IP right holders the right to control who uses their inventions through licensing or selling inventions. The National Model for Institutional IP Policies helped in organizing policy statements, negating any conflict of interest, and increasing the incentive ratios and distribution of revenue" - Yazan Al-Zain, Director of Innovation and Entrepreneurship Center, University of Jordan.

WIPO's project in Jordan triggered the development and adoption of a Jordanian Model of Institutional IP Policies, which led to the establishment of IP policies in 11 universities.

**South Africa:** "The WIPO resources on IP policy development are great. I have drawn on them in developing policies myself and delivering training on the topic" - Rosemary Wolson, Director of the Technology Transfer Office, University of Johannesburg, South Africa.

#### **International Knowledge and Technology Transfer Leadership Summit**

In October 2022 WIPO hosted the International Knowledge and Technology Transfer Leadership Summit 2022, in cooperation with the Association of University Technology Managers (AUTM). Thirty-six technology transfer leaders from 29 countries and territories gathered to discuss global perspectives on knowledge and technology transfer, diversity and inclusion across the

innovation ecosystem, and models of government funding. WIPO and AUTM committed to continuing their partnership and engage in inclusive global technology transfer collaborations and social ventures worldwide.



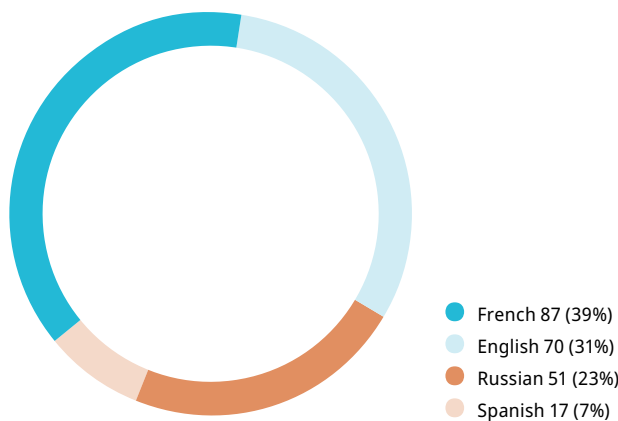
Photo: WIPO/Martin

**Distance learning**

The e-Tutorial on Using Patent Information, which was launched in 2020 as a distance learning course (DL177) through the WIPO Academy platform, is a self-paced course specifically developed for TISCs that comprises three learning modules: patent basics, patent search and retrieval, and patent analysis.

The e-tutorial is currently available in English, French, Russian and Spanish on the WIPO Academy's e-learning platform. The Arabic and Chinese versions are accessible through the WIPO TISC webpage and are expected to be made available on the WIPO Academy's learning platform in 2023.

**Figure 13. e-tutorial registrations from TISC staff, by language**

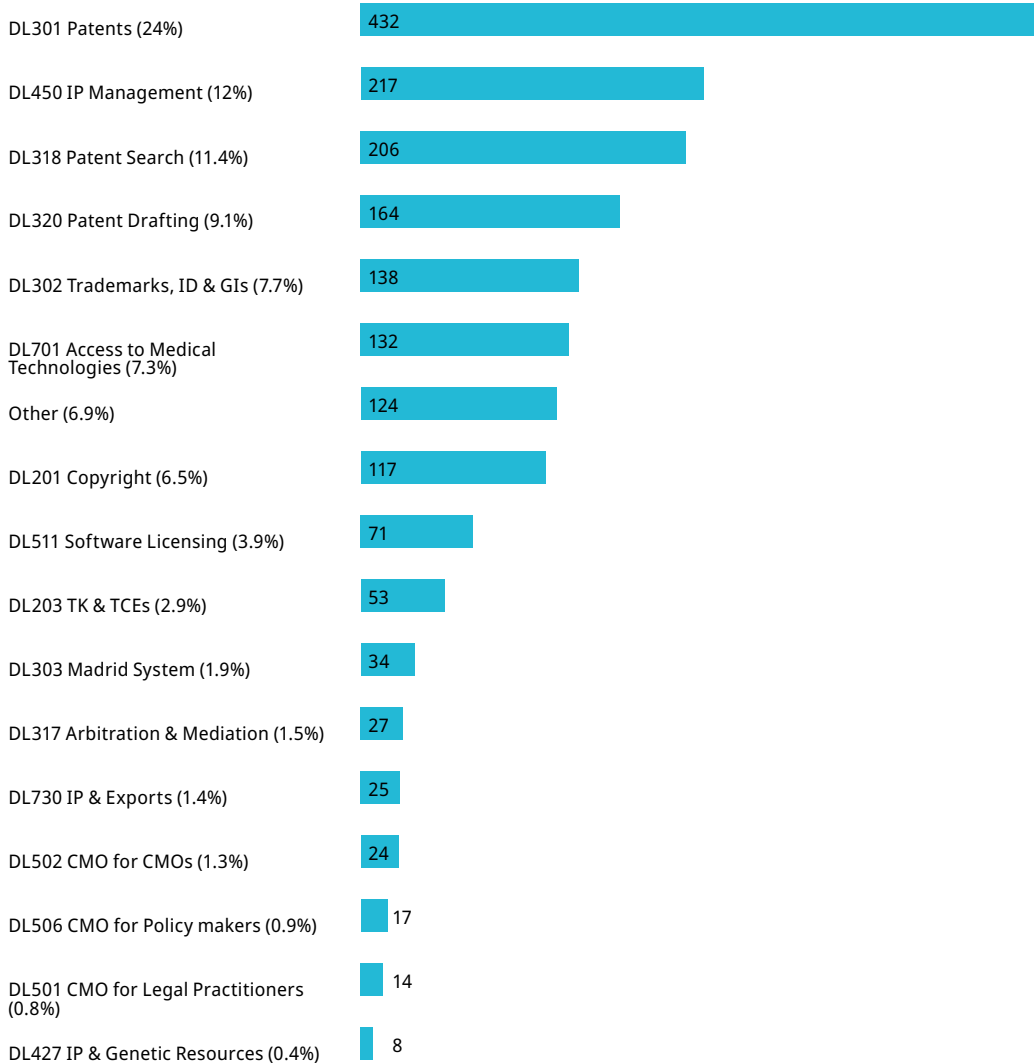


Source: WIPO Academy, 2022

In addition to the e-tutorial, 3,200 TISC staff also participated in other distance learning courses offered by the WIPO Academy in 2022.

The participation of TISC staff in advanced courses on IP management, trademarks and other IP rights, in addition to their participation in courses on patents, patent search and patent drafting, reflects the need for TISCs to increase their knowledge and skills in other innovation support areas to respond to the demand from local innovators and entrepreneurs.

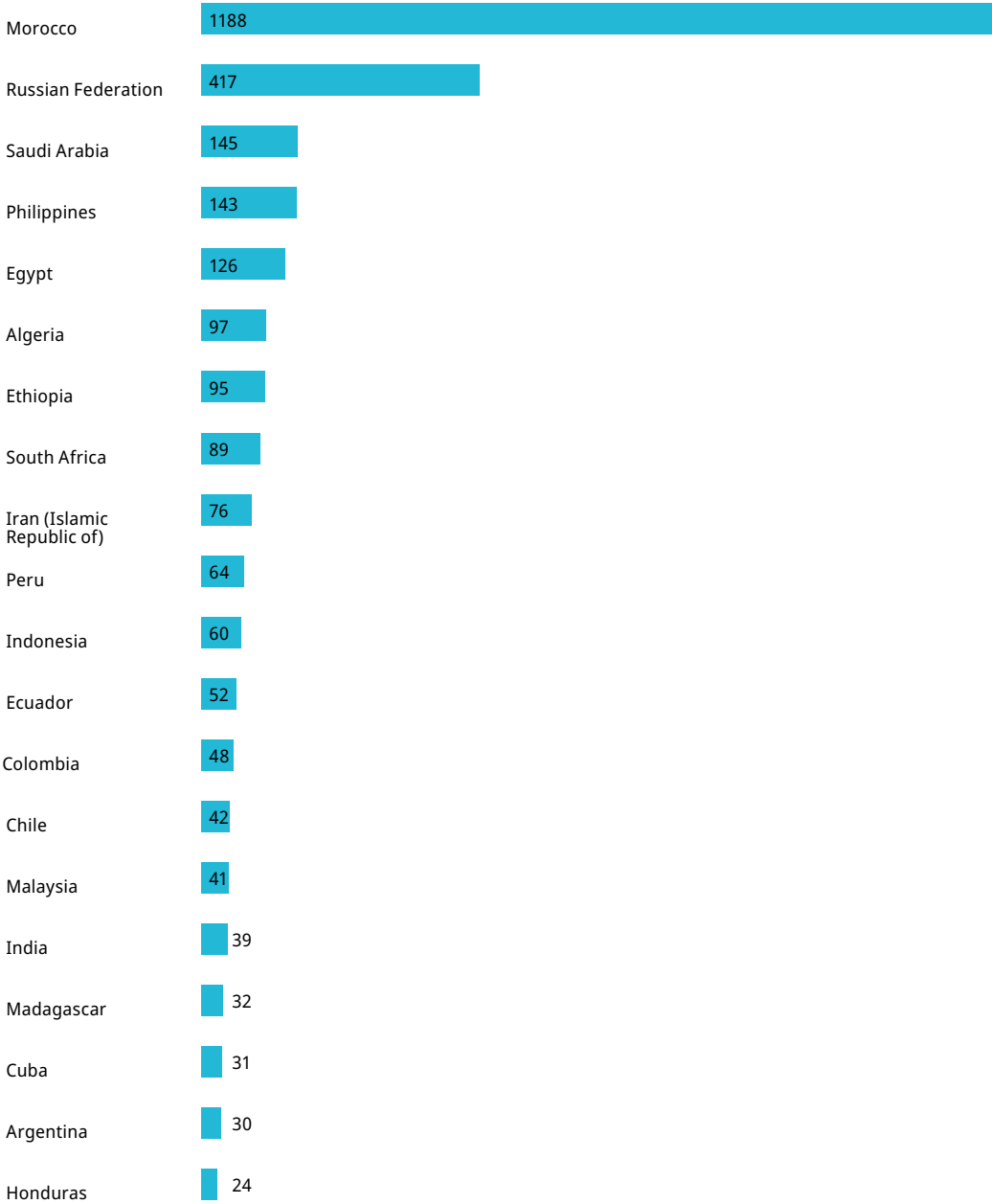
**Figure 14. TISC staff participation in advanced courses of the WIPO Academy, by course**



Source: WIPO Academy, 2022

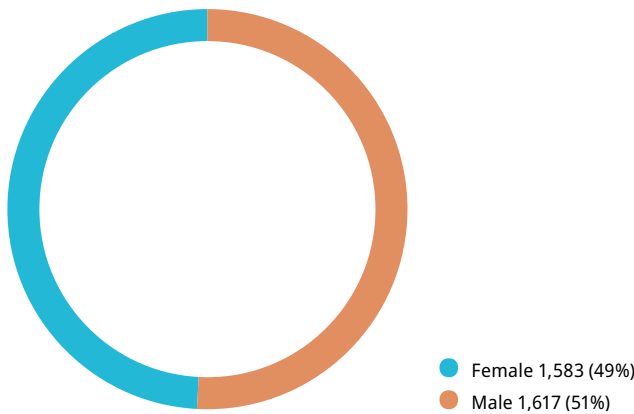
TISC staff in Morocco continued to represent a large proportion (37 percent) of the total number of participants from TISCs around the world.

**Figure 15. TISC staff participation in WIPO Academy training, by country**



Source: WIPO Academy, 2022

**Figure 16. TISC staff participation in WIPO Academy training, by gender**



Source: WIPO Academy, 2022

## Publications to support training and reinforce learning

Training is supported by publications developed for TISCs and technology transfer structures to reinforce learning. These publications are key reference sources on a range of subject areas such as patent documentation and databases, patent searches, patent analytics, technology transfer, IP management and commercialization. They are available in multiple languages.

In 2022, an updated version of the *WIPO Guide to Using Patent Information* was published, along with the new *Technology Transfer Training Needs Assessment Manual and Toolkit* to assess training needs in technology transfer and IP management. The manual and toolkit assist in mapping innovation value chains, including funders, developers, managers, users of IP and associated support institutions such as TISCs, as well as the relationships between them, to help users identify gaps in skills and competencies and design effective training programs for individuals and institutions at a national level. The resulting training needs assessment helps users design targeted training plans for the different stakeholders in the national innovation value chain.

Following the publication of the WIPO guides on identifying and using inventions in the public domain, a complementary toolkit was developed to provide additional practical tools for refining new product and service concepts, building on inventions in the public domain and bringing these concepts to the market. A multimedia digital training package on the toolkit was also developed and will be piloted in 2023.

### Publications in the area of technology transfer

To boost technology transfer and commercialization, an *Incentives Guide for Researchers and Technology Transfer Staff* is in development. The guide aims to help universities create innovative incentive programs for their academic researchers, to encourage them to participate in technology transfer and knowledge exchange activities. It will also support technology transfer staff to help the university's TTO expand, stay healthy and reduce turnover.

In preparing the guide, WIPO conducted a worldwide survey (755 participants from 88 countries) to investigate the internal and external motivations of both researchers and TTO staff, as well as to investigate the key factors and obstacles to their engagement in technology transfer activities. Below are some interesting outcomes.

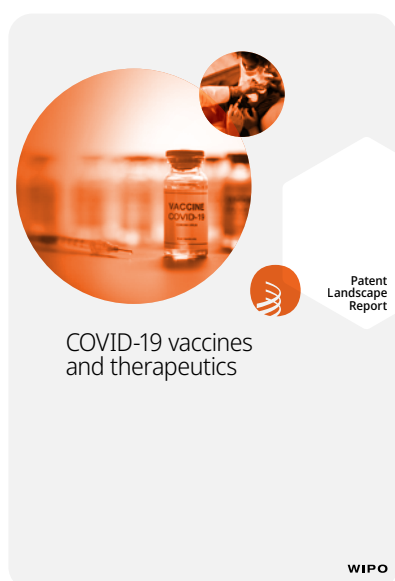
- The most frequent motivation to engage in technology transfer appears to be the desire to have a positive impact on society or to contribute to technological development, for both researchers and TTO staff. This holds true for all the continents, with the only exception being researchers in Asia, where the most frequent motivation is the desire to get recognition for their work.

- Whereas all the categories of respondents considered technology transfer equally as part of a researcher's duties, TTO professionals more than researchers think that technology transfer increases the quality of research.
- For TTO staff, stronger motivations lead to stronger satisfaction with working in a TTO. The most significant motivations associated with satisfaction are the fact that technology transfer is a challenging, exciting and intellectually valuable experience and that it allows insights into industry trends (among internal motivations), and that it makes it possible to get recognition for one's work (among external motivations).
- Female researchers also tend to be more motivated than male researchers by the desire to check the validity and practical application of their research, but also by the possibility to get recognition for their work or to be considered for promotions as a result of their technology transfer activities.
- Younger researchers appear to be more motivated than older ones by the desire to increase their network of professional relationships within industry, and by the possibility of receiving promotions or monetary rewards or starting a different career. Similar associations are observed for researchers with fixed-term rather than permanent contracts.

### Publications in patent analytics

The WIPO Technology Trends (WITT) reports are flagship publications that track technology trends through the analysis of patent and other data to provide empirical evidence on innovation in specific fields. The resulting knowledge helps business leaders, researchers and policymakers in their decision-making. The first report in the series was published in 2019 and focuses on trends in patenting of AI innovations. The second report, published in 2021, is the first large-scale overview and analysis of patenting and technology trends in the field of assistive technology, and provides information about the state of play in technologies that assist people living with physical or cognitive impairments. In 2022, preparatory work started on the third report, which will focus on the future of transportation. The WITT reports were downloaded more than 146,000 times between 2019 and the end of December 2022.

Patent Landscape Reports (PLRs) prepared by WIPO over the years have covered topics of particular relevance to developing countries such as public health, food security, climate change and the environment. In 2022, two new PLRs were published: one on COVID-19-related vaccines and therapeutics, providing preliminary insights into related patenting activity during the pandemic, and one on patenting activities and related developments in the field of hydrogen fuel cells in transportation. Both reports make very useful contributions to the areas of public health and clean energy by presenting research and innovation efforts in these two areas, focusing on the efforts to fight the pandemic and the efforts to transform the Transportation Sector and put it on a net zero pathway. In addition to these reports, WIPO also provides access to over 250 PLRs prepared by other organizations.



PLRs published by WIPO in 2022



Several learning resources and tools to help build capacity and develop the patent analytics skills of researchers and innovators in developing countries have also been developed over the years. Methodological guidelines for preparing PLRs have been formalized in the *WIPO Guidelines for Preparing Patent Landscape Reports*, the *WIPO Manual on Open Source Tools for Patent Analytics* and the *Handbook on Patent Analytics*, with the latter two being revised and updated in 2022.



# Special feature: strengthening local capacities to accelerate knowledge and technology transfer for sustainable economic recovery after pandemics

The COVID-19 pandemic has shown not only the vulnerability of the world to diseases but also the urgent need to cooperate on the global level and to reach multilateral solutions on equitable access to vaccines and medical treatments. IP and know-how have played an enabling and facilitating role as the foundation for trust-based collaborations among creators and innovation stakeholders: governments, business, academia and funding institutions. Prompt pandemic response was based on an interplay primarily between patents, know-how and trade secrets.

A special COVID-19 response package was also launched by WIPO in 2021 to accelerate knowledge transfer and technology adaptation and to assist member states in ensuring rapid and effective sustainable economic recovery after the COVID-19 pandemic through an effective use of the IP system.

In this area of technology and innovation support, this response package translated into the development of a number of technology transfer resources related to accelerated life sciences innovation as well as resources and training materials on patent and technology search and licensing in the areas of prophylactics, therapeutics, bio-analytics and bioinformatics for communicable diseases.

New resources that are being developed in this area will include specific training materials on technology search in scientific and technical content using search tools available through ARDI and Research4Life programs, training materials and reference documents on patent search for chemical compounds and biological sequences including evaluation of search results, and patent disclosure requirements, as well as specific training on IP management, IP valuation and technology transfer in the field of biotechnology.

These training materials will be supported by resources that are being developed specifically for the Biotechnology Sector, such as an *IP Valuation Booklet for the Biotechnology Sector* and a *Technology Transfer Primer*, which will be integrated into the WIPO Academy's distance learning course portfolio. The IP Policy Template for Academic and Research Institutions included in WIPO's IP Policy Toolkit is also being updated to include specific issues related to accelerated life sciences innovation and to help institutions enter into cooperation, R&D and licensing

agreements to fight pandemics more effectively. This package should help member states build capacity for successful transfer of the necessary IP rights and scaling up of inventions to the level of innovative technologies in response to pandemics.

Building on the PLR on COVID-19-related vaccines and therapeutics that was published in 2022, which provides early observations on the patenting activity that took place in the field of COVID-19 vaccines and therapeutics, and compares results with clinical trial data for related candidate vaccines and drugs, an updated and extended version of the report will be published in 2023.

A key factor for innovation ecosystems being able to respond to public health crises is also maximum availability and disclosure of genetic sequence data for the development of diagnostics, therapeutics and vaccines. WIPO is contributing to the development of a *Guide for Patent Searches and Submissions Related to Genetic Resources (GRs) and GR Data in the Life Sciences* and related training modules. The guide will address in particular the challenges for users with fewer resources and less patent information know-how to conduct prior art searches and submissions involving biological sequence listings in publicly accessible patent and non-patent literature databases. In this regard, the IPID will also compile and disseminate free and open-source data sources and analytical tools for chemical compounds and biological sequences through, in particular, the WIPO INSPIRE platform, and identify new patent databases and patent database providers specialized in technologies related to prophylactics, therapeutics, bio-analytics and bioinformatics as potential resources and partners for the ASPI program. These resources will be completed by the end of 2023.

Building on existing resources, specific tools are also being developed to create a basis for a better understanding of the specificities of technology transfer processes when the subject matter is GRs or GR data. In this regard, WIPO is also developing a *WIPO Toolkit on Intellectual Property and Genetic Rights Resources Management*. The toolkit will include an interactive GR licensing tool that aims to provide practical guidance for licensees and licensors who wish to license IP rights for genetic materials and/or genetic data, highlighting important IP questions to consider during this process. It will also contain practical case studies and use cases, model templates and sample provisions, as well as an interactive licensing checklist to support decision-making in this area, intended for anyone providing or receiving intangible assets related to GRs in the context of knowledge and technology transfer. An online GR licensing samples and templates library will complete the toolkit. In light of the particularities in the disclosure and protection of inventions related to chemical compounds and biological materials and organisms, protection of test data, and the nature of trade secrets and know-how underpinning innovation in these areas, a reference document on these specificities will also be prepared. These tools will be completed in 2023.

On April 25 and 26, 2022, the Center for International Intellectual Property Studies (CEIPI), based in Strasbourg, organized the SEED Ideathon on “Access to Anti-Covid Vaccines.” WIPO took an active part in the competition as a member of the jury as well as offering a special reward to the winning team – a mentoring program to reflect on the team’s proposal. The project consisted of a race of reflections around equitable access to vaccines. The Ideathon coincided with World IP Day, highlighting the role of creative young people and the importance of using the IP system to realize their innovative ideas. It will continue in 2023, focusing on making connections between creative industries and technology transfer and supporting female entrepreneurs.



Photo: CEIPI

# Looking ahead

WIPO's support for TISCs and TTOs will continue to evolve and respond to local needs. New resources being developed to reinforce and expand the capabilities of TISCs and technology transfer structures will help create and strengthen innovation ecosystems, encouraging innovators to use IP for business growth and bring their innovations to market.

Looking ahead, the following new resources are in development:

- Implementation of the TPPM to support TISC focal points in coordinating and managing their national networks more effectively.
- Publication of new PLRs in areas such as graphite and ilmenite minerals, and an update of the 2022 COVID-19 vaccines and therapeutics report.
- Piloting of "serious games" on patent analytics and launch of a new distance learning course introducing patent analytics.
- Piloting of a multimedia digital training package on the Toolkit on New Product Development and Inventions in the Public Domain.
- Launch of a WIPO capacity-building package for life sciences stakeholders to support academic and business institutions in upgrading their capacities to respond to life sciences challenges such as pandemics through effective use of the IP system, IP management and technology transfer. The package will include a primer on technology transfer in the field of biotechnology and guides on patent searches in the field of chemistry and biotechnology, disclosure requirements and the protection of inventions related to pharmaceuticals and biotechnology, principles of social responsibility in IP policies related to public health, socially responsible IP commercialization in academic institutions, and a licensing toolkit in the field of genetic resources.
- Publication of an *IP Valuation General Guide* and *IP Valuation Booklet* for the Biotechnology Sector to facilitate the understanding of academic institutions, governmental organizations and inventors on the application of IP valuation methods in general and in the Biotechnology Sector specifically.
- Updating of the *Successful Technology Licensing* manual, with additional information on different IP strategies and terms of collaborative development agreements, with a new focus on SMEs.
- Strengthening of the capabilities of technology transfer structures and intermediaries, including through the launch of a mentoring program for the Baltic States Pool of Experts.
- Launch of a new program connecting creative industries and technology transfer, mapping the technology ecosystem of creative industries and recognizing the potential of AV/VR, cloud, AI, blockchain and other advanced technologies in fields such as music, gaming, design, performing arts and museums.
- Publication of an *Incentives Guide* for researchers and TTO staff introducing examples of rewards and incentives policies from universities and public research institutions worldwide to boost researcher and TTO staff engagement in technology transfer and commercialization.

- Publication of a WIPO Policy Template for Use of Copyrighted Works at Universities and Public Research Institutions, with accompanying guidelines for customization, to help academic institutions set up a general framework on the use of copyrighted works.
- Development of an ASEAN Regional Institutional IP Policy Model for Universities and Public Research Institutions.
- Implementation of an ASEAN IP valuation project to identify IP valuation practices in the region, create a list of commonly acceptable IP valuation principles, and develop an IP valuation toolkit to build the capacities of IP valuation professionals in the region.

# TISC program milestones

2009

- Launch of TISC project
- Launch of ARDI

2010

- Launch of ASPI
- Conclusion of first SLAs to implement a TISC network

2011

- ARDI joins Research4Life partnership
- Publication of the first WIPO PLR

2012

- Launch of interactive e-tutorial on patent information and search
- Inauguration of eTISC knowledge management platform

2013

- First ASEAN regional TISC meeting
- First "Ask the Expert" session on eTISC

2014

- TISC and PLR projects become regular WIPO activities
- First use of open-source tools in a WIPO PLR

2015

- Publication of *Guidelines for Preparing Patent Landscape Reports*

2016

- Launch of Development Agenda Project on the Public Domain
- Launch of the Inventor Assistance Program (IAP)
- Launch of TISC training on patent analytics
- Online publication of *WIPO Manual on Open Source Tools for Patent Analytics*

2017

- First TISCs start providing patent analytical services
- Approval of new Development Agenda Project on Technology Transfer and IP Management

2018

- First workshops on guides for identifying and using information in the public domain
- Launch of the Patent Register Portal

2019

- Launch of *WIPO Technology Trends 2019: Artificial Intelligence*
- First training courses on technology transfer and IP management based on a new methodology for targeting training

2020

- 1,000 TISCs established worldwide
- Launch of WIPO INSPIRE
- Publication of guides on identifying and using inventions in the public domain
- Launch of redesigned eTISC platform
- Launch of e-tutorial as a certified WIPO Academy distance learning course
- Completion of Development Agenda Project on Intellectual Property Management and Technology Transfer

2021

- First online Global TISC Conference
- Integration of specialized technology transfer resources into the TISC program
- New WIPO INSPIRE platform integrating the Patent Register Portal and eTISC
- Comprehensive review and update of the Patent Register Portal
- Development of new tools to support the management of national TISC networks
- Launch of *WIPO Technology Trends 2021: Assistive Technology*
- Update of the *Manual on Open Source Tools for Patent Analytics*

2022

- Launch of the TPPM platform
- Development of a new package of resources on knowledge and technology transfer for sustainable economic recovery after pandemics
- Launch of PLRs on COVID-19 vaccines and therapeutics and on hydrogen fuel cells in transportation
- New IP and technology transfer webpage
- Establishment of a Baltic States TTO Network and signing of MoU with WIPO

# Useful links

WIPO Technology and Innovation Support Centers  
[www.wipo.int/tisc/](http://www.wipo.int/tisc/)

WIPO Directory of Technology and Innovation Support Centers  
[www.wipo.int/tisc/en/search](http://www.wipo.int/tisc/en/search)

WIPO INSPIRE  
[inspire.wipo.int](http://inspire.wipo.int)

Intellectual Property and Technology Transfer  
[www.wipo.int/technology-transfer](http://www.wipo.int/technology-transfer)

IP Policies for Universities and Research Institutions  
[www.wipo.int/technology-transfer/en/ip-policies.html](http://www.wipo.int/technology-transfer/en/ip-policies.html)

ASPI – Specialized Patent Information  
[www.wipo.int/aspi](http://www.wipo.int/aspi)

ARDI – Research for Innovation  
[www.wipo.int/ardi](http://www.wipo.int/ardi)

WIPO eTISC  
<https://etisc.wipo.int>

Patent Register Portal  
[www.wipo.int/patent\\_register\\_portal](http://www.wipo.int/patent_register_portal)

WIPO Technology Trends  
[www.wipo.int/tech\\_trends](http://www.wipo.int/tech_trends)

WIPO Patent Analytics  
<https://wipo-analytics.github.io>

Patent Landscape Reports  
[www.wipo.int/patentscope/en/programs/patent\\_landscapes](http://www.wipo.int/patentscope/en/programs/patent_landscapes)

Technology Transfer Training Needs Assessment Manual and Toolkit  
[www.wipo.int/publications/en/details.jsp?id=4586](http://www.wipo.int/publications/en/details.jsp?id=4586)

WIPO Academy Distance Learning Courses  
[www.wipo.int/academy/en/courses/distance\\_learning](http://www.wipo.int/academy/en/courses/distance_learning)

TISC Webinars  
[www.wipo.int/meetings/en/topic.jsp?group\\_id=327](http://www.wipo.int/meetings/en/topic.jsp?group_id=327)

Database of Intellectual Property Policies from Universities and Research Institutions  
[www.wipo.int/technology-transfer/en/database-ip-policies-universities-research-institutions.html](http://www.wipo.int/technology-transfer/en/database-ip-policies-universities-research-institutions.html)

Model Agreements  
[www.wipo.int/technology-transfer/en/agreements.html](http://www.wipo.int/technology-transfer/en/agreements.html)

Inventor Assistance Program  
[www.wipo.int/iap](http://www.wipo.int/iap)

Time- and Cost-Efficient Alternative Dispute Resolution of R&D and Technology Transfer Disputes for TISCs  
[www.wipo.int/amc/en/center/tisc](http://www.wipo.int/amc/en/center/tisc)



This annual report for Technology and Innovation Support Centers (TISCs) and Technology Transfer Offices (TTOs) highlights the main developments and milestones in 2022, with a focus on how TISCs in 90 countries and TTOs continued to expand their services to meet the needs of local innovators, and how WIPO supports them with new resources.



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