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## **Committee on Development and Intellectual Property (CDIP)**

**Twenty-Eighth Session**  
**Geneva, May 16 to 20, 2022**

### **REVISED DOCUMENT ON THE STOCKTAKING AND LIST OF SUGGESTED ACTIVITIES ON IP AND DEVELOPMENT IN THE DIGITAL ENVIRONMENT**

*prepared by the Secretariat*

1. The Committee on Development and Intellectual Property (CDIP) at its twenty-third session, held from May 20 to 24, 2019, while discussing the Proposal submitted by the Russian Federation on “IP and Development in the Digital Environment” (document CDIP/23/16), requested the Secretariat to:

*“a) conduct a stocktaking in the context of IPO digitalization to identify the respective infrastructure needs of developing countries and LDCs, i.e. raising awareness, improving IPOs/institutions’ capacities, and their use of digital technologies to automate and optimize IP registration and administration processes;*

*b) based upon the result of the stocktaking, provide for the CDIP’s consideration a list of suggested activities aimed at enabling implementation of the WIPO Development Agenda Recommendations from Clusters A and C, specifically aimed at bridging the digital divide (Recommendation 24), improving national IP institutional capacity through*

*further development of infrastructure (Recommendation 10), and facilitating IP-related aspects of ICT for growth and development (Recommendation 27).*

*10.3 The Committee will consider the result of the stocktaking and the list of suggested activities at its 25th session, with the view of identifying possible future CDIP needs focused projects. Those Member States interested in participating in such projects and activities may inform the WIPO CDIP Secretariat and/or present their possible proposals to the Committee. If there is a need for additional time or financial resources for conducting the activities contained in para. 10. 2 (a) and 10. 2 (b), the Secretariat should report to the Committee at its 24<sup>th</sup> session.”*

2. The document entitled “Stocktaking and List of Suggested Activities on IP and Development in the Digital Environment”, contained in document CDIP/25/9 was made available for consideration by the 25<sup>th</sup> session of the Committee. At the request of Member States, the discussion on this document has been deferred.

3. At its 27<sup>th</sup> session, while considering its future work, the Committee agreed<sup>1</sup> that should Member States wish, the Secretariat will revise the document CDIP/25/9.

4. Document CDIP/25/9 REV. contains the “Revised document on the Stocktaking and List of Suggested Activities on IP and Development in the Digital Environment”, as requested by Member States.

## I. AWARENESS RAISING, INFORMATION SHARING AND FOSTERING COLLABORATION IN THE CONTEXT OF IPO DIGITALIZATION

### A. TECHNICAL INFRASTRUCTURE

5. Information and Communication Technologies (ICT) represent a significant opportunity for IP Office (IPO) transformation. Digitalization and the development and adaptation of technologies are one of the keys to IPO processes becoming more accessible, faster and efficient. Such transformation is important to provide better access to the IP system to innovators and creators everywhere, to match the transformation of business models in the new digital age, the increasing speed and volume of innovation and creation and to provide a springboard for IPOs to close the technology gap.

6. The available ICT solutions for IPOs are a mixture of in-house and contracted-out developments and adaptations of off-the-shelf solutions. While some IPOs are developing significant in-house expertise, others rely on contractors. Both in-house and bought-in solutions offer different advantages and disadvantages. Assisting IPO Members States in developing frameworks for their decision making, using a best approach whilst weighing the options, is central to assisting the development of future-proof and cost-efficient solutions.

7. As IPO processes are generally similar despite national differences, IPOs are often working on similar ICT solutions, leading to potentially significant duplication. While some degree of duplication can be beneficial to developing best-in-class services, fostering the sharing of information to benefit from the learning of others and to optimize the solutions is also likely to be highly beneficial to all IPOs. There may also be cases where avoiding duplication and promoting collaboration would free up resources to increase the speed and diversity of process transformations. While some IPOs may already be developing more advanced ICT solutions, older versions may be available to share with others.

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<sup>1</sup> See paragraph 11 of the [Summary by the Chair](#) of the 27<sup>th</sup> session of the CDIP.

8. Underlying all such ICT developments and adaptations are datasets and IP application and registration information sets handled, processed and collected by IPOs. While valuable in their own right, the full potential to foster better IP systems and economic growth unfolds when these individual datasets are complete, standardized and readily shared amongst IPOs.

9. In parallel, a number of private sector ICT tools are being developed that may assist innovators and creators downstream in the lifecycle of their IP rights. There is an increased need for IPOs to be aware of the development of new technologies, their potential to provide novel solutions and, where appropriate, to be able to provide access to datasets to allow a smoother interface between IPO processes and such downstream tools for IP management. IPOs increasingly need to scan the horizon for new technologies and assess their possible uses, as well as the disruption they may cause to the IP system. They will also need to be cognizant of solutions and approaches developed by the private sector, to ensure that resources are spent in the right areas.

10. In order to shape practical, user-accessible solutions, IPOs also need to connect to how digitalization is changing innovation, creation and business models and the challenges faced by entrepreneurs and enterprises. At the same time, fostering and understanding amongst the widest possible set of stakeholders of the work IPOs are doing and the accessibility of IP to drive economic growth will be essential to create the necessary buy-in and use of the transforming IPOs processes and services.

11. Awareness raising, information exchange, fostering of collaboration can only be reached through open dialogue and connecting with a broad and diverse range of stakeholders, including IPOs.

12. The WIPO Conversation on IP and Frontier Technologies has proven to be a highly accepted, leading global format to provide an open, inclusive forum to engage with and facilitate discussion and knowledge building among the widest possible set of stakeholders on the impact on IP of frontier technologies.

13. The most recent, fifth session of the WIPO Conversation was held on April 5 and 6, 2022, entitled "Frontier Technologies and IP Administration – Learning from Each Other". It took a deep dive into the increasing use of ICT technologies in IPOs. The session attracted around 1,000 registrations from 117 countries and included information-sharing sessions from both IPOs and the private sector. One theme, emerging from the session, was the call from many, both at IPO level and the wider set of stakeholders, to foster further information exchange and dialogue on increased collaboration in this field, as the development and adoption of ICT technologies is highly relevant in the new digital age and will have real practical impact for WIPO's stakeholders, innovators and creators.

## II. STOCKTAKING OF VARIOUS TECHNICAL ASSISTANCE PROGRAMS AND TOOLS / SOFTWARE DEVELOPED AND PROVIDED BY THE WIPO SECRETARIAT

### *i. IPO Administration*

14. Most countries now benefit from modern communication technologies, such as the Internet and mobile phones. However, opportunities to use more advanced ICT systems and tools are still not available to the administration of IPOs in all developing countries and LDCs. The lack of high-quality digital IP data of national IP rights remains the first obstacle to overcome, since the availability of foreign IP data in digital form does not provide the full benefit and interest to the local stakeholders of innovation and creative industry.

15. IPOs share a common set of business processes and automation workflows of such processes by introducing digital document management, consisting of digital procedural steps for reception of IP filings in digital form, workflow and case management in a digital environment, such as search and examination, as well as publication and dissemination of digital IP data for public access. All these steps require support from ICT systems, which process digital IP data in accordance with a standardized data format and structure, for which Member States have made efforts to establish and update technical standards for digitization in the form of WIPO Standards. Assistance in this area has been made through the Committee on WIPO Standards.

*ii. IP Data Digitization and Creation of technically-standardized Data of IP Files*

16. WIPO Standards are a fundamental common framework for IP data, information and documentation in order to enable IPOs and other stakeholders around the globe to work in a more efficient, harmonious, and timely fashion. They ensure the interoperability of IP data and contribute to more efficient IP information dissemination and transaction. In other words, WIPO Standards help users of IP systems to obtain better access to and to make more effective use of IP data and information in the digital environment.

17. All WIPO Standards are developed through the discussions by experts from IPOs and IP industry based on the best practices available in the IP community. Around fourteen Task Forces under the Committee on WIPO Standards (CWS) are active, and participation in CWS and the Task Forces provide deeper knowledge about WIPO Standards, learning opportunities on how Standards are used by different IPOs, other stakeholders and users, and opportunities to reflect the situation or needs of the IPOs in the Standards. Financing the participation of several delegates from developing countries and LDCs in CWS meetings continued during the last two biennia to narrow the knowledge gap among countries in technical standards in the digital environment. Taking into account the current evaluation of emerging technologies, the CWS recently established the Blockchain Task Force, 3D Task Force and the Digital Transformation Task Force. All these Task Forces are open to all Member States. In collaboration with IPOs and other IP ecosystem actors, the International Bureau prepared and published “Blockchain technologies and IP ecosystems: A WIPO white paper”, available on the WIPO website at: [www.wipo.int/cws/en/blockchain-and-ip.html](http://www.wipo.int/cws/en/blockchain-and-ip.html).

18. WIPO Standards are published on the WIPO website as the WIPO Handbook, so that any interested party can use them freely to enhance their business practices and data operation, following the best practices guided by WIPO Standards. To narrow the gap of understanding of the role of WIPO Standards, the WIPO Secretariat enhanced its dedicated web pages ([www.wipo.int/cws/en/](http://www.wipo.int/cws/en/) and [www.wipo.int/standards/en/](http://www.wipo.int/standards/en/)) and provided updated resources, including training materials in 2021-2022.

19. Assistance with the implementation of WIPO Standards is conducted through free distribution and provision of WIPO tools and services that function in compliance with relevant WIPO Standards. There is, for instance, the WIPO IPAS Office Suite software (see below), which incorporates WIPO Standards in structuring and formatting IP data and WIPO Sequence Suite software, which has been developed in close collaboration with IPOs, for digitizing data of nucleotide and amino acid sequence listings in XML format, in accordance with WIPO Standard ST.26, for the purpose of filing and processing patent applications, which contain such listings. Version 2 of WIPO Sequence suite will be released in the second quarter of 2022 to respond to the Member States’ decision that WIPO Standard ST.26 should be implemented at national, regional and international levels by applicants and IPOs as of July 1, 2022. The trainings for WIPO ST.26 and WIPO Sequence Suite in various languages are provided. Recorded video clips are available on the WIPO website at: [www.wipo.int/cws/en/trainings.html](http://www.wipo.int/cws/en/trainings.html)

20. International Classifications are critical tools to categorize or retrieve IP data. For example, the International Patent Classification (IPC) is a very powerful tool for searching patent-related databases in the digital era, which has been updated by the experts from IPOs at the IPC Revision Working Group to respond to technological evolution. The IPC enables the user to locate the right technology in many types of patent-related searches, or find an informative technology overview or a complete and detailed list of patent documents relating to a specific technology represented by IPC symbols. The IPC homepage provides an access to supporting IPC resources, such as IPCCAT (IPC Computer-Assisted Categorization) or IPC training materials. Trainings about International Classifications have also been provided upon requests.

*iii. Digital Transformation of IPOs*

21. In the last 20 years, IPOs in most developing countries and least-developed countries, have made good progress towards digital transformation and digitization of their services and business processes. WIPO's program of technical assistance to IPOs has benefited more than 90 IPOs, and assisted them to move from paper-based to digital administration and operations. Of the IPOs assisted by WIPO, around 90 per cent have IP administration systems that support the main business processes of reception, examination, registration and publication. Approximately 50 per cent of them have fully digitized their data and documents to support paperless processing. The areas where more work is required include: i) the availability of published and searchable IP data online, where less than half of IPOs in developing and least-developed countries have implemented modernized services; and ii) the provision of online filing and related services, which are available in around 30 per cent of the IPOs that have been assisted by WIPO.

22. WIPO's program of technical assistance to IPOs in developing and least-developed countries also provides assistance with digitization of IP data. Digitization projects include scanning of historical documents, capture of data from paper records, and data quality improvement projects to correct errors in historical data.

23. The availability of good quality digitized data is one of the constraints that hinders IPOs in their efforts to provide online and digital processes. For many reasons, data has not been reliably recorded or updated and the paper records remain the authoritative source in many IPOs. This makes it difficult for Offices to provide reliable online services based on unreliable data.

24. Digitization and data quality improvement projects are typically resource-intensive and are outsourced to third party providers, typically IT companies based in the beneficiary country or in neighboring countries. Because of the financial resources required, the projects are usually funded using donor funds, in particular, the Japan Funds-in-Trust (FIT).

25. Since 2010, 29 digitization projects have been executed in IPOs in developing and least-developed countries from all regions.

*iv. Assistance in Creating Digital IP Data*

26. For IPOs in developing and least-developed countries, which may not have enough resources and expertise to generate their national IP data in digital form, it is necessary for the WIPO Secretariat to respond to their requests for technical assistance in digitizing their national IP data, by providing IPOs with WIPO Optical Character Recognition (OCR) software and training IPO officials to develop skills and acquire knowledge for their own digitization of IP data.

27. WIPO uses its internally-developed OCR software that was initially developed in 2006 for creating digital data from international applications, initially filed in paper format, or as a facsimile image, under the Patent Cooperation Treaty (PCT). This system was built by adapting the market leader OCR solution to the particularities of the patent documents and to WIPO Standards. It has allowed WIPO to make the PCT applications, descriptions and claims searchable in all publication languages with the exception of Arabic in PATENTSCOPE.

28. Building on this internally-developed technology and know-how, WIPO started to use it to assist IPOs in their IP data digitization. To this end, WIPO entered in a partnership with the European Patent Office (EPO) to help national IPOs produce high quality full text for their front-file patent publications and offered a customization of its internal OCR system, training and support services and OCR licenses to participating Offices. OCR results are digital and well-structured IP data, in accordance with WIPO Standards. From April 2017 to November 2019, six training sessions were organized, 34 IPOs received the software and were trained.

29. The successful partnership with EPO for European IP data digitization led to an exploratory project for developing countries in Latin America in the framework of the LATIPAT project. WIPO and EPO organized a training session in Latin America in November 2018, during which 12 IPOs in Latin America were trained and received WIPO OCR software.

30. At the end of 2019, the Offices that had received assistance accounted to more than 30. Discussions were held with the EPO to extend this successful partnership to the ASEAN region in 2020. The Israeli Patent Office also expressed interest in participating.

31. In 2012, the Executive Chiefs of the EPO, the Spanish Patent and Trademark Office and WIPO signed a Memorandum of Understanding (MoU) on the project to promote the exchange of patent information in the framework of LATIPAT amongst the IPOs of Latin American countries.

32. Since then, the three Organizations together with the IPOs in Latin America, have been working together to maintain and update a regional database, containing the information of patent applications published and patents granted in Latin American countries. This database is providing access to the region's patent technology information in digital form and is serving as a common reference platform for the publication of patent information in Latin America. Under this project, 16 Latin American IPOs have been actively participating and regularly sending their information, following WIPO Standards and internationally-recognized formats. Since the establishment of the PATENTSCOPE platform, this information is also being included in PATENTSCOPE.

33. One of the main objectives of WIPO's assistance to IPOs participating in the LATIPAT project over the last three years has been to increase searchable full-text data in digital form on patents published by these IPOs. In November 2018, a LATIPAT training seminar was organized by WIPO and the EPO in San José, Costa Rica, during which staff from 12 Latin American IPOs were trained and received the license to use a WIPO developed OCR system for the creation of full text for patent applications and published patents. The seminar aimed at training the staff of those IPOs in the production of high quality full-text searchable data for inclusion in PATENTSCOPE and ESPACENET. Officials from Argentina, Brazil, Costa Rica, Cuba, Dominican Republic, Ecuador, Guatemala, Honduras, Mexico, Peru and Uruguay participated in the training.

34. As a result, the IPOs of Argentina, Brazil, Chile, Colombia, Costa Rica, Cuba, Dominican Republic, El Salvador, Guatemala, Mexico, Nicaragua, Peru and Uruguay, periodically send data to WIPO and the EPO for inclusion in databases. The full text data, produced using the OCR software from the IPOs of Argentina, Costa Rica, Dominican Republic, Ecuador,

Honduras, Mexico and Uruguay, is in the process of being validated and the data from Cuba and Peru is in the process of being uploaded and put into production.

35. In 2019, there were 16 countries participating in the project and sending bibliographic data and pdf files on patent applications and patents published by the IPOs of these countries. In August, 2019, the LATIPAT database registered over 2,900,000 bibliographic data and over 2,270,000 image data of full patent documents in digital and pdf format.

#### *v. Software Platforms*

36. Since 1999, WIPO has provided a software platform, the IPO Administration System (IPAS), which enables IPOs to automate the administration of applications for patents, trademarks, designs and related IP rights. This system, which is customizable to the specific legal framework of each IPO, supports all of the major business processes in an IPO, including reception, formalities examination, trademark search, registration, notifications, publication, opposition, assignments, renewals and other related processes. Use of the system has grown consistently and it is now in use in 90 national and regional IPOs worldwide.

37. Since 2014, the WIPO Secretariat has expanded this platform to become a fully-functional IPO Suite supporting all business processes and services. Features have been added to support electronic document management, which enables paperless processing. A module has been added (WIPO Publish) to support online publication, search and dissemination of IP information. Another module has been developed (WIPO File) to support online filing, fee payment, status tracking and filing of subsequent transactions (renewals, assignments, etc). The complete WIPO IPO Suite<sup>2</sup> now supports IPOs in providing fully online business services and paperless administration of IP rights.

#### *vi. Online Services*

38. As noted above, the WIPO IPO Suite provides full support for online services, including filing, publication, search and dissemination of IP data. However, only around 30 per cent of IPOs that benefit from WIPO technical assistance are currently providing these services. In many cases, IPO web sites do not contain up-to-date information about IP application practices and procedures, publications are not available online, or are not easily searchable, and there are no online services for filing or management of IP rights by IP owners and their representatives.

39. The Covid-19 pandemic has quickly increased the demand for IPOs to increase their online service provision. Those Offices that provide online filing services have seen their usage increase, in some cases, from 20 per cent to nearly 100 per cent. Other Offices have speeded up the deployment of online services and seen their usage increase rapidly. However, many have still not been able to move to online service provision.

40. The provision of online services is challenging for small IPOs in developing and least-developed countries, even where WIPO's technical assistance is available to provide the necessary platforms. The IPOs need to provide reliable and secure IT infrastructure, work with banks or online payment providers to enable online fee payment and modernize their service

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<sup>2</sup> Further information on the WIPO IPO Suite, including an overview document and a white paper on IPO digital transformation, is available at the following address:

[www.wipo.int/global\\_ip/en/activities/ip\\_office\\_business\\_solutions/](http://www.wipo.int/global_ip/en/activities/ip_office_business_solutions/)

Overview of WIPO IPO Suite can be found at:

[www.wipo.int/export/sites/www/global\\_ip/en/activities/ip\\_office\\_business\\_solutions/pdf/business\\_solutions.pdf](http://www.wipo.int/export/sites/www/global_ip/en/activities/ip_office_business_solutions/pdf/business_solutions.pdf)

White paper on digital transformation for IPOs can be found at:

[www.wipo.int/export/sites/www/global\\_ip/en/activities/ip\\_office\\_business\\_solutions/pdf/digital\\_transformation.pdf](http://www.wipo.int/export/sites/www/global_ip/en/activities/ip_office_business_solutions/pdf/digital_transformation.pdf)



provision and support. These are not necessarily challenges that can be resolved by external technical assistance alone. In addition, reliable online services cannot be provided based on unreliable data, and so IPOs need to consider digitization and data quality improvement projects (see paragraphs 26 to 35) before they can move to more advanced online services.

41. This is an area where more efforts are needed and where IP owners and applicants are demanding better services.

#### *vii. Knowledge Transfer and Support*

42. As part of its technical assistance program to IPOs, the WIPO Secretariat provides ongoing knowledge transfer and support services. A dedicated team provides services, such as support *via* email and teleconferencing, documentation and remote technical assistance. A knowledge base is maintained, with hundreds of pages of documentation and solutions. Technical focal points in IPOs have access to all information. The demand for support services has increased and the support team is now handling around 800 tickets or requests per year.

43. The WIPO Secretariat also holds regular training workshops at the regional or sub-regional level. Since 2020, these have all been held in a virtual format, with a corresponding increase in attendance. Nine training workshops were held in 2020 and five in 2021.

#### *viii. PCT, Madrid and the Hague Systems*

44. The PCT has provided a number of services for Member State IPOs in order to facilitate the operation and administration of PCT international applications electronically. By the end of 2021, a total of 98 IPOs had access to ePCT Office services in their role as Receiving Office (RO), International Searching Authority (ISA) or Designated or Elected Office, including 81 of these Offices, which use the browser-based ePCT Office services as their main tool for processing international applications in their role as RO; 73 of which offer ePCT-filing to their customers in order to file new international applications online. The eSearchCopy service is now fully operational, providing all search copies that need to be sent by one Office as RO to a different Office as ISA.

45. The Madrid Registry has established several services for member state IPOs in order to enhance the digital capability of member IPOs in respect of the operation of the Madrid System, namely:

- a) Madrid eFiling, which is in use by 15 national Offices, is a holistic service that allows applicants to file and national IPOs to validate and certify an international application.
- b) Within the same service, applicants and IPOs can respond to irregularities from WIPO.
- c) Madrid Application Assistant, which is an electronic version of the official MM2 form, is used by applicants from 71 different certifying IPOs.
- d) XML data communication for five IPOs: Brazil, Canada, China, Japan, and Malaysia.

46. The Hague System has full electronic data exchange with Offices of 11 existing Contracting Parties (Canada, the European Union, Israel, Japan, Mexico, Moldova, Republic of Korea, Russia, Spain, United States and Vietnam). It has promoted the use of ST.96 XML for all data exchanges with existing and new Contracting Parties, with all except one having now successfully completed the transition. The use of standardized granular data enables increased automation and machine to machine exchanges (the new Hague Web Services, launched in early 2022), most especially with regard to Office decisions.



*ix. Frontier Technologies*

47. There are IPOs that are now experimenting, or have already delivered new services, based on advanced technologies. In the context of IPOs, the most relevant technologies are cloud computing, big data analytics and Artificial Intelligence (AI).

48. Cloud computing offers the opportunity to overcome the IT infrastructure constraints that many smaller IPOs have traditionally faced. Offices can procure cloud infrastructure that is more reliable, more secure, and more cost-effective than traditional data centers, which frees up resources to focus on added-value services. On the other hand, cloud computing introduces new challenges for management. Contractual arrangements with service providers need to be carefully drafted, so that data governance and security issues are addressed. IT staff must learn new skills and develop new processes for managing costs and other aspects of the new business model.

49. IPOs generate a lot of data and the global IP databases contain many millions of records of valuable data. Data analytics can be used to improve IPO management, to better understand the needs of users and to identify or analyze trends in the IP systems.

50. In recent years, the field of AI has exploded with the availability of relatively cheap computer processing power, new algorithms, such as neural networks, and the ability to process large volumes of data. This revolution is affecting many domains. In the field of IP, there are promising applications of AI, including image similarity search, automated classification, translation services and advanced search services. Some IPOs are already developing capability in some or all of these areas.

In general, advanced technologies have the potential to transform IP administration. However, the capabilities and the investment needed are not easily within the reach of smaller IPOs, especially in developing and least-developed countries. In order to level the playing field and make these technologies more widely accessible to smaller IPOs, several principles could be considered:

- a) Re-use rather than re-invent. Many of the necessary services are already available, and IPOs should not waste resources competing with existing service providers to develop tools based on advanced technologies.
- b) Collaboration on the use of advanced technologies to avoid duplication of efforts.
- c) Tools may be shared and made available on non-commercial terms within the community of IPOs.
- d) Tools and data should be made available with open interfaces (APIs), so that they can be more easily integrated with existing systems

51. Taking that into account, WIPO offers information on initiatives in IPOs regarding Frontier Technologies and IP administration<sup>3</sup> on its website, so that various initiatives implemented by IPOs can be searched. AI and IP Clearing House provides information on strategies for the development of AI capacity and AI regulatory measure.<sup>4</sup> Actual examples were also showcased in the fifth WIPO Conversation on IP and Frontier Technologies.

52. Among various players, WIPO is also committed to helping narrow the global digital divide, which is widening due to accelerated use of emerging technologies such as AI. Through investment in innovative AI to improve IP administration, WIPO has developed a series of AI tools that meet the highest standards. WIPO will continue to provide such tools to Member

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<sup>3</sup> Further information on AI in IP Administration can be found at: [www.wipo.int/about-ip/en/artificial\\_intelligence/ip\\_administration.html](http://www.wipo.int/about-ip/en/artificial_intelligence/ip_administration.html)

<sup>4</sup> AI and IP Clearing House is available at: [www.wipo.int/about-ip/en/frontier\\_technologies/ai\\_and\\_ip.html](http://www.wipo.int/about-ip/en/frontier_technologies/ai_and_ip.html)

States, including to developing and least-developed countries, free of charge, as those tools are used to enhance IPO administration and improve access to IP information in the digital environment.

53. The Global Databases Division's Advanced Technology Application Centre (ATAC) and its Global Brands and Designs database team provide internally-developed world-class AI Tools, which are currently used by WIPO, other IPOs and other international organizations within the UN network. These include:

- a) WIPO Translate (Neural Machine Translation);
- b) WIPO Brand Image Search (image similarity, based-on shape, color, composition, and concept);
- c) WIPO Speech-to-Text (natural language transcription from audio and video).

54. Most of the WIPO AI tools are available to the public online or through APIs. WIPO is actively providing these tools to the wider international community through licensing and partnership agreements. These agreements are established on generous terms and conditions in order to share innovation widely, whilst recovering some of the organization's initial investment and operational costs. WIPO will continue to be committed to the enhancement of access to new digital technologies and tools empowered by them, such as AI tools by developing and least-developed countries.

## B. LEGAL INFRASTRUCTURE

55. There is a close link between the legal procedural requirements for processing industrial property applications on the one hand and the technical design of digitized filing and application processing systems in IPOs on the other.

### x. *Patent Law*

56. WIPO administers the Patent Law Treaty (PLT), which addresses formality requirements relating to patent procedures before IPOs. Certain obligations under this treaty may have an impact on the digitalization of the IPOs. Consequently, should countries have an intention to join this treaty, they may consider legal and technical issues in a holistic and synergistic manner. As the PLT allows its Contracting Parties to exclude, with certain exceptions, the filing of communications on paper, paragraph 4 of the Agreed Statements adopted in 2000 by the PLT Diplomatic Conference, expressed a request that WIPO and the Contracting Parties should provide developing countries, least-developed countries and countries in transition with technical assistance to meet their obligations under the PLT and to facilitate its implementation. Based on the said Agreed Statements, the Secretariat submits to each ordinary session of the WIPO General Assembly information on the relevant technical assistance and cooperation activities carried out by WIPO, to facilitate filing of communications in electronic form. Furthermore, the Secretariat provides targeted legal and practical information to interested Member States, as well as legislative and policy advice, taking duly into account the priorities and special needs of beneficiary countries, the desired balance in rights and obligations in the IP system, and the differing levels of Member States' development. The Patent and Technology Law Division provided legislative advice to 25 countries and regional bodies in the patent field during the 2018-19 biennium, with the following distribution by region: Africa (four), Arab (four), Asia and the Pacific (six), Latin America and the Caribbean (eight), and Transition and Developed Countries (three). In the 2020-21 biennium, patent-related legislative and policy advice was provided to 35 developing and least-developed countries, with the following distribution by region: Africa (five), Arab region (six), Asia and the Pacific (eight), Latin America and the Caribbean (15), other (one). Advice in relation to regulations implementing national and

regional patent law duly takes into account the relevant patent Offices' practices, as well as the IT tools and platforms available to them.

*xi. Trademark Law and Industrial Design Law*

57. WIPO administers the Singapore Treaty on the Law of Trademarks (STLT), which deals with formality requirements relating to trademark applications and other requests filed with national and regional registration authorities during the life span of a trademark registration. Features, such as electronic filing, multiple-class applications and registrations, division of applications and registrations, or the possibility of filing a single request for changes and corrections in several trademarks of the same owner, may require customized digital solutions. Technical assistance is available to address these specific needs. During the biennium, the Secretariat also provided targeted legal and practical support to interested Member States. Legislative and policy advice in the area of trademark and design law, bearing in mind the priorities and needs of beneficiary countries in up to 22 instances, with the following distribution by region: Africa (five), Arab countries (six), Asia and Pacific (seven), Latin America and Caribbean (three), and Transition and Developed Countries (one).

58. In 2016, the Secretariat of the Standing Committee on the Law of Trademarks, Industrial Designs and Geographical Indications (SCT) prepared and addressed to all Member States of WIPO the *Questionnaire on Graphical User Interface (GUI), Icon and Typeface/Type Font Designs*, including questions on the protection of new technological designs, used in apps and other emerging technologies. The information compiled through the questionnaire<sup>5</sup> provides a good overview of the ways, in which GUIs and icons are protected around the world.

*xii. Copyright and Related Rights Law*

59. WIPO organized a Survey on Voluntary Copyright Registration Systems and published its Report in 2021.<sup>6</sup> Taking into account the principle of formality-free protection established in the Berne Convention, WIPO offers and will continue to offer technical assistance in this field, *inter alia*, by sharing sources of information on existing voluntary copyright registration systems and practices, and by organizing capacity-building activities for developing countries and countries with economies in transition.

60. WIPO also provided advice and participated as an Observer in the Diplomatic Conference, leading to the adoption on August 28, 2021, of the Kampala Protocol on Voluntary Registration of Copyright and Related Rights,<sup>7</sup> within the Framework of the African Regional Intellectual Property Organization (ARIPO).

*xiii. Provision of legal information (WIPO Lex)*

61. In addition to providing legal advice, WIPO provides free access to legal information through the WIPO Lex database, allowing legislators and policy makers in developing and least-developed countries to closely follow and study IP laws from around the world, including for recent developments in IP protection in the digital environment.

62. In 2020, WIPO expanded WIPO Lex to include IP judgments as a new collection. The purpose of WIPO Lex – Judgments is to contribute to the availability of information and data on

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<sup>5</sup> More than 65 Member States, Intergovernmental organizations (IGOs) and Non-Governmental organizations (NGOs) replied to it.

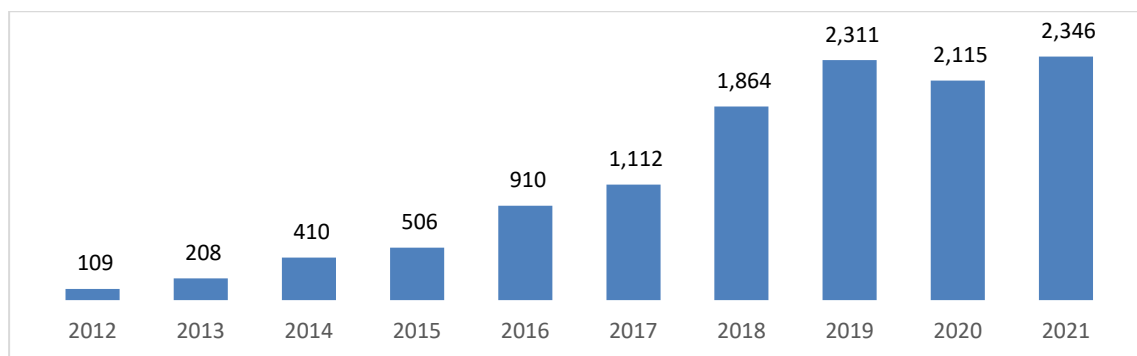
<sup>6</sup> The Survey can be found at: [www.wipo.int/edocs/mdocs/mdocs/en/wipo\\_crr\\_ge\\_2\\_21/wipo\\_crr\\_ge\\_2\\_21\\_report.pdf](http://www.wipo.int/edocs/mdocs/mdocs/en/wipo_crr_ge_2_21/wipo_crr_ge_2_21_report.pdf)

<sup>7</sup> The Kampala Protocol on Voluntary Registration of Copyright and Related Rights is accessible at: [www.aripo.org/wp-content/uploads/2021/09/Kampala-Protocol-on-Voluntary-Registration-of-Copyright-and-Related-Rights-2.pdf](http://www.aripo.org/wp-content/uploads/2021/09/Kampala-Protocol-on-Voluntary-Registration-of-Copyright-and-Related-Rights-2.pdf)

judicial systems and decisions on IP, by disseminating leading IP judgments that establish precedent or persuasive interpretations. WIPO Lex – Judgments currently covers 24 jurisdictions and contains more than 900 judgments, with some 600 of those judgments being from 19 developing countries or LDCs.

*xiv. Access to digital data of science and technology and IP available in commercial databases*

63. WIPO created several partnership projects in the area of access to information and knowledge, in line with the recommendations of the WIPO Development Agenda. WIPO’s Access to Research for Development and Innovation (ARDI) program is a public-private partnership with some of the world’s leading scientific and technical publishers, providing free or low-cost access to up to 9,000 subscription-based scientific and technical journals and up to 52,000 books and reference works in 125 developing countries and LDCs. The number of institutions subscribed to ARDI increased to over 2,300 last year (see figure below). It is also a member of the Research4Life partnership together with programs administered by the World Health Organization (WHO), the Food and Agriculture Organization (FAO), the United Nations Environment Programme (UNEP), and the International Labour Organization (ILO), all of which offer content in their respective specialized fields. In total, more than 10,500 institutions are registered with Research4Life, providing a total access to up to 30,000 journals and up to 131,000 books and reference works.



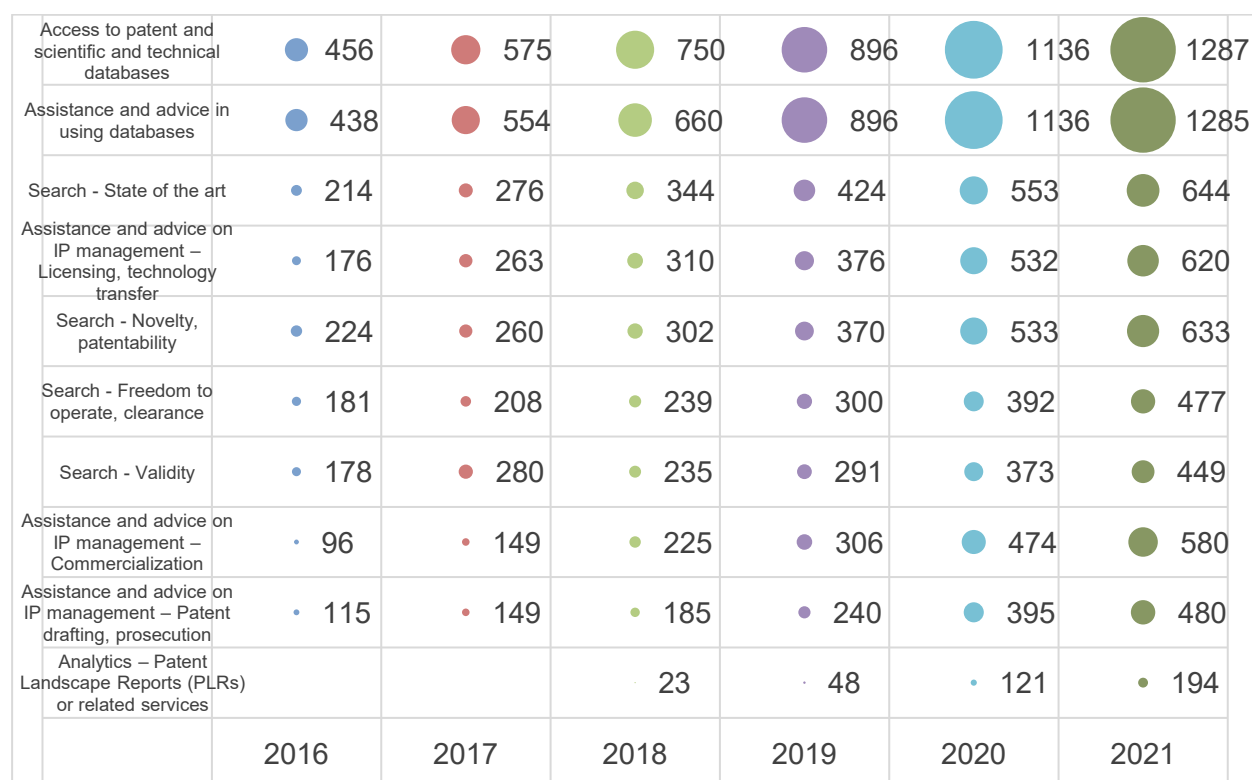
64. WIPO’s Access to Specialized Patent Information (ASPI) is another public-private partnership program with nine of the world’s leading patent database providers, offering free or low-cost access to commercial patent search and analytical services to over 160 registered institutions in 46 developing and least-developed countries. Commercial patent databases provide more sophisticated search and analysis tools compared to free of charge patent databases.

65. WIPO’s suite of online services for innovators have been further expanded with the launch of WIPO INSPIRE, which offers a range of powerful and easy-to-use functionalities for patent information users. It is designed as a one-stop-shop, where users can access digital products and tools in one place and integrates expert and social content on patent databases, patent registers, patent analytics, technology transfer and institutional IP policies, providing a unique blend of information and knowledge on resources, tools, and good practices in these areas. WIPO INSPIRE was accessed by 11,487 users in 2021.

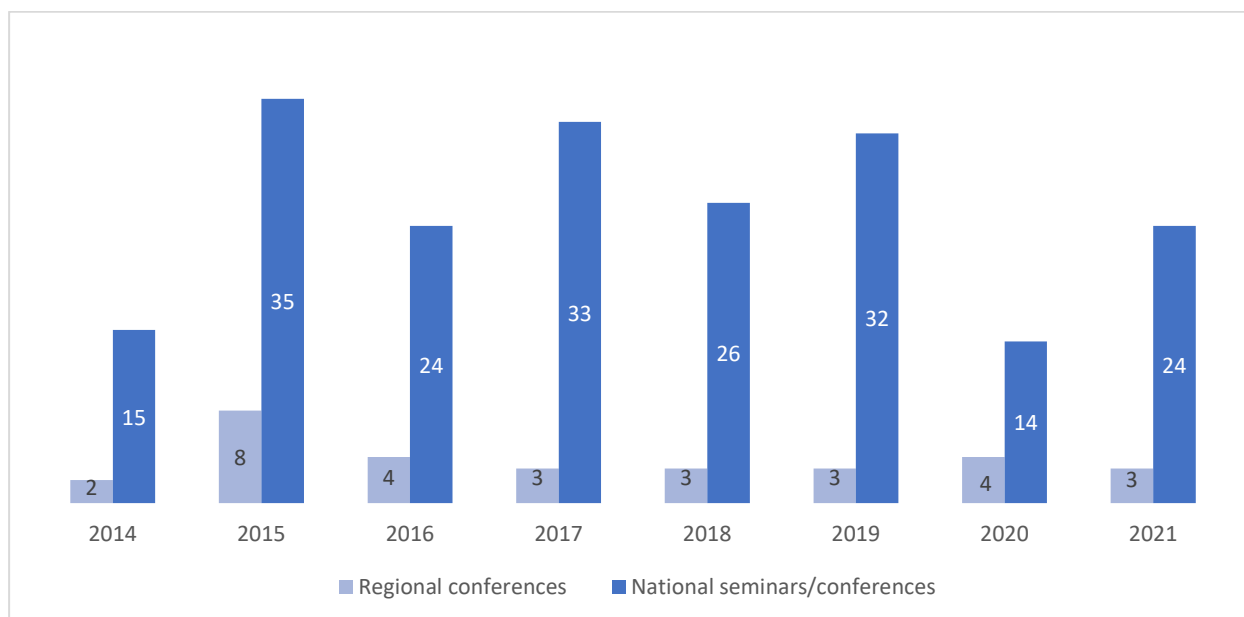
66. Technology and Innovation Support Centers (TISCs) are part of a global flagship program launched in response to WIPO Development Agenda Recommendations. This program aims to create high-quality, locally-based technology and innovation support services, ranging from

access to and assistance in using patent databases to technology search and analysis services and IP rights management services to help inventors, researchers and entrepreneurs unlock their innovative potential. Since the WIPO TISC program was launched in 2009, national projects are formally ongoing in 88 Member States, with over 1,300 TISCs hosted in institutions, such as universities and research centers and where over 1.7 million inquiries were received last year.

67. The number of different types of services is also expanding in recent years from simple access to databases, through assistance in searching and analysis of data found, to assistance and advice on IP management in licensing, technology transfer, commercialization, patent drafting, patent prosecution, and patent analytics, as shown in the figure below.



68. Training provided by WIPO supports the development of knowledge and skills among TISC staff, building their capacity to provide a range of high-quality services. Training includes both on-site and online workshops and seminars, with a focus on training of trainers, distance learning carried out in cooperation with the WIPO Academy, and 'Ask the Expert' sessions on the eTISC digital knowledge-sharing platform. Topics covered include: basic concepts and skills in patent searching; different types of patent searches, including state of the art, novelty and freedom to operate search; patent analytics; and IP rights management. National training seminars have been complemented with regional conferences, designed to promote sharing of experiences and best practices among different national TISC networks, as shown in the figure below.



69. A number of publications and learning resources have been developed for patent information users in general and TISC staff specifically, to access technology found in databases and use it in developing products and services to take to market. These resources include an interactive e-tutorial on patent information, helping innovators to use the wealth of technology information found in patent documents, as well as guides on identifying and using inventions in the public domain, providing guidance, in particular, on freedom to operate search and new product development processes. They also include a recently published training needs assessment manual and toolkit to enable the assessment of training needs for institutions involved in IP management, technology transfer and commercialization / utilization.

70. Moreover, patent landscape reports (PLRs) provide technical and business-relevant information for a specific technology, contributing to informed policy discussions, strategic research planning or technology transfer. Besides its own PLRs, WIPO's searchable database provides 258 PLRs prepared by other organizations. The patent landscape reports, developed in the period 2011 to 2019, attracted the interest of patent information users with 34,360 downloads in 2021. In order to develop the capacities of TISCs in the provision of patent analytical services, Guidelines for Preparing Patent Landscape Reports, a Manual on Open Source Tools for Patent Analytics, as well as a Patent Analytics Handbook, Datasets and Presentations have been developed as further training material on patent analytics. The Manual was updated in 2021 and an updated version of the Handbook will be available in the first half of 2022.

71. The first issue of the new patent analytics-based flagship publication WIPO Technology Trends (WITT) on AI was published in January 2019. It shows trends in AI techniques, functional applications and application fields, based on patent, scientific, litigation and mergers and acquisition data, contextualizing them with case studies, insights and perspectives from leading experts. It provides innovation and policy decision-makers an extensive overview of the technology, contextualizing it with related policy discussions and other related issues, providing in this way a support tool with a more holistic approach for decision-making and for a better understanding of the technology landscape and its ecosystem. Moreover, it presents the technology in a way, which is understandable for a non-technical audience, while it provides a state-of-the-art methodology to search patents in the topic concerned. Following the first issue on AI, the second WITT, launched in March 2021, was dedicated to Assistive Technology, namely, assistive products and technologies to address functional limitations related to mobility, cognition, communication, vision, hearing, self-care and the built environment, with users



ranging from persons with disabilities to aging population. The report identified emerging assistive technologies, enabling technologies thanks to which the development of such advanced solutions, were possible. In addition, it adapted the National Aeronautics and Space Administration (NASA) Technology Readiness Level methodology and impact criteria to assess how far the identified emerging technologies are from commercialization, and which are the factors that can influence the time it will take until a product reaches the markets and is scaled-up. The WIPO Technology Trends reports were downloaded over 278,000 times in the period from 2019 to the end of January 2022.

### III. LIST OF SUGGESTED ACTIVITIES

72. Based on the stocktaking and the evaluation of those activities presented to Member States in the course of consideration of the WIPO Program and Budget for this biennium, the WIPO Secretariat has the following remarks on implementation of the WIPO Development Agenda Recommendations from Clusters A and C, specifically, aimed at bridging the digital divide (Recommendation 24), improving national IP institutional capacity through further development of infrastructure (Recommendation 10), and facilitating IP-related aspects of ICT for growth and development (Recommendation 27):

- 1) Technical assistance and capacity building for IPOs by offering WIPO in-house developed software, ICT tools, AI-assisted tools, ICT platforms, workflow reengineering suitable for digital data processing, and training for knowledge transfer. Considerable progress has been made in recent years in the digital transformation of IPOs. IPOs in most countries have digitized records and have moved from 100 per cent paper-based to digitized IP administration systems. However, much work remains to be done to improve the completeness and quality of IP data at many offices, and to develop the capability to provide fully online services to IP applicants, owners and other stakeholders. The following priorities may be considered:
  - a) Continuation and extension of the services to assist IPOs with digitization and data quality improvement.
  - b) Further enhancement of WIPO's IPO Suite to provide more advanced functionality.
  - c) Building of capabilities in IPOs to move to fully online, digitized services.
  - d) Facilitation of the exchange of information and access to tools based on advanced technologies.
  - e) Provision of assistance to IPOs in digitizing IP data to narrow the digital divide in the IP area. WIPO's in-house OCR tools can be offered to IPOs committed to put in place full text XML for the front-file publication of their patent applications and grants.
- 2) Assistance in enhancing institutions for bridging the digital and technology gap through TISCs and its associated services will include the following elements:
  - a) Capacity development in patent search and analytics to be continued and expanded to include aspects of technology transfer (such as licensing and IP valuation), support tools for new product design and development, as well as training programs on IP institutional policies, with courses developed for digital delivery in blended learning modules.



- b) Training materials and resources in these areas will also include an updated Successful Technology Licensing Guide, an IP Valuation Guide with associated subject-matter primers, and an Incentive Guide for Researchers.
  - c) An integrated support platform for innovators and TISCs will also offer relevant resources, such as reports on patent databases, the eTISC knowledge and social platform, a new TISC Project and Performance Management platform for monitoring national TISC projects, IP university policy and spin-off databases, as well as a technology transfer literature compilation.
- 3) Provision of legislative advice and relevant information to developing and least-developed countries for their IP legislation in the digital environment. Digitalization of the procedures before IPOs presupposes a solid legal framework that allows for such endeavors, creates incentives for users to use the digital tools and services offered, yet does not impose requirements that cannot be complied with by IPOs in their current stage of development. The rapid pace of technology development makes it crucial that the legal rules, applicable to procedural and formality matters, are aligned with the available IPO infrastructure and institutional capacity. To this end, WIPO continues to provide legislative advice to ensure such alignment and assist Member States in attaining their goal of providing user-friendly and secure digital platforms and services.

*73. The CDIP is invited to consider the information contained in this document.*