

Committee on WIPO Standards (CWS)

Sixth Session
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RECOMMENDATIONS FROM THE MEETING ON ICT STRATEGY AND ARTIFICIAL INTELLIGENCE

Document prepared by the Secretariat

INTRODUCTION

1. The Director General of the World Intellectual Property Organization (WIPO), Mr. Francis Gurry, raised the need for WIPO to commence to engage in the rapidly developing area of big data, the Internet of Things and artificial intelligence (AI) at the Fifty-Seventh Session of the Assemblies Meetings held in 2017. He mentioned that one focus of attention could be the increasing use of AI and big data in intellectual property (IP) administration in his speech at the Meetings, which is available on the WIPO website at: http://www.wipo.int/about-wipo/en/dgo/speeches/a_57_dg_speech.html.
2. In the global innovation economy, demand for IP titles – patents, trademarks, industrial designs, copyright – is rapidly increasing and becoming more complex. Disruptive technologies such as AI, big data analytics and blockchain, can be used to address the growing challenges facing IPOs.
3. As a first step, the International Bureau issued Circular C. 8706, inviting Intellectual Property Offices (IPOs) to provide their input regarding business solutions, which use AI and big data; specific AI systems in use; and experiences and other useful information to share with other IPOs.

4. In order to facilitate discussion among Member States of WIPO and other interested parties, the International Bureau also organized the Meeting of IPOs on ICT Strategies and Artificial Intelligence for IP Administration (ICTAI meeting), which took place at WIPO headquarters in Geneva from May 23 to 25, 2018. The ICTAI meeting was opened by the Director General who highlighted the requirement for leveraging advanced information technologies to deal with the increased complexity and volume of IP applications, as well as the increased need for collaboration between IP offices. Delegations welcomed WIPO's initiative to convene the meeting, which was timely and useful for the exchange of views and experience in the area of ICT and business management, for effective IPO administration.

RELEVANT RECOMMENDATIONS TO STANDADIZATION

5. The meeting was composed of three themes; (a) ICT Strategy of IPOs for efficient IPO administration; (b) International ICT Strategy for Global IP protection; and (c) Applications of AI and other advanced technologies to IPO Administration. The discussions were summarized in document WIPO/IP/ITAI/GE/18/5, which is available at:
http://www.wipo.int/meetings/en/doc_details.jsp?doc_id=407578.

6. Discussions were based on document WIPO/IP/ITAI/GE/18/3, which is available at:
http://www.wipo.int/meetings/en/details.jsp?meeting_id=46586, containing 40 Recommendations, which was prepared by the International Bureau to facilitate discussions at the meeting.

7. The Recommendations were reviewed and generally accepted by the delegations, while certain recommendations need time for implementation or further consideration. The delegations also noted that some recommendations should be followed up with specific actions. Furthermore, the delegations noted that the relevant CWS Task Forces may wish to consider a wider range of issues with regard to the following recommendations: R10, R12, R16, R17, R19, R21, R23, R32 and R33. (See paragraphs 6, 7, 8, 10, 11, 13, 14 and 15 of document WIPO/IP/ITAI/GE/18/5.)

8. As a follow-up to the ICTAI meeting, the International Bureau established a dedicated web page, http://www.wipo.int/about-ip/en/artificial_intelligence/. The International Bureau also established an electronic forum for the discussion of ICT strategies and AI for IP Administration, which is available here: <https://www3.wipo.int/confluence/display/ictai>. The forum is restricted to the experts nominated by IPOs.

PROPOSALS

9. The Secretariat of this Committee further analyzed the 40 Recommendations and the possible actions, which were suggested by the ICTAI meeting in view of the CWS activities. The Secretariat considers that the 40 Recommendations could be categorized into three Groups:

- (a) Group 1: Recommendations are related to the exiting CWS Tasks or new Tasks that are proposed to be established at this session of the Committee;
- (b) Group 2: Recommendations are not directly related to the any of current and the proposed CWS Tasks, but seem to be relevant to potential future activity of the Committee; and
- (c) Group 3: Recommendations seem to be not relevant to the CWS activity now and in the near future.

10. The outcome of the analysis is annexed to the present document for consideration by the CWS. The Secretariat proposes the CWS to request the CWS Task Forces to consider relevant aspects of the Recommendations in Group 1, and to report their further actions required for their respective Task(s), including a proposal for amendment to the description(s) of the respective Task(s), if needed.

11. Taking into account the discussions at the ICTAI meeting and IPOs' ICT strategy to use disruptive technologies in their administration, the International Bureau proposes to create a new Task:

- to review the Recommendations in Group 2 and Group 3 indicated in the Annex of document CWS/6/3;
- to explore the impact of disruptive technologies on IP administration and IP data in view of harmonization and collaboration; and
- to prepare a proposal for a roadmap of future development and enhancement of WIPO Standards in view of more effective producing, sharing, managing and utilizing IP information and data by IPOs and other interested parties using the disruptive technologies.

12. The International Bureau also proposes the following text for the description of the new Task: "Prepare a proposal for a roadmap of future development and enhancement of WIPO Standards in view of more effective producing, sharing and utilizing IP information and data by IPOs and other interested parties using the disruptive technologies".

13. The International Bureau also proposes to establish a corresponding task force to carry out the new task, and offers to lead the Task Force if established. The progress on the Task should be reported to the next session of the CWS.

14. *The CWS is invited to:*

(a) note the content of the present document;

(b) consider the outcome of the Secretariat's analysis, as referred to in paragraph 8 above and as reproduced in the Annex to the present document;

(c) consider and approve the proposal as indicated in paragraph 10, above;

(d) consider and approve the proposal to create a new Task and the proposed description of the new Task, as referred to in paragraphs 11 and 12, above; and

(e) consider and approve the establishment of the new Task Force, with its corresponding Task Force Leader and request the established Task Force to report its progress on the new task at its next session, as referred to in paragraph 13, above.

[Annex follows]

40 RECOMMENDATIONS AND CWS ACTIVITIES

Recommendations	Category	Relevant WIPO Standards and CWS Tasks	Remark
R1. Develop an online data exchange protocol covering key common transactions to generate high quality IP data at the source, based directly from output from IP management systems, with a view to create and exchange IP data with IPOs and the IB in accordance with WIPO Standards.	Group 1	Task No.41 - ST.96, Task No. 56 - API standard	
R2. In introducing an online data exchange protocol, implement appropriate policies and consider ICT systems in use by IP applicants and IP agents to facilitate their use of the protocol to submit high quality IP data.	Group 1	Task No. 56 - API standard	
R3. Back-file capturing of IP data by OCR conversion of image data should be properly undertaken in accordance with good quality control and relevant WIPO Standards.	Group 3	WIPO ST.22	
R4. In addition to bibliographic data such as names of applicants, the full text of patent specification should be converted into, or generated at the source, to make patent applications searchable. Consider common tools or at least closer WIPO Standards for the preparation of XML from word processor formats to ensure consistency.	Group 1	Task No.44-ST.26, Task No.38-ST.36, Task No.39-ST.66, Task No.42-ST.86, Task No.41-ST.96,	
R5. Image data and complex elements such as image of a device trademark, an industrial design and graphs contained in IP applications should be generated as machine-searchable data in accordance with relevant WIPO Standards (in particular WIPO Standard ST. 96)	Group 1	Task No.41 - ST.96, Task No.57 - visual representation of design, A proposed new Task (see document CWS/6/22)	
R6. Re-engineer and transform the current business models and workflow processes based on paper transactions into modernized and optimized business models and workflow processes based on digital IP data transactions, with collaboration of business, ICT and legal representatives at all stages	Group 1	A proposed new Task (see document CWS/6/23)	
R7. Explore the possibility of AI-powered automatic classification tools to enhance the use of, and control the quality of, classification symbols allotted to IP applications	Group 3	ST.8	

Recommendations	Category	Relevant WIPO Standards and CWS Tasks	Remark
R8. Strengthen international cooperation for internationally coherent practices of using international classifications and for the provision of technical support to make local language versions of international classifications available	Group 3	ST.8	
R9. Share information on emerging search technologies, especially image search, classification tools and language tools, and consider ways in which the technology can be shared and made available to smaller IPOs to improve the quality and efficiency of IP information search	Group 1	Task No. 57 - Electronic visual representation of design	
R10. Develop a reference platform for online publication and search, while contributing to the international cooperation under CWS about systems for providing access to publicly available patent information of IPOs participating in the CWS Task No. 52. The platform would be linked to international and/or regional databases to automate the dissemination of information	Group 1	Task No. 52 - Public access to patent information	The ICTAI meeting noted that CWS is expected to discuss standardization of formats for online publication
R11. IPOs should share information on ICT solutions for records management, in particular on the appropriate use of standard ICT packages and the solutions for guaranteeing authenticity of digital records, signatures, etc	Group 1	Task No.24 ATRs Task No. 56 - API standard,	Blockchain - document CWS/6/4
R12. In cooperation with interested Member States, the IB should develop a prototype for a distributed IP registry. The prototype could be used for IP applications to create an authentic registry of IP application numbers, for example to be used for validation of priority claims. Study the possibility of using a distributed IP registry linking to WIPO CASE or the International Register. The potential of blockchain technologies for linking such distributed registries should also be explored	Group 1	A proposed new Task (see document CWS/6/4)	The ICTAI meeting noted that a proposal may be submitted to CWS to create a task force to study utilization of block chain technologies, while noting remarks made by some delegations that a federated model of registry and deep linking of those registries for search and retrieval may be more a practical short-term solution.
R13. IPOs to work towards increasing the degree of exchanging standardized fully XML based data with the IB, considering synchronous models such as ePCT machine to machine services	Group 1	Tas No.38- ST.36, Tas No.41- ST.96	
R14. The IB and IPOs should begin consultations on a standardized model for data exchange for the traditionally bilateral paper exchanges in the PCT, taking into account investments in assuring security requirements are optimized	Group 1	Task No.56- API standard	

Recommendations	Category	Relevant WIPO Standards and CWS Tasks	Remark
<p>R15. IPOs should investigate legal and technical possibilities for identifying patent families prior to publication and ensure permission for IPOs processing family members to access search and examination reports. This recommendation should be considered in conjunction with R12 regarding the establishment of distributed registries, considering that a limited amount of information (e.g. priority references) could eventually be shared on a distributed registry prior to publication</p>	Group 1	A proposed new Task (see document CWS/6/4)	
<p>R16. The application body formats for WIPO Standard ST.36 and ST.96 should be carefully analyzed and recommendations made for more specific, practical forms of implementation than the general standards (which allow for an enormous number of options) which meet all the needs for patent processing and allow reliable two way transformations between the two</p>	Group 1	Task No.38-ST.36, Task No.41- ST.96	<p>The ICTAI meeting noted that IPOs are considering migration to WIPO Standard ST.96, noting issues with convertibility and dealing with multiple formats in reality. The CWS XML4IP Task Force is expected to consider new elements for ST.96, including search and examination reports and possible expansion of the Task Force work to cover the implementation issues including XML validation mechanisms to enhance interoperability between offices (R16 and R17). Additional legal and operational expertise may be needed for these additional elements.</p>
<p>R17. The work on development of search and examination report standards for WIPO Standard ST.96 should not simply convert the ST.36 standard to the expectations of ST.96, but analyze whether the structures encourage easy reuse of data between stages of search and examination both with an IPO and between different IPOs.</p>	Group 1	Task No.38-ST.36, Task No.41- ST.96	

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<p>R18. Common conversion software should be developed for the validation and conversion of major document types (initially DOCX; other formats could also be considered) into simplified XML formats. The software should be carefully version controlled, be suitable for integration into national processing systems both by local deployment and by reference to an API for centralized instances and be capable of producing either WIPO Standard ST.36 or ST.96 output in formats which allow for accurate conversion between the two at a later stage, if required. Converters for the other direction (ST.36 or ST.96 to DOCX) should be considered at a later stage if it will assist the process of effective amendment/correction of applications.</p>	Group 1	Task No.38-ST.36, Task No.41- ST.96	
<p>R19. IPOs and the IB should agree PLT-compatible bibliographic/description data packages for use in their online filing systems, together with a common method of coding Office-specific sections, allowing more effective reuse of bibliographic/description data from previously filed applications and development of third party IP management systems to deliver bibliographic/description data without the need for conversion or retyping.</p>	Group 1	Task No.41- ST.96	ST.96 version 3.0 covers most of data components which can be used in model international forms under the PLT (http://www.wipo.int/plt-forum/en/#mif)
<p>R20. IPOs and the IB should agree formats for packages (for PCT, this could be based on the existing PCT Annex F packages), which can be readily prepared by third party software (also including export of a filed application from another IPO) and pushed to Office servers to prepopulate most of a draft application prior to completion in an online filing system.</p>	Group 2		
<p>R21. IPOs should participate in WIPO projects to use global common tools and platforms to which ICT systems of IPOs should be connected, such as WIPO CASE, WIPO global portal of IP registries, and provide IP data in accordance with relevant WIPO Standards</p>	Group 1	Various WIPO Standards, and Task No.44-ST.26 Software Tool	

Recommendations	Category	Relevant WIPO Standards and CWS Tasks	Remark
R22. IPOs need to share and disseminate patent information and data without any barriers and free-of-charge or at a marginal cost	Group 1	Task No. 52 - Public access to patent information	The ICTAI meeting noted that there is no global policy on barrier-free exchange of patent information, although many delegations already have such a policy and would like to see it more widely implemented. Such a policy should specify the scope of patent information (bibliographic data, full-text data, citation and classification data, and work products of offices)
R23. IPOs are encouraged to provide their authority file or the link to their website of authority file to the IB	Group 1	Task No.51 - ST.37	The ICTAI meeting noted that authority files are already made available by some offices and have been standardized in WIPO standard ST.37. Other offices are encouraged to implement the standard.
R24. Explore the possibility of an international Fund-in-Trust voluntarily contributed by IPOs to enhance international cooperation for digitizing IP data as a global public good	Group 3		
R25. IPOs should consider the use of WIPO DAS, particularly for processing patent and design applications	Group 3		
R26. Develop further a new recommendation on a signed electronic package format for priority documents, including application bodies in full text formats (where available) and bibliographic data in XML format as a part of WIPO Standards. The new format could be exchanged via WIPO DAS or directly between applicants and IPOs	Group 1	Task No.38-ST.36, Task No.41- ST.96	
R27. Encourage the wider use of existing standardized data exchange mechanisms, promote wider use of electronic filing and prioritize creation of additional electronic forms to improve the quality and reliability of data received from applicants, thereby reduce the errors caused by data content and format inconsistencies	Group 1	Task No.41-ST.96, A proposed new Task (see document CWS/6/23)	

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R28. Establish a self-service, centralized transaction processing model wherein users and IPOs connect to a central IB platform for data services. This will change the paradigm from one based around batch transmission of forms and responses to one of real-time updates to the International Register entered directly by the parties concerned	Group 1	Task No. 56 - API standard	
R29. Promote wider sharing of data concerning terms of goods and services that are acceptable or not by IP Offices to further reduce the need for costly and time-consuming processes (irregularity and refusal processes)	Group 3		
R30. Create a more comprehensive, user-friendly and machine accessible database of terms of goods and services that could reduce irregularities	Group 3		
R31. IPOs should continue and expand their use of standard grounds of refusal	Group 3		
R32. The quality of exchange between IPOs and with the IB would be improved if IPOs move to using WIPO Standard ST96 for Hague-related XML components	Group 1	Task No.41- ST.96	The ICTAI meeting noted that the relevant CWS Task Forces need to consider a wider range of issues.
R33. Technical issues related to the acceptance of moving images need to be considered, alongside the associated preparations with regards to integrity in terms of transmission and storage – as well as publication and sharing	Group 2		The ICTAI meeting noted that the relevant CWS Task Forces need to consider a wider range of issues.
R34. IPOs are encouraged to consider participating in DAS as depositing and accessing IPOs for design priority documents, which would potentially reduce costs and risk with regard to provision of certified copies in respect of Hague international registrations	Group 3		
R35. Enhance international cooperation among IPOs and the IB to adhere to agreed settlement timetables, the use of web-forms for data collection and the adoption of standardized electronic filing systems	Group 2		

Recommendations	Category	Relevant WIPO Standards and CWS Tasks	Remark
R36. Agree on an international standard for information security such as ISO/IEC 27001 as a means to demonstrate reasonable assurance of internal control effectiveness by Offices. Where Offices are required to comply with their own national information security standard, a mapping to the international standard can be provided to demonstrate a healthy information security management system. For external Cloud service providers, agree on minimum certification and independent audits against standards prescribed by the Cloud Security Alliance STAR or SSAE (ISAE) SOC II Type 2 as a means of information security assurance in the Cloud	Group 1	Task No. 56 - API standard	
R37. Consider standardized security mechanisms as part of the review of data exchange protocols	Group 1	Task No. 56 - API standard	
R38. Improved methods should be explored for integration with international systems and for centralized systems. Create a centralized service, as a demonstration/prototype, with open and standard APIs, for dissemination of classification and standards data and for transactional data exchange between IPOs and regional/international IP systems	Group 1	Task No. 56 - API standard	
R39. Share information about online services (filing, subsequent transactions, etc) with the aim of identifying common transactions and services that could be made available through APIs to enable interoperability of systems, including systems developed by third party solution providers	Group 1	Task No. 56 - API standard	
R40. Explore the possibility of global joint projects to capitalize on common interests and synergy of IPOs	Group 3		

[End of Annex and of document]