

## **Committee on WIPO Standards (CWS)**

**Sixth Session**  
**Geneva, October 15 to 19, 2018**

### **CREATION OF A TASK TO PREPARE RECOMMENDATIONS FOR BLOCKCHAIN**

*Document prepared by the Secretariat*

#### **BACKGROUND**

1. The Meeting of Intellectual Property Offices (IPOs) on ICT Strategies and Artificial Intelligence (AI) for IP Administration took place at WIPO headquarters in Geneva from May 23 to 25, 2018. 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](http://www.wipo.int/meetings/en/details.jsp?meeting_id=46586), containing 40 recommendations.
2. One of the recommendations, i.e., R12, which is reproduced below, was related to a distributed IP registry:

“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.”

3. At the meeting, the participants discussed the Recommendation R12 and noted that a number of IPOs were conducting experiments with blockchain-type technology for use in situations such as creating shared registries. It was also noted that a proposal might be submitted to the CWS to create a task force to study the utilization of blockchain technologies. Some delegations remarked that a federated model of registry and deep linking of those registries for search and retrieval might be a more practical short-term solution. (See paragraphs 6 and 7 of document [WIPO/IP/ITAI/GE/18/5.](#))

#### PROPOSALS

4. The Secretariat received two proposals regarding Blockchain from Australia and the Russian Federation for consideration at this Session of the Committee. Those proposals are reproduced as Annex I and Annex II, respectively, to the present document.

5. Taking into account the proposals referred to in paragraph 13 of Annex I and paragraph 10 of Annex II to the present document, the Secretariat suggests creating a new Task of which the description would read, "

- (a) Explore the possibility of using blockchain technology in the processes of providing IP rights protection, processing information about IP objects and their use;
- (b) Collect information about IPO developments in use of and experience with blockchain, assess current Industry Standards on blockchain and consider merit and applicability to IPOs; and
- (c) Develop a model to standardize approaches of using blockchain technology in the IP field, including guiding principles, common practice and use of terminology as a framework supporting collaboration, joint projects and proofs of concept.
- (d) Prepare a proposal for a new WIPO standard applying blockchain technology in the processes of providing IP rights protection, processing information about IP objects and their use"

6. It is also proposed to establish a new Task Force, which will be called "Blockchain Task Force" to handle the new Task if established.

7. *The CWS is invited to:*

*(a) note the content of the present document; and*

*(b) consider the proposal submitted by IP Australia regarding the development of recommendations for Blockchain, reproduced as Annex I;*

*(c) consider the proposal submitted by the Delegation of Russian Federation regarding the development of recommendations for Blockchain, reproduced as Annex II;*

*(d) consider and approve the proposal concerning the creation of the new task referred to in paragraph 5, above; and*

*(e) consider and approve the establishment of the new Task Force, with its corresponding Task Force Leader, referred to in paragraph 6, above; and*

*(f) request the established Task Force to report its progress on the task at its next session.*

[Annexes follow]

## PROPOSAL TO DEVELOP A NEW WIPO STANDARD REGARDING BLOCKCHAIN

*Document prepared by the IP Australia*

1. IP Australia would like to request that the Committee on WIPO Standards (CWS) consider and define a new WIPO standard for the development and use of blockchain technology across Member States. This new standard should support guiding principles, common practice and use of terminology as well as deliver a framework to support collaboration, joint projects and proofs of concept.
2. Francis Gurry, Director General of the World Intellectual Property Organization (WIPO), said technologies like blockchain will have a radical impact on the existing IP landscape. Currently, we do not have an agreed WIPO standard for the development and implementation of blockchain across Intellectual Property Offices (IPOs).
3. IP Australia recognises that several IPOs and the International Bureau of WIPO are discussing and making headway in the embracement of this disruptive technology.
4. At its most basic level, a blockchain is a database. It is used to store information. The way it stores information has some special characteristics that make it particularly useful in certain situations. Blockchain is often referred to as a distributed ledger. A “ledger” may be familiar – especially if you’ve taken an accountancy course. It keeps track of information about transactions. “Distributed” is a core part of the blockchain model. Rather than only one ledger existing, many copies of the whole ledger are held on many nodes (e.g. servers) in a network. There is no central authority. Every time a new transaction is added to the ledger, it is added to and processed by every copy of the ledger.
5. Blockchain has several beneficial qualities that IPOs can embrace;
  - It is cryptographically secure
  - It can be public or private
  - It can enable automation through smart contracts
  - It builds consensus and collaboration
  - It can enhance trust
  - Data on the blockchain cannot be censored or changed
6. IP Australia has recently partnered with a blockchain technology start-up to develop a blockchain-based patent IP processing and storage solution. Moreover, we have built a set of automatic capabilities through a blockchain facility called smart contracts. Our proofs of concept have demonstrated the suitability of the technology for storing patent data. We will shortly move onto a testing stage, where we will aim to stress the system and ensure that it is fit for expansion to all Australian IP data.
7. There are a plethora of opportunities and potential to scale this work to an international level, from uses in provenance, trade secrets and licensing to supporting current initiatives such as authority files or as a secure data transfer tool such as the use of private blockchains with key data held on the blockchain and supporting information off the blockchain when connecting between IPOs and the International Bureau.

8. However, we believe that due to the lack of a WIPO standard that provides some governance across the use of this technology in the IP Sector, IPOs may implement significantly different designs, methodologies and approaches to its implementation. This would lead to an inability to deliver joint blockchains and realise the benefits that this technology has to offer. The objective of the proposed task is to develop a new standard for the use of and implementation of blockchain technology in IPOs. The task will require the establishment of guiding principles, common practice and use of terminology to deliver a framework that supports collaboration, joint projects and proofs of concept (POC).

9. IP Australia proposes that a new task and a corresponding Task Force should be established under the CWS to develop the new WIPO standard.

10. It is suggested that the Task Force commence associated activities including the collection of information about IPOs' present and future use of blockchain, their architecture and approach to implementation (survey). As well as organizing workshops or Task Force meetings and agreeing on a joint POC that supports the building of high level design principles that IPOs may leverage as they apply blockchain technology to historic and emerging problems.

11. IP Australia proposes that the new WIPO standard for blockchain should consider but is not limited to:

- (a) Providers
  - (i) Every public node worldwide [for public blockchains]
    - Miners for Proof-of-Work
    - Harvesters for Proof-of-Importance, and
    - Validators for Proof-of-Stake may be listed within 'providers'
  - (ii) Private blockchains use private nodes that they provide themselves
- (b) Language
  - C++
  - Googles "Go"
  - Solidity
  - Serpent
  - Viper
  - Python and
  - (iii) Others
- (c) Public or Private
  - Bitcoin made the first public blockchain famous because it removed third party authorization
  - Private blockchain re-applies third party authorization
- (d) Efficiency
  - Automation
  - Smart contracts
- (e) Data On or Off
  - On to track the transaction stored on the blockchain [public or private]
  - Off to store the data that the blockchain transaction points to

- (f) Security
  - The immutability of blockchain data is often seen as the key security attribute of blockchain in a public blockchain
  - Security is traded off in private blockchains
- (g) Consensus - how should Consensus be achieved?
  - By competing Miners in public blockchains trying to find a solution to target nonce or
  - By private algorithms in public blockchains and designated roles
  - Methods of finding consensus in a blockchain e.g. practical byzantine fault tolerance algorithm (PBFT), the proof-of-work algorithm(PoW) ,the proof-of-stake algorithm (PoS), and the delegated proof-of-stake algorithm (DPoS)
- (h) Participants
  - Implementations may provide the ability to specify a blacklist of participant identities who are not permitted to submit transactions
- (i) Credentials
  - Handling of user credentials using key management solutions such as digital wallets
- (j) Scaling Mechanisms
  - Various On-Chain (Layer 2) scaling mechanisms may be implemented, such as [Plasma], [sharding], easy parallelizability [EIP-648], as well as other Off-Chain (Compute) scaling mechanisms.

12. IP Australia would greatly appreciate that the CWS discuss this issue at its sixth session with a view to developing the new WIPO standard for blockchain, which will clearly guide IPOs to deliver solutions leveraging this technology that are harmonized in approach and allow for interoperability.

13. IP Australia proposes the CWS:

(a) to create its new Task of which the description would read "Collect information about IPO developments in, use of and experience with blockchain, assess current Industry Standards and consider merit and applicability to IPOs and the development of New WIPO Standard for blockchain; and deliver guiding principles, common practice and use of terminology as a framework supporting collaboration, joint projects and proofs of concept."; and

(b) to establish a new Task Force which will be called "Blockchain Task Force" to handle the new Task.

[Annex II follows]

## PROPOSAL FOR THE CREATION OF A TASK TO STUDY BLOCKCHAIN APPLICATIONS IN THE FIELD OF INTELLECTUAL PROPERTY

*Document prepared by the Delegation of the Russian Federation*

### BACKGROUND

1. Blockchain is a digital public registry protected from unauthorized access. The distributed database stores information about all transactions of the system participants in the form of a «block chain» (blockchain).
2. Participants see only those transactions that are related to them, and the cryptographic protection system guarantees the reliability and consistency of the data.
3. The main advantage associated with blockchain is the possibility to speed up verification processes, reduce costs of data or transactions purification and risks through open control.
4. Any changes of the data in the chain of blocks are possible only if the network participants confirm legitimacy of the transaction in accordance with the general rules. This allows for the use of blockchain as a documentary evidence, confirming the transfer of digital assets or storing information as well as confirming the compliance of processes with regulations.
5. Blockchain is considered to be a technology that can transform existing business processes and principles of interaction with regulators. Global interest in its implementation is growing and pilot projects have been launched primarily by banks, fintech companies, retailers, industrial and transport enterprises and state organizations.
6. Many technology companies and service providers collaborate with syndicates, for example, Enterprise Ethereum Alliance and Hyperledger Projects, which are jointly developing innovative solutions for post-trade processing, tracking goods in the supply chain and recording transactions for audit.
7. Recently, the number of issued patents for inventions related to blockchain technology has increased (285 applications were submitted to Rospatent during the first quarter of 2018).
8. A number of industrial property offices have already started exploring the possibilities of the technology. A number of events and conferences have been organized to familiarize the community of inventors and patent attorneys with the advantages of this technology, as well as stimulating inventive activity. For example,
  - (a) Rospatent organized the following activities:
    - Hackathon for blockchain solutions for business - <https://it-events.com/events/11656>;
    - International Conference «Digital transformation: Intellectual Property and blockchain technology» - <http://ip-blockchain.ru/>; and
  - (b) the European Union Intellectual Property Office (EUIPO) organized the event «EU Blockathon 2018»: <https://euipo.europa.eu/ohimportal/en/web/observatory/blockathon>

9. Blockchain technology can be applied in registration and protection of industrial property rights:

- Blockchain can be used when disposing of intellectual property rights; it can register the contract directly in the distributed registry, while mandatory checks will be made. The record of them will also be stored in the blockchain, which will significantly reduce the time to register a right disposal.
- Blockchain technology can be used as a distributed registry to organize secured repositories of information about the registration of industrial property objects, simplifying access to information regarding priority documents.

10. The Russian Federation submits for consideration and approval of the CWS the proposal to create a new task in the CWS Work Program aimed at studying the possibility of using the blockchain technology in the processes of providing IP rights protection, including the following:

- to develop a model to standardize approaches of using blockchain technology in the processes of providing IP rights protection, processing information about IP objects and their use;
- to prepare a proposal for future actions aimed at application of the blockchain technology in the processes of providing IP rights protection, processing information about IP objects and their use.

11. The results are to be presented for consideration of the CWS.

[End of Annexes and of document]