

## Advisory Committee on Enforcement

### Fourteenth Session Geneva, September 2 to 4, 2019

#### NEW TECHNOLOGIES IN IP ENFORCEMENT

*Contributions prepared by Switzerland and the European Union*

1. At the thirteenth session of the Advisory Committee on Enforcement (ACE), held from September 3 to 5, 2018, the Committee agreed to consider, at its fourteenth session, among other topics, the “exchange of information on national experiences relating to institutional arrangements concerning IP enforcement policies and regimes, including mechanism to resolve IP disputes in a balanced, holistic and effective manner”. Within this framework, this document introduces the contributions of one Member State (Switzerland) and one non-state Member (the European Union) on new technologies in IP enforcement.

2. Both contributions consider the scale and impact of counterfeit and pirated goods on the economy and on consumer health and safety as their starting point. The Swiss contribution subsequently focuses specifically on measures to combat counterfeit goods in the digital environment. It provides an overview of the existing legal framework, including measures available to trademark holders to enforce their rights and collaborate with customs, as well as measures that are not permissible under applicable laws, such as website blocking injunctions against Internet service providers. The contribution discusses the role of intermediaries and public-private partnerships in online IP enforcement and concludes with an outline of the possible role of blockchain solutions in this area. The contribution by the European Union, on the other hand, has blockchain applications for IP enforcement as its main focus. The contribution reports on a Blockathon competition organized by the European Union Intellectual Property Office (EUIPO) and the European Commission in 2018, intended to stimulate innovations in blockchain-based anti-counterfeiting solutions. Several highly skilled coding teams were tasked with tackling challenges faced by consumers, customs officials and logistics operators in validating the authenticity of products and tracking the movement of genuine goods through the supply chain. The contribution describes the workings behind the winning solution of creating virtual twins for each physical product and concludes by mapping some of the issues this will require further attention in the future.

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## SWISS EXPERIENCES WITH INTELLECTUAL PROPERTY ENFORCEMENT IN THE DIGITAL AGE

*Contribution prepared by Dr. Daniel Kraus, Professor of Innovation Law and Director, Centre for Intellectual Property and Innovation, University of Neuchâtel, Switzerland\**

### ABSTRACT

This contribution offers a selective overview of Switzerland's experiences in combating counterfeit goods and piracy in an ever-evolving digital age. The contribution intends to be very practical; it covers voluntary industry solutions within the legal framework of a non-European Union member state. Opportunities and limits of blockchain solutions are also considered.

### I. INTRODUCTION AND STATISTICS

1. Trade in counterfeit goods and pirated works has long been recognized as an obstacle to trade in legitimate goods<sup>1</sup>. As far back as the 1980s, the parties to the General Agreement on Tariffs and Trade (GATT) recognized the problem and initiated intellectual property (IP) negotiations within the Uruguay Round, which was the forerunner to the World Trade Organization (WTO) as we know it today. Indeed, the Agreement on Trade-Related Aspects of Intellectual Property Rights (TRIPS Agreement) was originally conceived as an instrument to combat trade in counterfeit and pirated goods<sup>2</sup> and only subsequently evolved into an comprehensive IP Agreement.

2. With the digitalization of the economy through the Internet, and more recently through social networks and mobile applications (apps), global trade in counterfeit and pirated goods has taken on new dimensions<sup>3</sup>. This is also the case in Switzerland. The latest available statistics from the Swiss customs show the following<sup>4</sup>:

- In 2018, 14,388 counterfeit branded products were seized by Swiss customs, including 9,805 counterfeits in commercial goods traffic and 4,583 counterfeits in tourist traffic. In 2017, 10,686 counterfeit products were seized<sup>5</sup> and in 2016, 13,604<sup>6</sup>, showing that even with fluctuations, the trend is towards more seizures of infringing goods.

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\* The views expressed in this document are those of the authors and not necessarily those of the Secretariat or of the Member States of WIPO.

<sup>1</sup> See Organization for Economic Co-operation and Development (OECD) and European Intellectual Property Office (EUIPO) (2019), *Trends in Trade in Counterfeit and Pirated Goods*, available at: <https://doi.org/10.1787/g2g9f533-en>.

<sup>2</sup> Watal Jayashree (2001), *Intellectual Property Rights in the WTO and Developing*, pp. 15 and 21.

<sup>3</sup> At the international level, trade in counterfeit and pirated goods rose from 2.5 per cent of world trade in 2013 to 3.3 per cent in 2016; see *Trends in Trade in Counterfeit and Pirated Goods*, *op. cit.*

<sup>4</sup> [https://www.ezv.admin.ch/ezv/fr/home/documentation/publications/fakten\\_und\\_zahlen.html](https://www.ezv.admin.ch/ezv/fr/home/documentation/publications/fakten_und_zahlen.html).

<sup>5</sup> [https://www.ezv.admin.ch/ezv/fr/home/documentation/publications/fakten\\_und\\_zahlen/archives.html](https://www.ezv.admin.ch/ezv/fr/home/documentation/publications/fakten_und_zahlen/archives.html) (2019).

<sup>6</sup> [https://www.ezv.admin.ch/ezv/fr/home/documentation/publications/fakten\\_und\\_zahlen/archives.html](https://www.ezv.admin.ch/ezv/fr/home/documentation/publications/fakten_und_zahlen/archives.html) (2018).

- With regard to trade in counterfeit pharmaceuticals, customs seized 3,203 imports in 2018<sup>7</sup>, 1,060 in 2017 and 1,028 in 2016<sup>8</sup>, although some estimate that 20,000 illegal consignments of pharmaceutical products reach Switzerland every year<sup>9</sup>. This is a 300 per cent increase in two years.
- In 2016, counterfeit and pirated goods accounted for 6.8 per cent of importations in the European Union (EU), as against 5 per cent in 2013<sup>10</sup>. This alarming situation at the European level clearly also affects Swiss companies, for which the EU represents an important market.

3. The general upward trend in seizures of counterfeit goods by customs unfortunately corresponds to an increase in the trade of counterfeits. Most of the trade in counterfeit products in Switzerland is through commercial goods traffic<sup>11</sup>.

## II. THE LEGAL FRAMEWORK

### A. TRADEMARK LAW

4. The fact that more and more counterfeit products are imported directly by the end user – a behavior which, in principle, would fall under the exception of private use – led to a modification of the Swiss Trademark Act back in 2008. Since then, Article 13(2)*bis* of the Act provides that trademark owners may also prevent third parties from importing, exporting or carrying in-transit goods bearing signs that are confusingly similar to their trademarks if the importation takes place for private purposes. Although the behavior of the importer has not been criminalized, what are known as capillary imports may be apprehended by customs, regardless of whether they result from digital trade.

### B. COLLABORATION WITH CUSTOMS

5. Collaboration with customs is more important than ever and has been as successful as it can be. Swiss law provides efficient means for the collaboration between holders of trademarks, copyrights and patents and customs authorities, including notifications of suspicious consignments by customs and applications for assistance by IP right holders<sup>12</sup>.

6. EU law also allows for efficient collaborations between right holders and customs to combat the importation of infringing goods. Similar instruments to those provided for under Swiss law may be used as long as a trademark has been registered in the EU<sup>13</sup> and is open to

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<sup>7</sup> [https://www.ezv.admin.ch/ezv/fr/home/documentation/publications/fakten\\_und\\_zahlen/archives.html](https://www.ezv.admin.ch/ezv/fr/home/documentation/publications/fakten_und_zahlen/archives.html) (2019).

<sup>8</sup> [https://www.ezv.admin.ch/ezv/fr/home/documentation/publications/fakten\\_und\\_zahlen/archives.html](https://www.ezv.admin.ch/ezv/fr/home/documentation/publications/fakten_und_zahlen/archives.html) (2018).

<sup>9</sup> <https://www.bag.admin.ch/bag/fr/home/medizin-und-forschung/heilmittel/heilmittelfaelschung-illegaler-handel.html>.

<sup>10</sup> *Trends in Trade in Counterfeit and Pirated Goods*, *op. cit.*, p. 60.

<sup>11</sup> [https://www.ezv.admin.ch/ezv/en/home/documentation/publications/fakten\\_und\\_zahlen.html](https://www.ezv.admin.ch/ezv/en/home/documentation/publications/fakten_und_zahlen.html).

<sup>12</sup> See in particular Articles 70-72h of the Swiss Trademark Act (available at: <https://www.admin.ch/opc/en/classified-compilation/19920213/index.html>), Article 86a-86k of the Swiss Patents Act (available at: <https://www.admin.ch/opc/en/classified-compilation/19540108/index.html>), Articles 75-77h of the Swiss Copyright Act (available at: <https://www.admin.ch/opc/en/classified-compilation/19920251/index.html>) and Articles 46-49 of the Swiss Designs Act (available at: <https://www.admin.ch/opc/en/classified-compilation/20000457/index.html>).

<sup>13</sup> Regulation (EU) No 608/2013 of the European Parliament and of the Council of 12 June 2013 Concerning Customs Enforcement of Intellectual Property Rights and Repealing Council Regulation (EC) No 1383/2003, available at: <https://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:32013R0608&from=FR>.

(and indeed used by) Swiss companies benefiting from IP protection in the EU (in particular trademarks and designs).

### C. COPYRIGHT LAW

7. In Switzerland, downloading pirated works is considered to fall under the exception of private use, whereas uploading them and making them available to the public constitutes an infringement of copyright. However, according to the Federal Supreme Court, Internet protocol addresses of users are to be considered as personal data under the Data Protection Act and their protection overrides a private – commercial – interest in their use to offer commercial services to identify copyright infringers<sup>14</sup>.

8. Nevertheless, the Swiss approach focuses on directing efforts to combat piracy at anyone who illegally makes content available. In order to meet this target, the Swiss Copyright Act is currently under a well-advanced revision, with anti-piracy measures concentrating mainly on hosting providers. Taking into consideration that the latter are considered able to act quickly and in a targeted manner on their servers, the draft bill contains a “take down and stay down” obligation<sup>15</sup>.

### III. BLOCKING OF WEBSITES

9. Website blocking injunctions are available in some jurisdictions such as the United Kingdom. However, there is no system allowing for the blocking of websites by Internet service providers in Switzerland. Judges are therefore limited in the injunctions they can issue<sup>16</sup>. In some cases, however, courts have ordered domain name registrars to transfer litigious domain names of distributors of counterfeit products to the trademark owners, even though the registrars were not parties in the proceedings. Those registrars had, however, expressly accepted to effect the changes<sup>17</sup>.

### IV. THE ROLE OF INTERMEDIARIES AND PARTNERSHIPS

10. Brand owners regularly use WIPO’s domain names dispute resolution system when their trademarks are usurped in a domain name. Very often, however, online distributors use

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<sup>14</sup> Decision 1C\_285/2009 of September 8, 2010.

<sup>15</sup> <https://www.ige.ch/en/law-and-policy/national-ip-law/copyright-law/revision-to-copyright-law/all-about-the-draft-amendment/fighting-piracy-efficiently.html>. Article 39d of the Draft Copyright Act reads as follows (in French):

“1 Le fournisseur d’un service d’hébergement Internet qui sauvegarde les informations saisies par les usagers est tenu d’intervenir afin de prévenir qu’une œuvre ou un autre objet protégé soit à nouveau rendu accessible de manière illicite à des tiers par le biais de son service lorsque les conditions suivantes sont réunies:

a. l’œuvre ou un autre objet protégé a déjà été rendu accessible à des tiers de manière illicite par le biais du même service;

b. le fournisseur a été rendu attentif à la violation du droit;

c. le service, notamment en raison de son fonctionnement technique ou de ses objectifs économiques qui favorisent les violations du droit, génère un risque particulier qu’une telle violation soit commise.

2 Le fournisseur doit prendre les mesures qui peuvent être raisonnablement exigées de lui d’un point de vue technique et économique compte tenu du risque de violation”.

<sup>16</sup> Benhamou Yanniv (2017), *Website Blocking Injunctions Under Swiss Law – From Civil and Administrative Injunctions to Criminal Seizure or Forfeiture*, Expert Focus, no. 11, pp. 885-893, available at <http://archive-ouverte.unige.ch/unige:98862>. For a recent case confirming the absence of responsibility of the Internet access provider, see decision of the Federal Court 4A\_433/2018 of February 8, 2019, which considers that an Internet access provider cannot be considered as a participant in the violation of copyright when protected films are uploaded on illegal platforms.

<sup>17</sup> Decision of the Court of Justice of the Canton of Geneva ACJC/646/2016 of May 6, 2016.

another name in their domain names, so that other solutions need to be found. Such approaches may be purely internal<sup>18</sup> or require the collaboration of intermediaries.

11. Retail platforms like eBay have their own verification systems, such as eBay Authenticate, which takes 20 per cent off the sales price and may therefore be discouraging, the Verified Rights Owner Program or notice and takedown procedures. More and more internal procedures are adopted by trade platforms to identify infringing behaviors as early as possible, including IP checks, authentication and verification of user accounts or interdiction of advertisements on platforms for products that are particularly at risk (e.g., pharmaceuticals and luxury goods).

12. Collaboration with, and of, intermediaries is also instrumental. This includes financial institutions such as credit card issuers, to ensure that due diligence processes are undertaken by acquirers so that only legal transactions are submitted for payment<sup>19</sup>. It also includes collaboration between advertising agencies and their clients to avoid misplacement of digital advertisement. It finally requires shipping agencies, as part of the distribution chain, to work closely with customs<sup>20</sup>.

13. Finally public-private partnerships such as the Swiss Anti-Counterfeiting and Piracy Platform<sup>21</sup> play a crucial role in public awareness raising through campaigns, but also in the exchange of best practices between IP right holders, traders and intermediaries through regular meetings and training events.

## V. BLOCKCHAIN SOLUTIONS?

14. One option that is currently being discussed to address the problem of counterfeit goods is the use of blockchain-based technology. Already-existing technical solutions include track-and-trace, “which uses Radio-Frequency Identification (RFID) tags to track the physical location of a product, which are then stored in a centralized database”<sup>22</sup> and cryptographic approaches that “allow[s] customers to check the authenticity of products using their cell phones and does not require access to a database”. Compared to these, a blockchain approach may be used in manufacturing and digital supply chains, providing security and cost-effective decentralized protection systems<sup>23</sup>.

15. Some solutions are starting to be available in Switzerland, like tools for proving dates of creation of authentic goods rather than anti-counterfeiting solutions. Some developments on the latter may be observed in the watch industry. It is however too early to draw any conclusions on that point.

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<sup>18</sup> See, e.g., *Carole Aubert* (2015), *The Activities of the Federation of the Swiss Watch Industry in the Area of Preventive Actions to Address Online Counterfeiting* (document WIPO/ACE/10/22); available at: [https://www.wipo.int/edocs/mdocs/enforcement/en/wipo\\_ace\\_10/wipo\\_ace\\_10\\_22.pdf](https://www.wipo.int/edocs/mdocs/enforcement/en/wipo_ace_10/wipo_ace_10_22.pdf).

<sup>19</sup> Violation of internal rules may lead to fines or revocation of privileges.

<sup>20</sup> For a brief overview of the issues, see IP Watch (2017), *The Many Layers of Best Practices in the Fight Against Counterfeiting, Piracy*, available at: <https://www.ip-watch.org/2017/09/14/many-layers-best-practices-fight-counterfeiting-piracy/>.

<sup>21</sup> See <http://www.stop-piracy.ch/>.

<sup>22</sup> Alzahrani Naif and Bulusu Nirupama, *A New Product Anti-Counterfeiting Blockchain Using a Truly Decentralized Dynamic Consensus Protocol*, *Concurrency Computation: Practice and Experience*, Special Issue Paper 2019, pp. 3 *et seq.*, available at: <https://doi.org/10.1002/cpe.5232>.

<sup>23</sup> *Ibid.*

## VI. CONCLUSION

16. Switzerland has certainly garnered positive experiences in the fight against counterfeiting and piracy. However, combating trade in counterfeit and pirated goods needs to be actively kept on the agenda of both the private and public sectors. Adaptation of the legal framework to technological developments and new business models is fundamental and needs to take place not only at the national, but also at the international level. Finally, the fight against counterfeiting and piracy must also be kept high on the agenda not only of IP right holders themselves, but also of their business partners, including in particular intermediaries such as financial institutions, trading platforms, advertising agencies and shipping companies. It is only by constantly working hand in hand that successes may be achieved in the future.

[End of contribution]

## NEW TECHNOLOGICAL OPPORTUNITIES FOR INTELLECTUAL PROPERTY RIGHTS PROTECTION AND ENFORCEMENT: BLOCKATHON – FIGHTING COUNTERFEITS THROUGH BLOCKCHAIN TECHNOLOGY

*Contribution prepared by Ms. Claire Castel, Head, Intellectual Property in the Digital World and Awareness Service, European Union Intellectual Property Office (EUIPO), Alicante, Spain\**

### ABSTRACT

A recent study by the Organization for Economic Co-operation and Development and the European Union Intellectual Property Office (EUIPO) has shown that in 2016, counterfeit and pirated goods accounted for as much as 3.3 per cent of world trade and up to 6.8 per cent of European Union imports from third countries (in 2013, these figures were 2.5 per cent and 5 per cent respectively). These are alarming results. Enforcement officers have limited resources and technology, but blockchain could effectively support the fight against counterfeit and pirated products. In 2018, the EUIPO and the European Commission launched a Blockathon competition as a catalyst for innovation to tap the potential of blockchain, by uniting the blockchain community's efforts to develop solutions that could easily track the provenance of products. The overall goal of the 2018 Blockathon was to provide enforcement authorities with tools to identify counterfeits and criminals quickly, assist legitimate companies in protecting their business assets and provide tools for consumers to make informed choices. The winning prototypes will now be tested.

### I. THE BLOCKATHON

1. Up to 6.8 per cent of all imports into the European Union (EU) are counterfeit and pirated goods, estimated at EUR 121 billion in illegal trade<sup>1</sup>. According to further analysis by the European Union Intellectual Property Office (EUIPO) of the scope, scale and impact of intellectual property (IP) infringement in 13 sectors, the total loss in the EU was of an annual average of EUR 100 billion between 2012 and 2015<sup>2</sup>. The negative effects of counterfeiting are not merely economic losses, but also major risks posed to consumer health and safety.

2. The EU is at the forefront of action to combat counterfeiting. At the end of 2017, the European Commission announced a comprehensive package of measures to deliver a balanced IP enforcement system to meet current societal challenges<sup>3</sup>, including action “to support industry-led initiatives to combat IP infringements, such as (...) steps to better protect supply chains” and “initiatives to strengthen the capacity of customs and other authorities to enforce IP rights”<sup>4</sup>.

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<sup>1</sup> Organization for Economic Co-operation and Development (OECD) and European Intellectual Property Office (EUIPO) (2019), *Trends in Trade in Counterfeit and Pirated Goods*, available at: <https://doi.org/10.1787/g2g9f533-en>.

<sup>2</sup> EUIPO (2018), *Synthesis Report on IPR Infringement*, p. 28, available at: [https://euiipo.europa.eu/tunnel-web/secure/webdav/guest/document\\_library/observatory/docs/Full%20Report/Full%20Synthesis%20Report%20EN.pdf](https://euiipo.europa.eu/tunnel-web/secure/webdav/guest/document_library/observatory/docs/Full%20Report/Full%20Synthesis%20Report%20EN.pdf).

<sup>3</sup> European Commission (November 29, 2017), *A Balanced IP Enforcement System Responding to Today's Societal Challenge* (document COM/2017/0707 final), available at: <https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX:52017DC0707>.

<sup>4</sup> *Ibid.*, p. 3.



3. The EUIPO plays a key role in the overall EU strategy against counterfeiting and is considering innovative technologies, among many other initiatives, as means of improving the enforcement of IP rights and building the capacity of public authorities and all supply chain stakeholders to identify counterfeits<sup>5</sup>. Blockchain has clear potential in this respect, as it is a technology that can track and trace a product throughout the supply chain. In 2018, EUIPO, together with the European Commission, held the first ever anti-counterfeiting blockchain event in order to explore its potential.

#### A. THE CHALLENGE AND VISION

4. The rise of e-commerce is creating new challenges in the identification of genuine and counterfeit products, in particular by consumers. In 2017, 10 per cent of EU consumers unwittingly bought a counterfeit product, while 35 per cent wondered whether their online purchase was a genuine or counterfeit product<sup>6</sup>.

5. Many tools and solutions are currently used by businesses and public authorities to identify counterfeits but they work separately and are decentralized, poorly synchronized and unlikely to connect all relevant stakeholders, namely the EU, IP offices, governments, customs and other enforcement authorities, manufacturers, retailers, shipping companies, ports, airports and citizens<sup>7</sup>.

6. A potential solution to such a challenge is the kind of decentralization and synchronization blockchain technology that can deliver and create a secure and collectively shared record of authenticity, which should make it possible to track and trace an authentic product through the entire supply chain and enable all stakeholders to tackle counterfeiting more effectively. The vision is to use blockchain to develop the next level of anti-counterfeiting infrastructure, at which anyone interested (producers, consumers, transport services etc.) can check the authenticity of a product easily and alert right holders when counterfeits are found.

#### B. THE EVENT

7. The 2018 EU Blockathon was held in Brussels from June 22 to 25. For three days, some of the best coding teams worked on imagining and developing specific ways and means of delivering this vision, by linking existing tracking systems to public IP databases through blockchain solutions.

8. The event was launched by Andrus Ansip, Vice President, European Commission, Lowri Evans, Director General, Directorate-General for Internal Market, Industry, Entrepreneurship and SMEs, European Commission, and Christian Archambeau, Executive Director, EUIPO. They opened the competition between 11 teams, which took up the challenge of designing the best prototypes with the assistance of EUIPO and a wide range of supporting partners and experts.

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<sup>5</sup> The EUIPO has already developed actual services in that field, notably the Enforcement Database which contains information on IP-protected products and which police and customs officials from all Member States can access, thus making it easier for them to identify counterfeits and take action.

<sup>6</sup> EUIPO (2017), *European Citizens and Intellectual Property: Perception, Awareness and Behaviour*, available at: <https://euiipo.europa.eu/ohimportal/en/web/observatory/ip-perception-2017>.

<sup>7</sup> The EUIPO is preparing a technology watch web-based tool to compare the various anti-counterfeiting methods and types available according to purpose, main technical and business characteristics and adoption times.

a) The Challenges

9. The teams were presented with challenges affecting three categories of stakeholders:

- consumers, for whom solutions should be found to guarantee the authenticity of the product delivered or ensure that they can ascertain product authenticity by means of a mobile or other type of device;
- customs officials, for whom solutions should be found to validate the authenticity of parcels or of entire shipments to permit fast-tracking through customs – the teams also considered ways and means of supporting the trusted exchange of information between customs, right holders and logistics operators to support risk assessment, decision-making and action by customs officials; and
- logistics operators, for whom solutions should be found to enable them to acquire a trusted record and contribute to the tracking of authentic products as they pass from one operator to another, and thus improve trust and transparency with customs departments.

b) The Winning Team and the Proposed Solutions

10. Cryptomice was the overall winner of the 2018 EU Blockathon and also won the prize for the logistics operators challenge, the runner-up prize for the consumer challenge and half of the runner-up prize for the customs challenge.

11. The proposed solution consisted in creating a virtual twin for each physical product in a supply chain. As a product moves through the supply chain, its virtual twin moves through the various stakeholders' information systems by means of a blockchain solution. The physical product is only accepted by the next operator in the chain if it receives also its virtual twin. The blockchain solution ensures that data on the virtual twins are exchanged in a tamper-proof, trusted and secure environment. If physical goods are delivered without their virtual twins, a red flag is raised in a reporting system, facilitating the identification of bad actors in the distribution chain.

C. THE ANTI-COUNTERFEITING USE CASE AND ITS POTENTIAL

12. Building on the momentum created by the 2018 EU Blockathon and calls for further support for the development of a community of experts on concrete blockchain solutions to tackle counterfeiting, the EUIPO and the European Commission launched the Anti-Counterfeiting Blockathon Forum to bring interested parties and stakeholders together to follow up on the discussions and work on specific contributions. The forum was unveiled on February 7, 2019, and focused on drafting and defining the Anti-counterfeiting Blockchain Use Case<sup>8</sup> and related pilot to be defined and implemented. Experts in blockchain and IP enforcement are now invited to join the forum to work on delivering the next level of anti-counterfeiting infrastructure based on blockchain. The infrastructure will focus on interconnecting, rather than replacing, existing market systems. Furthermore, authenticity is at the core, addressing the need to prove that the goods received are genuine. In brief, IP right holders gain access to the anti-counterfeiting blockchain through a Blockchain Access Portal,

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<sup>8</sup> European Commission and EUIPO (2019), *Anti-Counterfeiting Blockchain Use Case*, available at: [https://euipo.europa.eu/tunnel-web/secure/webdav/guest/document\\_library/observatory/documents/Blockathon/Blockathon-Forum\\_Blockchain-Use-Case.pdf](https://euipo.europa.eu/tunnel-web/secure/webdav/guest/document_library/observatory/documents/Blockathon/Blockathon-Forum_Blockchain-Use-Case.pdf).

which gives permissions to create tokens in the blockchain representing goods (tokenized goods). Right holders may authorize other parties, such as manufacturers, to create and handle tokens on their behalf and record events and information on their goods.

13. The record on the blockchain is a unique and immutable token. As goods pass from one party to another, they exchange the token between digital wallets. The combination of a unique product identity and the continuous transfer of the digital identity between wallets will create mathematical proof that the goods are genuine.

14. Customs and other enforcement authorities can take advantage of tokenized goods with proven authenticity, by allowing their swift passage through customs checks.

15. Further optional services are associated with other perspectives:

- From the transport perspective, containment information is stored. The container is tokenized and related to the goods contained by means of mathematical algorithms, thus obviating the need to open a sealed container to check the authenticity of the contained goods whenever a container moves between parties in the supply chain.
- Optionally, the blockchain will hold shipment details, thus permitting the creation of a history of authentic shipping records, which may support risk assessments performed by enforcement authorities.
- From the enforcement perspective, the blockchain can generate events automatically, warning that the integrity of the goods is at risk or detecting an anomaly as goods pass between parties in the supply chain. Permissioned applications can monitor such events and send notifications to right holders and enforcement authorities. Optionally, the blockchain records action taken by customs to help parties in the supply chain to know the status of a shipment.
- Lastly, from the provenance perspective, the information held on the blockchain can be enhanced by adding records manually or automatically through sensors. Consumers can use such records to ascertain product authenticity and identify the production facility, supply chain movements and provenance of raw materials, among other things.

## **II. FOLLOW-UP**

16. The development of the next level of anti-counterfeiting infrastructure is highly complex. The main challenges are linked to, for example, relationships with existing track-and-trace systems and supply chain applications, the type of products fit for implementation, including products composed of an assembly of goods, the need to tokenize all goods in a single product line, the low impact on enforcement authorities and right holders, dependency on the involvement of all parties handling tokenized goods and support for the secondary market. All of these challenges will be explored further through the pilot and implementation stages.

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