

**Program and Budget Committee
Thirtieth Session
Geneva, July 8-12, 2019**

June 7, 2019

**Q&A
PROPOSED PROGRAM AND BUDGET 2020/21**

WIPO DIGITAL TIMESTAMPING SERVICE

The following Q&A is an addendum to the Q&A on a WIPO Digital Timestamping Service published at the 29th session of the PBC. Q1 to Q12 and their answers are reproduced from the first version of the Q&A, with slight editorial changes and some additional information. Q13 and onwards are newly added questions and their answers, mainly based on initial discussions made at the 29th session in May.

Q1: Please briefly explain what digital timestamping means?

A1: Digital timestamping refers to electronic signed certifications that prove the existence of a digital file at a specific date and time. Digital stamping enables you to state with a high level of certainty that the date and time on the timestamp is accurate and has not been tampered with. It can be considered as a digital notary-type service.

Q2: What is the WIPO Digital Timestamping Service?

A2: A proposal has been included in the 2020/21 Program and Budget that WIPO will become a trusted Time Stamping Authority (TSA), which will provide a certified “gold-standard” digital timestamping service to users of the Global IP Systems and other innovation actors (Program 28).

Q3: Please explain why the Service is being proposed.

A3: The Organization is facing rapidly evolving trends in the areas of Information Technology (IT), and its investment in IT systems and services in response to the needs for digital transformation is crucial and necessary for promoting innovation and for international cooperation, so that benefits from IT and other new technologies may be widely shared among Member States. As the Director General’s Foreword explains, according to WIPO’s preliminary studies, there is a significant demand for a trusted international entity providing this service. The service would be complementary to WIPO’s existing global systems.

Q4: Why is the proposal included in Program 28?

A4: It is because the proposed service is intended to provide strong levels of information assurance and security to users of the service. Secondly, the development of a “gold standard” WIPO Digital TimeStamping (“WDTS”) service requires a high level of expertise and knowledge in the relevant areas, which are currently available only in Program 28 which is responsible for “information assurance, security and safety”. Finally, WDTS will serve general purposes of digital certification of date and time, so not limited to any specific IP right.

Q5: What will WIPO actually do for this service?

A5: WIPO will become a trusted TSA that should comply with the relevant industry standards and certification (see Q11 and its answer below for more details). WIPO will provide the WDTS service to users who pay a fee, to recover the cost of WIPO's investment and operation of the service.

Q6: Please explain how the service can work for users who seek WIPO's certification.

A6: Users will access a specially dedicated WDTS web site in the secured area of the WIPO web site, use WIPO's software to create a digital hash from the user's digital file (the original file) kept on the user's PC, and send the hash to WIPO. WIPO will securely process the hash, apply a timestamp, and then send back to the user a digital timestamping certificate. When the user needs to have someone to verify the certificate, WIPO WDTS site will provide verification on demand as a free service.

Q7: Will WIPO store and keep the original file?

A7: No, WIPO will not receive the original file. The original file remains with the user of the service locally on their computers. WIPO neither receives the original file, nor has any information about the content. What WIPO will do is to receive only a hash created by the user from the user's digital file (the original file). A hash is created by an industry-standard cryptographic algorithm from the original file, and it is a unique string of bits (such as 908739a06e0998f39d671e3a158a2f085d590116dfaadfcae181ee0fc5e2379). The hash is a unique fingerprint of the original file. It would be impossible to derive the original file from the hash.

Q8: Is there any risk of fraud?

A8: WIPO will not ascertain or arbitrate the ownership of the original work, only certify the existence/possession of the digital work at a specific point in time. WIPO will clarify this in the disclaimer and explanation of the WDTS to avoid any misunderstanding about the risk of fraud. WDTS will use robust industry standard technologies such as IETF RFC 3161 among others, thereby reducing the risk of abuse. No external party, not even WIPO, will be able to modify a digital timestamp once generated, due to the nature of the technologies used. By using WDTS, users in the world can benefit from robust, timely and effective services from a most trusted international organization in the area of IP.

Q9: Why should WIPO provide digital timestamp services, while private corporations and a few IPOs currently provide such services?

A9: Existing services are mainly limited to some countries and not available worldwide. In response to the digital transformation trends across the world, WIPO can provide services that are more inclusive to potential users in countries where digital timestamping services are not available. In view of WIPO's credibility and trust gained from users of WIPO's global IP protection services, WIPO should be able to provide the most trusted services, with a focus on IP-related assets.

Q10: Will WIPO create a trade secret database or registry?

A10: No, WIPO will not create a registry of original files for which a WIPO digital timestamp certificate is provided. It will only store the hashes of the original files.

Q11: Will WIPO be technologically capable of providing digital timestamp services?

A11: Technologies used for the provision of digital timestamp services are mature. Industry standards (such as RFC 3161) outline the requirements that a third party (such as WIPO) must meet in order to operate as a TSA, using a proven technology called Public Key Infrastructure (PKI) to ensure a high level of confidentiality, integrity, and authenticity of the digital token. WIPO has the knowledge, skills and capability to establish and operate such a service.

Q12: How many resources do WIPO require?

A12: Initial investment for a pilot project of WIPO Digital Timestamping service in 2020/21 is about 1.3 million Swiss francs. WIPO aims to establish the business and technical infrastructure in 2020 for the launch of the initial service. The initial investment cost would be recovered within two to five years from the launch, based on our preliminary assumptions and analysis.

Q13: What are the advantages and disadvantages of a WIPO Digital Timestamping service?

A13: The Secretariat conducted a SWOT (Strengths, Weaknesses, Opportunities and Threats) analysis, which is standard during the business planning and market assessment phases.

According to the Secretariat's preliminary study with external experts in this field, the outcome of the SWOT analysis of WDTS is as follows:

WIPO's strengths and opportunities (advantages) are:

- WIPO's worldwide reputation and strong trust in the area of innovation and creativity, demonstrated by a large number of users of WIPO IP protection systems (PCT, Madrid, and the Hague Systems) and the WIPO Arbitration and Mediation Center (AMC);
- WIPO's experience and the credibility that WIPO has gained through the long-term services provided under PCT in providing a secure technical infrastructure and efficient, trustworthy and credible services in the handling of unpublished applications before the publication of PCT international applications;
- Opportunities with WIPO's worldwide customers and its existing users of WIPO IP protection systems who could potentially use the WDTS as a complementary service to reinforce the digital management of their innovation-related files and data as an integral part of IP asset management;
- Opportunities opened for WIPO, as an international organization committed to inclusive and worldwide diffusion of new technologies; Member States may request WIPO to take a lead in filling the existing gap in the global market and to make WDTS widely available in the world as one of the tools for the ongoing digital transformation, in particular, in those countries where currently trustworthy digital timestamping services are not available; and
- WIPO should be able to use its existing capacity-building program to effectively educate and raise awareness of the importance and usefulness of digital timestamping in the context of better management and protection of innovation and creative activities.

Regarding weaknesses and threats (disadvantages), the following points were identified:

- WIPO would have to make an initial investment to set-up ICT systems for WDTS from scratch;
- As with any online service, WDTS is exposed to the risk from data breaches; and
- There are many providers of similar services in the market.

The WIPO Secretariat is confident, however, that WIPO's advantages outweigh the weaknesses and threats for the following reasons:

- The initial investment cost is estimated at 1.3 million Swiss francs and it is expected that the fee income should recuperate that cost within two to five years;
- The technologies to be used for WDTS are mature technologies, following industry standards with the minimum risk of failure;
- The risk associated with WDTS will be mitigated by internationally standardized technologies used in processing only a hash (no handling of the original file), and by the support from WIPO's most robust and secure technical infrastructure; and
- WIPO will be able to provide a trustworthy digital timestamping service at the global scale worthy of WIPO's brand in a complementary way that fills a market gap; existing services mainly target users in limited jurisdictions.

Q14: What domains and users does WIPO target for the service?

A14: As shown in the presentation on slide 8 "Target Use Case"

(https://www.wipo.int/edocs/mdocs/govbody/en/wo_pbc_29/wo_pbc_29_presentation_on_wipo_digital_timestamping_service.pdf), WIPO considers the following three domains and user groups as priority targets:

- Owners of trade secrets for the digital recording and management of IP-related assets and other unpublished files or data such as source code and research material;
- Users of PCT, Madrid and the Hague Systems for the management of preparatory works prior to the filing of patent, trademark or industrial design applications, or other works in pre-competitive stage, in order to prepare for a future need of defense; and
- Other actors and stakeholders of innovation and creative activities for the management of their IP-related documents, such as licensing document, and non-disclosure agreements.

WDTS does not preclude other users from using WDTS for purposes other than those specifically mentioned above.

Digital timestamping services may be useful to prove the date and time of publication of certain documents that could be cited as the prior art in connection with patent examination. Another possible use of digital timestamping could be in relation to claiming the use of a specific trademark. Digital timestamping services should hence enhance the level of trust in the digital environment.

Also, in view of the accelerated speed of knowledge and information sharing in open science and open innovation, it may be of greater interest to scientists when they want to claim first

right to new discoveries, while waiting for their official publication in journals. WDTS may also be useful to prove the fact that certain products were exhibited at a certain date and time with a view to provide supporting evidence in connection with the grace period.

Q15: To what extent should WIPO deal with the issue of authorship, creatorship and inventorship?

A15: As explained in the reply to Q8, WIPO will neither ascertain nor arbitrate the ownership/ creatorship/inventorship of the original work. First, according to the proposed model of WDTS, it is technically impossible for WIPO to know the content of the original file. Second, such questions should be left to specialized parties involved in the ownership dispute to resolve in the relevant jurisdiction according to the applicable laws. WDTS does not provide such dispute resolution services.

Q16: Given that, in some countries, specific requirements enforced by relevant laws and regulations should be met in order for digital timestamping services to be accepted in that jurisdiction, how should WIPO ensure that WDTS will be acceptable in as many national jurisdictions as possible?

A16: WIPO is aware of the diversified legal requirements of certain jurisdictions for the acceptance of digital timestamping as valid evidence of existence. Such diversity is, however, within the expected range of industry standards that WIPO intends to use. WIPO will align WDTS with those requirements specified by certain countries and seek cooperation from those countries to expand usage of WDTS.

Q17: Please provide a more detailed breakdown of the 1.3 million Swiss francs indicated as the initial investment (see Q12 and A12, above)

A17: Approximately 400,000 Swiss francs out of 1.3 million Swiss francs covers the cost of the project manager. The project manager will be hired through a temporary contract for a maximum period of two years during the next biennium. Some time and resources for supporting the project manager will be required from the existing human resources budget of Program 28. Non-personnel costs for the project (900,000 Swiss francs) in 2020/21 include product development and management tasks, infrastructure, maintenance and support costs, and audit-related costs. The breakdown by year of the 1.3 million Swiss francs is 749,000 Swiss francs and 549,000 Swiss francs in the years 2020 and 2021, respectively. The initial investment cost is expected to be recovered within two to five years from WDTS's launch, based on an initial estimate as explained in response to Q19 below.

Q18: What is the planned pricing structure and business model for the service?

A18: The business model planning and market assessment is ongoing for the WDTS service, and no model or pricing point has been decided to-date.

WIPO will adopt its policy of setting fees to recover the cost of the investment and operation, as were the cases of other WIPO fee-paying services such as PCT, Madrid, and the Hague Systems.

WIPO will also take into consideration the current fee level of similar services in the market. According to WIPO's preliminary study of the current market, there is a wide range of business models and price points across the market and WIPO plans to test potential models in 2019, collecting insights and feedback. A business model can include a transactional (i.e. price per individual time-stamp), subscription (i.e. annual, monthly, or other period renewable fee providing a set number of included digital time stamps), and/or bundle (i.e. a set fee per number of time stamps, mainly in the form of a bulk volume) structure.

WDTS plans to align itself with market standards providing a good level of flexible options and pricing points that will make the service accessible to a wide range of different markets.

Q19: What is the estimated usage and growth for the service?

A19: WIPO does not have solid figures of projected usage, since the use will be affected by many parameters, including fee level, the investment in marketing, and the degree of adoption by target users. Under a modest market scenario, WIPO's current assumption is that during the initial year of operation, WDTS will process about 100,000 stand-alone digital timestamping requests. In the second year and subsequent years to follow, WIPO expects a gradual annual growth rate for subscriptions and stand-alone digital timestamp requests, always as part of WDTS's modest market scenario. These estimates will change as we finalize the fee model and market analysis later this year.

Q20: Are there any limitations to the format of the original file for which WDTS can be used?

A20: WDTS will cover any digital file or data format, whether it is text or audio-visual in nature; as long as it is digital, there are no format-related limitations in using WDTS. A hash can be created from any file format.

Q21: In view of diversity of technologies used for digital timestamping, what made WIPO decide to adopt technologies complied with IETF RFC 3161?

A21: WIPO will follow industry standards relevant and common in the area of digital timestamping. In order to operate as a TSA, IETF RFC 3161 is a defacto standard that all TSAs comply with, including public sector TSA services. In addition to RFC 3161, WIPO will seek to comply with other internationally accepted standards such as the European Standard for Trust Service Providers, issuing certificates- ETSI EN 319 411-1/2 and ETSI TS 101 861- that define the time stamping profile. Compliance with these internationally recognized standards is a differentiating factor when providing global timestamping services, in the capacity of a TSA. While the specific technologies that will be procured will be through a formal WIPO procurement process, these technologies will be expected to support or implement standards such as RFC 3161.

STRATEGIC GOAL III FACILITATING THE USE OF IP FOR DEVELOPMENT

Q1: Please briefly explain the reason for the changes in resource allocations under ERs III.4 and IV.2 under Program 9 in the Draft Proposed Program and Budget 2020/21?

A1: The decrease of resources under ER III.4 primarily reflects: (i) a redistribution of personnel resources across Bureaus to support an enhanced focus on capacity building (ER III.2); and (ii) an enhanced emphasis on promoting enhanced access to IP information in the Office of the Deputy Director General (reflected under ER IV.2).

In addition to (ii) above, the increased resources under ER IV.2 is the result of: (i) an enhanced focus on appropriate technology projects for LDCs, previously reflected under ER III.1; and (ii) technology transfer initiatives in the Regional Bureaus, resulting in a shift of resources from ERs III.1, III.4 and IV.4.

Q2: Can you provide a breakdown of the budget for each of the Regional Bureaus in the Draft Proposed Program and Budget 2020/21?

A2: The breakdown of the budget for each of the Regional Bureaus in the Draft Proposed Program and Budget 2020/21 is reflected in the table below.

Financial Resources for Program 9 by Unit
(in thousands of Swiss francs)

	2018/19 Approved Budget			2018/19 Budget after Transfers			2020/21 Proposed Budget			Difference from 2018/19 Approved Budget	
	Personnel Resources	Non-Personnel Resources	Total	Personnel Resources	Non-Personnel Resources	Total	Personnel Resources	Non-Personnel Resources	Total	Amount	%
<i>1. Financial Resources</i>											
0030 Office of the DDG- Development Sector	3,975	653	4,628	3,411	772	4,183	3,331	653	3,984	(644)	-13.9%
0031 Regional Bureau for Africa	3,686	1,696	5,382	3,450	1,661	5,111	3,136	1,696	4,832	(550)	-10.2%
0032 Regional Bureau for Arab Countries	3,979	1,696	5,675	3,065	1,696	4,761	2,986	1,696	4,681	(993)	-17.5%
0033 Regional Bureau for Asia & the Pacific	4,066	1,696	5,762	3,727	1,672	5,400	3,720	1,696	5,416	(346)	-6.0%
0034 Regional Bureau for Latin America & the Caribbean	4,046	1,696	5,742	4,225	1,696	5,921	4,342	1,696	6,038	296	5.2%
0035 Division for Least-Developed Countries	2,545	1,052	3,597	2,609	1,062	3,671	2,538	1,152	3,691	94	2.6%
GRAND TOTAL	22,297	8,488	30,785	20,487	8,559	29,046	20,054	8,588	28,642	(2,143)	-7.0%

STRATEGIC GOAL VII ADDRESSING IP IN RELATION TO GLOBAL POLICY ISSUES

Q1: What is the number of books downloaded by Authorized Entities (AEs) in developing and least developed countries out of the total of 14,500 books downloaded through the ABC Global Book Service?

A1: Of 14,500 digital files downloaded (cumulative as of December 31, 2018), 1,200 (8.3%) were downloaded by authorized entities located in developing countries.

To increase the number of files downloaded by developing countries, the following measures have been taken:

- increasing support to developing countries for adherence to the Marrakesh Treaty and provision of technical assistance on legislation;
- accelerating the signing of additional AEs in developing countries;
- dedicating additional resources to further accelerate the integration of catalogues of new AEs; and
- implementing capacity building projects in developing countries to train and assist in the production of accessible copies of local educational works.

ANNEX III – ALLOCATION OF INCOME AND EXPENDITURE BY UNION

Allocation of income and expenditure by Union without the nominal contribution of the CF, the Hague and the Lisbon Unions of 1 per cent of their revenue towards common expenses.

Table 11: Overall Scenario by Union

(in thousands of Swiss francs)

	CF Unions	PCT Union	Madrid Union	Hague Union	Lisbon Union	Total
2020/21 Income	36,084	674,122	164,491	13,319	779	888,795
2020/21 Expenditure						
Direct Union	25,218	238,966	77,736	19,455	1,542	362,917
Direct Admin	12,604	116,319	55,606	11,654	837	197,020
Sub-total, Direct	37,822	355,284	133,342	31,109	2,378	559,936
Indirect Union	-	117,413	11,471	-	-	128,884
Indirect Admin	-	61,281	5,987	-	-	67,268
Sub-total, Indirect	-	178,694	17,457	-	-	196,151
Total, 2020/21 Expenditure	37,822	533,979	150,800	31,109	2,378	756,088
Estimated IPSAS adjustment to budget	975	13,765	3,887	802	61	19,490
Total Expenditure after IPSAS adjustments	38,797	547,743	154,687	31,911	2,440	775,578
Operating Result	(2,713)	126,379	9,804	(18,592)	(1,661)	113,217
RWCF Target*	18,911 50.0%	133,495 25.0%	37,700 25.0%	4,666 15.0%	- n/a	194,772 25.8%

*RWCF targets are calculated by applying the PBE factors, as per the Revised Policy on Reserves (WO/PBC/23/8), to the biennial expenditure for each Union

Table 12: Income estimates by Union

(in thousands of Swiss francs)

	CF Unions		PCT Union		Madrid Union		Hague Union		Lisbon Union		Total	
	Amount	%	Amount	%	Amount	%	Amount	%	Amount	%	Amount	%
Income on accrual basis												
Fees	-	-	672,132	99.7%	162,184	98.6%	11,963	89.8%	50	6.4%	846,329	95.2%
Income on a cash basis												
Contributions (unitary)	34,754	96.3%	-	-	-	-	-	-	-	-	34,754	3.9%
Arbitration	594	1.6%	561	0.1%	1,518	0.9%	627	4.7%	-	-	3,300	0.4%
Publications	7	0.0%	700	0.1%	60	0.0%	-	-	-	-	767	0.1%
Miscellaneous Income	676	1.9%	676	0.1%	676	0.4%	676	5.1%	676	86.8%	3,380	0.4%
Sub-total	36,031	99.9%	1,937	0.3%	2,254	1.4%	1,303	9.8%	676	86.8%	42,201	4.7%
IPSAS adj. to Income on a cash basis	53	0.1%	53	0.0%	53	0.0%	53	0.4%	53	6.8%	264	0.0%
TOTAL	36,084	100%	674,122	100%	164,491	100%	13,319	100%	779	100%	888,795	100%

Table 13: Budget by Program and Union

(in Swiss francs)

	CF Unions	PCT Union	Madrid Union	Hague Union	Lisbon Union	Total
1 Patent Law	403,120	5,441,883	177,197	-	-	6,022,200
2 Trademarks, Industrial Designs and Geographical Indications	1,054,920	-	3,428,490	791,190	-	5,274,600
3 Copyright and Related Rights	13,723,206	2,922,217	285,483	-	-	16,930,906
4 Traditional Knowledge, Traditional Cultural Expressions and Genetic Resources	7,119,270	-	-	-	-	7,119,270
5 The PCT System	-	218,882,389	-	-	-	218,882,389
6 Madrid System	-	-	61,158,680	299,204	65,807	61,523,690
7 WIPO Arbitration and Mediation Center	2,275,341	2,148,933	5,814,759	2,401,748	-	12,640,781
8 Development Agenda Coordination	-	3,362,817	328,527	-	-	3,691,344
9 Africa, Arab, Asia and the Pacific, Latin America and the Caribbean Countries, Least Developed Countries	-	24,750,660	3,320,027	682,267	69,590	28,822,544
10 Transition and Developed Countries	-	6,812,913	1,331,502	607,165	10,000	8,761,580
11 The WIPO Academy	-	11,982,633	1,170,629	-	-	13,153,262
12 International Classifications and Standards	642,017	4,993,468	1,426,705	71,335	-	7,133,526
13 Global Databases	-	6,915,631	2,941,298	784,921	-	10,641,850
14 Services for Access to Information and Knowledge	-	6,139,550	1,258,441	228,180	-	7,626,172
15 Business Solutions for IP Offices	-	13,128,251	1,282,549	-	-	14,410,800
16 Economics and Statistics	-	6,745,597	659,003	-	-	7,404,600
17 Building Respect for IP	-	4,216,914	411,966	-	-	4,628,880
18 IP and Global Challenges	-	4,432,017	432,981	-	-	4,864,998
19 Communications	-	14,940,441	1,459,589	-	-	16,400,030
20 External Relations, Partnerships and External Offices	-	12,752,030	1,751,169	691,605	25,000	15,219,804
21 Executive Management	1,284,353	17,823,830	5,946,250	1,122,610	85,260	26,262,302
22 Program and Resource Management	1,782,540	25,497,606	10,564,502	1,935,489	118,331	39,898,468
23 Human Resources Management and Development	1,371,786	19,037,204	6,351,047	1,199,032	91,064	28,050,133
24 General Support Services	1,945,962	27,005,418	9,009,342	1,700,899	129,180	39,790,801
25 Information and Communication Technology	2,294,629	33,767,378	11,550,732	2,265,066	152,326	50,030,131
26 Internal Oversight	245,591	3,408,234	1,137,029	214,663	16,303	5,021,821
27 Conference and Language Services	1,756,925	24,382,030	8,134,147	1,535,669	116,631	35,925,402
28 Information Assurance, Safety and Security	1,204,513	16,715,833	5,576,609	1,052,824	79,960	24,629,738
30 SMEs and Entrepreneurship Support	-	5,810,648	567,664	-	-	6,378,312
31 The Hague System	-	-	-	12,897,800	-	12,897,800
32 Lisbon System	-	-	-	-	1,371,200	1,371,200
Unallocated	717,854	9,962,145	3,323,495	627,452	47,654	14,678,600
TOTAL	37,822,026	533,978,670	150,799,812	31,109,120	2,378,306	756,087,934