

Committee on WIPO Standards (CWS)

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REPORT BY THE API TASK FORCE (TASK No. 56 AND TASK No. 64)

Document prepared by the API Task Force Co-Leaders

SUMMARY

1. The API Task Force works under the framework of Tasks No. 56 and No. 64. The Task Force meets quarterly to discuss proposals for revisions and support for implementation of the Standards which are managed by the API Task Force: WIPO Standard ST.90 on Web Application Programming Interfaces (API) and WIPO Standard ST.97 on JavaScript Object Notation (JSON). The API Task Force also supported the International Bureau to organize the 'WIPO API Day 2023' online event, where IP Office and IT industry experts exchanged their experience in this sector.

BACKGROUND

2. The API Task Force, currently co-led by the Canadian Intellectual Property Office (CIPO) and the European Union Intellectual Property Office (EUIPO), was established in November 2019 (see paragraph 51 of document CWS/7/29). Initially Tasks No. 56 and No. 64 were undertaken by the XML4IP Task Force but the decision was made that these Tasks should be conducted by participants with broad Web API and JSON expertise (see paragraph 49 of document CWS/7/29).

3. At its eighth session held in 2020, the Committee on WIPO Standards (CWS) adopted WIPO Standard ST.90 (see paragraph 15 of CWS/8/24). At its tenth session held in 2022, the CWS adopted WIPO Standard ST.97 and designated the API Task Force to deal with Task No. 64 (see paragraph 44 of CWS/10/22).

4. Tasks No. 56 and 64 are currently assigned to the API Task Force, the descriptions of which are:

- Task No. 56: “*Ensure the necessary revisions and updates of WIPO Standard ST.90; support the International Bureau in developing a unified catalog of APIs that are made available by Offices; and support the International Bureau in promoting and implementing WIPO Standard ST.90.*”. The CWS requested the API Task Force to present a final proposal for the new ST.90 draft standard at CWS/8.
- Task No. 64: “*Ensure the necessary revisions and updates of WIPO Standard ST.97*”.

PROGRESS ON TASK NO. 56

Objectives

5. At a high-level, in conducting Task No. 56, the Task Force hopes that the following benefits will be realized by Intellectual Property Offices (IPOs):

- guidance on industry best practices, regardless of the size of the Office;
- a recommendation on an appropriate data structure and a standardized business vocabulary which would facilitate communication between machines or software applications developed by IPOs;
- a recommendation on security and authentication solutions which would assist IPOs in selecting software and approaches to authentication where different required security levels exist; and
- a naming convention which will provide a standardized approach in identifying data resources while versioning of the said resources would facilitate Intellectual Property (IP) data exchange at the international level.

Relevant actions for 2023

6. The API Task Force met virtually to discuss future improvements to WIPO Standards ST.90 and ST.97 on a quarterly basis during 2023 and continued these discussions online through their Task Force wiki. During early discussions, the Task Force confirmed the following development priorities related to Task No. 56 for the calendar year of 2023:

- Development of a unified API catalog;
- Preparation of a proposal for a revision of WIPO ST.90 considering the adopted WIPO ST.97 and its revisions; and
- Organization of the event “WIPO API Day” in 2023, similar to the one which was organized in 2020 by the International Bureau.

Potential challenges or dependencies

7. The API Task Force identified potential challenges in achieving these goals including being able to guarantee the participation of IPOs in the activities led by the Task Force, and time and resource constraints.

Progress evaluation

8. Despite these challenges progress was made on each of the goals indicated above and these are indicated below.

Development of the Unified API Catalog

9. The unified API Catalog is proposed as an automated tool, which crawls public IP Office sites to capture the public APIs they provide and it was first proposed at the eighth session of the CWS (see paragraph 17 of CWS/8/24). The original proposal was to provide a list of these APIs rather than a gateway, and this was supported by API Task Force members at the time. A portal was then proposed as an improved option by the International Bureau. The basic concept is to build an API catalog 'portal' which lists public APIs offering IP-related data or services published by IP Offices and which would be automatically updated at a regular intervals.

10. The user requirements for this project were approved on the Task Force wiki after two rounds of discussion on the wiki. An interactive mock-up of the proposed WIPO API Catalog portal was presented by the International Bureau to the Task Force. The different filter elements and general layout was appealed to Task Force members.

11. The International Bureau, in collaboration with the Task Force, is considering crawling API Specification files, provided in standardized formats (e.g., OpenAPI or WSDL), to capture required information, and implementing manual updates when automatic crawling is not feasible. IP Offices will be encouraged to send the International Bureau the URLs of their API services and related API Specification files. The International Bureau will also develop a set of comprehensive guidelines to assist IP offices to update their APIs, specifications and related documents, to ensure that they can be automatically indexed by the WIPO API Catalog crawler. These guidelines will serve as a roadmap for potential new participants, including IP offices and industries, as they join this initiative.

12. The International Bureau proposes that the development of the WIPO API Catalog portal be another exemplary cooperative project among IPOs for the benefit of the IP community. In this regard, the International Bureau proposed that APIs provided by all Task Force Offices should be considered in the scope of the development project and has invited the Co-Leaders of the API Task Force to join the development project board.

13. The International Bureau is currently conducting a tender process to select a company to implement the portal. Once a vendor is selected, the project board will be established, and the project will commence with a kick-off meeting scheduled for October.

14. The key objectives of this project include:

- Analysing and documenting the API services provided by the participating IPOs;
- Identifying the best means to automate the crawling process as much as possible,
- Developing a set of comprehensive guidelines that will help IP offices to update their APIs, specifications and related documents; and
- Defining a list of common labels/categorizations, and
- Determining the essential and optional information that IP offices should provide the International Bureau.

Revision and updates of the WIPO Standard ST.90

15. According to the decision made at the tenth session of the CWS, the Secretariat introduced necessary editorial amendments to WIPO ST.90 under the framework of Task No. 56 (see paragraphs 47 and 48 of document CWS/10/22), after the adoption of WIPO Standard ST.97. The revised WIPO Standard ST.90, version 1.1, was published in February 2023.

16. Improvements to WIPO Standard ST.90 are managed using an Improvement Register. Proposals are made by Task Force Members and then opened to the whole Task Force for comment so that they can be refined or agreed for inclusion in the next version of WIPO ST.90. There are currently three proposals open for discussion on the register:

- Improvement to Annex I: to present the four tables in a more usable manner. The EUIPO indicated that perhaps it would be better to include all four tables as a single table on a single worksheet. Then filters could be used to adjust for different compliance levels.
- Improvement to Annex II: to provide a dynamic list of IP vocabulary instead of a static one based on ST.96 version 5.0.
- GraphQL: this was a proposal by an architect at the USPTO to expand the scope of ST.90 to include GraphQL. This just provides another option for users to 'pick & choose'.

17. EUIPO has produced an Excel workbook for use by IPOs to determine the compliance rating of an API in relation to WIPO Standard ST.90. By performing this analysis, they can determine their particular compliance rating and by use of this template Offices can be sure that there is harmonisation with respect to commonly exposed endpoints. The Task Force Co-Leaders encourage other Offices to participate in the compatibility matrix analysis.

18. The Task Force is seeking feedback from other Offices on any different endpoints that they may have already exposed, including a definition of terms, and requests the CWS to invite IPOs to provide relevant information in replying to a CWS circular issued by the Secretariat.

WIPO API Day 2023 event

19. WIPO API Day 2023 was held online on June 12 and 13, 2023, which was organized by the International Bureau and supported by the Task Force. This event gathered an excellent list of international speakers from different fields who shared with participants their knowledge and experience in the use of APIs. The event also brought the attention of IPOs and the private sector to the API Task Force's activities and to relevant WIPO Standards.

20. Each day of the event was focused on a particular theme:

- Day 1 “API Revolution” was dedicated to discuss general API aspects such as API strategy, API management or API standards.
- Day 2 “APIs for Intellectual Property” was dedicated to IP-related topics, and to exchange APIs experiences, in the IP domain, not only from the IP Offices perspective, but also from the IP industry, identifying the overall needs in this area.

21. Feedback from the event indicated that it was beneficial in educating participants on both the status of API technology but also on IP-related topics. Moreover, the IP-focused presentations were beneficial especially for API developers because presenters were able to demonstrate real-world use cases for API technology and the challenges that IPOs may encounter when implementing them. After the event, some Offices expressed their willingness to present their API journey at the future events. For upcoming events, the Task Force proposes to extend the time allocated for each presentation, and to contact the international speakers well in advance to guarantee their participation.

22. Further details, including videos and presentation slide decks has been published on the WIPO website at: https://www.wipo.int/meetings/en/details.jsp?meeting_id=76392.

PROGRESS ON TASK NO. 64

Objectives

23. In undertaking Task No. 64, the Task Force works to provide the necessary revisions and updates of WIPO Standard ST.97.

Relevant actions for 2023

24. Following the adoption of WIPO Standard ST.97 at the tenth session of the CWS (see paragraph 43 of CWS/10/22), the Standard was published in Part 3 of the WIPO Handbook in February 2023, in English, French and Spanish.

25. Since the last session of the CWS, the API Task Force has been working on completing Office compatibility analysis relative to WIPO ST.97. CIPO specified that, regarding WIPO ST.97, all their APIs currently have WIPO ST.96-compliant payloads. The Task Force also reviewed again the history of development for the WIPO Standard ST.97 and is working to investigate how to simplify the hierarchy of JSON schemas which are compatible with the WIPO ST.96 XML structure.

Potential challenges or dependencies

26. The API Task Force identified potential challenges in conducting this Task including:

- maintaining the compatibility between WIPO ST.97 and across future revisions of WIPO ST.96. Future revisions to WIPO ST.96 and WIPO ST.97 may need to be aligned and/or reference each other where appropriate. The existing ST.97 JSON schemas were based on ST.96 XML version 5.0, however the most recent version of ST.96 is version 7.1. The Task Force must determine whether there is a need to update WIPO ST.97 each time WIPO Standard ST.96 is revised.
- ensuring the required participation to test the WIPO ST.97 JSON transformation tool and establish a practice in its use. This type of Office feedback is critical in determining whether it is useful and determining an appropriate process for its use.

Progress evaluation

27. The first version of WIPO Standard ST.97 was published on the premise that it would remain compatible with WIPO ST.96, so one of the main challenges is to reduce the complexity inherited from WIPO ST.96, with a clear goal to define a workable version of WIPO ST.97 which facilitates the maximum adoption among the IPOs and external organizations.

28. In undertaking this task, the Task Force should leverage the simplified hierarchy of JSON, as the current version of WIPO ST.97 is quite complicated due to its concordance with the XML structure provided in WIPO ST.96. A proposal to test the simplification of the WIPO ST.97 `TrademarkApplication` component has been made by the Task Force Co-Leaders, since the structure of trademark documents is far less complex than that of patent applications. The results of this exercise will be reported to the CWS at the twelfth session, as part of the proposal to revise WIPO ST.97.

29. The Task Force has indicated that once they have completed their compatibility analysis with WIPO ST.90, they will perform a similar exercise for WIPO ST.97 but with a trademark and/or design focus. IPOs are invited to participate in testing of the WIPO ST.97 JSON transformation tool and establish a practice in its use.

WORK PLAN

30. The API Task Force will continue its work on Tasks No. 56 and No. 64 and note below the activities which are planned for the period prior to the twelfth session of the CWS.

WIPO API Catalog development project:

31. The Task Force will participate in the WIPO API Catalog portal development project which the International Bureau plans to launch in 2023. The first phase of the implementation intends to launch a pilot with 15 IPOs to provide a proof of concept. Once the value of this portal is shown, this could be potentially extended to all accessible IP-related APIs, based on the success of the initial pilot and the agreement of relevant parties. The International Bureau will resend an invitation to all Task Force members to inquire about their interest in participating in the pilot project, aiming to secure the active participation of 15 IP Offices from the current Task Force Membership.

WIPO Standard ST. 90:

32. Discussions will continue on proposals which are currently listed on the Improvement Register published on the Task Force wiki, including potential improvements to Annexes I and II to the Standard, or the potential inclusion of GraphQL as another option within the Standard.

33. The Task Force will share their implementation plans for WIPO Standard ST.90 and their experience in conducting these plans. The International Bureau announced that new APIs will be developed according to the recommendations provided in WIPO ST.90 and improvements to existing APIs will also be made considering WIPO ST.90. There may be exceptions only when an older technology stack must be used as these are likely not compatible with WIPO Standard ST.90. To support this task, the International Bureau will integrate WIPO ST.90 rules into an internal API Management system which will automatically assess whether a new API adheres to or deviates from the recommendations of WIPO ST.90.

WIPO Standard ST.97:

34. The Task Force would like to emphasize that feedback from IPOs who have already implementing this Standard is highly appreciated, especially regarding the challenges which have been encountered. This information is very helpful in identifying areas where simplification of components might be possible. The Task Force is aiming to gather this information from the various Offices, with the goal of achieving a simplified version of WIPO ST.97 that can be easily adopted by both IP offices and the industry. This updated version of WIPO ST.97 will be presented at the twelfth session of the CWS.

35. An Improvement Register for WIPO ST.97 is pending and will define the list of improvements proposed in the history of development by the XML4IP Task Force and be published on the Task Force wiki.

36. *The CWS is invited to:*

(a) note the content of the present document;

(b) note the release of WIPO Standard ST.90 versions 1.1, as indicated in paragraph 15 above;

(c) test the JSON transformation tool as indicated above in paragraph 29;

(d) request the Secretariat to issue a circular inviting IPOs to provide feedback on the endpoints of APIs established by them and indicate their definition of terms as referred to in paragraph 18 above; and

(e) note the work plan of the API Task Force, as indicated in paragraphs 30 to 35 above.

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