WIPO
WORLD
INTELLECTUAL PROPERTY
ORGANIZATION

CWS/7/3
ORIGINAL: ENGLISH
DATE: JUNE 12, 2019

Committee on WIPO Standards (CWS)

Seventh Session
Geneva, July 1 to 5, 2019

REPORT ON TASKS NO. 41, NO. 53, NO. 56 and NO. 63

Document prepared by the International Bureau

INTRODUCTION

1. At its sixth session held in October 2018, the Committee on WIPO Standards (CWS) received progress reports from the XML4IP Task Force (XML4IP TF) on the activities conducted while undertaking the following CWS Tasks:

- Task No. 41: “Ensure the necessary revisions and updates of WIPO Standard ST.96”;
- Task No. 53: ” Develop XML schema components for geographical indications”; and
- Task No. 56: “Prepare recommendations for data exchange supporting machine to machine communications focusing on (i) message format, data structure and data dictionary in JSON and/or XML (ii) naming conventions for Uniform Resource Identifier (URI) of resources”.

(See paragraph 41 to 61 in document CWS/6/34.)

Further details are provided below in respect to the progress achieved in conducting each Task.

2. Furthermore, at its sixth session, the CWS considered a proposal for updating existing WIPO Standards related to the publication of information about Intellectual Property (IP) rights and legal status events and developing model eXtensible Stylesheet Language Transformations (XSLT) for processing data in eXtensible Markup Language (XML) format, in particular in WIPO Standard ST.96. The CWS created two new Tasks and one of them is Task No. 63, the description of which reads: “Develop visual representation(s) of XML data, based on WIPO XML Standards, for electronic publication”. The CWS assigned Task No. 63 to the XML4IP TF (see paragraph 153 of document CWS/6/34).

3. In order to carry out the four Tasks No. 41, No. 53, No. 56 and No. 63, the XML4IP TF conducted its discussions through its wiki and several online conferences and organized two meetings in person. The reports of the Task Force meetings held in Geneva, Switzerland and Seoul, Republic of Korea, during and after the sixth session of the CWS are available on the WIPO website at: http://www.wipo.int/cws/en/taskforce/xml4ip/background.htm.

4. At the XML4IP TF Meeting held in Seoul in March, 2019, the following fifteen Offices/Organizations were represented: Austrian Patent Office (APO), IP Australia (IPA), Canadian Intellectual Property Office (CIPO), Eurasian Patent Organization (EAPO), European Patent Office (EPO), European Union Intellectual Property Office (EUIPO), International Patent and Trademark Office, Switzerland (IPTO), Japan Patent Office (JPO), Korean Intellectual Property Office (KIPO), Russian Federal Service for Intellectual Property (ROSPATENT), Saudi Authority for Intellectual Property (SAIP), Spanish Patent and Trademark Office (SPTO/OEPM), United Kingdom Intellectual Property Office (UKIPO), the International Union for the Protection of New Varieties of Plants (UPOV) and the United States Patent and Trademark Office (USPTO) as well as the International Bureau. The XML4IP TF discussed agenda items, including the progress on Task No. 63, the new WIPO Web API Standard and associated pilot projects, the proposed JavaScript Object Notation (JSON) specification, the newly proposed ST.96 XML components, such as the examination report schema, geographical indication and copyright orphan work schemas and updates from the Madrid and Hague systems on information sharing using ST.96.

5. At its sixth session, the CWS agreed on a maximum of two official releases of ST.96 per year, published on April 1 and October 1. If any emergency updates are required outside these times then they will be considered on a case-to-case basis.

REVISION AND IMPLEMENTATION OF STANDARD ST.96 (TASK NO. 41)

6. Within the framework of Task No. 41, the XML4IP TF continued to enhance WIPO ST.96. Details of the revisions by the Task Force and implementations by Intellectual Property Offices (IPOs) are detailed below.

Release of Version 3.1 of WIPO Standard ST.96

7. In order to support implementation of the Madrid and Haguesystems communications in ST.96, in particular, considering the fast approaching launch of Hague communications between CIPO and the International Bureau, a minor release of ST.96 was published in November 2018, to support the initiative in 2018. CIPO plans to go live with Hague communications in June 2019. A summary of the updates is provided below:

- added two new simple types: `com:IGOCodeType` and `com:ExtendedNationalityCodeType;`
- updated `com:entitlementNationalityCode` to use `com:ExtendedNationalityCodeType;`
- updated `com:EntitlementDomiciledCode` and `com:EntitlementEstablishmentCode` to use `com:ExtendedWIPOST3CodeType`;
- updated, changed country name “SZ” from “Swaziland” to “Eswatini” `in` com: `WIPOST3CodeType and` com: `ISOCountryCodeType`;
- updated `dgn:HabitualResidenceCode` to use `com:ExtendedWIPOST3CodeType`;
- added optional component: `com:PaymentDueDate` in the element `dgn:HagueSecondPartFeePayable`;

- added optional component: `com:ApplicationDateTime` in the `dgn:HagueApplicationType`. This is needed to resolved time-zone discrepancies;

- updated `dgn:HagueIBToOfficeBagType`, there is a sequence that follows a choice, which breaks the "choice". It was subsequently removed in this release;

- updated `dgn:HagueSecondPartFeePaidType`, added optional element `com:RecordIdentifier`. It should be optional because the element can be used in both directions;

- removed limit on choice in `dgn:HagueOfficeCopyBagType`. There is an unjustified limit of 10 choices in `dgn:HagueOfficeCopyBagType`. This must be unlimited;

- updated `dgn:HagueApplicationType`. Changed `com:DocumentIncludedBag` from required to optional; and

- added two new components: `com:StartDate` and `com:EndDate.`

IPOs' Implementation of WIPO ST.96

8. At the XML4IP TF Meeting held in Seoul, the participant IPOs shared their current practices and plans to implement WIPO ST.96. Several IPOs indicated their desire to transition in the future from ST.36 or SGML to ST.96, in particular for data dissemination, while other Offices indicated their progress in the transition. In particular, CIPO reported that it would soon be conducting Madrid communications with the International Bureau in WIPO ST.96.

Hague System implementation plans for WIPO ST.96

9. The International Bureau informed the Task Force that the implementation of ST.96 in the Hague System is on track to transition to a single format for their electronic communication with contracting parties and will stop support for the legacy format by December 31, 2020. However, IPOs have now started to request an extension and so this date may change in the future. The latest version of their roadmap for their implementation of WIPO ST.96 can be found here: https://www.wipo.int/edocs/mdocs/hague/en/h_ld_wg_7/h_ld_wg_7_8.pdf

WIPO Intellectual Property Administration System (IPAS) implementation plans for WIPO ST.96

10. In order to streamline data flow and ensure data quality at source, the International Bureau is implementing WIPO ST.96 in WIPO IPAS in three phases:

- in Phase 1, to be completed by July 2019, ST.96 will be used to package data received by external e-filing systems and transferred into IPAS;

- in Phase 2, to be completed by end of 2019, ST.96 will be used to notify decisions of designated Contracting Party to the WIPO Madrid system; and

- in Phase 3, to be completed by June 2020, ST.96 will be used for online publication and data exchange with third parties.

Progress on XML Schema Development

Development of the XML schema for Copyright Orphan Works

11. At its sixth session, the CWS agreed to include copyright orphan works as part of the ST.96 library (see paragraph 68 of document CWS/6/34).

12. At the Task Force meeting in Seoul, the UK IPO gave an overview of the work carried out to produce the draft ST.96 schema for copyright orphan works, including the countries/Offices which had contributed to the work. The UK IPO then walked the XML4IP TF through the schema itself and, in particular, elements comprising enumerated lists of values. A small number of minor amendments were identified which the UK IPO agreed to make whilst also considering the issue of multiple languages.

13. The XML4IP TF agreed that a tentative timeline for completion of the drafting and commencement of testing of the draft XML schema by interested IPOs is September 30, 2019.

Development of XML schema components on Patent Legal Status

14. To follow up on the decision at the fifth session of the CWS, the XML4IP TF worked to prepare a set of XML schema components on patent legal status data. This task is not only relevant to the XML4IP TF but also to the Legal Status Task Force, as these XML schemas are based on WIPO Standard ST.27.

15. Since the sixth session of the CWS, there have been two online meetings and a continued discussion at the Task Force Meeting in Seoul to provide feedback on the various revisions. The Task Force agreed that the fourth draft XML schema is ready for testing and UK IPO, CIPO and IPA have volunteered to test the schema and several other IPOs plan to join the testing. In particular, IP Australia indicatedthat it had plans to develop a Web API to disseminate patent legal status data and the finalization of this schema is crucial to the project's success.

Development of XML schema for priority document

16. Development of XML schema for patent priority document is one of the proposals that the five IP Offices (IP5)[1], made in 2010 for consideration by the XML4IP Task Force. The Task Force agreed on the three phases to develop priority document XML:

- Phase 1: preparation of conceptual document and agreement on the business case(s);
- Phase 2: development of XML schema based on WIPO ST.96 schema components; and
- Phase 3: pilot testing of XML schema with the participation of several IPOs.

17. The Task Force has started discussion on Phase 1 based on a proposal from KIPO. KIPO suggested documentation of XML data structure for priority documents, which allows IPOs to supplement the current image based structure with additional XML data. It is noted that currently most IPOs convert patent applications filed in XML format to image format when they exchange priority documents with other IPOs. The Task Force members noted that development of priority documents in XML is a good way to move toward the text-based data provision. However, the Task Force agreed to investigate a potential impact of the exchange of priority documents through the WIPO Digital Access Service (DAS) system and a potential legal implications of priority documents exchange in XML.

[1] The members of IP5 are the European Patent Office (EPO), the Japan Patent Office (JPO), the Korean Intellectual Property Office (KIPO), the National Intellectual Property Administration of the People's Republic of China (CNIPA) and the United States Patent and Trademark Office (USPTO)

Additional Outstanding XML components

18. Since the sixth session, the XML4IP TF identified many items to enhance WIPO ST.96. Progress on the some of these items is provided below:

- Patent Transaction and Patent Record XML*:* there has not been any significant progress on these two XML schema development projects which respectively relate to patent document transaction and a record of entire lifecycle of patent applications. The Task Force reviewed the current status and an update to these schemas at the XML4IP TF meeting in Seoul. The USPTO and ROSPATENT are both contributing to updating the draft XML components and will provide the result to the Task Force once they are available;
- Patent Examination Report XML: the International Bureau presented a revised XML schema to the XML4IP Meeting in Seoul, which intends to comprehensively capture all of the PCT examination and search forms. It is the intention of the Task Force to further develop this schema for use in national or regional examination reports; and
- Patent Request Form XML: this is one of the documents that IP5 Offices proposed in 2010 to develop a relevant XML schema for, but the XML4IPTF has already started work on this. The Task Force agreed to develop the request form XML based on the Model International Request Form published on the WIPO website, in the area of Patent Law Treaty (PLT), at: http://www.wipo.int/plt-forum/en/forms/modifications_req_form.html. The Task Force started discussion by reviewing a mapping of ST.96 components to the PLT model request form that the International Bureau provided. The Task Force assumes that the Model Form can cover national and international patent request forms. The Task Force members were invited to provide feedback on this mapping on the TF wiki page, in particular based on their national perspective.

INTEROPERABLE IMPLEMENTATION OF WIPO ST.96

19. The CWS noted discussions of the XML4IP Task Force on the issues regarding conformant implementation of WIPO ST.96 by IPOs considering interoperability in exchanging data in ST.96 with other IPOs at the sixth session of the CWS (see paragraph 15, document CWS/6/7). WIPO ST.96 provides Annex V "*Implementation rules and guidelines*" to support IPOs to implement ST.96 in two ways, compatible and conformant with WIPO ST.96. The Task Force members provided feedback that the guidelines are too hard to follow, even if they are considered ideal for interoperability among IPOs. As such, some IPOs have deviated from the guidelines.

20. Since the sixth session of the CWS, the XML4IP TF has continued exploring practical solutions to assist IPOs to implement WIPO ST.96 and enhance interoperability of data exchange in ST.96. The solutions require a consideration of both the perspective of the data consumer and the data producer. The Task Force agreed on the specific criteria used to assess different approaches for solutions, provided below:

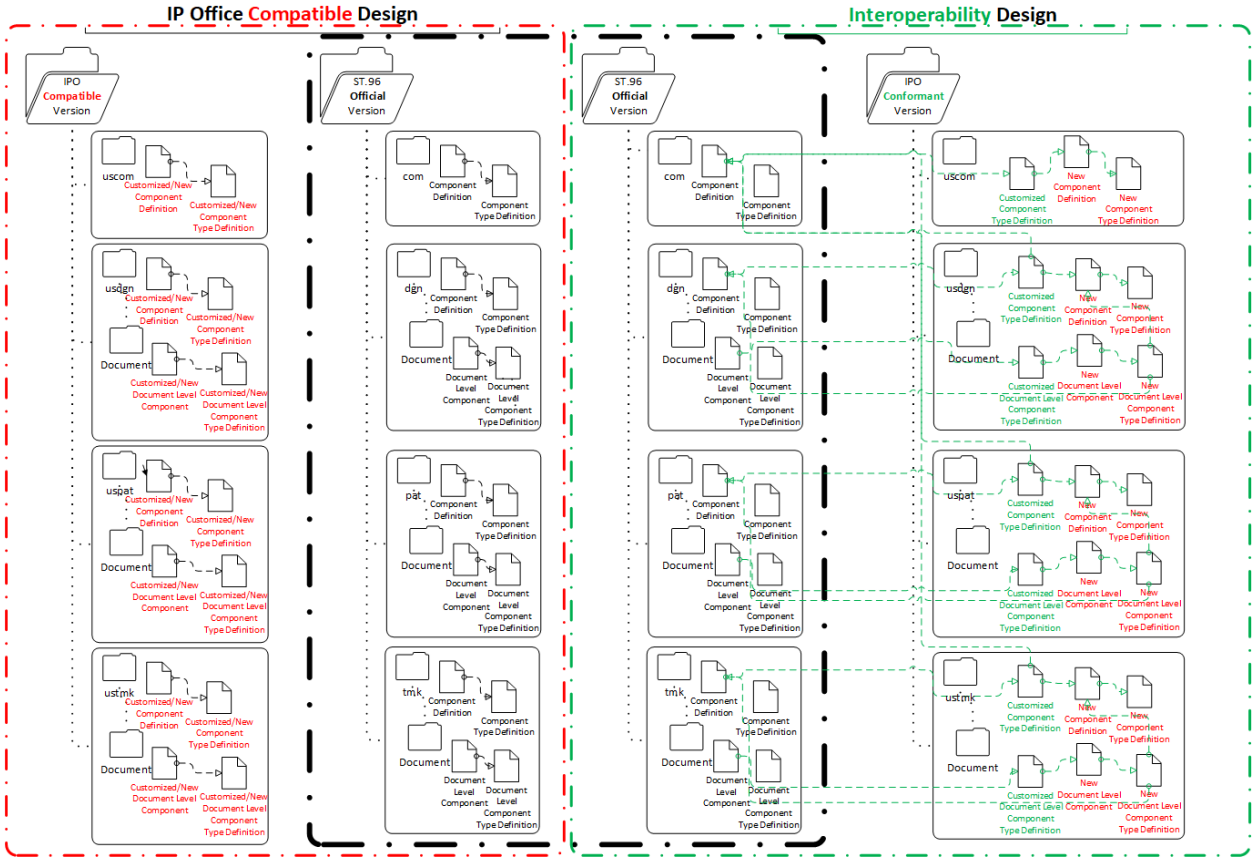
- stop propagation up to the root element level of XML schema to support the data producer;
- make the changes easily identifiable to support the data producer; and
- make the changes as targeted as possible.

21. In consultation with the International Bureau, the USPTO analyzed the approaches that the Task Force discussed and suggests the following guidelines for customizing WIPO ST.96 XML components during implementation, while ensuring interoperability:

- ST.96 mandatory components must not be removed;

- ST.96 mandatory components must not be changed from optional to mandatory;
- ST.96 components must remain in the order they were published;
- new components must be added at the bottom of the extended element;
- new components must be added as optional;
- new enumeration values must not be added or removed. These new components must be created in an IPO specific namespace. For example `uspat`, as an extension to an element in the `pat` namespace;
- patent ST.96 elements should retain their original namespace (`pat, tmk, dgn, com`) but are updated to reference IPO modified complex types which are created in the IPO specific namespace. For example, if `com:Contact` is customized, then the new components will refer to `uscom:ContactType`;
- there must only be one component with the same name in either the original namespace or the office-specific namespace. In reference to the example above, there should not be both `uscom:Contact` and `com:Contact`; and
- do not add or propagate namespace changes to the root of the document.

22. The following diagram illustrates how an IPO can identify a 'compatible' (shown in red) versus a 'conformant'/interoperable schema (shown in green).



23. The guidelines produced above provide the advantage that a single application can be developed using a common XSLT script to extract WIPO ST.96 conformant data given that the structure does not change. However, one disadvantage of this approach is that changes to the XML instances will not be visible as only the data type is adapted. However, automated tools could be used to differentiate between versions or between the national implementation and the current version of WIPO ST.96, such as Altova *DiffDog* or *CompareIt*.

24. In order to improve understanding of application of these guidelines, two examples have been provided as Annex I to this document for review and comments by the CWS. If this newly proposed design approach is approved by the XML4IP TF then Annex V of ST.96 will need to be amended.

25. Another outstanding issue in terms of interoperable implementation of ST.96 is the ability of the International Bureau to respond to the IPOs' need for amendments to ST.96 rapidly enough. The Task Force noted that each IPO has its own business requirements and an IT development schedule to implement WIPO ST.96. If the IPOs cannot find a relevant component in ST.96, they tend to customize it by adding, removing and amending XML components. To support the needs of the IPOs and enhance interoperability, the Task Force agreed that IPOs should provide feedback on their request to amend ST.96 and should meet more regularly to discuss these amendments. Following the agreement on this by the CWS, the International Bureau is proposing monthly regular online meetings to discuss the latest proposal for revision to WIPO ST.96 and provide feedback.

26. As the CWS noted at its sixth session, the XML4IP TF also requested the International Bureau provide a centralized repository in which IPOs can share their customized schema. In response to this request, the International Bureau, in collaboration with Task Force members, prepared a proposal to fulfill this request. This proposal has the benefit of determining which components should appear in future revisions of WIPO ST.96, by including common components for these office-specific implementations. This proposal is provided as Annex II to this document, for review and comments by the CWS.

XML SCHEMA FOR GEOGRAPHICAL INDICATIONS (TASK NO. 53)

27. At its sixth session, the CWS considered, as part of the work of the XML4IP TF on Task No.53, a draft XML schema for geographical indications, provided by ROSPATENT. This included the use of the new namespace prefix 'gin' and the use of three classification schemas: Nice classification, Lisbon informal classification and national classification schemas. The CWS reaffirmed that WIPO ST.96 should be extended to cover geographical indications and requested the XML4IP TF to present a final draft XML schema of geographical indications (GI) for consideration at this session (see paragraph 61 of document CWS/6/34).

28. Two online meetings were organized to improve the draft XML schemas, in particular an update of product categories considering the other standards used in trade.

29. At the XML4IP TF Meeting in Seoul, the third draft, which includes data components proposed by the EUIPO as well as GI Record components, was provided to participants for comment. At this Meeting, the following outstanding issues were raised: territorial units for the schema; the use of JSON versus XML; the use of the 'GI' acronym instead of 'GeographicalIndication'; and an appropriate GI classification schema. It was noted that in many jurisdictions, different government administration areas other than IPO managed geographical indications. Therefore, the Task Force members agreed to consult with the relevant government authorities in their country, in particular to discuss GI Product Category components which includes national classifications of GI products. The Task Force agreed to update the draft schema for testing and several TF members volunteered to test it this year.

30. The draft schemas for the current version have been provided to the CWS by the Task Force as Annex III to the present document, for consideration and comment.

DEVELOPMENT OF A NEW WIPO STANDARD ON WEBSERVICES (TASK NO. 56)

31. At its sixth session, the CWS noted a draft-working standard to the CWS presented by the XML4IP TF. Several business cases for Web APIs were discussed during this session and the CWS presented questions in regards to the granularity of the draft standard including whether details of the security framework should be provided. Also at this session, two delegates recommended two example models which could provide a proof of concept for use of the draft standard (see paragraphs 43 to 46 in document CWS/6/34).

32. Following the decision by the CWS at its sixth session, the XML4IP TF worked to prepare a final proposal for the new WIPO standard on Web API for consideration at this session of the CWS. However, the XML4IP TF considers that more time and inputs are required to complete the preparation. Therefore, the Task Force provides an updated draft standard which is included as a separate document for review and comment by the CWS at this session (see document CWS/7/4).

33. Furthermore, it should be noted that the type of experts that the XML4IP TF members should be consulting with when developing this draft standard typically work outside of the business areas where Task Force members work. Therefore, the XML4IP TF proposes the CWS to establish a new Task Force to carry out Task No. 56. A proposed name of the new Task Force and a proposed new description of Task No. 56 are provided in document CWS/7/4.

VISUAL REPRESENTATION OF XML DATA (TASK NO. 63)

34. Within the framework of Task No. 63, the XML4IP TF discussed how to prepare visual representations of XML data to assist IPOs in implementing WIPO ST.96 in the future. In this regard, the Task force agreed to develop a new Annex of ST.96, Annex VII, by providing at least one ST.96 XML instance. This is an alternative perspective on the original purpose of the Task No. 63, which was to provide a standard means of displaying XML components.

35. In addition, after a discussion of their suitability to manage this Task, the Task Force proposes the CWS to reassign Task No. 63 to the Digital Transformation Task Force. The reasoning behind this proposal is that this Task No. 63 relates more to presentation of XML data, rather than the structures of the schemas themselves and may be broader than just ST.96 XML.

FUTURE DEVELOPMENT OF WIPO ST.96 AND OTHER WIPO STANDARDS BASED ON WIPO ST.96

36. The XML4IP TF discussed whether XML schema components defined in other WIPO Standards using XML, such as WIPO Standard ST.37, should be included in ST.96. At the XMLIP Seoul meeting, the Task Force members expressed different opinions: one member Office said each Standard should define their own XML schema components independently from ST.96 even though they follow ST.96 naming rules and conventions. Other member Offices said that ST.96 is comprehensive with around 1,800 XML components and those exiting components should be reused by other Standards. The Task Force agreed that ST.96 should be considered as a library of XML schema components of IP business, which could be referred to by other WIPO Standards while unnecessary dependency, e.g., versioning of XML schema, should be avoided.

37. Taking into account the discussions by the XML4IP TF mentioned above, the International Bureau suggests the following three options for consideration by the CWS:

- option 1*:* other Standards using XML schema should refer to existing ST.96 schema components and, if needed, new XML schema components for the Standards should be defined in ST.96, except the root element of the XML schema that should be defined in the Standards concerned, which will refer to ST.96 existing and new components. For example, the root element of `AuthorityFile` would be included in WIPO ST.37 but all remaining schema components would be referenced within WIPO ST.96. This option has the advantage that all XML schema components are included in the common library, ST.96, for the future reuse and the root element that is specific for the Standard is independently defined in the specific business domain. This option also minimizes dependency of XML schema versioning between ST.96 and the Standard as only the document level component, the root element, has the version information according to the ST.96 naming conventions and the root element will not be impacted when ST.96 updates its version;

- option 2*:* all XML schema components of the other Standards should be defined and maintained in the Standards separately from ST.96, while they follow ST.96 naming rules and conventions. As an example, ST.37 creates a namespace 'st37' for holding the root element, `AuthorityFile`, and other components. The advantage of this approach is that managing the schemas separately will remove any dependencies. The disadvantage of this option is that many components will necessarily be duplicated between WIPO ST.96 and the other Standards, as ST.96 contains most of IP related XML components; and there may be a potent risk to define different data set under the same component names; and

- option 3: all of the XML schema components, including root elements, should be defined within WIPO ST.96. This has the disadvantages of dependences and versioning control issues.

38. Depending on which of the options above is selected or other decision by the CWS, WIPO Standards ST.96 and ST.37 may require updating. Furthermore, the agreement will guide future development of XML schema, including Patent Legal Status XML.

DEVELOPMENT OF NEW JSON SCHEMA

39. In preparation of the new WIPO standard on Web API under Task No. 56 "[m]essage format, data structure and data dictionary in JSON and/or XML", the XML4IP noted that there is no WIPO standard providing recommendations on JSON.

40. Furthermore, since 2015 the XML4IP TF has considered the need of recommendations for JSON, in addition to the XML Standards, but postponed its substantive discussion waiting for industry recommendations on JSON schema. As more and more IPOs have produced their data in JSON format, the Task Force agreed to start discussion on JSON specification and to report to the CWS the outcomes of its activities even though the industry JSON schema is still in draft status.

41. The XML4IP TF discussed an initial proposal for JSON specification presented by the USPTO at its Seoul meeting in March 2019. After the meeting, in collaboration with the USPTO, the International Bureau has prepared a revised draft of JSON specification providing a set of naming conventions based on WIPO ST.96. The result of the work is submitted as a separate document for information and comments by the CWS at this session (see document CWS/7/5).

42. It should be noted that the new JSON schema will use the term ‘Intellectual Property’ rather than ‘Industrial Property’ that was previously referenced in WIPO Standards, due to the request by some IPOs to provide copyright orphan works data in JSON format.

OTHER RELATED MATTERS

43. Based on the discussion above, it is clear that the XML4IP TF observed the need to develop more technical Standards, including for the exchange of XML and JSON data and recommendations on Web APIs for accessing and exchanging Intellectual Property resources. At the same time, IPOs are now outsourcing development of their products and services following WIPO Standards. Taking into consideration the new audience for these technical standards, i.e., system developers outside of IPOs, the International Bureau would like to seek guidance of the CWS regarding the type of promotional campaigns it could conduct in order to reach this new audience, in particular how best to host a forum for developers.

44. As indicated above, the scope of WIPO ST.96 will be expanded in scope in the future from Industrial Property to Intellectual Property, due to the inclusion of XML elements for copyright orphan works.

WORK PLAN

45. The XML4IP TF plans to release V4.0 of WIPO ST.96 in October 2019. This version will likely include the following modifications from V3.1:

- extension of the scope of WIPO ST.96 from Industrial Property to Intellectual Property;
- Main body and Annex I: amendments are dependent upon the conclusions regarding the Options for relationship between ST.96 and other Standards used ST.96 XML components suggested above and references between two business areas of ST.96 components, e.g., whether patent components can refers to trademark components;
- Annex III: the inclusion of new components such as components for copyright orphan works and geographical indications as well as changes required to support Hague and Madrid communications;
- Annex V: changes to the guidelines will be required considering the new interoperable implementation design approach proposed;
- Annex VI: every major release requires an update to Appendix A, B and C; and
- Annex VII: proposed new Annex which includes sample XML instances.

46. In addition, the XML4IP TF will continue to work on developing and testing XML components, including the following schema components:

- Patent Legal Status XSD: testing has already commenced;
- Examination Report XSD: still under development;
- Priority Document XSD: at the inception stage; and
- Patent Record/Patent Transaction XSD: ROSPATENT and the USPTO hope to finalize the schema before the seventh session.

47. The CWS is invited to:

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

(b) note the plans of ST.96 implementations in Hague System and WIPO IPAS as indicated in paragraphs 9 to 10 above;

(c) encourage IPOs to participate in testing XML schemas of copyright orphan works, geographical indications and patent legal status, as indicated in paragraphs 11, 14 to 15 and 27 to 30 above;

(d) note the issues on interoperable implementation of ST.96 described in paragraphs 19 to 26 above and review and comment on Annex I to this document;

(e) note the contents regarding centralized repository for ST.96 implementation schema described in paragraph 26 above and review and comment on Annex II to this document;

(f) consider and approve the proposal by the XML4IP TF for creation of a new Task Force to carry out Task No. 56 as indicated in paragraph 33 above;

(g) consider and approve the proposal by the XML4IP TF to reassign Task No. 63 to the Digital Transformation Task Force as indicated in paragraph 35 above;

(h) consider the options for development of WIPO Standards using XML based on ST.96 and decide one option as indicated in paragraph 37 above;

(i) note the proposal for JSON specification as indicated in paragraphs 39 to 42 above;

(j) consider the proposal by the International Bureau for monthly meetings to discuss the revisions to ST.96 as indicated in paragraph 25 above;

(k) note the new audience of WIPO Standards and provide guidance including the provision of a developers forum, as indicated in paragraph 43;

(l) note the extension of the scope of ST.96 from covering industrial property to intellectual property as indicated in paragraphs 42 and 44 above; and

(m) note the XML4IP TF work plan, including the next release of ST.96.

[Annexes follow]

ANNEX I

PROPOSAL FOR CENTRALIZED REPOSITORY FOR OFFICE-SPECIFIC ST.96 COMPONENTS

1. In order for IP Offices (IPOs) to exchange ST.96 data, conformance at the instance and schema level is essential. A conformant XML instance is one that validates against the ST.96 schema.

2. However, IPOs have found it necessary to adapt the ST.96 published schema, for their business needs. According to implementation rules set out in Annex V of WIPO ST.96, IPOs should provide these new or extended elements in their own namespace, for example `uspat`, and propagate these changes up to the root element. These national implementations of ST.96 are no longer conformant but compliant.

3. As a solution to this problem, at the Task Force Meeting held in Moscow May 2018, the ROSPATENT proposed that the International Bureau host these national implementations on a centralized repository or platform. This was further discussed in the Meeting in Geneva in October of the same year. The members of the XML4IP Task Force supported this proposal and this document outlines the next steps for implementation that the International Bureau proposes for implementation. Both ROSPATENT, the United States Patent and Trademark Office and the United Kingdom Intellectual Property Office have collaborated on producing examples of national implementations, created in their own namespace.

4. In order to develop this repository, the International Bureau has identified three outstanding issues, which will be discussed further below:

(a) the technology platform for versioning and hosting the data;

(b) the method for collecting and updating office specific schemas; and

(c) permissions surrounding access to these schemas.

5. Part of the WIPO Common Toolkit, is Subversion (SVN)[1], which is an Open Source centralized version control system that is typically used for managing source code development. In this way, it is well suited to hosting office-specific adaptions to the ST.96 schemas.

6. In terms of use of SVN for this purpose, the International Bureau would provide access to individual folders for each of the IPOs, which would allow Offices to upload this data. This means of establishing data transfer places the onus on IPOs to provide this data but also provides them with greater control over their own data.

7. In terms of access to the schemas, it is proposed that the International Bureau, as managers of the SVN repository, will have both read and write access to all of these folders while IPOs will be only be able to write their own schemas to their specific Office folder and download (read) folders of other IP Offices they wish to communicate with. There is also the added advantage that using SVN as the repository platform can be provided with a negligible cost. IPOs should not provide their IPOs schemas until they are considered to be a final version. In other words, this repository should not be considered a ‘sandbox’.

[1] Apache Subversion home-page https://subversion.apache.org/

8. One major advantage of this approach is that once IPOs have committed to providing their data to this centralized repository, this will allow the International Bureau to perform a comparison to identify new changes, which have been drafted in parallel by Offices, and determine if there are any new components in common. Once these have been identified, these common elements could be presented to the Task Force as future updates to the published (formal) ST.96 schema.

9. SVN includes, as version control system, includes within it a comparison tool, `diff`[2], which allows comparisons to be performed between various revisions. It even provides for a differentiation between two folders, which is suited to our purpose. This way we can quickly identify those components which differ between national implementations or between differ between the ST.96 implementation and a specific IPO.

10. Before the International Bureau can move forward with this proposal, we must encourage the participation of IPOs. Unless Offices provide us with this data, there is no purpose to us moving to the next stage of implementation.

[Annex II follows]

[2] SVN diff reference guide http://svnbook.red-bean.com/en/1.8/svn.ref.svn.c.diff.html

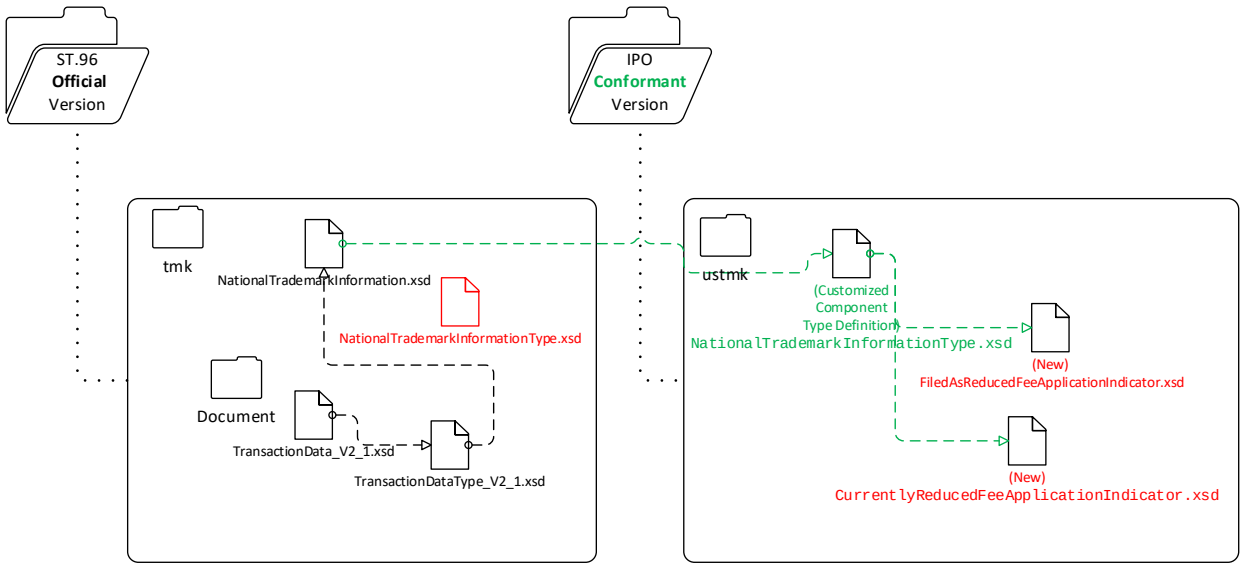
ANNEX II

EXAMPLES OF VARIOUS CUSTOMIZATIONS BASED ON INTEROPERABILITY

1. The following two examples are provided to assist in the understanding of the proposed design approach described in document CWS/7/3. In the first example, two new optional elements are added to the ST.96 schema. In the second example, an existing ST.96 component, which has been extended is added to the ST.96 schema. In the examples, changes are identified using yellow highlighted text.

Example 1: Adding two new atomic optional elements to existing ST.96 V2_1 structure (tmk:NationalTrademarkInformation)

`tmk:TransactionData/tmk:TrademarkBag/tmk:Trademark/tmk:National TrademarkInformation`



2. Step 1: Define IPO Customized XSD Definition. In this instance, the new elements, `ustmk:FiledAsReducedFeeApplicationIndicator` and `ustmk:CurrentlyReducedFeeApplicationIndicator` will be created within the USTrademark folder at the same level as ST.96 Trademark folder. Following the guidelines, these optional elements must be added to the bottom of the schema:

```
<?xml version="1.0" encoding="UTF-8"?>

<xsd:schema xmlns:ustmk="urn:us:gov:doc:uspto:trademark"
xmlns:tmk="http://www.wipo.int/standards/XMLSchema/ST96/Trad
emark" xmlns:xsd="http://www.w3.org/2001/XMLSchema"
targetNamespace="urn:us:gov:doc:uspto:trademark"
elementFormDefault="qualified"
attributeFormDefault="qualified" version="V2_0">

 <xsd:import
namespace="http://www.wipo.int/standards/XMLSchema/ST96/Trad
emark" schemaLocation="../Trademark/RegisterCategory.xsd"/>
```

```
 <xsd:import
namespace="http://www.wipo.int/standards/XMLSchema/ST96/Trad
emark"
schemaLocation="../Trademark/ApplicationAbandonedDate.xsd"/>

 <xsd:import
namespace="http://www.wipo.int/standards/XMLSchema/ST96/Trad
emark"
schemaLocation="../Trademark/RegistrationCancelledDate.xsd"/
>

 <xsd:import
namespace="http://www.wipo.int/standards/XMLSchema/ST96/Trad
emark"
schemaLocation="../Trademark/AmendedPrincipalRegisterIndicat
or.xsd"/>

 <xsd:import
namespace="http://www.wipo.int/standards/XMLSchema/ST96/Trad
emark"
schemaLocation="../Trademark/AmendedSupplementalRegisterIndi
cator.xsd"/>

 <xsd:import
namespace="http://www.wipo.int/standards/XMLSchema/ST96/Trad
emark"
schemaLocation="../Trademark/RegisterAmendedDate.xsd"/>

 <xsd:import
namespace="http://www.wipo.int/standards/XMLSchema/ST96/Trad
emark"
schemaLocation="../Trademark/MarkCurrentStatusExternalDescri
ptionText.xsd"/>

 <xsd:import
namespace="http://www.wipo.int/standards/XMLSchema/ST96/Trad
emark"
schemaLocation="../Trademark/MarkCurrentStatusInternalDescri
ptionText.xsd"/>

 <xsd:import
namespace="http://www.wipo.int/standards/XMLSchema/ST96/Trad
emark"
schemaLocation="../Trademark/PreviouslyRegisteredMarkPublica
tionIndicator.xsd"/>

 <xsd:import
namespace="http://www.wipo.int/standards/XMLSchema/ST96/Trad
emark"
schemaLocation="../Trademark/PreviouslyRegisteredMarkPublish
edDate.xsd"/>
```

```
 <xsd:import
namespace="http://www.wipo.int/standards/XMLSchema/ST96/Trad
emark"
schemaLocation="../Trademark/InterferenceStatementText.xsd"/
>

 <xsd:import
namespace="http://www.wipo.int/standards/XMLSchema/ST96/Trad
emark"
schemaLocation="../Trademark/TradeDistinctivenessScopeText.x
sd"/>

 <xsd:import
namespace="http://www.wipo.int/standards/XMLSchema/ST96/Trad
emark"
schemaLocation="../Trademark/OrderRestrictingScopeStatementT
ext.xsd"/>

 <xsd:import
namespace="http://www.wipo.int/standards/XMLSchema/ST96/Trad
emark"
schemaLocation="../Trademark/RestrictionStatementText.xsd"/>

 <xsd:import
namespace="http://www.wipo.int/standards/XMLSchema/ST96/Trad
emark"
schemaLocation="../Trademark/CertificationStatementText.xsd"
/>

 <xsd:import
namespace="http://www.wipo.int/standards/XMLSchema/ST96/Trad
emark"
schemaLocation="../Trademark/ConcurrentUseStatementText.xsd"
/>

 <xsd:import
namespace="http://www.wipo.int/standards/XMLSchema/ST96/Trad
emark"
schemaLocation="../Trademark/FiledAsPlusApplicationIndicator
.xsd"/>

 <xsd:import
namespace="http://www.wipo.int/standards/XMLSchema/ST96/Trad
emark"
schemaLocation="../Trademark/CurrentlyPlusApplicationIndicat
or.xsd"/>

 <xsd:import
namespace="http://www.wipo.int/standards/XMLSchema/ST96/Trad
emark"
schemaLocation="../Trademark/RegistrationChangeIndicator.xsd
"/>
```

```
<xsd:import
namespace="http://www.wipo.int/standards/XMLSchema/ST96/Trad
emark"
schemaLocation="../Trademark/AllowanceNoticeDate.xsd"/>

<xsd:import
namespace="http://www.wipo.int/standards/XMLSchema/ST96/Trad
emark" schemaLocation="../Trademark/RenewalDate.xsd"/>

<xsd:import
namespace="http://www.wipo.int/standards/XMLSchema/ST96/Trad
emark"
schemaLocation="../Trademark/RegistationCertificateAmendment
Text.xsd"/>

<xsd:import
namespace="http://www.wipo.int/standards/XMLSchema/ST96/Trad
emark"
schemaLocation="../Trademark/CertificateCorrectingRegistrati
onText.xsd"/>

<xsd:import
namespace="http://www.wipo.int/standards/XMLSchema/ST96/Trad
emark"
schemaLocation="../Trademark/MaintenanceFilingBag.xsd"/>

<xsd:import
namespace="http://www.wipo.int/standards/XMLSchema/ST96/Trad
emark"
schemaLocation="../Trademark/NationalCaseLocation.xsd"/>

<xsd:include
schemaLocation="FiledAsReducedFeeApplicationIndicator.xsd"/>

<xsd:include
schemaLocation="CurrentlyReducedFeeApplicationIndicator.xsd"
/>

<xsd:complexType name="NationalTrademarkInformationType">

    <xsd:sequence>

        <xsd:element ref="tmk:RegisterCategory"/>

        <xsd:element ref="tmk:ApplicationAbandonedDate"
minOccurs="0"/>

        <xsd:element ref="tmk:RegistrationCancelledDate"
minOccurs="0"/>

        <xsd:element
ref="tmk:AmendedPrincipalRegisterIndicator" minOccurs="0"/>

        <xsd:element
ref="tmk:AmendedSupplementalRegisterIndicator"
minOccurs="0"/>
```

```
         <xsd:element ref="tmk:RegisterAmendedDate"
minOccurs="0"/>

         <xsd:element
ref="tmk:MarkCurrentStatusExternalDescriptionText"
minOccurs="0"/>

         <xsd:element
ref="tmk:MarkCurrentStatusInternalDescriptionText"
minOccurs="0"/>

         <xsd:element
ref="tmk:PreviouslyRegisteredMarkPublicationIndicator"
minOccurs="0"/>

         <xsd:element
ref="tmk:PreviouslyRegisteredMarkPublishedDate"
minOccurs="0"/>

         <xsd:element ref="tmk:InterferenceStatementText"
minOccurs="0"/>

         <xsd:element
ref="tmk:TradeDistinctivenessScopeText" minOccurs="0"/>

         <xsd:element
ref="tmk:OrderRestrictingScopeStatementText" minOccurs="0"/>

         <xsd:element ref="tmk:RestrictionStatementText"
minOccurs="0"/>

         <xsd:element ref="tmk:CertificationStatementText"
minOccurs="0"/>

         <xsd:element ref="tmk:ConcurrentUseStatementText"
minOccurs="0"/>

         <xsd:element
ref="tmk:FiledAsPlusApplicationIndicator" minOccurs="0"/>

         <xsd:element
ref="tmk:CurrentlyPlusApplicationIndicator" minOccurs="0"/>

         <xsd:element ref="tmk:RegistrationChangeIndicator"
minOccurs="0"/>

         <xsd:element ref="tmk:AllowanceNoticeDate"
minOccurs="0"/>

         <xsd:element ref="tmk:RenewalDate" minOccurs="0"/>

         <xsd:element
ref="tmk:RegistationCertificateAmendmentText"
minOccurs="0"/>
```

```
        <xsd:element
ref="tmk:CertificateCorrectingRegistrationText"
minOccurs="0"/>

        <xsd:element ref="tmk:MaintenanceFilingBag"
minOccurs="0"/>

        <xsd:element ref="tmk:NationalCaseLocation"
minOccurs="0"/>

        <xsd:element
ref="ustmk:FiledAsReducedFeeApplicationIndicator"
minOccurs="0"/>

        <xsd:element
ref="ustmk:CurrentlyReducedFeeApplicationIndicator"
minOccurs="0"/>

    </xsd:sequence>

</xsd:complexType>

</xsd:schema>
```

3. Step 2: Update namespace reference. The reference to the trademark namespace must be updated to the US customized version which includes the two new elements. i.e. update tmk:NationalTrademarkInformation.xsd to refer IPO customization type definition in USTrademark folder.

```
<?xml version="1.0" encoding="UTF-8"?>

<xsd:schema
xmlns:tmk="http://www.wipo.int/standards/XMLSchema/ST96/Trad
emark" xmlns:ustmk="urn:us:gov:doc:uspto:trademark"
xmlns:xsd="http://www.w3.org/2001/XMLSchema"
targetNamespace="http://www.wipo.int/standards/XMLSchema/ST9
6/Trademark" elementFormDefault="qualified"
attributeFormDefault="qualified" version="V2_1">

<xsd:import namespace="urn:us:gov:doc:uspto:trademark"
schemaLocation="../USTrademark/NationalTrademarkInformationT
ype.xsd"/>

<xsd:element name="NationalTrademarkInformation"
type="ustmk:NationalTrademarkInformationType">

    <xsd:annotation>

        <xsd:documentation>A container to hold information
related to a national trademark</xsd:documentation>

    </xsd:annotation>

</xsd:element>

</xsd:schema>
```

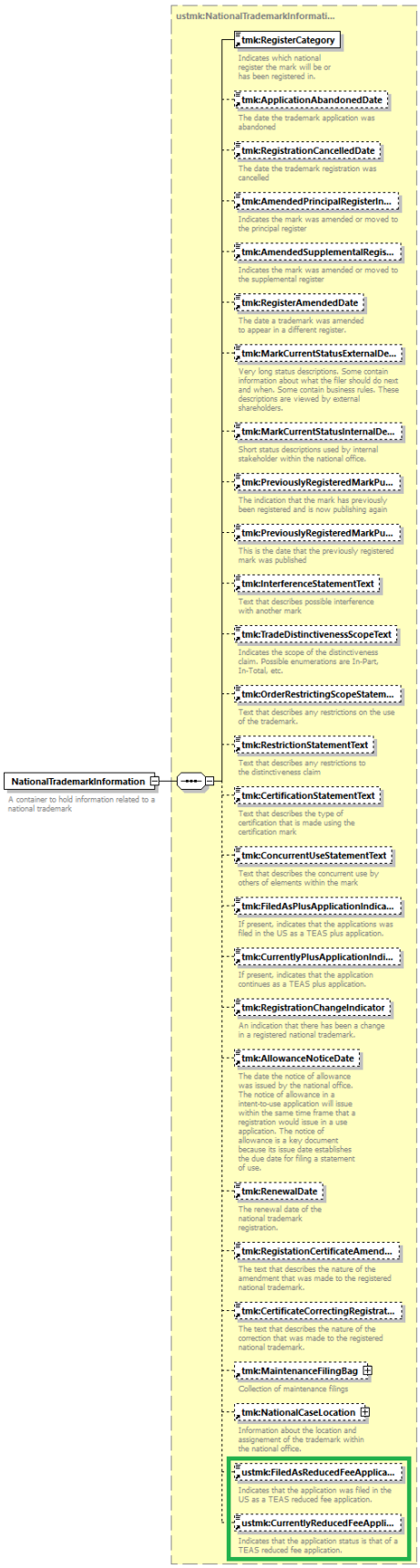
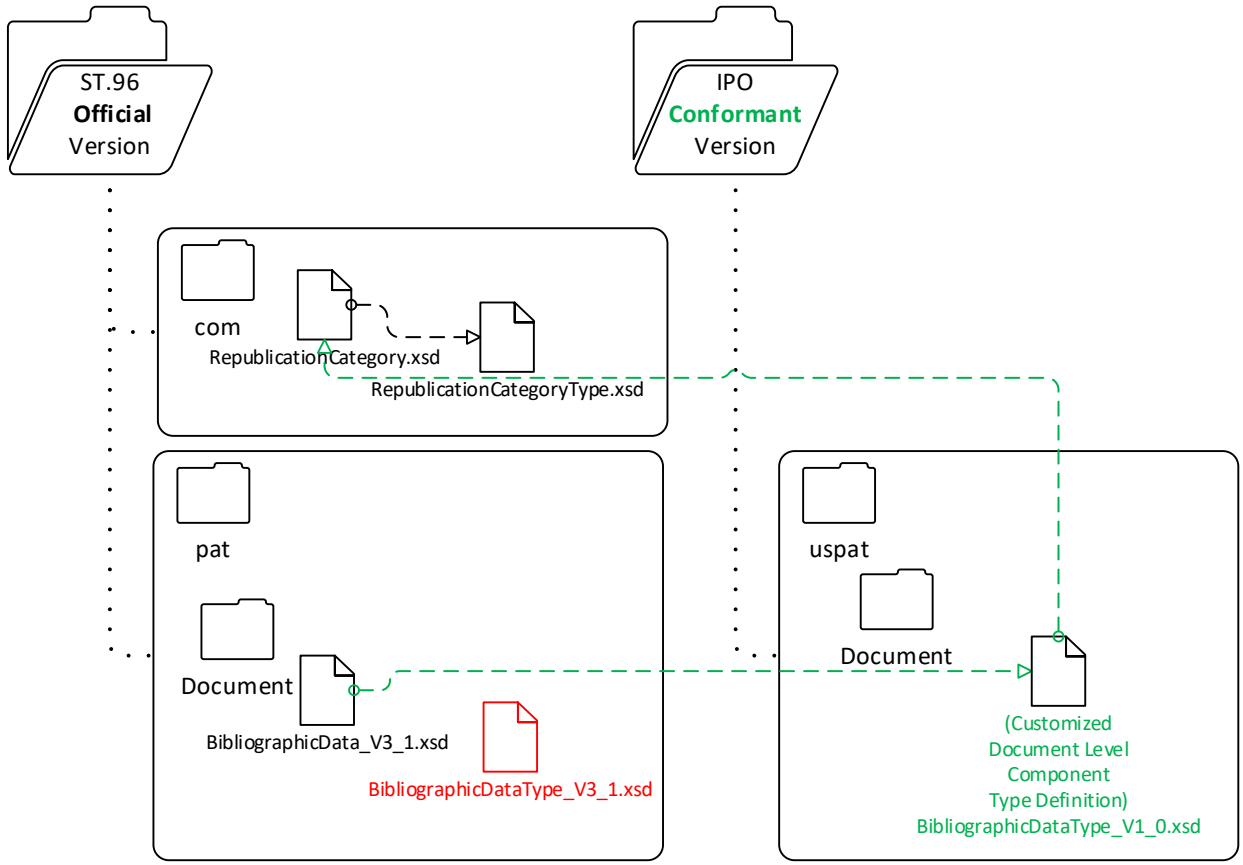


Figure 1: New customized IPO tmk schema

Example 2: Adding existing ST.96 component, pat:RepublicationCategory, to existing ST.96 V3_1 structure pat:Bibliographicdata

IPO Customized XSD Definition: (in USPatent/Document folder)



4. Step 1: Define Customization in IPO namespace folder USPatent/Document. Here the `pat:BibliographicDataType` is extended to include `pat:RepublicationCategory`.

```
<?xml version="1.0" encoding="UTF-8"?>

<xsd:schema
xmlns:com="http://www.wipo.int/standards/XMLSchema/ST96/Comm
on"
xmlns:pat="http://www.wipo.int/standards/XMLSchema/ST96/Pate
nt" xmlns:uspat="urn:us:gov:doc:uspto:patent"
xmlns:xsd="http://www.w3.org/2001/XMLSchema"
xmlns:uscom="urn:us:gov:doc:uspto:common"
targetNamespace="urn:us:gov:doc:uspto:patent"
elementFormDefault="qualified"
attributeFormDefault="qualified" version="V8_0">

 <xsd:import
namespace="http://www.wipo.int/standards/XMLSchema/ST96/Pate
nt"
```

```
schemaLocation="../../Patent/Document/BibliographicDataType_
V3_1.xsd"/>

 <xsd:import
namespace="http://www.wipo.int/standards/XMLSchema/ST96/Pate
nt"
schemaLocation="../../Patent/RepublicationCategory.xsd"/>

 <xsd:complexType name="BibliographicDataType">

     <xsd:complexContent>

          <xsd:extension base="pat:BibliographicDataType">

               <xsd:sequence>

                    <xsd:element
ref="pat:RepublicationCategory" minOccurs="0"/>

               </xsd:sequence>

          </xsd:extension>

     </xsd:complexContent>

 </xsd:complexType>

</xsd:schema>
```

5. Step 2: Update ST.96 Patent/Document BibliographicData_V3_1.xsd reference to refer IPO customized definition in USPatent/Document folder. Again, as above, the namespace reference must be updated to the customized version.

```
<?xml version="1.0" encoding="UTF-8"?>

<xsd:schema
xmlns:com="http://www.wipo.int/standards/XMLSchema/ST96/Comm
on"
xmlns:pat="http://www.wipo.int/standards/XMLSchema/ST96/Pate
nt" xmlns:uspat="urn:us:gov:doc:uspto:patent"
xmlns:xsd="http://www.w3.org/2001/XMLSchema"
targetNamespace="http://www.wipo.int/standards/XMLSchema/ST9
6/Patent" elementFormDefault="qualified"
attributeFormDefault="qualified" version="V3_1">

 <xsd:annotation>

     <xsd:appinfo>

          <com:SchemaCreatedDate>2012-09-
12</com:SchemaCreatedDate>

          <com:SchemaLastModifiedDate>2019-04-
16</com:SchemaLastModifiedDate>


 <com:SchemaContactPoint>xml.standards@wipo.int</com:SchemaCo
ntactPoint>
```

```
<com:SchemaReleaseNoteURL>http://www.wipo.int/standards/XMLSchema/ST96/V3_1/ReleaseNotes.pdf</com:SchemaReleaseNoteURL>
    </xsd:appinfo>
</xsd:annotation>
<xsd:import namespace="urn:us:gov:doc:uspto:patent" schemaLocation="../../USPatent/Document/BibliographicDataType_V1_0.xsd"/>
<xsd:element name="BibliographicData" type="uspat:BibliographicDataType">
    <xsd:annotation>
        <xsd:documentation>Bibliographic information included on the first page of a patent document.  Contains document identification, domestic filing data, foreign priority data, public availability dates or term of protection, technical information, related patent or application information.</xsd:documentation>
    </xsd:annotation>
    <xsd:unique name="BibComponentKey">
        <xsd:selector xpath=".//*"/>
        <xsd:field xpath="@com:id"/>
    </xsd:unique>
</xsd:element>
</xsd:schema>
```

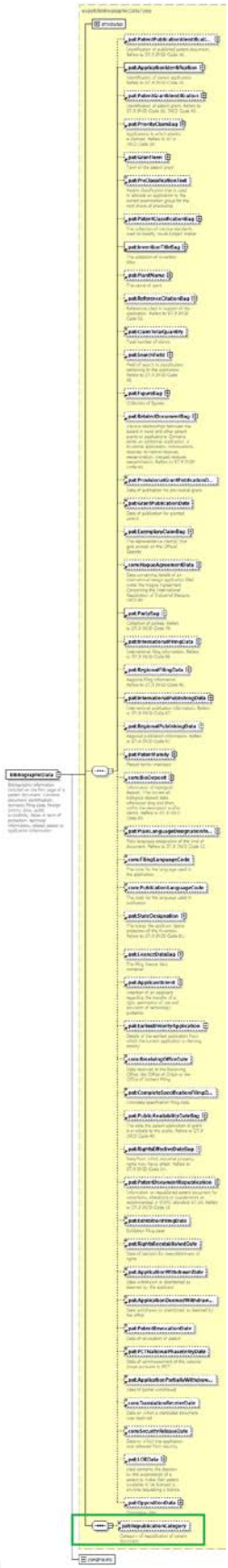


Figure 2: New customized pat schema

[Annex III follows]

ANNEX III

Revised Draft GIN XMLSchemas: (annex_iii_gin_xmlschemas_v3_2_d3.zip)

[End of Annex III and of document]