

Meeting of International Authorities under the Patent Cooperation Treaty (PCT)

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PROCESSING SEQUENCE LISTINGS

Document prepared by the International Bureau

SUMMARY

1. WIPO Standard ST.26 defines a set of recommendations which specify the required format for sequence listings filed as part of an international applications on or after July 1, 2022. Following a successful transition to use of the new Standard, the International Bureau is proposing further development of the Standard and associated tools, including the WIPO Sequence Suite, for more efficient processing of sequence listings.

2. The International Bureau is continuously looking for ways to simplify processing of sequence listings and ensure that the results are high quality to support the requirements of patent applicants, International Authorities, designated Offices and database providers. The work on streamlining document types and their application has been finalized, and the implementation is underway. The Committee on WIPO Standards (CWS) will consider a proposal on substantive changes to WIPO Standard ST.26 to expand disclosure requirements and allow the inclusion of short sequences at its forthcoming session in November 2025.

BACKGROUND

3. WIPO Standard ST.26 recommends an XML format for the presentation of nucleotide and amino acid sequences in patent applications. It entered into force on July 1, 2022. Amendments to the PCT Regulations and modifications to the Administrative Instructions under the PCT, including relevant Forms, also entered into force at the same time, requiring sequence disclosures to be presented in compliance with WIPO Standard ST.26 in any international application filed on or after that date. This document provides updates on the recent developments and presents certain challenges and possible ways to improve the current practices for processing of sequence listings.

WIPO SEQUENCE SUITE

4. The International Bureau has developed and makes available a software suite known as WIPO Sequence Suite which is comprised of the following two components:

- (a) WIPO Sequence: a standalone desktop application, available for Windows, Linux and MacOS, to assist applicants to author and validate sequence listings in compliance with WIPO Standard ST.26; and
- (b) WIPO Sequence Validator: a web service deployed internally at patent Office environments to check filed sequence listings for compliance with WIPO Standard ST.26.

5. Development and testing of the WIPO Sequence Suite is prioritized and undertaken in coordination with the Sequence Listings Task Force.

6. The latest version of the WIPO Sequence Validator released in 2025 is 3.0.1, offering significantly improved performance over the previous versions. The release of the next version 3.1.0 is underway to address a technical bug in the implementation of version 3.0.1.

7. WIPO Sequence version 3.0.0 was released in July 2025 to a pilot group (“WIPO Sequence Insiders”) for testing. This version includes an upgraded database and technology stack, new warnings to indicate the presence of skipped sequences in a project and improved revalidation performance. In addition, certain verification rules have been grouped to declutter the verification report. Following feedback from the WIPO Sequence Insiders group, the International Bureau has decided to postpone the release to the general public of the next version. In parallel, the International Bureau is improving version 3.0.0 to provide several performance improvements and new features. This improved version, which will be version 3.1.0, is expected to be released to the general public in the first quarter of 2026 after it has been tested by the WIPO Sequence Insiders group.

DEVELOPMENT OF WIPO STANDARD ST.26

8. The latest version of WIPO Standard ST.26, version 1.7, came into force on July 1, 2024, and should be used for all international, national and regional applications filed on or after that date. The changes compared to version 1.6 are essentially clarifications and the addition of several new examples in the guidance document. A proposal for revision of WIPO Standard ST.26 as version 2.0, together with a draft implementation plan, has been submitted for approval at the thirteenth session of the CWS, to be held in November 2025 (see document CWS/13/16). The proposal includes two substantive revisions: (i) amendments aimed at lifting the minimum sequence length requirement which indicates that short sequences cannot be included within a compliant sequence listing, and (ii) amendments aimed at requiring a subset of nucleotide analogs and peptide analogs to be represented by the corresponding unmodified residue symbols. If the proposal is adopted, certain modifications will be required to be made to Annex C of the Administrative Instructions under the PCT as well as to the PCT International Search and Preliminary Examination Guidelines.

DATA PACKAGE FORMAT FOR THE ELECTRONIC EXCHANGE OF PRIORITY DOCUMENTS

9. At its twelfth session, held from September 16 to 19, 2024, the CWS adopted new WIPO Standard ST.92 on the data package format for the electronic exchange of priority documents. This Standard aims to improve the processing of priority documents by allowing the electronic exchange of structured text formats and especially sequence listings in the XML format of WIPO Standard ST.26, instead of only PDF files. It was tentatively agreed to aim for implementation of the new Standard by July 1, 2027. This will involve IT development work by the International Bureau for PCT systems and the WIPO Digital Access Service for Priority Documents (DAS), as well as by national or regional Offices. A proposal for revision of WIPO Standard ST.92 as

version 2.0, which extends the recommendations to allow the exchange of priority documents for both industrial designs and trademarks, has been submitted for consideration and approval at the thirteenth session of the CWS, to be held in November 2025 (see document CWS/13/20). Once the CWS has approved the proposed revision of the Standard, IP Offices (IPOs) should consider their implementation plans.

10. In May 2025, the Secretariat issued Circular C. CWS 195 “Survey on WIPO Standard ST.92 Implementation Plan”, inviting IPOs to provide their feedback regarding the proposed implementation plan of WIPO Standard ST.92 and the sunset date of July 1, 2027. They were also invited to provide their plan to exchange priority documents through WIPO DAS during the transition period. Responses were provided by 37 IPOs, and a detailed analysis and summary of the survey results are found in document CWS/13/20. Considering the feedback received by IPOs, the Digital Transformation Task Force proposes a new “sunset date” of July 1, 2028, for consideration by the CWS. The International Bureau plans to upgrade WIPO DAS to accept and provide priority documents compliant with the new Standard. The timeline for completion of this upgrade is estimated at six months. The upgrade will enable WIPO DAS to accept and provide priority documents compliant with WIPO Standard ST.92, in parallel with the current format, until the end of the transition period on June 30, 2028, if the new proposed date is approved by the CWS at its thirteenth session. From the agreed sunset date, WIPO DAS plans to accept and provide priority documents only compliant with WIPO Standard ST.92. Further technical details on the implementation of the proposed Standard in WIPO DAS should be discussed separately among the Offices participating in WIPO DAS.

PROCESSING OF SEQUENCE LISTINGS UNDER THE PCT

11. Since July 2022, the International Bureau has received approximately 40,000 international applications which contain a sequence listing. For most, the processing was simple and in line with expectations, but certain issues, some of which are presented below need further review and analysis.

SEQUENCE LISTINGS UNDER RULE 13^{ter}

12. The use of Rule 13^{ter} to request a sequence listing for the purpose of international search has decreased following the introduction of WIPO Standard ST.26, but not as much as had been expected. It had been hoped that international applications disclosing sequences requiring a sequence listing would all contain a WIPO Standard ST.26-compliant sequence listing, validated prior to submission and considered suitable for international search. However, presently around 13 per cent of international applications with a sequence listing include a submission under Rule 13^{ter}. This includes:

- (a) cases where the sequence listing included in the international application as filed was presumably found to be defective, requiring a standard-compliant listing for search; and
- (b) cases where no listing had originally been submitted, but the international application disclosed sequences that should have been included in a listing.

13. Table 1 below presents a snapshot taken in September 2025 of the number of international applications filed on or after July 1, 2022, for which the International Bureau had received a sequence listing of some type, broken down by receiving Office. The second to fourth columns show:

- (a) the number of international applications with any type of sequence listing on file;
- (b) the number of international applications including a Rule 13^{ter} sequence listing in addition to a listing that had been included in the international application as filed; and

(c) the number of international applications including a Rule 13~~ter~~ sequence listing where the international application as filed contained no sequence listing.

Table 1: Number of International Applications with Sequence Listings by Receiving Office

Receiving Office	Total with listings	Rule 13ter in addition to listing as filed	Rule 13ter submitted later only
AT	4		
AU	350		3
BR	66		2
CA	362	5	47
CL	10		1
CN	9,041	10	93
CU	12	2	
CZ	31		4
DE	10		
DK	8		1
EP	6,150	125	399
ES	74	4	3
FI	36	1	
FR	55	3	1
GB	680	23	89
GR	5		
HU	17		1
IB	1,591	70	134
ID	1	1	
IL	392	42	4
IN	109	2	11
IT	23	1	3
JP	2,431	1	1
KR	2,762	1	
MX	3	1	
MY	5		
NL	122		61
NO	4		1
NZ	20		1
PE	3		
PH	2		
PL	50	7	5
PT	7		
QA	2		
RU	56	3	
SE	35	1	2
SG	242	1	4
SK	3		1
TH	17	2	5
TR	52		8

Receiving Office	Total with listings	Rule 13ter in addition to listing as filed	Rule 13ter submitted later only
UG	1		
US	15,119	1,164	2,696
ZA	2		

14. The reasons for Rule 13ter submissions require further analysis, but the variations are a factor of the International Searching Authority as well as the origin of the listing. It is more common in some States than others for applicants to file international applications disclosing sequences that are required by Rule 5.2(a) to be included in a sequence listing without furnishing such a listing as part of the international application. Some International Authorities check the sequence listings contained in the application more thoroughly than others and are more likely to invite the applicant to submit a standard-compliant listing under Rule 13ter for the purpose of international search if a defect is found in a listing or if the application body contains sequences that are not included in a listing.

DOCUMENT TYPES RELATED TO SEQUENCE LISTINGS

15. Table 2 below shows the revised document types related to sequence listings currently available and the corresponding number of usages of each document type for applications filed since July 2022, along with the changes that are currently under implementation. The purpose of revising the document types is to make it easier for applicants or formalities examiners to understand and select the correct document types for special cases and reduce the human error that may occur due to confusion between multiple similar document types or accidentally clicking on the incorrect document type from the dropdown list. The document types “Sequence Listing - Correction - Rule 13ter”, “Sequence Listing - Rectification - Rule 13ter” and “Sequence Listing under Rule 13ter Rectified by the International Preliminary Examining Authority (Rule 91)” are considered as unnecessary since they are not part of the international application as such; if a Rule 13ter listing is wrong for any reason, it could simply be replaced with a new one rather than specifying whether the change is due to a correction or a rectification. The document type “Seq List statement 13ter” is a duplication with the document type “Sequence Listing Statement”, and the document types “Seq. List. Info” and “Sequence List Tables” are no longer applicable. The description of certain document types is currently also under review to make it clear and easy for users.

Table 2: Use of Sequence Listings Document Types

Revised Document type	Number
Sequence Listing	37,559
Sequence Listing 13ter	4,677
Seq List statement 13ter	4,220
Sequence Listing - Certified Copy Placeholder Page	896
Sequence Listing Statement	637
Sequence Listing as originally filed (replaced under Rule 12, 26 or 91)	295
Seq. List. Info	239
Sequence Listing Corrected under Rule 26	180
Sequence Listing Rectified by the International Searching Authority (Rule 91)	85
Purported Sequence Listing (not in compliance with ST.26)	71

Revised Document type	Number
Sequence Listing – Rectification – Rule 13ter	70
Sequence Listing Incorpor. By Ref. (Rule 20.6)	24
Sequence Listing - Translation for the purposes of international publication	24
Sequence Listing - Translation for the purposes of international search	11
Sequence Listing Validation Report	10
Sequence Listing Amendment Art.34	10
Sequence Listing - IPRP II Annex	8
Sequence Listing – Correction – Rule 13ter	7
Sequence Listing - later submitted (Rule 20.5)	4
Sequence Listing - later submitted (Rule 20.5bis)	2
Sequence Listing Rectified by the International Preliminary Examining Authority (Rule 91)	1
Sequence List Tables	-
Sequence Listing under Rule 13ter Rectified by the International Preliminary Examining Authority (Rule 91)	-
Sequence Listing - Translation for the purposes of Supplementary International Search	-

CORRECTIONS OF BIBLIOGRAPHIC DATA

16. Currently some receiving Offices check the bibliographic data in the sequence listings and invite the applicant to submit corrections under Rule 26. Since July 2022, the International Bureau received 180 sequence listings corrected due to defects in applicant's name, priority date, invention title etc. The bibliographic data section is included as a guide to help identify cases where the wrong listing has been submitted, rather than being a definitive source of information. According to paragraph 28 of Annex C of the Administrative Instructions, the receiving Office may draw attention to discrepancies but should not require correction. The processing should proceed on the basis of the relevant data as set out in the request. In order to reduce the number of such type of corrections, the bibliographic data in the sequence listings could be either simplified or not necessarily checked by the receiving Offices.

TRANSLATION OF SEQUENCE LISTINGS

17. As applicants can submit sequence listings containing free text qualifier values in up to two languages (English and/or one other), and examiners at International Searching Authorities are mostly proficient in the language of filing, whether or not that is the language of publication, translations of sequence listings are rarely submitted during the international phase. Since July 2022, the International Bureau has received around 30 documents indicated as sequence listing translations for publication or for search purposes. However, a review of samples of sequence listings suggest that the language options are not always being used as intended. In some cases (including documents provided as corrections, including the corrections mentioned in paragraph 16 above), the translation of the sequence listing consisted of only the general information part, which is not required (see paragraphs 17(b) and 28 of Annex C to the PCT Administrative Instructions), rather than the free text. Furthermore, it is not clear that the qualifier values are being provided in the correct language(s) and, where it is indicated that both English and a second language are being used, that the qualifier values are equivalent. The International Bureau hopes to perform a more systematic analysis of the use of language options within sequence listings during the international phase. To improve such analysis, the

International Bureau would also welcome information from Offices in their capacity as designated Offices on the extent to which translations are required for national phase processing, the reasons for which translations are required and any issues that have been found with receiving and processing such translations.

18. The Meeting is invited to note the contents of document PCT/MIA/32/9 and provide any comments for further review and analysis of processing of sequence listings under the PCT.

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