L2/26-241R

Release Management Group Report to UTC #189

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The Release Management Group (“RMG”) is composed of UTC working group leaders and other volunteers working on the process for development of Unicode Standard releases and for evolving processes for future releases.

1. Unicode 18.0 release

Unicode 18.0 was released on September 16, according to plan. The content for this release included some notable differences from past releases:

- A new annex was added: UAX #60, *Data for East Asian Scripts*.
- UTS #58, *Unicode Link Detection and Formatting*, was first released after Unicode 17.0, and was incorporated into the Unicode 18.0 release as a synchronized UTS.
- Auxiliary charts were revamped:
    - The Script and Normalization charts, which were redundant and problematic, were removed.
    - The old Names List charts were problematic because they relied on client-side fonts for presenting glyphs. These were replaced by newly implemented Names List charts that use server-side resources to present representative glyphs. These incorporated a refreshed design as well as an index page similar to the main charts index page.
    - A new set of Collation & Casing charts replaced the old Case Mapping and Collation charts. Like the new Names list charts, these have a new implementation, design, and index page.
- The old Name Index, which was a static page created using a curated Index.txt file (part of UCD), has been replaced by a dynamic Name Index search page, which supports full text search on complete names list content.

The “gamma” phase (from the end of the July UTC meeting until release day) was made more complicated by the removal of the Chisoi script from 18.0. The need for this late change was anticipated after the JTC 1/SC 2 meeting in June, and some of the work to remove Chisoi was done before the UTC meeting. But many different components of the release content are affected by such changes, and so there were a number of tasks that remained to be done (or redone) after UTC #188.

2. Process development

2.1 Developments during the 18.0 cycle

In the RMG report to UTC 185 (L2/25-234), RMG indicated that priorities for process improvement during the 18.0 cycle would include continuing to improve staging processes to simplify release-day tasks and allow for earlier content validation. For the 18.0 release, staging was used for much more of the release content. Deployment scripts were created that automated many release-day tasks: instead of separate tasks to deploy many different items to the production server, consolidated scripts were used to deploy large sets of content from the staging server to production. This allowed release-day tasks to be completed more quickly and with fewer issues.

These changes in staging and deployment created some challenges prior to release day, however.

- It had been decided to include UAXes and UTSes in the staging processes, with these documents on a staging server. However, while this was in progress, we discovered that validation of these documents would be problematic on the staging server because these documents have many links using fully-qualified URLs that would fail on a staging server.
  As a result, with less than two weeks to go before the release, plans for validation and deployment of these documents had to be changed. We staged these documents in their regular locations on the live server (but did not link to them yet); this allowed for better validation than in previous releases when we had collected them in a different location. Final deployment of the reports was also included in the source-controlled deployment script.
- Development and testing of deployment scripts to be used on release day was not completed until the last week before release day.

Another challenge that arose within the last four weeks was use of LLMs to check content for inconsistencies or other issues. This was effective in identifying several issues, but had not been planned and required triaging of new bugs in content that had been assumed to be finalized.

Lessons were learned from these challenges:

- While we welcome thorough content QA, we need bug reports and suggestions available much earlier in the cycle.
- The staging processes have proven useful and should be expanded, but need to be developed and tested earlier in the cycle.

2.2 Process development priorities for the 19.0 cycle

One of the areas mentioned in the RMG report to UTC 185 for prioritization had to do with the technical reports. Quoting from section 2.5 of L2/25-234:

> Technical report document management: Set a goal to automate document version management and deployment for UAXes, UTSes and UTRs. This would need to satisfy certain requirements (see below) and result in significant improvement and efficiency for all stakeholders collectively.
>
> - Requirements include:
>   - Ease of use and benefit for document authors and owning working groups, not just RMG and supporting Unicode staff.
>   - Must work for final releases and also for preview releases, including integration with PRI processes.
>   - Need to continue to have stable snapshots of updates used as reference for UTC decisions.
> - If that goal can't be achieved, then a fallback goal will be to have better documentation for existing processes.

We have not yet developed automated deployment for these documents. We did achieve a broader shared understanding of the publication processes, and we improved the release staging and validation processes.

Based on the issues discovered in the 18.0 cycle, we recommend that the following steps be taken in the 19.0 cycle:

- Update links in the UAXes and in the synchronized UTSes so that they are compatible with staging.
- Create an automated process for deploying drafts and proposed updates (note that updating proposed updates requires WG approval, see 183-N1).

3. Unicode 19.0 scope and timeline

RMG recommends that the next release be planned as a "full" release, Unicode 19.0, including new characters and scripts or other content changes that would be considered in a full release. At the same time, we caution that UTC should be conservative with the amount of work, in order to ensure that changes to content and to processes across all WGs can be completed with high confidence.

A timeline for the development and release of Unicode 19.0 is proposed with the following key dates:

- 2026-10-28, UTC #189: Confirm scope and timeline for Unicode 19.0
- 2026-12-30: snapshot of PRI feedback
- 2026-01-22, UTC #190: Finalize alpha content
    - New characters / emoji, charts
    - Property data
    - Advance in-progress UTSes, UAXes
- 2027-02-09: Start of alpha
- 2027-03-23: End of alpha, snapshot of feedback
- 2027-04-15, UTC #191: Finalize beta content
    - Charts
    - Property data
    - Draft UTSes, UAXes
    - Draft of complete core spec content
- 2027-05-25: start of beta review
- 2027-07-06: end of beta public review, snapshot of feedback
- 2027-07-29, UTC #192: Finalize 19.0 content
- 2027-09-15: Unicode 19.0 release

RMG proposes that UTC #189 make the following decision:

> [189-C] Consensus: UTC approves the proposed timeline and plan for Unicode 19.0 outlined in document L2/26-241.

4. Recommendation of new repertoire for 19.0

Based on work within IRG recommendations from the CJK & Unihan WG, UTC #188 approved two blocks of CJK unified ideograph components (188-C43), 494 characters combined. As of now, those are the only characters that have been approved for Unicode 19.0.

In RMG's report to UTC #188 (L2/26-160), we made a preliminary proposal for new repertoire to be included in Unicode 19.0.[1] RMG recommends that all characters mentioned in L2/26-160 be approved for Unicode 19.0; this includes 15 Leibniz symbols for which UTC requested further review by SEW: Since then, SEW has concluded this review and recommends their encoding. Except for those 15, all other characters have previously been given provisional code point assignments.

Thus, RMG recommends that UTC #189 take the following actions:

[1] The 2,090 characters considered in L2/26-160 match the new characters in CDAM1 of ISO/IEC 10646:2026 Amd 1.

[189-C] Consensus: UTC accepts for encoding in Unicode version 19.0 the following 1,487 characters for new scripts for which code points have previously been provisionally assigned:

- 55 characters for Sirmauri at 11850..1188F (ref. 185-C4)
- 1,392 characters for Proto-Cuneiform at 12690..12BFF (ref. 185-C2)
- 40 characters for Chisoi at 16D80..16DA9 (ref. 174-C21, 181-C61, 184-C2, 184-C25, 188-C2)

[189-C] Consensus: UTC accepts for encoding in Unicode version 19.0 the following 94 character additions:

- 1 Telugu character: 0C70 (ref. 185-C5)
- 2 Kannada characters: 0CF0, 0CF4 (ref. 188-C4, 188-C5)
- 1 Cyrillic character: 1C8B (ref. 183-C8)
- 1 currency sign: 20C5 (ref. 187-C11)
- 2 combining marks for symbols: 20F1..20F2 (ref. 188-C13)
- 10 Latin letters: AB6E, 1DF82..1DF8A (ref. 183-C9, 183-C11, 184-C10, 184-C11, 184-C12, 184-C14, 184-C16)
- 2 Arabic letters: 10EC0..10EC1 (ref. 184-C8)
- 1 Brahmi mark: 1107E (ref. 188-C9)
- 4 Tulu-Tigalari characters: 113CB, 113D9..113DB (ref. 183-C5, 185-C7, 188-C6, 188-C7)
- 2 Dogra characters: 1183C..1183D (ref. 185-C6)
- 2 Devanagari characters: 11B0B..11B0C (ref. 186-C22)
- 2 CJK punctuation characters: 16FE5..16FE6 (ref. 188-C41, 188-C42)
- 2 Alchemical symbols: 1CED1, 1CED5 (ref. 186-C25, 187-C12)
- 54 Leibnizian symbols: 1DC00..1DC35 (ref. 188-C16)
- 8 phonetic symbols: 1DFC5..1DFCC (ref. 184-C13, 184-C15)

Including the 494 CJK components already approved for Unicode 19.0 (188-C43), the combined count of new characters above would be 494 + 1,487 + 94 = 2,075.

(Note: Other characters may be independently proposed at UTC 189 for approval in Unicode 19.0. The above counts do not reflect that.)

UTC #188 approved one standardized variation sequence for Unicode 19.0 (188-C17), and provisionally assigned seven other sequences. RMG recommends all of these standardized variation sequences be included in Unicode 19.0.

Thus, the RMG recommends that UTC #189 take the following action:

[189-C] Consensus: UTC accepts 7 standardized variation sequences for addition in Unicode version 19.0 which were provisionally assigned by UTC decisions 188-C16 and 188-C41.