

Title: CJK & Unihan Group Recommendations for UTC #176 Meeting

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Date: 2023-07-11

This document provides the CJK & Unihan Group recommendations for the UTC #176 meeting, based on a meeting that took place on 2023-07-07 from 6 to 8:45PM PDT, which was attended by Yi Bai, Eiso Chan, Kushim Jiang, Ken Lunde, William Nelson, CheonHyeong Sim, Stephan Hyeonjun Stiller, Harald Tveiten, Xieyang Wang, Yifán Wáng, and Fuqiao Xue via [Zoom](#). The Chair of the [CJK & Unihan Group](#), Ken Lunde, chaired the meeting.

The CJK & Unihan Group reviewed public feedback and documents that were received since the UTC #175 meeting took place. Comments are marked in **green**, and Recommendations to the UTC are marked in **red**. A “plain text” Copy&Paste-ready version of the Recommendations is also provided as the PDF attachment named *recommendations-20230707.txt*.

CJK Unified Ideographs Extension I

The four documents that are referenced in Section 01 are directly related to the CJK Unified Ideographs Extension I block, were discussed by the group, and for convenience, the following data file, which is a PDF attachment, includes the recommended Unihan database additions and changes based on them:

- *ExtensionI-20230707.txt*

- 01) L2/23-114R: Proposal to encode 622 urgently needed ideographs in UCS (Revised) [WG2 N5214R2]**
L2/23-145: Recommendations from WG 2 meeting 70 [WG2 N5234]
L2/23-146: Additional draft repertoire for 10646:2020 Amendment 2 and Unicode 16.0 [WG2 N5235]
L2/23-154: Revision of 622 UNCs of China (Feedback on WG2 N5214) [WG2 N5238]

Comments: Per [Consensus 175-C10](#), the UTC accepted during the UTC #175 meeting the CJK Unified Ideographs Extension I block (**U+2EBF0..U+2EE4F**), which included **603** ideographs in the range **U+2EBF0..U+2EE4A**, for Unicode Version 15.1. WG2 subsequently added this block to ISO/IEC 10646:2020 Amendment 2 (L2/23-146 = WG2 N5235). China was tasked by SC2 during the SC2 #28 meeting to provide feedback on Extension I to WG2 by the end of June. China’s feedback (L2/23-154 = WG2 N5238), which was received on 2023-06-30, resulted in 47 ideographs being removed and 66 ideographs being added. The Extension I block was subsequently updated to include **622** ideographs in the range **U+2EBF0..U+2EE5D**, and the block size increased to **U+2EBF0..U+2EE5F**. The group therefore recommends that the UTC accept the updated and expanded CJK Unified Ideographs Extension I block for Unicode Version 15.1, and makes the same recommendation to WG2 for ISO/IEC 10646:2020 Amendment 2.

Recommendations: The group recommends to the UTC the following disposition ➡

Consensus: Accept 622 ideographs in the updated CJK Unified Ideographs Extension I block with code point range U+2EBF0..U+2EE5D (block: U+2EBF0..U+2EE5F), based on document L2/23-114R and Section 01 of document L2/23-163, for Unicode Version 15.1.

Action Item for Michel Suignard, CJK: Apply the `kIRG_GSource`, `kRSUnicode`, and `kTotalStrokes` property values for the 622 ideographs in the updated CJK Unified Ideographs Extension I block, based on document L2/23-114R and Section 01 of document L2/23-163, and provide to Ken Lunde an updated Unihan data file, for Unicode Version 15.1.

Action Item for Ken Lunde, CJK: Update the Unihan database file `Unihan_IRGSources.txt` to add the `kIRG_GSource`, `kRSUnicode`, and `kTotalStrokes` property values for the 622 ideographs in the updated CJK Unified Ideographs Extension I block, based on document L2/23-114R and Section 01 of document L2/23-163, for Unicode Version 15.1.

Action Item for Ken Whistler, EDC: Update the pipeline to reflect the updated CJK Unified Ideographs Extension I block, based on document L2/23-114R and Section 01 of document L2/23-163, for Unicode Version 15.1.

Action Item for Ken Lunde, CJK: Update PRI #467 (Proposed Update UAX #38) to reflect the updated CJK Unified Ideographs Extension I block, based on document L2/23-114R and Section 01 of document L2/23-163, for Unicode Version 15.1.

Action Item for Markus Scherer, PAG: Update the UCD to reflect the updated CJK Unified Ideographs Extension I block, based on document L2/23-114R and Section 01 of document L2/23-163, for Unicode Version 15.1.

Action Item for Ken Lunde, CJK: Forward document L2/23-114R to CESI, indicating that the UTC accepted the updated CJK Unified Ideographs Extension I block for Unicode Version 15.1, and that its repertoire and ordering are therefore frozen and stable.

Unihan Database Restoration

02) Unihan Database Status

Comments: Per [Note 175-N1](#), the Unihan database was frozen in its Unicode Version 15.1 Alpha state, and per [Action Item 175-A2](#), Ken Lunde was tasked to restore the Unihan database for Unicode Version 16.0.

Ken Lunde successfully restored the Unihan database on **2023-06-01**, and is therefore able to make updates, to include generating a new *Unihan.zip* file for the UCD. The group therefore recommends that the CJK Unified Ideographs Extension I block be formally added to the Unihan database, and that the *kStrange* property value syntax error for U+31993 (**I:6D6E** → **I:U+6D6E**) be corrected in the Unihan database. The group also recommends that all other Unihan database additions, changes, and removals should remain targeted for Unicode Version 16.0, to include those that are accepted in this document.

Recommendations: The group recommends to the UTC the following disposition ➡

Note: The Unihan database is no longer frozen, but the only updates that are targeted for Unicode Version 15.1 are the addition of the CJK Unified Ideographs Extension I block and the correction of the kStrange property value syntax error for U+31993, based on Section 02 of document L2/23-163.

Action Item for Ken Lunde, CJK: Update the Unihan database to add the CJK Unified Ideographs Extension I block and to correct the kStrange property value syntax error for U+31993, based on Section 02 of document L2/23-163, for Unicode Version 15.1.

Action Item for Ken Whistler, EDC: Remove the draft errata notice for the kStrange property value syntax error for U+31993.

PRI #467 Feedback

The two items of [PRI #467](#) (*Proposed Update UAX #38*) feedback that are in this section were discussed by the group, and for convenience, the following data file, which is a PDF attachment, includes the recommended Unihan database removals based on the second item:

- *Unihan-removals-20230707.txt*

The recommended Unihan database removals are also shown inline, following the **Recommendations**.

03) ID20230519101601

Date/Time: Fri May 19 10:16:01 CDT 2023

ReportID: ID20230519101601

Name: FAN Ming

Report Type: Public Review Issue

Opt Subject: **467**

It's suggested to change the name of block 'CJK Unified Ideographs Extension I' to 'CJK Unified Ideographs Extension J'(i.e. skip letter 'I'), in case the English letter 'I' is confused with latin numeral 'I' on some occasions.

Comments: The group discussed this feedback, and agreed that there is no precedent for skipping the designation "I" in this block's name. The group further agreed that skipping the designation "I" would likely create more confusion.

Recommendations: The group recommends to the UTC the following disposition ➡

Action Item for Ken Lunde, CJK: Convey to the feedback submitter the CJK & Unihan Group comments in Section 03 of document L2/23-163. See PRI #467 feedback [ID20230519101601].

04) ID20230527202621

Date/Time: Sat May 27 20:26:21 CDT 2023

ReportID: ID20230527202621

Name: Paul Masson

Report Type: Error Report

Opt Subject: **kPhonetic 990**

In Casey this phonetic contains 10 characters. In both Unicode 14 and 15, it has swelled to well over 300 characters, most of which clearly do not belong. This appears to be the same problem as for phonetic 1157, which was corrected in Unicode 15.

Comments: The group discussed this feedback, and agreed that all instances of the *kPhonetic* property value **990*** should be removed from the UniHan database. Ken Lunde had a private email exchange with the feedback submitter, and the same conclusion was reached.

Recommendations: The group recommends to the UTC the following disposition ➡

Action Item for Ken Lunde, CJK: Update the UniHan database to remove all 394 instances of the *kPhonetic* property value “990*,” based on PRI #467 feedback [ID20230527202621] and Section 04 of document L2/23-163, for Unicode Version 16.0.

Action Item for Ken Lunde, CJK: Convey to the feedback submitter the CJK & UniHan Group comments in Section 04 of document L2/23-163. See PRI #467 feedback [ID20230527202621].

Remove:

U+36A2	kPhonetic	990*
U+36A3	kPhonetic	990*
U+36A6	kPhonetic	990*
U+36A7	kPhonetic	990*
U+36A9	kPhonetic	990*
U+36AA	kPhonetic	990*
U+36AB	kPhonetic	990*
U+36AC	kPhonetic	990*
U+36AF	kPhonetic	990*
U+36B2	kPhonetic	990*
U+36B5	kPhonetic	990*
U+36B6	kPhonetic	990*
U+36B7	kPhonetic	990*
U+36B9	kPhonetic	990*
U+36BD	kPhonetic	990*
U+36BE	kPhonetic	990*
U+36BF	kPhonetic	990*
U+36C0	kPhonetic	990*
U+36C3	kPhonetic	990*
U+36C4	kPhonetic	990*
U+36C6	kPhonetic	990*
U+36CA	kPhonetic	990*
U+36CD	kPhonetic	990*
U+36CE	kPhonetic	990*
U+36CF	kPhonetic	990*
U+36D0	kPhonetic	990*

U+36D2	kPhonetic	990*
U+36D3	kPhonetic	990*
U+36D4	kPhonetic	990*
U+36D6	kPhonetic	990*
U+36D7	kPhonetic	990*
U+36D8	kPhonetic	990*
U+36D9	kPhonetic	990*
U+36DC	kPhonetic	990*
U+36DD	kPhonetic	990*
U+36DE	kPhonetic	990*
U+36E3	kPhonetic	990*
U+36E4	kPhonetic	990*
U+36E6	kPhonetic	990*
U+36E7	kPhonetic	990*
U+36E8	kPhonetic	990*
U+36E9	kPhonetic	990*
U+36EC	kPhonetic	990*
U+36EF	kPhonetic	990*
U+36F1	kPhonetic	990*
U+36F2	kPhonetic	990*
U+36F3	kPhonetic	990*
U+36F5	kPhonetic	990*
U+36F6	kPhonetic	990*
U+36FB	kPhonetic	990*
U+36FC	kPhonetic	990*
U+36FE	kPhonetic	990*
U+36FF	kPhonetic	990*
U+3702	kPhonetic	990*
U+3703	kPhonetic	990*
U+3704	kPhonetic	990*
U+3706	kPhonetic	990*
U+3707	kPhonetic	990*
U+3708	kPhonetic	990*
U+370A	kPhonetic	990*
U+370B	kPhonetic	990*
U+370D	kPhonetic	990*
U+370E	kPhonetic	990*
U+3710	kPhonetic	990*
U+3711	kPhonetic	990*
U+3713	kPhonetic	990*
U+3715	kPhonetic	990*
U+3716	kPhonetic	990*
U+3717	kPhonetic	990*
U+3718	kPhonetic	990*
U+3719	kPhonetic	990*
U+371A	kPhonetic	990*
U+371B	kPhonetic	990*
U+371C	kPhonetic	990*
U+371E	kPhonetic	990*
U+3720	kPhonetic	990*
U+3721	kPhonetic	990*
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U+3725	kPhonetic	990*
U+3726	kPhonetic	990*

U+3727	kPhonetic	990*
U+3728	kPhonetic	990*
U+3729	kPhonetic	990*
U+372A	kPhonetic	990*
U+372E	kPhonetic	990*
U+372F	kPhonetic	990*
U+3730	kPhonetic	990*
U+3731	kPhonetic	990*
U+3732	kPhonetic	990*
U+3733	kPhonetic	990*
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U+373A	kPhonetic	990*
U+373B	kPhonetic	990*
U+373C	kPhonetic	990*
U+38FD	kPhonetic	990*
U+4D92	kPhonetic	990*
U+5977	kPhonetic	990*
U+597A	kPhonetic	990*
U+597B	kPhonetic	990*
U+597C	kPhonetic	990*
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U+59AA	kPhonetic	990*
U+59AB	kPhonetic	990*
U+59AD	kPhonetic	990*
U+59B1	kPhonetic	990*
U+59BA	kPhonetic	990*
U+59BD	kPhonetic	990*
U+59BF	kPhonetic	990*
U+59C0	kPhonetic	990*
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U+59C3	kPhonetic	990*
U+59C4	kPhonetic	990*
U+59C7	kPhonetic	990*

U+59C8	kPhonetic	990*
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U+59D6	kPhonetic	990*
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U+59E9	kPhonetic	990*
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U+59EF	kPhonetic	990*
U+59F0	kPhonetic	990*
U+59F3	kPhonetic	990*
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U+5A05	kPhonetic	990*
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U+5A6E	kPhonetic	990*
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U+5A7D	kPhonetic	990*
U+5A7E	kPhonetic	990*
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U+5A82	kPhonetic	990*
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U+5A85	kPhonetic	990*
U+5A86	kPhonetic	990*
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U+5A8A	kPhonetic	990*
U+5A8B	kPhonetic	990*
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U+5A8E	kPhonetic	990*
U+5A91	kPhonetic	990*
U+5A94	kPhonetic	990*
U+5A98	kPhonetic	990*
U+5A9C	kPhonetic	990*
U+5A9D	kPhonetic	990*
U+5AA1	kPhonetic	990*
U+5AA5	kPhonetic	990*
U+5AA8	kPhonetic	990*
U+5AAD	kPhonetic	990*
U+5AAE	kPhonetic	990*
U+5AAF	kPhonetic	990*
U+5AB0	kPhonetic	990*
U+5AB4	kPhonetic	990*
U+5AB9	kPhonetic	990*
U+5ABB	kPhonetic	990*
U+5AC0	kPhonetic	990*

U+5AC3	kPhonetic	990*
U+5AC5	kPhonetic	990*
U+5ACE	kPhonetic	990*
U+5AD2	kPhonetic	990*
U+5AD4	kPhonetic	990*
U+5AD5	kPhonetic	990*
U+5ADB	kPhonetic	990*
U+5ADD	kPhonetic	990*
U+5ADE	kPhonetic	990*
U+5AE2	kPhonetic	990*
U+5AE4	kPhonetic	990*
U+5AE7	kPhonetic	990*
U+5AED	kPhonetic	990*
U+5AEF	kPhonetic	990*
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U+5AF9	kPhonetic	990*
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U+5B1F	kPhonetic	990*
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U+5B36	kPhonetic	990*
U+5B39	kPhonetic	990*
U+5B3A	kPhonetic	990*

U+5B3C	kPhonetic	990*
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U+5B42	kPhonetic	990*
U+5B44	kPhonetic	990*
U+5B46	kPhonetic	990*
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U+5B49	kPhonetic	990*
U+5B4A	kPhonetic	990*
U+5B4D	kPhonetic	990*
U+5B4E	kPhonetic	990*
U+5B4F	kPhonetic	990*
U+7C79	kPhonetic	990*
U+8097	kPhonetic	990*
U+909A	kPhonetic	990*
U+9495	kPhonetic	990*
U+216AD	kPhonetic	990*
U+216AE	kPhonetic	990*
U+216B7	kPhonetic	990*
U+216B9	kPhonetic	990*
U+216BB	kPhonetic	990*
U+216CC	kPhonetic	990*
U+216D8	kPhonetic	990*
U+216E0	kPhonetic	990*
U+216E1	kPhonetic	990*
U+216F5	kPhonetic	990*
U+216F6	kPhonetic	990*
U+21701	kPhonetic	990*
U+2170A	kPhonetic	990*
U+2170B	kPhonetic	990*
U+21727	kPhonetic	990*
U+21728	kPhonetic	990*
U+2172C	kPhonetic	990*
U+2172F	kPhonetic	990*
U+21731	kPhonetic	990*
U+21732	kPhonetic	990*
U+21733	kPhonetic	990*
U+2174A	kPhonetic	990*
U+2174D	kPhonetic	990*
U+21750	kPhonetic	990*
U+2175C	kPhonetic	990*
U+21766	kPhonetic	990*
U+21798	kPhonetic	990*
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U+2179A	kPhonetic	990*
U+217A2	kPhonetic	990*
U+217AA	kPhonetic	990*
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U+217AD	kPhonetic	990*
U+217AF	kPhonetic	990*
U+217CD	kPhonetic	990*
U+217D1	kPhonetic	990*
U+217DE	kPhonetic	990*
U+217DF	kPhonetic	990*
U+217EB	kPhonetic	990*
U+217ED	kPhonetic	990*

U+217EF	kPhonetic	990*
U+2180A	kPhonetic	990*
U+2180F	kPhonetic	990*
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U+2181A	kPhonetic	990*
U+2181E	kPhonetic	990*
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U+2183C	kPhonetic	990*
U+2183F	kPhonetic	990*
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U+2184A	kPhonetic	990*
U+2184F	kPhonetic	990*
U+21850	kPhonetic	990*
U+21851	kPhonetic	990*
U+21854	kPhonetic	990*
U+21856	kPhonetic	990*
U+21865	kPhonetic	990*
U+2187A	kPhonetic	990*
U+21880	kPhonetic	990*
U+218B1	kPhonetic	990*
U+218C8	kPhonetic	990*
U+218EA	kPhonetic	990*
U+218EE	kPhonetic	990*
U+218FD	kPhonetic	990*
U+2190B	kPhonetic	990*
U+2190C	kPhonetic	990*
U+2190E	kPhonetic	990*
U+21919	kPhonetic	990*
U+2191B	kPhonetic	990*
U+2191E	kPhonetic	990*
U+21922	kPhonetic	990*
U+24E74	kPhonetic	990*
U+27E9C	kPhonetic	990*
U+295A0	kPhonetic	990*
U+29A1A	kPhonetic	990*

PRI #468 Feedback

The single item of [PRI #468](#) (*Proposed Update UAX #45*) feedback that is in this section was discussed by the group, and for convenience, the following data file, which is a PDF attachment, includes the recommended UAX #45 data file changes based on it:

- *USource-changes-20230707.txt*

The recommended UAX #45 data file changes are also shown inline, following the **Recommendations**.

05) ID20230622075657

Date/Time: Thu Jun 22 07:56:57 CDT 2023

ReportID: ID20230622075657

Name: Charlotte Buff

Report Type: Public Review Issue

Opt Subject: **468**

There are a number of ideographic description sequences in USourceData.txt where the usage of ? as a placeholder can be replaced with a proper component that has since been encoded.

UTC-00972: 争 to 争

UTC-00974: 田↑ ? to 田↑ 奥

UTC-00975: [] ↑ ? to [] ↑ 直

UTC-00983: 日?双 to 日而双

UTC-00990: []土? to []土真

UTC-00999: [T]?定 to [T]专定

UTC-01009: [T] ↑ ? to [T] ↑ 专

UTC-01010: 𐀀𐀁𐀂𐀃 to 𐀀𐀁𐀂𐀃𐀄

UTC-01012: [] ↑ ? to [] ↑ 真

UTC-01014: 00時? to 00時申

UTC-01015: [] 才 ? to [] 才 专

UTC-01019: 日? to 日专

UTC-01021: 木? to 木直

UTC-01023: [?] 歹? to [?] 歹南

UTC-01026: [] ? to [] 专

UTC-01027: [REDACTED] ? to [REDACTED] 真

UTC-01031: 牛? to 牛吳

UTC-01032: 𐤃𐤓 ? to 𐤃𐤓 𐤔

UTC-01035: 00目? to 00目専

UTC-01042: 立? to 立专

UTC-01050: [] ? to []

UTC-01054: 𐤁𐤏𐤕? to 𐤁𐤏𐤕𐤔 (IDC was also wrong in this case)

UTC-01058: 01 to 01 专

UTC-01070: [] 钱 ? to [] 钱 真

UTC-01071: []? 页 to []真页

The following make use of the new rotation operator.

UK-01373: 田?戈 to 田回戈戈

UK-01397: []?示 to []Q佳示

UK-01411: 虎? to 虎戈

UTC-03253: 見見 to 見見

UTC-03254: 見見 to 見見見見

Additionally, I have provided an IDS for some ideographs that currently have none. Some of them use the new subtraction and rotation operators.

UTC-00014: 𠂇 𠂇 𠂇

UTC-00055: 𠂇 𠂇 𠂇

UTC-00062: 𠂇 𠂇 (the second component is U+2E80 CJK RADICAL REPEAT)

UTC-00135: 𠂇 𠂇

UTC-00247: 𠂇 𠂇

UTC-00285: 𠂇 𠂇 𠂇 (the enclosure is 𠂇 𠂇 and not 𠂇 because this character belongs to radical 22)

UTC-00950: 𠂇 𠂇

UTC-00951: 𠂇 𠂇

UTC-00952: 𠂇 𠂇

The following sequences are malformed (don't include any operators) and need to be corrected:

UK-02945: 𠂇 𠂇 to 𠂇 𠂇

UK-02946: 𠂇 𠂇 to 𠂇 𠂇

UK-02947: 𠂇 𠂇 to 𠂇 𠂇

UK-02948: 𠂇 𠂇 to 𠂇 𠂇

UK-02949: 𠂇 𠂇 to 𠂇 𠂇

Comments: The group discussed this feedback, and agreed that the proposed IDS changes in the UAX #45 data file are appropriate, to include using the new Ideographic Description Characters in Unicode Version 15.1. Changes to the UAX #45 data file, *USourceData.txt*, can be safely targeted for Unicode Version 15.1.

Recommendations: The group recommends to the UTC the following disposition ➡

Action Item for Ken Lunde, CJK: Update the UAX #45 data file to reflect changes to IDSes, based on PRI #468 feedback [ID20230622075657] and Section 05 of document L2/23-163, for Unicode Version 15.1.

Action Item for Ken Lunde, CJK: Convey to the feedback submitter the CJK & Unihan Group comments in Section 05 of document L2/23-163. See PRI #468 feedback [ID20230622075657].

Current:

UTC-00014;ExtC;U+2A79D;15.5;;;ABC2;;;7;5
UTC-00055;ExtC;U+2B0B1;119.2;;;ABC2;;;8;3
UTC-00062;ExtE;U+2B94E;15.10;;;ABC2;;;9;3
UTC-00135;ExtC;U+2AA72;50.2;;;DYC 274.110;;;5;1
UTC-00247;Variant;U+27D6A;154.6;;;kSBGY 530.08;;;1
UTC-00285;ExtE;U+2B9D4;22.8;;;kSBGY 183.09;;;10;3
UTC-00950;Rejected;;;113.9;;;UDR;;;2
UTC-00951;Rejected;;;72.5;;;UDR;;;2
UTC-00952;Rejected;;;167.5;;;UDR;;;2
UTC-00972;ExtG;U+30053;6.10;;;𠂇?争;UTCDoc L2/12-333 4;;;11;1
UTC-00974;ExtG;U+3006C;9.5;;;𠂇?𠂇;UTCDoc L2/12-333 6;;;7;2

UTC-00975;ExtG;U+30072;9.6;;𠂇?;UTCDoc L2/12-333 7;;8;1
 UTC-00983;ExtG;U+30179;24.8;;𠂇?双;UTCDoc L2/12-333 15;;10;2
 UTC-00990;ExtG;U+30270;32.7;;𠂇土?;UTCDoc L2/12-333 22;;10;1
 UTC-00999;ExtG;U+3034E;40.10;;𠂇?定;UTCDoc L2/12-333 31;;13;1
 UTC-01009;ExtG;U+3044A;61.5;;𠂇?;UTCDoc L2/12-333 41;;8;1
 UTC-01010;ExtG;U+3044C;61.5;;𠂇?;UTCDoc L2/12-333 42;;8;2
 UTC-01012;ExtG;U+3045D;61.7;;𠂇?;UTCDoc L2/12-333 44;;10;1
 UTC-01014;ExtG;U+304CC;64.5;;𠂇?;UTCDoc L2/12-333 46;;8;1
 UTC-01015;ExtG;U+304E2;64.6;;𠂇?;UTCDoc L2/12-333 47;;9;4
 UTC-01019;ExtG;U+3057A;72.5;;𠂇日?;UTCDoc L2/12-333 51;;9;1
 UTC-01021;ExtG;U+305DD;75.6;;𠂇木?;UTCDoc L2/12-333 53;;10;1
 UTC-01023;ExtG;U+3067D;78.6;;𠂇歹?;UTCDoc L2/12-333 55;;10;1
 UTC-01026;ExtG;U+306D3;85.5;;𠂇?;UTCDoc L2/12-333 58;;8;1
 UTC-01027;ExtG;U+306EC;85.7;;𠂇?;UTCDoc L2/12-333 59;;10;1
 UTC-01031;ExtG;U+30831;93.5;;𠂇牛?;UTCDoc L2/12-333 63;;9;2
 UTC-01032;ExtG;U+30842;94.5;;𠂇?;UTCDoc L2/12-333 64;;8;1
 UTC-01035;ExtG;U+30955;109.5;;𠂇目?;UTCDoc L2/12-333 67;;10;1
 UTC-01042;ExtG;U+30A62;117.5;;𠂇立?;UTCDoc L2/12-333 74;;10;1
 UTC-01050;ExtG;U+30B4B;122.6;;𠂇?;UTCDoc L2/12-333 82;;11;1
 UTC-01054;ExtG;U+30C2B;140.5;;𠂇?;UTCDoc L2/12-333 86;;9;1
 UTC-01058;ExtG;U+30D55;149'.5;;𠂇?;UTCDoc L2/12-333 90;;7;1
 UTC-01070;ExtG;U+30F82;167'.7;;𠂇?;UTCDoc L2/12-333 102;;12;1
 UTC-01071;ExtG;U+310AA;181'.7;;𠂇?页;UTCDoc L2/12-333 103;;13;1
 UK-01373;ExtG;U+304A5;62.4;;𠂇?戈;UTCDoc L2/15-260 61;;8;1
 UK-01397;ExtG;U+30A07;113.8;;𠂇?示;UTCDoc L2/15-260 85;;13;3
 UK-01411;ExtG;U+30C9E;141.4;;𠂇虎?;UTCDoc L2/15-260 99;;12;1
 UK-02945;ExtG;U+300F6;15.4;;𠂇风;UTCDoc L2/15-260 1633;;6;3
 UK-02946;ExtG;U+30FC0;167'.13;;𠂇鉴;UTCDoc L2/15-260 1634;;18;2
 UK-02947;ExtG;U+30F7D;167'.6;;𠂇羊;UTCDoc L2/15-260 1635;;11;4
 UK-02948;ExtG;U+30C82;140.13;;𠂇腾;UTCDoc L2/15-260 1636;;16;3
 UK-02949;ExtG;U+306EE;85.7;;𠂇卤;UTCDoc L2/15-260 1637;;10;2
 UTC-03253;FutureWS;;147.7;;𠂇見見;UTCDoc L2/22-009 2;kSimplifiedVariant
 U+32053;14;2
 UTC-03254;FutureWS;;147.21;;𠂇見見見見;UTCDoc L2/22-009 3;;28;2

Adjusted:

UTC-00014;ExtC;U+2A79D;15.5;;𠂇?圣;ABC2;;7;5
 UTC-00055;ExtC;U+2B0B1;119.2;;𠂇?米;ABC2;;8;3
 UTC-00062;ExtE;U+2B94E;15.10;;𠂇免;ABC2;;9;3
 UTC-00135;ExtC;U+2AA72;50.2;;𠂇束;DYC 274.110;;5;1
 UTC-00247;Variant;U+27D6A;154.6;;𠂇具戒;kSBGY 530.08;;;1
 UTC-00285;ExtE;U+2B9D4;22.8;;𠂇、仁壯;kSBGY 183.09;;10;3
 UTC-00950;Rejected;;113.9;;𠂇福;UDR;;;2
 UTC-00951;Rejected;;72.5;;𠂇春;UDR;;;2
 UTC-00952;Rejected;;167.5;;𠂇钱;UDR;;;2
 UTC-00972;ExtG;U+30053;6.10;;𠂇专争;UTCDoc L2/12-333 4;;11;1
 UTC-00974;ExtG;U+3006C;9.5;;𠂇?具;UTCDoc L2/12-333 6;;7;2
 UTC-00975;ExtG;U+30072;9.6;;𠂇?血;UTCDoc L2/12-333 7;;8;1
 UTC-00983;ExtG;U+30179;24.8;;𠂇直双;UTCDoc L2/12-333 15;;10;2
 UTC-00990;ExtG;U+30270;32.7;;𠂇土真;UTCDoc L2/12-333 22;;10;1
 UTC-00999;ExtG;U+3034E;40.10;;𠂇专定;UTCDoc L2/12-333 31;;13;1
 UTC-01009;ExtG;U+3044A;61.5;;𠂇?专;UTCDoc L2/12-333 41;;8;1
 UTC-01010;ExtG;U+3044C;61.5;;𠂇?具;UTCDoc L2/12-333 42;;8;2
 UTC-01012;ExtG;U+3045D;61.7;;𠂇?真;UTCDoc L2/12-333 44;;10;1
 UTC-01014;ExtG;U+304CC;64.5;;𠂇?申;UTCDoc L2/12-333 46;;8;1
 UTC-01015;ExtG;U+304E2;64.6;;𠂇?专;UTCDoc L2/12-333 47;;9;4

UTC-01019;ExtG;U+3057A;72.5;;𠄎日𠄎𠄎;UTCDoc L2/12-333 51;;9;1
 UTC-01021;ExtG;U+305DD;75.6;;𠄎木𠄎𠄎;UTCDoc L2/12-333 53;;10;1
 UTC-01023;ExtG;U+3067D;78.6;;𠄎歹𠄎𠄎;UTCDoc L2/12-333 55;;10;1
 UTC-01026;ExtG;U+306D3;85.5;;𠄎𠄎𠄎𠄎𠄎;UTCDoc L2/12-333 58;;8;1
 UTC-01027;ExtG;U+306EC;85.7;;𠄎𠄎𠄎𠄎𠄎;UTCDoc L2/12-333 59;;10;1
 UTC-01031;ExtG;U+30831;93.5;;𠄎𠄎𠄎𠄎𠄎;UTCDoc L2/12-333 63;;9;2
 UTC-01032;ExtG;U+30842;94.5;;𠄎𠄎𠄎𠄎𠄎;UTCDoc L2/12-333 64;;8;1
 UTC-01035;ExtG;U+30955;109.5;;𠄎𠄎𠄎𠄎𠄎;UTCDoc L2/12-333 67;;10;1
 UTC-01042;ExtG;U+30A62;117.5;;𠄎𠄎𠄎𠄎𠄎;UTCDoc L2/12-333 74;;10;1
 UTC-01050;ExtG;U+30B4B;122.6;;𠄎𠄎𠄎𠄎𠄎;UTCDoc L2/12-333 82;;11;1
 UTC-01054;ExtG;U+30C2B;140.5;;𠄎𠄎𠄎𠄎𠄎;UTCDoc L2/12-333 86;;9;1
 UTC-01058;ExtG;U+30D55;149'.5;;𠄎𠄎𠄎𠄎𠄎;UTCDoc L2/12-333 90;;7;1
 UTC-01070;ExtG;U+30F82;167'.7;;𠄎𠄎𠄎𠄎𠄎;UTCDoc L2/12-333 102;;12;1
 UTC-01071;ExtG;U+310AA;181'.7;;𠄎𠄎𠄎𠄎𠄎;UTCDoc L2/12-333 103;;13;1
 UK-01373;ExtG;U+304A5;62.4;;𠄎𠄎𠄎𠄎𠄎;UTCDoc L2/15-260 61;;8;1
 UK-01397;ExtG;U+30A07;113.8;;𠄎𠄎𠄎𠄎𠄎;UTCDoc L2/15-260 85;;13;3
 UK-01411;ExtG;U+30C9E;141.4;;𠄎𠄎𠄎𠄎𠄎;UTCDoc L2/15-260 99;;12;1
 UK-02945;ExtG;U+300F6;15.4;;𠄎𠄎𠄎𠄎𠄎;UTCDoc L2/15-260 1633;;6;3
 UK-02946;ExtG;U+30FC0;167'.13;;𠄎𠄎𠄎𠄎𠄎;UTCDoc L2/15-260 1634;;18;2
 UK-02947;ExtG;U+30F7D;167'.6;;𠄎𠄎𠄎𠄎𠄎;UTCDoc L2/15-260 1635;;11;4
 UK-02948;ExtG;U+30C82;140.13;;𠄎𠄎𠄎𠄎𠄎;UTCDoc L2/15-260 1636;;16;3
 UK-02949;ExtG;U+306EE;85.7;;𠄎𠄎𠄎𠄎𠄎;UTCDoc L2/15-260 1637;;10;2
 UTC-03253;FutureWS;;147.7;;𠄎𠄎𠄎𠄎𠄎;UTCDoc L2/22-009 2;kSimplifiedVariant
 U+32053;14;2
 UTC-03254;FutureWS;;147.21;;𠄎𠄎𠄎𠄎𠄎;UTCDoc L2/22-009 3;;28;2

PRI #480 Feedback

The four items of [PRI #480](#) (*Unicode 15.1.0 Beta*) feedback that are in this section were discussed by the group, and for convenience, the following data files, which are PDF attachments, include the recommended Unihan database additions, changes, and removals, and UAX #45 data file changes, based on them:

- *Unihan-additions-20230707.txt*
- *Unihan-changes-20230707.txt*
- *Unihan-removals-20230707.txt*
- *USource-changes-20230707.txt*

The recommended Unihan database additions, changes, and removals, and UAX #45 data file changes, are also shown inline, following the **Recommendations**.

06) ID20230526155652

Date/Time: Fri May 26 15:56:52 CDT 2023

ReportID: ID20230526155652

Name: Andrew West

Report Type: Public Review Issue

Opt Subject: **480**

I have noticed the following KP glyphs which seem to have winding errors:

U+4006	盡	KP1-5D69
U+4C7B	鰩	KP1-8D70
U+4DA4	齧	KP1-9258
U+50BB	傻	KP1-3669
U+52DD	勝	KP0-E4F2
U+64C8	撲	KP1-476D
U+76F4	直	KP0-EAF1
U+771F	真	KP1-5DE4
U+881A	蠹	KP1-72F7
U+25F7D	𪛗	KP1-6645
U+25F84	𪛘	KP1-6648

Comments: The group discussed this feedback, and agreed that the glyph distortions should be fixed for the Unicode Version 15.1 code charts. Ken Lunde prepared a delta font that includes only the glyphs for these 11 KP-source ideographs, applied the corrections, then supplied the TrueType font to Michel Suignard. The image below shows the representative glyphs for the affected 11 KP-source ideographs, with the distorted forms shown in the first row, and the corrected forms shown in the second row:

										
盡 uni4006	鰩 uni4C7B	齧 uni4DA4	傻 uni50BB	勝 uni52DD	撲 uni64C8	直 uni76F4	真 uni771F	蠹 uni881A	𪛗 u25F7D	𪛘 u25F84
										
盡 uni4006	鰩 uni4C7B	齧 uni4DA4	傻 uni50BB	勝 uni52DD	撲 uni64C8	直 uni76F4	真 uni771F	蠹 uni881A	𪛗 u25F7D	𪛘 u25F84

Recommendations: The group recommends to the UTC the following disposition ➡

Action Item for Ken Lunde, CJK: Convey to the feedback submitter the CJK & Unihan Group comments in Section 06 of document L2/23-163. See PRI #480 feedback [ID20230526155652].

07) ID20230611130639

Date/Time: Sun Jun 11 13:06:39 CDT 2023

ReportID: ID20230611130639

Name: Michel Mariani

Report Type: Public Review Issue

Opt Subject: **480**

Two simplified/traditional variant issues in Unihan_Variants.txt 15.1 (also in 15.0):

Unihan_Variants.txt

Date: 2023-04-26 00:00:00 GMT [KL]

Unicode version: 15.1.0

- currently:

U+2A2C8 kSimplifiedVariant U+312C2

U+312C2 kTraditionalVariant U+2A2C8

U+23D07 kSimplifiedVariant U+3075C

U+3075C kTraditionalVariant U+23D07

- should be respectively “property-swapped”:

U+2A2C8 kTraditionalVariant U+312C2

U+312C2 kSimplifiedVariant U+2A2C8

U+23D07 kTraditionalVariant U+3075C

U+3075C kSimplifiedVariant U+23D07

Comments: The group discussed this feedback, and agreed that the *kSimplifiedVariant* and *kTraditionalVariant* properties for the four affected ideographs should be swapped per the feedback.

Recommendations: The group recommends to the UTC the following disposition ➡

Action Item for Ken Lunde, CJK: Update the UniHan database to swap the *kSimplifiedVariant* and *kTraditionalVariant* properties for four ideographs, based on PRI #480 feedback [ID20230611130639] and Section 07 of document L2/23-163, for Unicode Version 16.0.

Action Item for Ken Lunde, CJK: Convey to the feedback submitter the CJK & UniHan Group comments in Section 07 of document L2/23-163. See PRI #480 feedback [ID20230611130639].

Remove:

U+23D07	kSimplifiedVariant	U+3075C
U+2A2C8	kSimplifiedVariant	U+312C2
U+3075C	kTraditionalVariant	U+23D07
U+312C2	kTraditionalVariant	U+2A2C8

New:

U+23D07	kTraditionalVariant	U+3075C
U+2A2C8	kTraditionalVariant	U+312C2
U+3075C	kSimplifiedVariant	U+23D07
U+312C2	kSimplifiedVariant	U+2A2C8

08) ID20230616144439

Date/Time: Fri Jun 16 14:44:39 CDT 2023

ReportID: ID20230616144439

Name: Jaycee Carter

Report Type: Error Report

Opt Subject: **UnicodeData.txt and CJK Unified Ideographs Extension A**

The following values seem to be incorrect:

𐤁 (U+3AB3): kRSUnicode of 68.2 should be 68.1; kTotalStrokes of 6 should be 5

𐤂 (U+3AC8): kRSUnicode of 70.6 should be 70.5; kTotalStrokes of 10 should be 9

Although these both have the nonstandard component of a circle (which I have assumed to be a single stroke), they should be compared with 𐤃 (U+3514), which

has a `kRSUnicode` of 19.4 and `kTotalStrokes` of 6 (i.e. the circle is counted as one stroke).

Comments: The group discussed this feedback, and agreed that the informative `kRSUnicode` and `kTotalStrokes` property values for U+3AB3 𠬪 and U+3AC8 𠬪 should be adjusted per the feedback.

Recommendations: The group recommends to the UTC the following disposition ➡

Consensus: Accept the proposal to update the informative `kRSUnicode` and `kTotalStrokes` property values for U+3AB3 and U+3AC8, based on PRI #480 feedback [ID20230616144439] and Section 08 of document L2/23-163, for Unicode Version 16.0.

Action Item for Michel Suignard, CJK: Update the `kRSUnicode` and `kTotalStrokes` property values for U+3AB3 and U+3AC8, based on PRI #480 feedback [ID20230616144439] and Section 08 of document L2/23-163, and provide to Ken Lunde an updated Unihan data file, for Unicode Version 16.0.

Action Item for Ken Lunde, CJK: Update the Unihan database to update the `kRSUnicode` and `kTotalStrokes` property values for U+3AB3 and U+3AC8, based on PRI #480 feedback [ID20230616144439] and Section 08 of document L2/23-163, for Unicode Version 16.0.

Action Item for Ken Lunde, CJK: Convey to the feedback submitter the CJK & Unihan Group comments in Section 08 of document L2/23-163. See PRI #480 feedback [ID20230616144439].

Current:

U+3AB3	<code>kRSUnicode</code>	68.2
U+3AB3	<code>kTotalStrokes</code>	6
U+3AC8	<code>kRSUnicode</code>	70.6
U+3AC8	<code>kTotalStrokes</code>	10

Adjusted:

U+3AB3	<code>kRSUnicode</code>	68.1
U+3AB3	<code>kTotalStrokes</code>	5
U+3AC8	<code>kRSUnicode</code>	70.5
U+3AC8	<code>kTotalStrokes</code>	9

09) ID20230622205550

Date/Time: Thu Jun 22 20:55:50 CDT 2023

ReportID: ID20230622205550

Name: Judith Chen

Report Type: Public Review Issue

Opt Subject: **480**

It seems that the newly-added U-source glyph UTC-02994 was wrongly unified to U+44D5 𪛗.

With the addition of CJK Unified Ideographs Extension I in Unicode 15.1.0 Beta, I suggest that Unicode move UTC-02994 to U+2EDD4 𪛗, for the G-source glyph GIDC23-485 of U+2EDD4 𪛗 is identical to UTC-02994.

Comments: The group discussed this feedback, and noted that this change was already on our radar. In addition, the revised Extension I code point per document L2/23-114R is U+2EDE3. In

addition to moving the U-source from U+44D5 to U+2EDE3, the record for UTC-02994 in the UAX #45 data file, *USourceData.txt*, needs to be adjusted accordingly, and **ExtI** needs to be added as a new status field value in UAX #45 proper and in the header of *USourceData.txt*. The table below constitutes a proposal to horizontally-extend U+2EDE3 by adding UTC-02994 as a new U-source source reference:

Code Point	Code Chart Excerpt—Version 15.1	U-Source	
		Source Reference	Representative Glyph
U+2EDE3	2EDE3 𐤥 162.8  GIDC23-500	UTC-02994	

Recommendations: The group recommends to the UTC the following disposition ➡

Consensus: Accept the proposal to remove “162.8” from the informative kRSUnicode property value of U+44D5 and move the normative kIRG_USource property value “UTC-02994” from U+44D5 to U+2EDE3, based on PRI #480 feedback [ID20230622205550] and as amended in Section 09 of document L2/23-163, for Unicode Version 16.0.

Action Item for Michel Suignard, CJK: Remove “162.8” from the kRSUnicode property value of U+44D5 and move the kIRG_USource property value “UTC-02994” from U+44D5 to U+2EDE3, based on PRI #480 feedback [ID20230622205550] and as amended in Section 09 of document L2/23-163, and provide to Ken Lunde an updated Unihan data file, for Unicode Version 16.0.

Action Item for Ken Lunde, CJK: Update the Unihan database to remove “162.8” from the kRSUnicode property value of U+44D5 and move the kIRG_USource property value “UTC-02994” from U+44D5 to U+2EDE3, based on PRI #480 feedback [ID20230622205550] and as amended in Section 09 of document L2/23-163, for Unicode Version 16.0.

Action Item for Ken Lunde, CJK: Update the record for “UTC-02994” in the UAX #45 data file, *USourceData.txt*, based on PRI #480 feedback [ID20230622205550] and as amended in Section 09 of document L2/23-163, for Unicode Version 15.1.

Action Item for Ken Lunde, CJK: Update UAX #45 and the header of the UAX #45 data file, *USourceData.txt*, to add “ExtI” as a new status field value, based on PRI #480 feedback [ID20230622205550] and as amended in Section 09 of document L2/23-163, for Unicode Version 15.1.

Action Item for Ken Lunde, CJK: Convey to the feedback submitter the CJK & Unihan Group comments in Section 09 of document L2/23-163. See PRI #480 feedback [ID20230622205550].

Current:

U+44D5 kRSUnicode 140.8 **162.8**

Adjusted:

U+44D5 kRSUnicode 140.8

Remove:

U+44D5 kIRG_USource UTC-02994

New:

U+2EDE3 kIRG_USource UTC-02994

Current (*USourceData.txt*):

UTC-02994;ExtA;U+44D5;**140.8** 162.8;;[𪛗]荒;UTCDoc L2/17-062 14;kMandarin: yuǎn;12 10;1

Adjusted (*USourceData.txt*):

UTC-02994;**ExtI;U+2EDE3**;162.8;;[𪛗]荒;UTCDoc L2/17-062 14;kMandarin: yuǎn;12 10;1

Public Feedback

The three items of public feedback from [L2/23-159](#) that are in this section were discussed by the group, and for convenience, the following data file, which is a PDF attachment, includes the recommended UniHan database additions based on them:

- *Unihan-additions-20230707.txt*

The recommended UniHan database changes are also shown inline, following the **Recommendations**.

10) ID20230522180709

Date/Time: Mon May 22 18:07:09 CDT 2023

ReportID: ID20230522180709

Name: Paul Masson

Report Type: Error Report

Opt Subject: **kPhonetic for U+645E**

This character appears on p.350 of Casey but is not in a phonetic group. It appears that the appropriate one is 842. This was not added in version 15.
Thank you.

Comments: This particular addition to the provisional *kPhonetic* property is already reflected in the UniHan database for Unicode Version 15.1 Beta:

U+645E	kPhonetic	842*
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Recommendations: The group recommends to the UTC the following disposition ➡

Action Item for Ken Lunde, CJK: Convey to the feedback submitter the CJK & UniHan Group comments in Section 10 of document L2/23-163. See feedback [ID20230522180709] in L2/23-159.

11) ID20230522180742

Date/Time: Mon May 22 18:07:42 CDT 2023

ReportID: ID20230522180742

Name: Paul Masson

Report Type: Error Report

Opt Subject: **kPhonetic for U+773E**

This character is a variant of U+8846. It appears in Casey in the same group 324. Please add this entry to you database. Thank you.

Comments: The group discussed this feedback, and agreed that adding **324*** as the *kPhonetic* property value of U+773E would be appropriate.

Recommendations: The group recommends to the UTC the following disposition ➡

Action Item for Ken Lunde, CJK: Update the UniHan database to add “324*” as the *kPhonetic* property value of U+773E, based on feedback [ID20230522180742] in document L2/23-159 and Section 11 of document L2/23-163, for Unicode Version 16.0.

Action Item for Ken Lunde, CJK: Convey to the feedback submitter the CJK & UniHan Group comments in Section 11 of document L2/23-163. See feedback [ID20230522180742] in L2/23-159.

New:

U+773E	kPhonetic	324*
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12) ID20230522180830

Date/Time: Mon May 22 18:08:30 CDT 2023

ReportID: ID20230522180830

Name: Paul Masson

Report Type: Error Report

Opt Subject: **kPhonetic for U+78D7**

This character had a *kPhonetic* value of 269 in version 13, which was changed in version 14 to 1157*. It disappeared from the database in version 15 when the latter group was radically pruned, as needed to occur. Please add the correct entry to the database. Thank you.

Comments: The group discussed this feedback, and agreed that restoring **269** as the *kPhonetic* property value of U+78D7 would be appropriate. In addition, the group noted that when all *kPhonetic* property values of **1157*** were removed in Unicode Version 15.0, the following two property values that existing prior to Unicode Version 14.0 were also removed:

U+69D6	kPhonetic	1157*
U+6CB0	kPhonetic	1157*

It is obvious from the source of this property that only U+6CB0 𠂔 belongs to this phonetic group, so the group agreed that it would be appropriate to restore its property value.

Recommendations: The group recommends to the UTC the following disposition ➡

Action Item for Ken Lunde, CJK: Update the UniHan database to add “1157*” and “269” as the *kPhonetic* property values of U+6CB0 and U+78D7, respectively, based on feedback [ID20230522180830] in document L2/23-159 and as amended in Section 12 of document L2/23-163, for Unicode Version 16.0.

Action Item for Ken Lunde, CJK: Convey to the feedback submitter the CJK & UniHan Group comments in Section 12 of document L2/23-163. See feedback [ID20230522180830] in L2/23-159.

New:

U+6CB0	kPhonetic	1157*
U+78D7	kPhonetic	269

UAX #38 / Unihan Database Documents

The five documents in this section were discussed by the group, and for convenience, the following data files, which are PDF attachments, include all of the recommended Unihan database additions, changes, and removals based on them:

- *Unihan-additions-20230707.txt*
- *Unihan-changes-20230707.txt*
- *Unihan-removals-20230707.txt*
- *kFanqie-20230707.txt*
- *kIRG_JSource-additions-20230707.txt*

With the exception of the *kFanqie* property and *kIRG_JSource* property additions, the recommended Unihan database changes are also shown inline, immediately following the **Recommendations**.

13) L2/23-128: Request for consideration to update kSBGY property in Unihan DB

Comments: The group discussed this proposal, which is to move the provisional *kSBGY* property value **269.42** from U+555F 啟 to U+5553 啓 for better alignment with the proposed *kFanqie* property in document L2/23-002R that will be discussed in Section 14 of this document, and agreed that the change is appropriate.

Recommendations: The group recommends to the UTC the following disposition ➡

Action Item for Ken Lunde, CJK: Update the Unihan database to move the *kSBGY* property value “269.42” from U+555F to U+5553, based on document L2/23-128 and Section 13 of document L2/23-163, for Unicode Version 16.0.

Remove:

U+555F	kSBGY	269.42
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New:

U+5553	kSBGY	269.42
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14) L2/23-002R: Proposal to add kFanqie to Unihan Database

Comments: The group discussed this revised proposal to add the new provisional *kFanqie* property to the Unihan database, and agreed that the property is useful and should therefore be accepted.

Fanqie (反切) is a method commonly found in ancient Chinese dictionaries and rhyming books to specify the reading of an ideograph. The method uses two ideographs to specify a reading: the first one shares the same initial part, and the second one shares the same final part. For example, 德 (**t**ək) and 紅 (**y**un) are used to indicate the Middle Chinese reading of 東 (**t**un), and therefore the *kFanqie* property value of U+6771 東 is the ideograph pair 德紅. The method uses

a third and final ideograph, which can be either 反 or 切 (the two ideographs that correspond to Fanqie), and is therefore not included as part of the *kFanqie* property value.

In other words, the proposed *kFanqie* property corresponds to a method for associating the readings of ideographs, and is useful for writing poetry and rhymes, for analyzing the evolution of modern Chinese dialects, and for determining Middle Chinese readings. When reviewing ideographs in IRG working sets, the submitted evidence often includes the Fanqie reading, and this association helps to analyze its components and to confirm its semantics and abstract shape.

The group noted that the Syntax of this property will need to be adjusted as follows to accommodate the CJK Unified Ideographs Extension I block (the change is highlighted in **red**):

```
[\x{3400}-\x{4DBF}\x{4E00}-\x{9FFF}\x{FA0E}\x{FA0F}\x{FA11}\x{FA13}\x{FA14}\x{FA1F}\x{FA21}\x{FA23}\x{FA24}\x{FA27}-\x{FA29}\x{20000}-\x{2A6DF}\x{2A700}-\x{2E5F}\x{30000}-\x{323AF}]{2}
```

Recommendations: The group recommends to the UTC the following disposition ➡

Consensus: Accept the new provisional UniHan database property, *kFanqie*, based on document L2/23-002R and Section 14 of document L2/23-163, for Unicode Version 16.0.

Action Item for Ken Lunde, CJK: Document the *kFanqie* property in UAX #38, based on document L2/23-002R and as amended in Section 14 of document L2/23-163, for Unicode Version 16.0.

Action Item for Ken Lunde, CJK: Populate the *kFanqie* property in the UniHan database with the property values as provided in L2/23-002R, based on Section 14 of document L2/23-163, for Unicode Version 16.0.

Action Item for Rick McGowan, UTC: Post the PRI for the proposed update of UAX #38, to close on 2023-10-11.

15) L2/23-133: Revised 3 G-Source Glyphs [IRG N2611]

Comments: The group discussed this proposal, which involves changing the source references of five G-source ideographs, and revising the representative glyphs for three of the five ideographs, and agreed that the representative glyph and source reference changes are appropriate. In essence, the normative *kIRG_GSource* property values for U+25D89 簍 and U+28BBA 鑕 will move to U+7C51 簍 and U+9459 鑕, respectively, and those for U+2180C 嬭, U+25D89 簍, and U+28BBA 鑕 will be changed to the self-referencing **GU** G-source prefix.

Recommendations: The group recommends to the UTC the following disposition ➡

Consensus: Accept the proposal to change the normative *kIRG_GSource* property values of five ideographs, based on document L2/23-133 and Section 15 of document L2/23-163, for Unicode Version 16.0.

Action Item for Michel Suignard, CJK: Change the *kIRG_GSource* property values of U+7C51, U+9459, U+2180C, U+25D89, and U+28BBA, based on document L2/23-133 and Section 15

of document L2/23-163, and provide to Ken Lunde an updated UniHan data file, for Unicode Version 16.0.

Action Item for Ken Lunde, CJK: Update the UniHan database to change the *kIRG_GSource* property values of U+7C51, U+9459, U+2180C, U+25D89, and U+28BBA, based on document L2/23-133 and Section 15 of document L2/23-163, for Unicode Version 16.0.

Current:

U+7C51	<i>kIRG_GSource</i>	GE-464C
U+9459	<i>kIRG_GSource</i>	GE-5248
U+2180C	<i>kIRG_GSource</i>	GHZ-21072.07
U+25D89	<i>kIRG_GSource</i>	GKX-0903.28
U+28BBA	<i>kIRG_GSource</i>	GKX-1325.26

Adjusted:

U+7C51	<i>kIRG_GSource</i>	GKX-0903.28
U+9459	<i>kIRG_GSource</i>	GKX-1325.26
U+2180C	<i>kIRG_GSource</i>	GU-2180C
U+25D89	<i>kIRG_GSource</i>	GU-25D89
U+28BBA	<i>kIRG_GSource</i>	GU-28BBA

16) L2/23-143: Adding a self-referencing source reference “KU-03E02” to U+3E02 [WG2 N5198]

Comments: The group discussed this proposal, which requests that a normative *kIRG_KSource* property value with a self-referencing **KU** K-source prefix be added to U+3E02 𪛇, and agreed that it is appropriate.

Recommendations: The group recommends to the UTC the following disposition ➡

Consensus: Accept the proposal to add a normative *kIRG_KSource* property value to U+3E02, based on document L2/23-143 and Section 16 of document L2/23-163, for Unicode Version 16.0.

Action Item for Michel Suignard, CJK: Add the *kIRG_KSource* property value “KU-03E02” to U+3E02, based on document L2/23-143 and Section 16 of document L2/23-163, and provide to Ken Lunde an updated UniHan data file, for Unicode Version 16.0.

Action Item for Ken Lunde, CJK: Update the UniHan database to add the *kIRG_KSource* property value “KU-03E02” to U+3E02, based on document L2/23-143 and Section 16 of document L2/23-163, for Unicode Version 16.0.

New:

U+3E02	<i>kIRG_KSource</i>	KU-03E02
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17) L2/23-144: Request for Horizontal Extension in the J-column of ISO/IEC 10646 [WG2 N5221]

Comments: The group discussed this proposal, which is a massive 36,422-ideograph horizontal extension for the normative *kIRG_JSource* property, and agreed that it is a welcome addition to the UniHan database. Although the horizontal extension is massive, Ken Lunde was able to

compare it with a [near-identical horizontal extension](#) that is provided in a *CJK Type Blog* article entitled “[Unihan & Moji Jōhō Kiban Project: The Tip of the Iceberg](#)” that was published on 2018-01-27, and the 40 or so discrepancies were explained by changes that are planned for the Moji Jōhō Kiban database that can be found on pp 2 and 3 of document L2/23-144.

Recommendations: The group recommends to the UTC the following disposition ➡

Consensus: Accept the proposal to add 36,422 new normative kIRG_JSource property values, based on document L2/23-144 and Section 17 of document L2/23-163, for Unicode Version 16.0.

Action Item for Michel Suignard, CJK: Add the 36,422 new kIRG_JSource property values, based on document L2/23-144 and Section 17 of document L2/23-163, and provide to Ken Lunde an updated Unihan data file, for Unicode Version 16.0.

Action Item for Ken Lunde, CJK: Update the Unihan database to add the 36,422 new kIRG_JSource property values, based on document L2/23-144 and Section 16 of document L2/23-163, for Unicode Version 16.0.

UAX #45 / U-Source Documents

The five documents in this section were discussed by the group, and for convenience, the following data file, which is a PDF attachments, includes all of the recommended UAX #45 *USourceData.txt* data file additions based on them:

- *USource-additions-20230707.txt*

These recommended UAX #45 *USourceData.txt* data file additions are also shown inline, immediately following the **Recommendations**.

18) L2/23-110: Proposal to encode a Chinese character from Xiao Lin Guan Ji

Comments: The group reviewed this proposal, and agreed that adding the two ideographs to UAX #45 is reasonable, with the first one assigned a status value of **FutureWS** and the second one assigned a status value of **NoAction**. The representative glyphs for the two ideographs are shown below, with the first one being considered a candidate for inclusion in the UTC’s submission for the next IRG working set:

𪛗 𪛘

Recommendations: The group recommends to the UTC the following disposition ➡

Consensus: Accept two new U-Source ideographs as UTC-03337 and UTC-03338 with UAX #45 status values of FutureWS and NoAction, respectively, based on document L2/23-110 and Section 18 of document L2/23-163, for Unicode Version 16.0.

Action Item for Ken Lunde, CJK: Add two new records to the UAX #45 USourceData.txt data file and their representative glyphs to USourceGlyphs.pdf, based on document L2/23-110 and Section 18 of document L2/23-163, for Unicode Version 16.0.

Action Item for Ken Lunde, CJK: Convey to the author of document L2/23-110 the CJK & Unihan Group comments in Section 18 of document L2/23-163.

New:

UTC-03337;FutureWS;;44.19;;𪛗醺;UTCDoc L2/23-110 1;;22;1

UTC-03338;NoAction;;44.19;;𪛗醺;UTCDoc L2/23-110 2;Variant of UTC-03337;22;1

19) L2/23-124: Proposal to add one common character used for Duanxi ink-stone to UAX #45

Comments: The group reviewed this proposal, and agreed that adding the ideograph to UAX #45 is reasonable, with an assigned status value of **FutureWS**. The ideograph, whose representative glyph is shown below, can therefore be considered as a candidate for inclusion in the UTC's submission for the next IRG working set:

𪛗

Recommendations: The group recommends to the UTC the following disposition ➡

Consensus: Accept one new U-Source ideograph as UTC-03339 with a UAX #45 status value of FutureWS, based on document L2/23-124 and Section 19 of document L2/23-163, for Unicode Version 16.0.

Action Item for Ken Lunde, CJK: Add one new record to the UAX #45 USourceData.txt data file and its representative glyph to USourceGlyphs.pdf, based on document L2/23-124 and Section 19 of document L2/23-163, for Unicode Version 16.0.

New:

UTC-03339;FutureWS;;86.8;;𪛗火奈;UTCDoc L2/23-124;kMandarin nà:kCantonese naat3;12;1

20) L2/23-126: Proposal about adding 10 complex Hongmen related ideographs to UAX#45

Comments: The group reviewed this proposal, and agreed that adding the 10 ideographs to UAX #45 is reasonable, with an assigned status value of **FutureWS**. The ideographs, whose representative glyphs are shown below, can therefore be considered as candidates for inclusion in the UTC's submission for the next IRG working set:

𪛗𪛗𪛗𪛗𪛗𪛗𪛗𪛗𪛗𪛗𪛗

Recommendations: The group recommends to the UTC the following disposition ➡

Consensus: Accept 10 new U-Source ideographs as UTC-03340 through UTC-03349 with a UAX #45 status value of FutureWS, based on document L2/23-126 and Section 20 of document L2/23-163, for Unicode Version 16.0.

Action Item for Ken Lunde, CJK: Add 10 new records to the UAX #45 USourceData.txt data file and their representative glyphs to USourceGlyphs.pdf, based on document L2/23-126 and Section 20 of document L2/23-163, for Unicode Version 16.0.

New:

UTC-03340;FutureWS;;74.52;;[月][日]戈、[絲][二口絲][長馬長心];UTCDoc L2/23-126
1;;56;4

UTC-03341;FutureWS;;74.31;;[]月[]日戈、[][][][]二口[]长马长心;UTCDoc L2/23-126
2;;35;4

UTC-03342;FutureWS;;74.53;;月一糸二口糸長馬長心戈;UTCDoc L2/23-126 3;;57;4

UTC-03343;FutureWS;;74.32;;月一糸二口糸長馬長心戈;UTCDoc L2/23-126 4;;36;4

UTC-03344;FutureWS;;8.60;;一二月糸一長馬長菱心;UTCDoc L2/23-126 5;;62;3

UTC-03345;FutureWS;;61.46;;縹緋長馬長必;UTCDoc L2/23-126 6;;50;5

UTC-03346;FutureWS;;46.52;;𠄎𠄎戈𠄎山、𠄎𠄎糸𠄎二口糸𠄎長馬長ゝゝ;UTCDoc L2/23-1267;;55;4

UTC-03347;FutureWS;;8.27;;𠄎一𠄎𠄎𠄎二𠄎𠄎𠄎月贝戈心;UTCDoc L2/23-126 8;;29;5

UTC-03348;FutureWS;;74.32;;[]月[]日[]时[]分[]秒[]毫秒[]微秒[]纳秒[]皮秒[]飞秒[]阿秒[]zepto[]yocto[][]长马长心;UTCDoc L2/23-126 9;;36;5

UTC-03349;FutureWS;;62.52;;[[]]广[[]]糸言糸[[]]長馬長心戈;UTCDoc L2/23-126 10;;56;4

21) L2/23-130: Proposal to add 36 ideographs for Japanese place names to UAX #45

Comments: The group reviewed this proposal, and agreed that adding 35 of the 36 ideographs to UAX #45 is reasonable, with an assigned status value of **FutureWS**. The group noted that one of the ideographs, the 23rd one in the proposal, is unifiable with [IRG Working Set 2021 #02998](#) (aka TC-407C), and therefore does not need to be added to UAX #45. The remaining 35 ideographs, whose representative glyphs are shown below, can therefore be considered as candidates for inclusion in the UTC's submission for the next IRG working set:

[illegible]

Recommendations: The group recommends to the UTC the following disposition ➡

Consensus: Accept 35 new U-Source ideographs as UTC-03350 through UTC-03384 with a UAX #45 status value of FutureWS, based on document L2/23-130 and as amended in Section 21 of document L2/23-163, for Unicode Version 16.0.

Action Item for Ken Lunde, CJK: Add 35 new records to the UAX #45 USourceData.txt data file and their representative glyphs to USourceGlyphs.pdf, based on document L2/23-130 and as amended in Section 21 of document L2/23-163, for Unicode Version 16.0.

Action Item for Ken Lunde, CJK: Convey to the author of document L2/23-130 the CJK & Unihan Group comments in Section 21 of document L2/23-163.

New:

UTC-03350;FutureWS;;85.6;;;𣎵𠂔卡;UTCDoc L2/23-130 1;kJapanese いと;9;1
 UTC-03351;FutureWS;;93.4;;;𣎵牛化;UTCDoc L2/23-130 2;kJapanese こっとい;8;3
 UTC-03352;FutureWS;;75.7;;;𣎵木励;UTCDoc L2/23-130 3;kJapanese とち:Variant of 枳
 (probably);11;1
 UTC-03353;FutureWS;;140.7;;;𣎵𡗗从干;UTCDoc L2/23-130 4;kJapanese ケ:Variant of 華
 (probably);10;3
 UTC-03354;FutureWS;;75.9;;;𣎵木𡗗字;UTCDoc L2/23-130 5;kJapanese へら;13;1
 UTC-03355;FutureWS;;85.9;;;𣎵𢆶神;UTCDoc L2/23-130 6;kJapanese ほうり;12;4
 UTC-03356;FutureWS;;46.3;;;𣎵𠬞山川;UTCDoc L2/23-130 7;kJapanese ほき:The last
 stroke of left part is strange, but it is certainly 山:Variant of 崩 (proba-
 bly);6;3
 UTC-03357;FutureWS;;75.13;;;𣎵木蒔;UTCDoc L2/23-130 8;kJapanese たぶ;17;1
 UTC-03358;FutureWS;;115.5;;;𣎵禾𣎵千又;UTCDoc L2/23-130 9;kJapanese めき;10;3
 UTC-03359;FutureWS;;64.6;;;𣎵𠬞𣎵才年;UTCDoc L2/23-130 10;kJapanese ハイ:The right
 part looks like 年, but a bit different shape:It is unclear if this part is 年 or
 not:Variant of 捋 (probably):Unified with 捋?;9;3
 UTC-03360;FutureWS;;64.9;;;𣎵𠬞𣎵才乘;UTCDoc L2/23-130 11;kJapanese はと:The right
 part looks like a 乗, but vertical stroke was hook;12;3
 UTC-03361;FutureWS;;140.13;;;𣎵𡗗𣎵身瓜;UTCDoc L2/23-130 12;kJapanese こも:Variant of
 菰 (probably);16;3
 UTC-03362;FutureWS;;94.4;;;𣎵𢆶𢆶刼;UTCDoc L2/23-130 13;kJapanese チュウ:Variant of
 狙;7;5
 UTC-03363;FutureWS;;128.10;;;𣎵𦉐耳;UTCDoc L2/23-130 14;;;16;4
 UTC-03364;FutureWS;;116.11;;;𣎵穴堀;UTCDoc L2/23-130 15;kJapanese ほき ほっき:Similar
 to 竊;16;1
 UTC-03365;FutureWS;;38.14;;;𣎵鼓女;UTCDoc L2/23-130 16;kJapanese ごぜ:Similar to
 嫫;17;1
 UTC-03366;FutureWS;;46.9;;;𣎵山段;UTCDoc L2/23-130 17;kJapanese ゆり;12;3
 UTC-03367;FutureWS;;75.1;;;𣎵木畔;UTCDoc L2/23-130 18;kJapanese くるが;14;2
 UTC-03368;FutureWS;;75.2;;;𣎵木ㄨ;UTCDoc L2/23-130 19;kJapanese しめ;6;3
 UTC-03369;FutureWS;;140.9;;;𣎵𡗗𣎵元𣎵𠂔又;UTCDoc L2/23-130 20;kJapanese ク:Variant
 of 薙;12;2
 UTC-03370;FutureWS;;46.7;;;𣎵山花;UTCDoc L2/23-130 21;kJapanese はな;10;1
 UTC-03371;FutureWS;;142.5;;;𣎵虫矢;UTCDoc L2/23-130 22;kJapanese けら;11;3
 UTC-03372;FutureWS;;142.16;;;𣎵𡗗𣎵月虫丸;UTCDoc L2/23-130 24;kJapanese ほらが
 い:Variant of 羸;22;4
 UTC-03373;FutureWS;;46.12;;;𣎵山碎;UTCDoc L2/23-130 25;kJapanese びやく;15;1
 UTC-03374;FutureWS;;75.8;;;𣎵木𣎵止𣎵𢆶𣎵ノ𢆶;UTCDoc L2/23-130 26;kJapanese しぶ;12;1
 UTC-03375;FutureWS;;75.7;;;𣎵木𣎵且八;UTCDoc L2/23-130 27;Similar to 棋;11;2
 UTC-03376;FutureWS;;142.15;;;𣎵亡𣎵𣎵月虫𣎵𣎵;UTCDoc L2/23-130 28;kJapanese つぶ
 ら:Variant of 羸;21;4
 UTC-03377;FutureWS;;48.0;;;𣎵𠂔一;UTCDoc L2/23-130 29;kJapanese コウ:Variant of
 工;2;0
 UTC-03378;FutureWS;;195.7;;;𣎵𩺰完;UTCDoc L2/23-130 30;kJapanese あめ:Variant of
 鯧;17;4
 UTC-03379;FutureWS;;195.9;;;𣎵魚砂;UTCDoc L2/23-130 31;kJapanese はぜ:Variant of 鰒
 (probably);20;1

UTC-03380;FutureWS;;140.14;;𪛗𪛗广黄;UTCDoc L2/23-130 32;;17;4
UTC-03381;FutureWS;;46.6;;𪛗山𪛗;UTCDoc L2/23-130 33;kJapanese がけ:Simplified of
𪛗;9;1
UTC-03382;FutureWS;;30.6;;𪛗𪛗口成;UTCDoc L2/23-130 34;kJapanese かみ;9;1
UTC-03383;FutureWS;;75.5;;𪛗𪛗平木;UTCDoc L2/23-130 35;kJapanese なろ;9;1
UTC-03384;FutureWS;;112.9;;𪛗𪛗石飛;UTCDoc L2/23-130 36;kJapanese つぶて:Variant of 礫
(probably);14;5
1;;56;4

22) L2/23-139R: Proposal to Encode Abbreviated Ideographs(Kanjis) in Japanese

Comments: The group reviewed this proposal, and agreed that adding the nine ideographs to UAX #45 is reasonable, with an assigned status value of **FutureWS**. The ideographs, whose representative glyphs are shown below, can therefore be considered as candidates for inclusion in the UTC’s submission for the next IRG working set:

回部肅選機機剗

Recommendations: The group recommends to the UTC the following disposition ➡

Consensus: Accept nine new U-Source ideographs as UTC-03385 through UTC-03393 with a UAX #45 status value of FutureWS, based on document L2/23-139R and Section 22 of document L2/23-163, for Unicode Version 16.0.

Action Item for Ken Lunde, CJK: Add nine new records to the UAX #45 USourceData.txt data file and their representative glyphs to USourceGlyphs.pdf, based on document L2/23-139R and Section 22 of document L2/23-163, for Unicode Version 16.0.

Action Item for Ken Lunde, CJK: Convey to the author of document L2/23-139R the CJK & Unihan Group comments in Section 22 of document L2/23-163.

New:

UTC-03385;FutureWS;;53.2;;𠄎𠄎;UTCDoc L2/23-139R 1;Japanese simplified forms of U+6469 and U+9B54;5;5

UTC-03386;FutureWS;;18.6;;𠄎𠄎;UTCDoc L2/23-139R 2;Japanese simplified form of U+5287;8;2

UTC-03387;FutureWS;;75.9;;𠄎𠄎𠄎𠄎;UTCDoc L2/23-139R 3;Japanese simplified form of U+6A5F;13;4

UTC-03388;FutureWS;;75.10;;𠄎𠄎𠄎𠄎𠄎𠄎;UTCDoc L2/23-139R 4;Japanese simplified form of U+6A5F;14;4

UTC-03389;FutureWS;;162.9;;𠄎𠄎𠄎𠄎;UTCDoc L2/23-139R 5;Japanese simplified form of U+9078;13;4

UTC-03390;FutureWS;;44.2;;𠄎𠄎;UTCDoc L2/23-139R 6;Japanese simplified form of U+5C64;5;4

UTC-03391;FutureWS;;53.5;;𠄎𠄎𠄎𠄎;UTCDoc L2/23-139R 7;Japanese simplified form of U+9DF9;8;3

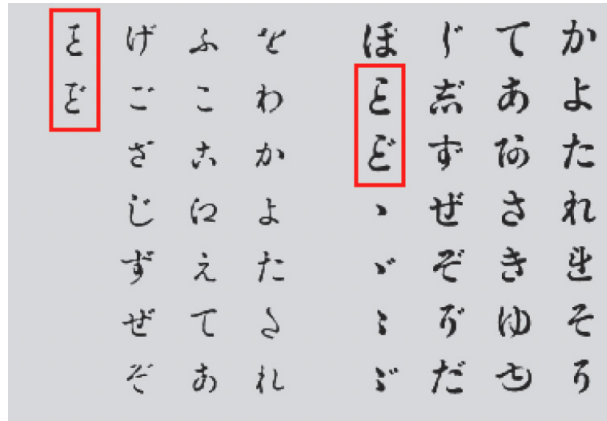
UTC-03392;FutureWS;;140.6;;𠄎𠄎𠄎𠄎𠄎𠄎;UTCDoc L2/23-139R 8;Japanese simplified form of U+85E4;10;3

UTC-03393;FutureWS;;31.1;;𠄎𠄎𠄎𠄎;UTCDoc L2/23-139R 9;Japanese simplified forms of U+56FD and U+5712;4;4

Other Documents

23) L2/23-112: Proposal for missing Kana-Ligatures

Comments: Ken Lunde solicited feedback from the Japan National Body, which was neutral. The Japan National Body did admit that among the hiragana ligatures that the one for **こと** has the strongest evidence. Such evidence, which includes both **こと** and *dakuten*-annotated **ごと**, can be seen on page 5 of document L2/23-127 that will be discussed in Section 25 of this document:



The group was mixed as to whether the additional hiragana ligatures should be encoded, mainly due to their strong vertical-only implications, but was more in favor of the katakana ligatures being encoded. The group therefore invites the author to prepare and submit a revised proposal that potentially includes a reduced set of hiragana ligatures.

Recommendations: The group recommends to the UTC the following disposition ➡

Action Item for Ken Lunde, CJK: Convey to the author of document L2/23-112 the CJK & Unihan Group comments in Section 23 of document L2/23-163, and forward to the author the comments from the Japan National Body.

24) L2/23-118: Proposal for superscript katakana letters for Ryukyuan languages

L2/23-123: Feedback on L2/23-118 (Proposal for superscript katakana letters for Ryukyuan languages)

Comments: Ken Lunde solicited feedback from the Japan National Body, which was positive. However, there remains many questions that remain unanswered, particularly those in document L2/23-118. The Japan National Body indicated that the use of “superscript” may not be appropriate for these characters, and that they should engage with the Shimakutoba Promotion Office (しまくとうば普及推進室) in Okinawa Prefecture. The group therefore invites the author to engage with the Japan National Body directly, and prepare and submit a revised proposal.

Recommendations: The group recommends to the UTC the following disposition ➡

Action Item for Ken Lunde, CJK: Convey to the author of document L2/23-123 the CJK & Unihan Group comments in Section 24 of document L2/23-163, and forward to the author the comments from the Japan National Body, along with a contact name and email address.

25) L2/23-127: Introduction on two unencoded Katakana letters

Comments: Ken Lunde solicited feedback from the Japan National Body, which was positive. The group therefore invites the author to prepare and submit a revised proposal that includes character names, recommended code points, character properties, code chart annotations, a TrueType font that includes their representative glyphs, and a Proposal Summary Form. The author of document L2/23-127 is a member of this group, and therefore already has the above feedback, so no UTC action is required.

Recommendations: The group recommends to the UTC the following disposition ➡

No UTC action is required.

That is all.