

TO: Unicode Technical Committee

FROM: Steve Tinney

RE: Comments on L2/23-190 Revised proposal to encode Proto-Cuneiform in Unicode

DATE: 2024-04-14

This document includes comments on L2/23-190 based on my review of the proposed encoding and its relationship to existing practice beyond the CDLI list of Proto-Cuneiform signs on which it is based. I am a Sumerologist with experience encoding Sumero-Akkadian Cuneiform in Unicode and have based the review on both online and published sources and on collation of Proto-Cuneiform documents where photos are available. I was also a long-time collaborator with Bob Englund, the expert whose work on the PC corpus is in one way encapsulated in the CDLI-github listing of archaic signs on which L2/23-190 is based. The comments are written in strong support of L2/23-190 and future iterations of the proposal.

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### 1. Introduction

L2/23-190, Anshuman Pandey's "Revised proposal to encode Proto-Cuneiform in Unicode" (AP23) is based on the list of Proto-Cuneiform signs at [https://cdli-gh.github.io/proto-cuneiform\\_signs/](https://cdli-gh.github.io/proto-cuneiform_signs/) (CDLI-gh) which consists of a list of glyphs and sign-names. CDLI-gh is not an exhaustive list of PC and so as part of reviewing AP23 I prepared an Oracc sign list of proctocuneiform at <https://build-oracc.museum.upenn.edu/pcsl>. PCSL compiles additional elements of existing practice including the CDLI PC text corpus and data from works which are not systematically included in CDLI-gh,

primarily several volumes in the CUSAS series.

## 2. Sources, Abbreviations and Conventions

### 2.1 Source and Abbreviations

The following sources and resources are referenced in these comments:

- ATFU C. Lecompte and L. Verderame (ed.) *Archaic Tablets and Fragments from Ur*. (Nisaba 25). Messina, 2013. Pp. 113-126, Section VII, “Index of Signs”, lists the signs occurring in the tablets published in Nisaba 25. The signs are not numbered and are referenced by name.
- ATU A. Falkenstein, *Archaische Texte aus Uruk* (ATU 1), Berlin 1936. The second part of this work, “Zeichenliste” gives a signlist of the texts edited in ATU 1 with references to PI. It is utilised for these comments indirectly via the references to ATU in ZATU. The signs are numbered and referred to as, e.g., ATU001.
- BAU E. Burrows, *Archaic Texts* (Ur Excavations Texts 2), London 1935. Plates 1-37 contain a signlist of the Early Dynastic I-II text from Ur with occasional stray additions relating to the later texts which are included in the “Supplement” on plates XLV-L. This list has been aligned with the proposal. The signs are numbered and referred to as, e.g., BAU001.
- AP23 A. Pandey, “Revised proposal to encode Proto-Cuneiform in Unicode” (UTC document L2/23-190). The proposal to which these comments apply. The signs are numbered and also provided with Unicode codepoints and names. References of the form AP23 1590 are to the listing on pages 7-127. References of the form AP23 U+12580 are to the character data on pages 161-209.
- CDLI-gh The CDLI GitHub list on which AP23 is based, <https://cdli-gh.github.io/proto-cuneiform/signs/>. CDLI-gh is unnumbered and signs are referenced by name.
- CDLI-tc The CDLI text corpus; collected with some adjustment of conventions in PCTC. Images and CDLI versions of the text transliterations are linked from PCTC to the source data at <https://cdli.mpiwg-berlin.mpg.de/>.
- CUSAS Cornell University Studies in Assyriology and Sumerology.
- CUSAS01 S.F. Monaco, *The Cornell University Archaic Tablets* (CUSAS 1), Bethesda, MD, 2007. Additional signs on pages 15, “New Signs and Sign Variants” and 281, “New Signs and Variants”.
- CUSAS21 S.F. Monaco, *Archaic Bullae and Tablets in the Cornell University Collections* (CUSAS 21) Additional signs on page 166, “New Signs and Variants”.
- CUSAS31 S.F. Monaco, *Archaic Cuneiform Tablets from Private Collection* (CUSAS 31), Bethesda, MD, 2016. Additional signs on page 203, “New Signs and Variants”.
- ED Early Dynastic
- LAK A. Deimel, *Liste der archaischen Keilschriftzeichen*, Berlin, 1922.
- LLATU R.K. Englund and H.J. *Lexicalischen Listen der Archaischen Texte aus Uruk* (ATU 3), Berlin 1993. The definitive edition of PC lexical lists from Uruk, pages 177-327, “Zeichenglossar der lexicalischen Listen aus Uruk” gives a signlist of the Uruk lexical texts, with many revisions to the names used in ZATU to differentiate sign variants, e.g., ZATU270, IŠ, is LLATU IŠ<sub>a</sub> and IŠ<sub>b</sub>. The signs are unnumbered and are referenced by name.
- OSL The Oracc Sign List, <http://oracc.org/osl>. This is the authority list for SAC signs and values used by Oracc, the Open Richly Annotated Cuneiform Corpus (<http://oracc.org>). OSL is unnumbered and signs are referenced by name.
- PC Proto-Cuneiform, see PCSL.

- PCSL Proto-Cuneiform Sign List, <http://oracc.org/pcsl/signlist>. A signlist created by Steve Tinney in the format of OSL. Derived from AP23 with revisions and additions based on detailed review of ATFU, BAU, CDLI-gh, CDLI-tc, LLATU, and ZATU. PCSL is unnumbered and signs are referenced by name. The signlist project also contains a version of the CDLI Proto-Cuneiform corpus.
- PI S. Langdon, *Pictographic Inscriptions from Jemdet Nasr* (Oxford Editions of Cuneiform Texts 7), London, 1928. Pp. 1-71 include a signlist of the Jemdet Nasr texts which was utilized by Falkenstein in ATU and by Green in ZATU. PI is utilized as subsumed by ATU, ZATU and other later lists and is not referenced directly.
- RKEZ R.K.Englund, “Liste der zusätzlichen Zeichen der Text der 33. und 34. Kampagne” Pp. 347-351 in ZATU.
- SAC Sumero-Akkadian Cuneiform, see OSL.
- ZATU M.W. Green and H.J. Nissen, *Zeichenliste der Archaischen Texte aus Uruk* (ATU 2), Berlin 1987. Initially intended to be the definitive signlist for the ATU project, Green's work was criticised even in the same volume (RKEZ 347) for ignoring the internal working procedures of the Berlin team and underdifferentiating the PC signlist by gathering similar-looking but possibly unrelated signs together under the same number, ignoring letter-variants. The signs are numbered and referred to as, e.g., ZATU001.

## 2.2 Conventions

Transliteration conventions differ between the various resources. The CDLI/ORACC transliteration is called ATF, and differs in the use of Unicode in ORACC versus ASCII conventions in CDLI. Thus, CDLI SZ corresponds to Oracc Š; CDLI x (times) corresponds to Oracc ×, and so on. In ATF, letters used to differentiate sign forms are indicated with a tilde followed by a lowercase letter (IŠ~a); in publications this is usually rendered as a simple subscript (IŠ<sub>a</sub>). Similarly, variant numbers are concatenated in text (IŠ~a1) but subscripted in print (IŠ<sub>a1</sub>). Note that without a preceding lowercase letter, a subscripted number is a sign index, differentiating distinct signs that are in contemporary transliteration homophonous (e.g., DU<sub>6</sub> vs DU<sub>8</sub>). The ATF notation “@t”, in print usually “-t”, is an abbreviation for the Akkadian term *tenû*, “leaning”, used in PC to mean any kind of variance in the orientation of a sign—sometimes inverted, sometimes rotated -45, 45 or 90 degrees clockwise. Compound signs are normally placed between vertical bars in ATF, e.g., |AMAR×TAR| rather than AMAR×TAR. Further conventions are documented in the ORACC GDL page at <https://build-oracc.museum.upenn.edu/ns/gdl/1.0/>.

## 2.2 PCSL

The signlist developed as part of the review of this proposal, PCSL, departs from the proposal in some important ways.

- PCSL uses Unicode ATF transliteration conventions, e.g., ŠEG<sub>9</sub> for SZE<sub>G</sub>9
- CDLI names for characters may apply to more than one proposed codepoint, e.g., SZE3 is the CDLI form of #970 and #970.1, which AP23 disambiguates in the Unicode name as SHE3 and SHE3 VARIANT 1. PCSL defines unique transliterations for each variant, adding ~v1, ~v2, etc., to match the VARIANT in the name. The PCSL transliteration of SZE3=SHE3 VARIANT 1 is ŠE<sub>3</sub>~v1.
- PCSL mostly aligns derived signs with their base signs both with derivations like @g (GUNU, addition of wedges) and where signs are components of compound signs.

### 3. General Observations

#### 3.1 The PC Encoding

##### 3.1.1 Chronological Scope

L2/23-190 does not specify the chronological boundaries of the PC encoding but subsequent discussions in the SAH and elsewhere have narrowed the scope to Uruk IV and III signs.

##### 3.1.2 Separation and Overlap of PC and SAC

It is important that PC be encoded separately from SAC. While there are observable continuities in the script use, it is an essential tenet of Englund's labelling of the PC signs that the labels are purely formal conventions and do not imply that there is any semantic continuity between, say, the PC sign U<sub>2</sub> and the SAC sign U<sub>2</sub>. This means that signs with names that also occur in SAC should be assigned a separate PC codepoint.

The CDLI-gh sign-names used in AP23, e.g., NINLIL, are sometimes controversial but this is not a reason to discontinue their use in the PC encoding. It is important to stress again in this context, though, that the naming conventions are about labelling not about identification of PC signs with later SAC interpretations.

Scholars working in PC through Early Dynastic studies are going to use both PC and SAC signs even in working in the same texts. The most important case for this is in the curviform numbers which continue from PC into later third millennium SAC and which are not encoded in SAC. Studies of the history of the script and lexicon will also mix PC and SAC signs freely.

##### 3.1.3 Identification of PC Signs with later SAC Signs

While there is a place for maintaining a list of correspondences of PC to SAC signs, the Unicode encodings of PC and SAC are not appropriate places for that task. The identification of PC antecedents to Early Dynastic signs is a complex matter and while some cases are relatively clear, where there are Early Dynastic lexical lists which duplicate PC lexical lists, for example, there are also significant areas of disagreement.

##### 3.1.4 Separate Encoding of Variants is Necessary

AP23 raises the question (p.2) of whether the proposal's separation of subvariants—cases where CDLI-gh combines multiple sign-forms under a single sign-name—is desirable or not. This is a reasonable question because it is highly likely that some of the minor sign variants are graphic rather than semantic—the question is which ones?

There is evidence to support separate encoding of subvariants as presently done in AP23. For example, Monaco states in CUSAS 1 p.15 n.105 “the two sub-variants of ŠEN<sub>b</sub> have been distinguished as ŠEN<sub>b1</sub> (𒊩) and ŠEN<sub>b2</sub> (𒊩𒀭), since they occur together in the same text, CUSAS 1, 163, clearly denoting two different cereal products.” As mentioned in the Specific Observations below, another case which is not reflected in CDLI-gh is that there are two signs DUG@t: DUG~a2@t (𒃶) and DUG~c2@t (𒃶), only the latter of which is consistently followed by a normally oriented DUG~c sign, suggesting that the contexts and interpretations are distinct.

In some cases subvariants are different stacking patterns of a number; in this case, too, they should be assigned separate codepoints as was also done with SAC numbers.

##### 3.1.5 Encoding of Damaged Signs

CDLI-gh contains a number of signs which are partially damaged. While the full identity of these signs is not certain, it is valuable to assign them codepoints as AP23 does, given that one of the purposes of encoding PC is to facilitate scholarship on the PC corpus. The damaged signs in administrative texts may never be able to be fully deciphered, but scholarly discussion will reference them in discussions of contexts and possible interpretation.

### 3.2 CDLI-gh as a Signlist

The nature of CDLI-gh as a signlist informs some decisions about the encoding of PC. CDLI-gh is a practical collection of Bob Englund's digital renderings of PC signs which was assembled over a long period of time and as a result exhibits some inevitable inconsistencies. There are a few signs in ZATU which are not in CDLI-gh, mostly because they are read differently by Englund than by the original editors of the text; there are some signs in CDLI-tc/LLATU that are not in CDLI-gh, e.g., UZ~a. These are detailed in Section 5 below.

#### 3.2.1 Corrections and Normalizations

While L2/13-190 does well to follow the naming conventions used in CDLI-gh as far as possible it also acknowledges the need for some corrections; in some cases these corrections would be better described as normalizations of the conventional names.

As described under Specific Observations some further normalizations would be advisable, especially concerning 1(N57@t)| and 1(N58@t)| compounds.

#### 3.2.2 Codepoints versus Sequences

It is not necessarily the case that every distinctly listed sign in CDLI-gh should be assigned its own codepoint. In SAC Unicode some signs “A BESIDE B” are assigned codepoints but most are not. In most cases the choice to assign codepoint was made because the sequence is a later reanalysis of an earlier sign; in others the practical value of having a codepoint for a common sign was considered.

Since CDLI-gh represents Bob Englund's considered approach to the PC script it makes practical sense to accept the CDLI-gh entries as signs.

#### 3.2.3 Underdifferentiation of Sign Variants in Compounds

CDLI-gh does not always specify a sign variant in compounds even when CDLI-gh has no corresponding unmarked form of the sign, for example it lists |AMARxTAR|, but has primary listings only for TAR+variant code, i.e., TAR~a and TAR~d. These are appropriately noted in AP23. In PCSL these components have been reviewed and labeled according to their variants and the resultant renamings are included here as suggested new Unicode names for the characters in question. A revised listing of signs that occur only in compounds is included in Section 4.

### 3.3 The CDLI-tc Corpus

The CDLI-tc corpus consists of transliterations made over a period of several decades and often uses conventions that are no longer used in CDLI-gh and related works. In addition, CDLI-tc often underspecifies both letter-variants and sub-variants making it important to treat it with a certain degree of critical care. As a result aligning the CDLI-tc with CDLI-gh/AP23 is not a straightforward process. This alignment has not been done in PCSL because it would require collation of the entire corpus and there is nobody at present who has both the expertise and the capacity to do this work.

### 3.4 Sort Sequence

The proposal (p.2) raises the question of whether to merge compound signs in with the non-compounds or to keep them separate as in AP23. The preferred approach would be to merge them because this is standard practice in cuneiform signlists of all kinds.

An infelicity in the sort sequence is that SZ sorts as SH—the standard practice is for SZ/Š to sort after S.

In both CDLI-gh and LLATU numbers are sorted so that all N49 group together, all N50 group together, etc.; in AP23 numbers are sorted so that are grouped by 1(X), 1(Y), 1(Z); 2(X), 2(Y), 2(Z) etc.

I would suggest considering the possibility of using the PCSL sort sequence for the encoding; integer sort codes used in PCSL are included as a column in the tabbed data file which accompanies this document (see Appendix 2).

### 3.5 Miscellaneous General Notes on L2/23-190

The word šeššig is spelled in the Unicode sign names as SHESSHIG; in SAC it is spelled SHESHIG (e.g., U+12215 CUNEIFORM SIGN LU2 SHESHIG). Another spelling in use is sheshshig. It would be preferable to align with prior Unicode practice and rename all SHESSHIG signs as SHESHIG signs.

The proposal (p.2) raises the question of whether to encode signs letter-variants that occur only in compounds, arguing that this would be useful for scholarly discourse about the PC sign list. Against an earlier draft of this document, it is simplest not to encode compound-only variants of signs as codepoints, the same approach as was adopted for SAC.

## 4. Suggested Revisions

This section provides an overview of the suggested revisions to L23/190; these revisions are given in the data table accompanying this report in the column 'action'.

### 4.1 Unmarked

Unmarked items require no action.

### 4.2 Ignore

In view of the decision to proceed separately with the numbers PROTO-CUNEIFORM NUMBER characters are ignored.

### 4.3 Remove

In line with the decision to restrict the scope of L23/190 to signs from the Uruk IV and Uruk III writing phases, the following characters should be removed:

REMOVE CHARACTERS TABLE

#	CDLI	NAME
352	A@g	A GUNU
376	ALAN~f	ALAN-F
389	ANZU2	ANZU2
396	ASAL2	ASAL2
449	DAG	DAG
509	E~e	E-E
529	ENSI	ENSI
530	ENSI2	ENSI2
569	GAN~d	GAN-D
580	GESZTIN~c	GESHTIN-C
593	GIG	GIG
594	GIL	GIL
607	GIR4	GIR4
611	GISZ~x	GISH-X
654	HUB2	HUB2
662	IGI	IGI
667	IM~a@g	IM-A GUNU

## REMOVE CHARACTERS TABLE

#	CDLI	NAME
684	KA2~d	KA2-D
711	KESZ2	KESH2
742	KU~a@t	KU-A TENU
751	KUN	KUN
767	LA~e	LA-E
777	LAK025	LAK025
778	LAK050	LAK050
779	LAK172	LAK172
780	LAK251	LAK251
781	LAK350	LAK350
782	LAK777	LAK777
787	LAL3~c	LAL3-C
793	LAM~c	LAM-C
797	LU2@t	LU2 TENU
872.1	NESAG2~a	NESAG2-A VARIANT 1
910	PA3	PA3
927	RI	RI
996	SZITA~c	SHITA-C
1001	SZU@s	SHU SHESSHIG
1010	SZURUPPAK~c	SHURUPPAK-C
1033	SIKIL	SIKIL
1070	TA~f	TA-F
1083	TAR~d	TAR-D
1132	UET2_405	UET2_405
1165	URI2	URI2
1185	USZUR3~a	USHUR3-A
1199	ZADIM	ZADIM
1459	1(N57).1(N57)	ONE-N57 BESIDE ONE-N57
1490	AxAN	A TIMES AN
1527	DIM~axGU	DIM-A TIMES GU
1528	DIM~axX	DIM-A TIMES X
1538	DUG~axHI	DUG-A TIMES HI
1544	DUG~axX	DUG-A TIMES X
1616	EZEN~axLA~e	EZEN-A TIMES LA-E
1625.1	EZEN~bx6(N57)	EZEN-B TIMES SIX-N57 VARIANT 1
1626	GA~axX	GA-A TIMES X
1640	GA2~a1xGU4	GA2-A1 TIMES GU4

## REMOVE CHARACTERS TABLE

















#	CDLI	NAME
1651	GA2~a1xNUN~a	GA2-A1 TIMES NUN-A
1689	GAN~dxHI	GAN-D TIMES HI
1690	GESZTIN~cxX	GESHTIN-C TIMES X
1691	GESZTU~axSZE~a@t	GESHTU-A TIMES SHE-A TENU
1720	GISZ@t.E2~a	GISH TENU BESIDE E2-A
1731	HIx1(N01@f)	HI TIMES ONE-N1 FLAT
1737	HIxSZE3@t	HI TIMES SHE3 TENU
1776	LAGAB~bx1(N01)	LAGAB-B TIMES ONE-N1
1783	LAGAB~bxSZITA~c	LAGAB-B TIMES SHITA-C
1784	LAGAB~bxSI	LAGAB-B TIMES SI
1787	LAGAB~bxX	LAGAB-B TIMES X
1792	MAx2(N57)	MA TIMES TWO-N57
1795	MAxX	MA TIMES X
1816	MUD3~a@gxGU	MUD3-A GUNU TIMES GU
1830	NINDA2x1(N06)	NINDA2 TIMES ONE-N6
1842	NINDA2x(GISZ.DAR~a)	NINDA2 TIMES GISH BESIDE DAR-A
1852	NINDA2xNE~a	NINDA2 TIMES NE-A
1853	NINDA2xSZIM~a	NINDA2 TIMES SHIM-A
1859	NINDA2x(X.MASZ)	NINDA2 TIMES X BESIDE MASH
1874	SAGxLAM~c	SAG TIMES LAM-C
1876	SAGxSAR~a	SAG TIMES SAR-A
1900	SZU2.2(N57)	SHU2 BESIDE TWO-N57
1919	SILA3~axDUG~b	SILA3-A TIMES DUG-B
1950	SILA3~bxDUG~a	SILA3-B TIMES DUG-A
1961	((SUKUD+SUKUD)~c	SUKUD JOINING SUKUD FORM C
1965	TURxX	TUR TIMES X
1966	TUR3~bxTAK4~a	TUR3-B TIMES TAK4-A
1969	U4x1(N01@f)	U4 TIMES ONE-N1 FLAT
2027	UKKIN~bxDUG~a	UKKIN-B TIMES DUG-A
2036	URI3~a+IB~a	URI3-A JOINING IB-A
2039	URU~a1xA	URU-A1 TIMES A
2050	USZ~bxTAR~d	USH-B TIMES TAR-D
2083	ZATU737xSZITA@g~a	ZATU737 TIMES SHITA GUNU-A
2095	((ZU&ZU).SAR~a	ZU OVER ZU BESIDE SAR-A



#### 4.4 Delete

Some characters are duplicates—in most cases it is likely that they were copied digitally over different exemplars of the same sign, so they exhibit very slight differences but these differences are not sufficient to warrant separate encoding. Two characters should be deleted because the glyphs in CDLI-gh are incorrect, probably because they were placeholders used by Bob Englund as he was working on the Umma texts, a work he did not complete. Encoding of these characters and some additional characters that occur only in the still unedited Umma proto-cuneiform tablets should be done after the tablets have been fully edited.









DELETE CHARACTERS TABLE

#	CDLI	CHAR	NAME	NOTES
384.1	AN		AN VARIANT 1	Duplicates 384 AN 
500	DUG~d		DUG-D	Duplicates 499 DUG~c@t 
541	EZEN~c		EZEN-C	Duplicates 540 EZEN~b@t 
928	RI~x		RI-X	Duplicates 930 RI8~b 
1516	<del>(BU~a&amp;BU~a).NA2~b</del>		BU-A OVER BU-A BESIDE NA2-B	Duplicates 1515  (BU~a&BU~a).NA2~a@n  
1723	GUG2xSZITA~a1		GUG2 TIMES SHITA-A1	Incorrect glyph in unedited Umma text
1820	MUSZENxPAP~a		MUSHEN TIMES PAP-A	Incorrect glyph in unedited Umma text
1844.2	NINDA2xGUDU4		NINDA2 TIMES GUDU4 VARIANT 2	Duplicates 1846  NINDA2x(HI.AN.ME~a)  
1844.3	NINDA2xGUDU4		NINDA2 TIMES GUDU4 VARIANT 3	Duplicates 1835  NINDA2x(AN.ME~a)  

#### 4.5 Newglyph





The following glyph replacements are suggested. Some characters have incorrect glyphs and others have glyphs that are based on suboptimal instances of the signs in question. For IŠ I suggest swapping ISH-B and ISH-B VARIANT 1. See the notes on individual characters in Section 5 of this document for rationales for the new glyphs.

NEWGLYPH CHARACTERS TABLE

#	CODE	CHAR	PCSL	NAME
678	12876		IŠ~b	ISH-B
678.1	12875		IŠ~b~v1	ISH-B VARIANT 1
923	FFFFD		RAD~a	RAD-A
1515	12C63		<del>(BU~a~v1%BU~a~v1).NA2~a@n</del>	BU-A OVER BU-A BESIDE NA2-A NUTILLU
1625	12CE0		EZEN~b×6(N57) ~v1	EZEN-B TIMES SIX-N57gi
1738	12D54		HI.SUHUR	HI BESIDE SUHUR
1738.2	12D52		HI.SUHUR~v2	HI BESIDE SUHUR VARIANT 2
1743	FFFF9		KA2~d×LAM~b~v2	KA2 TIMES LAM

## 4.6 Add

A minimal number of characters is suggested for addition at this phase of PC encoding:





ADD CHARACTERS TABLE				
#	PCSL	CODE	CHAR	NAME
3000	DUG~b×U <sub>2</sub> ~b	FFFFC		DUG-B TIMES U2-B
3001	DUG~a@t	FFFF8		DUG-A TENU
3002	DUG~c2@t	FFFFB		DUG-C2 TENU
3003	UZ~a	FFFFA		UZ-A

A further phase of PC encoding would be necessary to encode characters and variants attested in publications that post-date the time when Bob Englund was making digital copies and collecting the set of images that is now CDLI-gh. An indicative list of possible future additions may be found at <https://build-oracc.museum.upenn.edu/pcsl/signlist/addsources/>. Note, however, that this list contains some Uruk V and Early Dynastic signs, as well as some duplicates of signs that exist in this proposal under different names.






















## 4.7 Rename

Renaming is suggested for about 160 characters for one or more of several reasons:






















- The usage in CDLI-tc is different from that of CDLI-gh and it is preferable to align with CDLI-tc
- In CDLI-gh the components of compound characters are often not described as specifically as the individual characters, both for variants assigned in CDLI-gh and for variants assigned in AP23 to disambiguate cases where a CDLI-gh sign entry has multiple glyphs. In PCSL the components are fully labeled using variation codes and the base signs and their appearances in compounds are aligned so that the same glyph will have the same variation code both when occurring independently and when occurring as a component of a compound.
- In AP23 the Unicode name component BESIDE is used for all dotted relationships in compounds. In SAC Unicode, the beside relationship is expressed as PLUS when it occurs within parentheses in a compound. This ensures that |A×BA.DA|--where BA is contained within the A but DA is not--has a distinct name from |A×(BA.DA)|--where both BA and DA are contained within the A. PCSL's Unicode name generator uses PLUS for '.' in the latter case and this is reflected in the renames.

RENAME CHARACTERS TABLE				
#	CHAR	CDLI/PCSL	AP23 NAME/NEW NAME	
621		GIZZAL~x GIZZAL~v	GIZZAL-X GIZZAL-V	
678		ISZ~b IŠ~b~v1	ISH-B ISH-B VARIANT 1	
678.1		ISZ~b IŠ~b	ISH-B VARIANT 1 ISH-B	
871		NERGAL~x NERGAL~v	NERGAL-X NERGAL-V	

## RENAME CHARACTERS TABLE

#	CHAR	CDLI/PCSL	AP23 NAME/NEW NAME
997		SZITA@g~a ŠITA~b3@g	SHITA GUNU-A SHITA-B3 GUNU
997.1		SZITA@g~a ŠITA~b1@g	SHITA GUNU-A VARIANT 1 SHITA-B1 GUNU
998		SZITA@g~b ŠITA~a1@g	SHITA GUNU-B SHITA-A1 GUNU
1196		ZA~x ZA~v	ZA-X ZA-V
1462.1		1(N57).SZUBUR   1(N57).ŠUBUR~v1	ONE-N57 VARIANT 1 BESIDE SHUBUR VARIANT 1 ONE-N57 BESIDE SHUBUR VARIANT 1
1491		AxEN~a   A×EN~a~v2	A TIMES EN-A A TIMES EN-A VARIANT 2
1505.1		AB2x2(N14)   AB2~v2×2(N14)	AB2 TIMES TWO-N14 VARIANT 1 AB2 VARIANT 2 TIMES TWO-N14
1509		AMARxTAR   AMAR~v2×TAR~c	AMAR TIMES TAR AMAR VARIANT 2 TIMES TAR-C
1513		BU~axA   BU~a~v1×A	BU-A TIMES A BU-A VARIANT 1 TIMES A
1515		{(BU~a&BU~a).NA2~a@n   (BU~a~v1%BU~a~v1).NA2~a@n	BU-A OVER BU-A BESIDE NA2-A NUTILLU BU-A VARIANT 1 CROSSING BU-A VARIANT 1 BESIDE NA2-A NUTILLU
1520		BU~b.NA2~a   BU~b.NA2~a~v1	BU-B BESIDE NA2-A BU-B BESIDE NA2-A VARIANT 1
1530		DU6~axDISZ   DU6~a~v1×1(N58)	DU6-A TIMES DISH DU6-A VARIANT 1 TIMES ONE-N58
1545.1		DUG~bx1(N57)   DUG~b~v1×1(N57)	DUG-B VARIANT 1 TIMES AB2 DUG-B VARIANT 1 TIMES ONE-N57
1546		DUG~bx(1(N57).KU3~a)   DUG~b×(1(N57).KU3~a)	DUG-B TIMES ONE-N57 BESIDE KU3-A DUG-B TIMES ONE-N57 PLUS KU3-A
1548		DUG~bxAB2   DUG~b~v1×AB2	DUG-B TIMES AB2 DUG-B VARIANT 1 TIMES AB2
1553.1		DUG~bxDIN   DUG~b~v1×DIN	DUG-B TIMES DIN VARIANT 1 DUG-B VARIANT 1 TIMES DIN
1555		{(DUG~b&DUG~b)x1(N58)   (DUG~b~v1&DUG~b~v1)×1(N58)	DUG-B OVER DUG-B TIMES ONE-N58 DUG-B VARIANT 1 OVER DUG-B VARIANT 1 TIMES ONE-N58
1557		DUG~bxGA~a   DUG~b×GA~a~v4	DUG-B TIMES GA-A DUG-B TIMES GA-A VARIANT 4
1559		DUG~bxGESZTU~a   DUG~b×GEŠTU~a~v2	DUG-B TIMES GESHTU-A DUG-B TIMES GESHTU-A VARIANT 2
1559.1		DUG~bxGESZTU~a   DUG~b~v1×GEŠTU~a~v2	DUG-B TIMES GESHTU-A VARIANT 1 DUG-B VARIANT 1 TIMES GESHTU-A VARIANT 2
1563.1		DUG~bxHI   DUG~b~v1×HI	DUG-B TIMES HI VARIANT 1 DUG-B VARIANT 1 TIMES HI

## RENAME CHARACTERS TABLE

#	CHAR	CDLI/PCSL	AP23 NAME/NEW NAME
1564		DUG~bxHI@g~a   DUG~b~v1×HI@g~a	DUG-B TIMES HI GUNU-A DUG-B VARIANT 1 TIMES HI GUNU-A
1568		DUG~bx(KUR~a.X)   DUG~b×(KUR~a.X)	DUG-B TIMES KUR-A BESIDE X DUG-B TIMES KUR-A PLUS X
1572.1		DUG~bxMASZ   DUG~b~v1×MASŠ	DUG-B TIMES MASH VARIANT 1 DUG-B VARIANT 1 TIMES MASH
1575		DUG~bx(NI~a@g.ZATU779)   DUG~b×(NI~a@g.ZATU779)	DUG-B TIMES NI-A GUNU BESIDE ZATU779 DUG-B TIMES NI-A GUNU PLUS ZATU779
1578.1		DUG~bxSZE~a   DUG~b~v1×ŠE~a	DUG-B VARIANT 1 TIMES SHE-A FORM 1 DUG-B VARIANT 1 TIMES SHE-A
1578.2		DUG~bxSZE~a   DUG~b~v1×ŠE~a@t	DUG-B VARIANT 1 TIMES SHE-A FORM 2 DUG-B VARIANT 1 TIMES SHE-A TENU
1579		DUG~bx(SZE~a.NAM2)   DUG~b×(ŠE~a.NAM2)	DUG-B TIMES SHE-A BESIDE NAM2 DUG-B TIMES SHE-A PLUS NAM2
1581		DUG~bx(SI4~a.X)   DUG~b×(SI4~a.X)	DUG-B TIMES SI4-A BESIDE X DUG-B TIMES SI4-A PLUS X
1587		DUG~bx(TAK4~a.SA~a)   DUG~b×(TAK4~a.SA~a)	DUG-B TIMES TAK4-A BESIDE SA-A DUG-B TIMES TAK4-A PLUS SA-A
1588		DUG~bx(TAK4~a.SAL)   DUG~b×(TAK4~a.SAL)	DUG-B TIMES TAK4-A BESIDE SAL DUG-B TIMES TAK4-A PLUS SAL
1594.1		DUG~bxX   DUG~b~v1×X	DUG-B TIMES X VARIANT 1 DUG-B VARIANT 1 TIMES X
1600		DUG~bx(ZATU789.SA~a)   DUG~b×(ZATU789.SA~a)	DUG-B TIMES ZATU789 BESIDE SA-A DUG-B TIMES ZATU789 PLUS SA-A
1601		DUG~cx1(N57)   DUG~c~v2×1(N57)	DUG-C TIMES ONE-N57 DUG-C VARIANT 2 TIMES ONE-N57
1601.2		DUG~cx1(N57)   DUG~c~v3×1(N57)	DUG-C VARIANT 2 TIMES ONE-N57 DUG-C VARIANT 3 TIMES ONE-N57
1605		E2~bx1(N57)@t   E2~b×1(N58@t)	E2-B TIMES ONE-N57 TENU E2-B TIMES ONE-N58 TENU
1610		ESZDAXTAR   EŠDA×TAR~a	ESHDA TIMES TAR ESHDA TIMES TAR-A
1611		EZEN~axEN~a   EZEN~a~v1×EN~a	EZEN-A TIMES EN-A EZEN-A VARIANT 1 TIMES EN-A
1612		EZEN~axEN~b   EZEN~a×EN~b~v1	EZEN-A TIMES EN-B EZEN-A TIMES EN-B VARIANT 1
1613		EZEN~ax(HI.1(N57).AN)   EZEN~a×(HI×1(N57).AN)	EZEN-A TIMES HI BESIDE ONE-N57 BESIDE AN EZEN-A TIMES HI TIMES ONE-N57 PLUS AN
1620		EZEN~axSAG   EZEN~a×SAG~v1	EZEN-A TIMES SAG EZEN-A TIMES SAG VARIANT 1
1622		EZEN~ax(U2~b.A)   EZEN~a×(U2~b.A)	EZEN-A TIMES U2-B BESIDE A EZEN-A TIMES U2-B PLUS A






















## RENAME CHARACTERS TABLE

#	CHAR	CDLI/PCSL	AP23 NAME/NEW NAME
1627		GA~a.ZATU753   GA~a~v1.ZATU753	GA-A BESIDE ZATU753 GA-A VARIANT 1 BESIDE ZATU753
1627.1		GA~a.ZATU753   GA~a~v4.ZATU753 ~v1	GA-A BESIDE ZATU753 VARIANT 1 GA-A VARIANT 4 BESIDE ZATU753 VARIANT 1
1634		GA2~a1xEN~b   GA2~a1xEN~b~v1	GA2-A1 TIMES EN-B GA2-A1 TIMES EN-B VARIANT 1
1638		GA2~a1x(GIR~a.KU6~a)   GA2~a1x(GIR~a.KU6~a)	GA2-A1 TIMES GIR-A BESIDE KU6-A GA2-A1 TIMES GIR-A PLUS KU6-A
1643		GA2~a1x(HI.SUHUR)   GA2~a1x(HI.SUHUR~v1)	GA2-A1 TIMES HI BESIDE SUHUR GA2-A1 TIMES HI PLUS SUHUR VARIANT 1
1646		GA2~a1x(KU6~a.KU6~a)   GA2~a1x(KU6~a.KU6~a)	GA2-A1 TIMES KU6-A BESIDE KU6-A GA2-A1 TIMES KU6-A PLUS KU6-A
1665		GA2~a2x(GU4.SZE3)   GA2~a2x(ŠE3~v1.GU4)	GA2-A2 TIMES GU4 BESIDE SHE3 GA2-A2 TIMES SHE3 VARIANT 1 PLUS GU4
1668		GA2~a2xSZE3   GA2~a2xŠE3~v1	GA2-A2 TIMES SHE3 GA2-A2 TIMES SHE3 VARIANT 1
1673		GA2~bxDUB~b   GA2~bxDUB~b~v2	GA2-B TIMES DUB-B GA2-B TIMES DUB-B VARIANT 2
1678		GAN~cx(HI.DIN)   GAN~cx(HI.DIN)	GAN-C TIMES HI BESIDE DIN GAN-C TIMES HI PLUS DIN
1679		GAN~cxKASZ~c   GAN~c~v1xKAŠ~c	GAN-C TIMES KASH-C GAN-C VARIANT 1 TIMES KASH-C
1680		GAN~cx(KUR~a.A)   GAN~c~v1x(KUR~a.A)	GAN-C TIMES KUR-A BESIDE A GAN-C VARIANT 1 TIMES KUR-A PLUS A
1683		GAN~cxSZE~a   GAN~c~v2xŠE~a	GAN-C TIMES SHE-A GAN-C VARIANT 2 TIMES SHE-A
1684		GAN~cxSZE3@t   GAN~c~v2xŠE3@t~v1	GAN-C TIMES SHE3 TENU GAN-C VARIANT 2 TIMES SHE3 TENU VARIANT 1
1687		GAN~cxZATU777   GAN~c~v1xZATU777~v1	GAN-C TIMES ZATU777 GAN-C VARIANT 1 TIMES ZATU777 VARIANT 1
1688		GAN~dxGESZTU~a   GAN~dxGEŠTU~a~v2	GAN-D TIMES GESHTU-A GAN-D TIMES GESHTU-A VARIANT 2
1692		GIx1(N14)   GI~v1x1(N14)	GI TIMES ONE-N14 GI VARIANT 1 TIMES ONE-N14
1695		GI&GI&GI   GI~v1&GI~v1&GI~v1	GI OVER GI OVER GI GI VARIANT 1 OVER GI VARIANT 1 OVER GI VARIANT 1
1697		((GI&GI)xSZE3   ((GI&GI)xŠE3~v1	GI OVER GI TIMES SHE3 GI OVER GI TIMES SHE3 VARIANT 1
1699		GIxGISZ@t   GI~v1xGIŠ@t	GI TIMES GISH TENU GI VARIANT 1 TIMES GISH TENU
1701		GIxLAGAB~a   GI~v1xLAGAB~a	GI TIMES LAGAB-A GI VARIANT 1 TIMES LAGAB-A






















## RENAME CHARACTERS TABLE

#	CHAR	CDLI/PCSL	AP23 NAME/NEW NAME
1703		G1xSZE3   G1xŠE3~v1	GI TIMES SHE3 GI TIMES SHE3 VARIANT 1
1710		GIR~b.GIR~b   GIR~b~v1.GIR~b~v1	GIR-B BESIDE GIR-B GIR-B VARIANT 1 BESIDE GIR-B VARIANT 1
1712		GIR3~cxKAR2   GIR3~c~KAR2~b	GIR3-C TIMES KAR2 GIR3-C TIMES KAR2-B
1713		GIR3~cxSZE3   GIR3~c~ŠE3~v1	GIR3-C TIMES SHE3 GIR3-C TIMES SHE3 VARIANT 1
1714		((GISZx(DIN.DIN))~a   (G1Šx(DIN.DIN))~a	GISH TIMES DIN BESIDE DIN FORM A GISH TIMES DIN PLUS DIN FORM A
1715		((GISZx(DIN.DIN))~b   (G1Šx(DIN.DIN))~b	GISH TIMES DIN BESIDE DIN FORM B GISH TIMES DIN PLUS DIN FORM B
1716		((GISZx(DIN.DIN))~c   (G1Šx(DIN.DIN))~c	GISH TIMES DIN BESIDE DIN FORM C GISH TIMES DIN PLUS DIN FORM C
1722		GU4.ZATU755~a   GU4.ZATU755~b	GU4 BESIDE ZATU755-A GU4 BESIDE ZATU755-B
1724		GUG2xSILA3~a   GUG2~v1xSILA3~a	GUG2 TIMES SILA3-A GUG2 VARIANT 1 TIMES SILA3-A
1725		GUG2xTUR   GUG2~v1xTUR~v1	GUG2 TIMES TUR GUG2 VARIANT 1 TIMES TUR VARIANT 1
1742		KA~a.SZE~a   KA~a~v2.ŠE~a@t	KA-A BESIDE SHE-A KA-A VARIANT 2 BESIDE SHE-A TENU
1742.1		KA~a.SZE~a   KA~a~v1.ŠE~a	KA-A BESIDE SHE-A VARIANT 1 KA-A VARIANT 1 BESIDE SHE-A
1743		KA2xLAM   KA2~d~LAM~b~v2	KA2 TIMES LAM KA2-D TIMES LAM-B VARIANT 2
1746		KASZ~bxSZE~a   KAŠ~b~v1xŠE~a@t~v1	KASH-B TIMES SHE-A KASH-B VARIANT 1 TIMES SHE-A TENU VARIANT 1
1757		LAGAB~axDU6~b   LAGAB~a~DU6~a~v1	LAGAB-A TIMES DU6-B LAGAB-A TIMES DU6-A VARIANT 1
1761		LAGAB~axKUSZU2~b   LAGAB~a~KUŠU2~a@t	LAGAB-A TIMES KUSHU2-B LAGAB-A TIMES KUSHU2-A TENU
1768		LAGAB~axSI   LAGAB~a~SI~v1	LAGAB-A TIMES SI LAGAB-A TIMES SI VARIANT 1
1769		LAGAB~axSIG7   LAGAB~a~SIG7~v1	LAGAB-A TIMES SIG7 LAGAB-A TIMES SIG7 VARIANT 1
1788		LAL2~axEZEN~a   LAL2~a~EZEN~a~v1	LAL2-A TIMES EZEN-A LAL2-A TIMES EZEN-A VARIANT 1
1793		MAx~A   MA~v1x~A	MA TIMES A MA VARIANT 1 TIMES A
1803		MAH~axUD5~a   MAH~a~UD5~a~v1	MAH-A TIMES UD5-A MAH-A TIMES UD5-A VARIANT 1

## RENAME CHARACTERS TABLE






















#	CHAR	CDLI/PCSL	AP23 NAME/NEW NAME
1813		MAR~bx(LAGAB~b.SZE3)   MAR~b×(LAGAB~b.ŠE3~v1)	MAR-B TIMES LAGAB-B BESIDE SHE3 MAR-B TIMES LAGAB-B PLUS SHE3 VARIANT 1
1826		NI~a.RU   NI~a.RU~v1	NI-A BESIDE RU NI-A BESIDE RU VARIANT 1
1834		NINDA2x(AN.HI)   NINDA2×(AN.HI)	NINDA2 TIMES AN BESIDE HI NINDA2 TIMES AN PLUS HI
1835		NINDA2x(AN.ME~a)   NINDA2×(AN.ME~a)	NINDA2 TIMES AN BESIDE ME-A NINDA2 TIMES AN PLUS ME-A
1836		NINDA2x(AN.X)   NINDA2×(AN.X)	NINDA2 TIMES AN BESIDE X NINDA2 TIMES AN PLUS X
1844		NINDA2xGUDU4   NINDA2×(HI~a1.ME~a)	NINDA2 TIMES GUDU4 NINDA2 TIMES HI-A1 PLUS ME-A
1844.1		NINDA2xGUDU4   NINDA2×(HI~a1.AN.ME~a)	NINDA2 TIMES GUDU4 VARIANT 1 NINDA2 TIMES HI-A1 PLUS AN PLUS ME-A
1846		NINDA2x(HI.AN.ME~a)   NINDA2×(HI.AN.ME~a)	NINDA2 TIMES HI BESIDE AN BESIDE ME-A NINDA2 TIMES HI PLUS AN PLUS ME-A
1847		NINDA2x(HI.ME~a)   NINDA2×(HI.ME~a)	NINDA2 TIMES HI BESIDE ME-A NINDA2 TIMES HI PLUS ME-A
1848		NINDA2x(HI.X)   NINDA2×(HI.X)	NINDA2 TIMES HI BESIDE X NINDA2 TIMES HI PLUS X
1849		NINDA2x(HI@g~a.1(N06))   NINDA2×(1(N06).HI@g~a)	NINDA2 TIMES HI GUNU-A BESIDE ONE-N6 NINDA2 TIMES ONE-N6 PLUS HI GUNU-A
1855		NINDA2x(U4.X)   NINDA2×(U4.X)	NINDA2 TIMES U4 BESIDE X NINDA2 TIMES U4 PLUS X
1856		NINDA2x((UDU~axTAR)~a)   NINDA2×(UDU~a×TAR~a)	NINDA2 TIMES UDU-A TIMES TAR FORM A NINDA2 TIMES UDU-A TIMES TAR-A
1857		NINDA2x((UDU~axTAR)~b)   NINDA2×(UDU~a×TAR~b)	NINDA2 TIMES UDU-A TIMES TAR FORM B NINDA2 TIMES UDU-A TIMES TAR-B
1864		NUN~a+EN~a   NUN~a+EN~a~v2	NUN-A JOINING EN-A NUN-A JOINING EN-A VARIANT 2
1865		NUN~a+EN~b   NUN~a+EN~b~v1	NUN-A JOINING EN-B NUN-A JOINING EN-B VARIANT 1
1870		SAGx1(N14)   SAG~v1×1(N14)	SAG TIMES ONE-N14 SAG VARIANT 1 TIMES ONE-N14
1872		SAGxGESZTU~b   SAG@n×GEŠTU~b	SAG VARIANT 1 TIMES GESHTU-B SAG NUTILLU TIMES GESHTU-B
1872.1		SAGxGESZTU~b   SAG~v2×GEŠTU~b	SAG TIMES GESHTU-B VARIANT 1 SAG VARIANT 2 TIMES GESHTU-B
1873		SAGxGESZTU~c   SAG~v1×GEŠTU~c	SAG TIMES GESHTU-C SAG VARIANT 1 TIMES GESHTU-C
1875		SAGxMA   SAG~v1×MA~v1	SAG TIMES MA SAG VARIANT 1 TIMES MA VARIANT 1

## RENAME CHARACTERS TABLE

#	CHAR	CDLI/PCSL	AP23 NAME/NEW NAME
1880		SAL.SZU2   SAL.ŠU2~b	SAL BESIDE SHU2 SAL BESIDE SHU2-B
1891		SZITA~a1xSZU2   ŠITA~a1xŠU2~b	SHITA-A1 TIMES SHU2 SHITA-A1 TIMES SHU2-B
1893		SZITA~b1xHI@g~a   ŠITA~b2@gxHI@g~a	SHITA-B1 TIMES HI GUNU-A SHITA-B2 GUNU TIMES HI GUNU-A
1895		SZITA@g~ax1(N04)   ŠITA~b3@gx1(N04)	SHITA GUNU-A TIMES ONE-N4 SHITA-B3 GUNU TIMES ONE-N4
1896		SZITA@g~ax1(N06)   ŠITA~b3@gx1(N06)	SHITA GUNU-A TIMES ONE-N6 SHITA-B3 GUNU TIMES ONE-N6
1893		SZITA~b1xHI@g~a   ŠITA~b1@gxHI@g~a	SHITA-B1 TIMES HI GUNU-A SHITA-B1 GUNU TIMES HI GUNU-A
1899		SZU2.1(N02)   ŠU2~b.1(N02)	SHU2 BESIDE ONE-N2 SHU2-B BESIDE ONE-N2
1901		SZU2.AN   ŠU2~a.AN	SHU2 BESIDE AN SHU2-A BESIDE AN
1902		SZU2.E2~a   ŠU2~b.E2~a	SHU2 BESIDE E2-A SHU2-B BESIDE E2-A
1903		SZU2.E2~b   ŠU2~b.E2~b	SHU2 BESIDE E2-B SHU2-B BESIDE E2-B
1904		SZU2.EN~a   ŠU2~a.EN~a~v1	SHU2 BESIDE EN-A SHU2-A BESIDE EN-A VARIANT 1
1904.1		SZU2.EN~a   ŠU2~a.EN~a~v2	SHU2 BESIDE EN-A VARIANT 1 SHU2-A BESIDE EN-A VARIANT 2
1905		SZU2.EN~b   ŠU2~a.EN~b~v1	SHU2 BESIDE EN-B SHU2-A BESIDE EN-B VARIANT 1
1906		SZU2.GISZ   ŠU2~b.GIS	SHU2 BESIDE GISH SHU2-B BESIDE GISH
1907		SZU2.((Hix1(N57))&(Hix1(N57)))   ŠU2~a.(Hix1(N57))&(Hix1(N57))	SHU2 BESIDE HI TIMES ONE-N57 OVER HI TIMES ONE-N57 SHU2-A BESIDE HI TIMES ONE-N57 OVER HI TIMES ONE-N57
1908		SZU2.URI3~a   ŠU2~a.URI3~a~v1	SHU2 BESIDE URI3-A SHU2-A BESIDE URI3-A VARIANT 1
1910		SIXSZE3   ŠIXŠE3~v1	SI TIMES SHE3 SI TIMES SHE3 VARIANT 1
1918		SILA3~axDUG~a   SILA3~a~v1xDUG~a	SILA3-A TIMES DUG-A SILA3-A VARIANT 1 TIMES DUG-A
1920		SILA3~axGA~a   SILA3~axGA~a~v3	SILA3-A TIMES GA-A SILA3-A TIMES GA-A VARIANT 3
1922		SILA3~axGESZTU~a   SILA3~axGESZTU~a~v2	SILA3-A TIMES GESHTU-A SILA3-A TIMES GESHTU-A VARIANT 2
1934		SILA3~axMA   SILA3~axMA~v1	SILA3-A TIMES MA SILA3-A TIMES MA VARIANT 1



## RENAME CHARACTERS TABLE

#	CHAR	CDLI/PCSL	AP23 NAME/NEW NAME
1942		SILA3~axSZU2   SILA3~a×ŠU2~b	SILA3-A TIMES SHU2 SILA3-A TIMES SHU2-B
1944		SILA3~axSUM~a   SILA3~a×SUM~a~v1	SILA3-A TIMES SUM-A SILA3-A TIMES SUM-A VARIANT 1
1947		SILA3~axZATU629   SILA3~a×ZATU629~v1	SILA3-A TIMES ZATU629 SILA3-A TIMES ZATU629 VARIANT 1
1949		SILA3~ax(ZATU659.TU~c)   SILA3~a×(ZATU659.TU~c~v1)	SILA3-A TIMES ZATU659 BESIDE TU-C SILA3-A TIMES ZATU659 PLUS TU-C VARIANT 1
1953		SILA3~bxNI~a   SILA3~c×NI~a	SILA3-B TIMES NI-A SILA3-C TIMES NI-A
1992		U4x3(N01).3(N08)   U4×3(N01).3(N08)~v1	U4 TIMES THREE-N1 BESIDE THREE-N8 U4 TIMES THREE-N1 BESIDE THREE-N8 VARIANT 1
1999		U4.4(N08)   U4.4(N08)~v1	U4 BESIDE FOUR-N8 U4 BESIDE FOUR-N8 VARIANT 1
2015		U4x(X(N01))   U4×N(N01)	U4 TIMES X-N1 U4 TIMES N-N1
2016		U4.SZU2   U4.ŠU2~b	U4 BESIDE SHU2 U4 BESIDE SHU2-B
2019		(U8xTAR)~b   U8×TAR~b	U8 TIMES TAR FORM B U8 TIMES TAR-B
2020		(UDU~axTAR)~a   UDU~a×TAR~a	UDU-A TIMES TAR FORM A UDU-A TIMES TAR-A
2021		(UDU~axTAR)~b   UDU~a×TAR~b	UDU-A TIMES TAR FORM B UDU-A TIMES TAR-B
2026		UKKIN~bx(DIN.1(N01))   UKKIN~b×(DIN.1(N01))	UKKIN-B TIMES DIN BESIDE ONE-N1 UKKIN-B TIMES DIN PLUS ONE-N1
2031		UNUG~axA@t   UNUG~a~v1×A@t	UNUG-A TIMES A TENU UNUG-A VARIANT 1 TIMES A TENU
2032		UR~axKAR2   UR~a×KAR2~b	UR-A TIMES KAR2 UR-A TIMES KAR2-B
2034		UR2xTAR   UR2×TAR~c	UR2 TIMES TAR UR2 TIMES TAR-C
2040		URU~a1xAMAR   URU~a1×AMAR~v2	URU-A1 TIMES AMAR URU-A1 TIMES AMAR VARIANT 2
2049		USZ~bxTAR~c   UŠ~b~v2×TAR~c	USH-B TIMES TAR-C USH-B VARIANT 2 TIMES TAR-C
2049.1		USZ~bxTAR~c   UŠ~b×TAR~c	USH-B TIMES TAR-C VARIANT 1 USH-B TIMES TAR-C
2054		ZATU651xEN~a   ZATU651×EN~a~v2	ZATU651 TIMES EN-A ZATU651 TIMES EN-A VARIANT 2
2058		ZATU651xSZE~a   ZATU651~v2×ŠE~a	ZATU651 TIMES SHE-A ZATU651 VARIANT 2 TIMES SHE-A

RENAME CHARACTERS TABLE

#	CHAR	CDLI/PCSL	AP23 NAME/NEW NAME
2064.1		ZATU662x1(N14)   ZATU662~v1×1(N14)	ZATU662 TIMES ONE-N14 VARIANT 1 ZATU662 VARIANT 1 TIMES ONE-N14
2064.2		ZATU662x1(N14)   ZATU662~v2×1(N14)	ZATU662 TIMES ONE-N14 VARIANT 2 ZATU662 VARIANT 2 TIMES ONE-N14
2065		ZATU711xHI@g~a   ZATU711~v1×HI@g~a	ZATU711 TIMES HI GUNU-A ZATU711 VARIANT 1 TIMES HI GUNU-A
2066		ZATU711xX   ZATU711~v1×X	ZATU711 TIMES X ZATU711 VARIANT 1 TIMES X
2075		ZATU737xEN~a   ZATU737×EN~a~v2	ZATU737 TIMES EN-A ZATU737 TIMES EN-A VARIANT 2
2076		ZATU737xEN~b   ZATU737~v1×EN~b~v1	ZATU737 TIMES EN-B ZATU737 VARIANT 1 TIMES EN-B VARIANT 1
2077.1		ZATU737xGAR   ZATU737~v1×GAR	ZATU737 TIMES GAR VARIANT 1 ZATU737 VARIANT 1 TIMES GAR
2080		ZATU737xSAL   ZATU737~v3×SAL	ZATU737 TIMES SAL ZATU737 VARIANT 3 TIMES SAL
2085		ZATU737xU4   ZATU737~v3×U4	ZATU737 TIMES U4 ZATU737 VARIANT 3 TIMES U4
2086		ZATU737xUNUG~a   ZATU737×UNUG~a~v1	ZATU737 TIMES UNUG-A ZATU737 TIMES UNUG-A VARIANT 1
2087		ZATU737xX   ZATU737~v2×X	ZATU737 TIMES X ZATU737 VARIANT 2 TIMES X

























#### 4.8 Compound-only

The list of signs or sign-forms that occurs only in compounds—and should therefore not be encoded separately has changed significantly as a result of the renaming of compound-components. A list of compounds and their components is given in Appendix 1. The remaining list of compound-only elements and the signs that have them are given in the following pair of tables. This information can also be derived from the components column of the tabbed data accompanying this report as described in Appendix 2.

























COMPOUND-ONLY COMPONENTS AND THEIR SIGNS

Component	#	PCSL	CHAR
AB <sub>2</sub> ~v2	1505.1	AB <sub>2</sub> ~v2×2(N14)	
ANŠE~d	1550	DUG~b×ANŠE~d	
BAD~a	1464	1(N58)~a.BAD~a	
BU~a~v1%BU~a~v1	1515	(BU~a~v1%BU~a~v1).NA <sub>2</sub> ~a@n	
DARA <sub>3</sub> ~d1	1525	DARA <sub>3</sub> ~d1×KAR <sub>2</sub> ~b	

























## COMPOUND-ONLY COMPONENTS AND THEIR SIGNS

Component	#	PCSL	CHAR
DAR <sub>3</sub> ~d <sub>2</sub>	1525.2	DAR <sub>3</sub> ~d <sub>2</sub> ×KAR <sub>2</sub> ~a <sub>1</sub>	
	1526	DAR <sub>3</sub> ~d <sub>2</sub> ×(KAR <sub>2</sub> ~a <sub>1</sub> .ŠE~a)	
DUB@n~a	1534	(DUB@n~a×1(N58))~a	
	1536	(DUB@n~a×1(N58))~b	
DUB@n~b	1535	DUB@n~b×1(N58)~a	
DUG~b~v <sub>1</sub> &DUG~b~v <sub>1</sub>	1555	(DUG~b~v <sub>1</sub> &DUG~b~v <sub>1</sub> )×1(N58)	
DUG~b~v <sub>2</sub>	1591.1	DUG~b~v <sub>2</sub> ×U <sub>2</sub> ~b	
DUG~c~v <sub>2</sub>	1601	DUG~c~v <sub>2</sub> ×1(N57)	
EN~d	1866	NUN~a+EN~d	
GAN~c~v <sub>2</sub>	1683	GAN~c~v <sub>2</sub> ×ŠE~a	
	1684	GAN~c~v <sub>2</sub> ×ŠE <sub>3</sub> @t~v <sub>1</sub>	
GEŠTU~c	1873	SAG~v <sub>1</sub> ×GEŠTU~c	
GURUŠ~c	1729	GURUŠ~c×2(N14)	
HI~a <sub>1</sub>	1844	NINDA <sub>2</sub> ×(HI~a <sub>1</sub> .ME~a)	
	1844.1	NINDA <sub>2</sub> ×(HI~a <sub>1</sub> .AN.ME~a)	
KA~a~v <sub>1</sub>	1742.1	KA~a~v <sub>1</sub> .ŠE~a	
KA~a~v <sub>2</sub>	1742	KA~a~v <sub>2</sub> .ŠE~a@t	
KAR <sub>2</sub> ~a <sub>1</sub>	1525.2	DAR <sub>3</sub> ~d <sub>2</sub> ×KAR <sub>2</sub> ~a <sub>1</sub>	
	1526	DAR <sub>3</sub> ~d <sub>2</sub> ×(KAR <sub>2</sub> ~a <sub>1</sub> .ŠE~a)	
KAR <sub>2</sub> ~c	1524	DAR <sub>3</sub> ~c×(KAR <sub>2</sub> ~c.ŠE~a)	
KUR~e	1780	LAGAB~b×KUR~e	
KUŠU <sub>2</sub> ~a@t	1761	LAGAB~a×KUŠU <sub>2</sub> ~a@t	
X(N57)	1487	X(N57).GAR	
N(N01)	2015	U <sub>4</sub> ×N(N01)	











## COMPOUND-ONLY COMPONENTS AND THEIR SIGNS

Component	#	PCSL	CHAR
1(N57@t)	1734	HI×1(N57@t)	
NA2~a@n	1515	(BU~a~v1%BU~a~v1).NA2~a@n	
SILA3~a~v1	1918	SILA3~a~v1×DUG~a	
SILA3~d	1957	SILA3~d×NI~a	
SUHUR~v1	1643	GA2~a1×(HI.SUHUR~v1)	
	1738.1	HI.SUHUR~v1	
SUHUR~v2	1738.2	HI.SUHUR~v2	
ŠE~a@t~v1	1746	KAŠ~b~v1×ŠE~a@t~v1	
ŠITA~b2@g	1893	ŠITA~b2@g×HI@g~a	
ŠUBUR~v1	1462.1	1(N57).ŠUBUR~v1	
TAR~b	1857	NINDA2×(UDU~a×TAR~b)	
	2019	U8×TAR~b	
	2021	UDU~a×TAR~b	
TAR~c	1509	AMAR~v2×TAR~c	
	2034	UR2×TAR~c	
	2049	UŠ~b~v2×TAR~c	
	2049.1	UŠ~b×TAR~c	
TU~c~v1	1949	SILA3~a×(ZATU659.TU~c~v1)	
URU~a3	2047	URU~a3×KALAM~a	
UŠ~b~v2	2049	UŠ~b~v2×TAR~c	
X	1500	AB~a×X	
	1517	(BU~a&BU~a).X	
	1533	DU8~c×X	
	1568	DUG~b×(KUR~a.X)	

## COMPOUND-ONLY COMPONENTS AND THEIR SIGNS

Component	#	PCSL	CHAR
	1581	DUG~b×(SI4~a.X)	
	1594	DUG~b×X	
	1594.1	DUG~b~v1×X	
	1624	EZEN~a×X	
	1663	GA2~a1×X	
	1670	GA2~a2×X	
	1671	GA2~a3×X	
	1686	GAN~c×X	
	1698	(GI&GI)×X	
	1705	GI×X	
	1774	LAGAB~a×X	
	1807	MAH~a×X	
	1815	MAR~b×X	
	1822	MUŠEN×X	
	1828	NI~b×X	
	1836	NINDA2×(AN.X)	
	1848	NINDA2×(HI.X)	
	1855	NINDA2×(U4.X)	
	1858	NINDA2×X	
	1946	SILA3~a×X	
	1985	U4×2(N01).X	
	2011	U4×8(N01).X	
	2017	U4×X	
	2030	UKKIN~b×X	

COMPOUND-ONLY COMPONENTS AND THEIR SIGNS

Component	#	PCSL	CHAR
	2045	URU~a1×X	
	2059	ZATU651×X	
	2066	ZATU711~v1×X	
	2069	ZATU714×X	
	2087	ZATU737~v2×X	
	2091	ZATU759×X	
	2092	ZATU759@t×X	
ZATU737~v3	2080	ZATU737~v3×SAL	
	2085	ZATU737~v3×U4	
ZATU759@t	2092	ZATU759@t×X	





















## AP23 SIGNS WITH COMPONENTS THAT DO NOT OCCUR INDEPENDENTLY

#	COMPOUND-ONLY COMPONENTS	#	COMPOUND-ONLY COMPONENTS	#	COMPOUND-ONLY COMPONENTS
1462.1	ŠUBUR~v1	1671	X	1873	GEŠTU~c
1464	BAD~a	1683	GAN~c~v2	1893	ŠITA~b2@g
1487	X(N57)	1684	GAN~c~v2	1918	SILA3~a~v1
1500	X	1686	X	1946	X
1505.1	AB2~v2	1698	X	1949	TU~c~v1
1509	TAR~c	1705	X	1957	SILA3~d
1515	BU~a~v1%BU~a~v1  NA2~a@n	1729	GURUŠ~c	1985	X
1517	X	1734	1(N57@t)	2011	X
1524	KAR2~c	1738.1	SUHUR~v1	2015	N(N01)
1525	DARA3~d1	1738.2	SUHUR~v2	2017	X
1525.2	DARA3~d2 KAR2~a1	1742	KA~a~v2	2019	TAR~b
1526	DARA3~d2 KAR2~a1	1742.1	KA~a~v1	2021	TAR~b
1533	X	1746	ŠE~a@t~v1	2030	X
1534	DUB@n~a	1761	KUŠU2~a@t	2034	TAR~c
1535	DUB@n~b	1774	X	2045	X
1536	DUB@n~a	1780	KUR~e	2047	URU~a3
1550	ANŠE~d	1807	X	2049	UŠ~b~v2 TAR~c
1555	DUG~b~v1&DUG~b~v1	1815	X	2049.1	TAR~c
1568	X	1822	X	2059	X
1581	X	1828	X	2066	X
1591.1	DUG~b~v2	1836	X	2069	X
1594	X	1844	HI~a1	2080	ZATU737~v3
1594.1	X	1844.1	HI~a1	2085	ZATU737~v3
1601	DUG~c~v2	1848	X	2087	X
1624	X	1855	X	2091	X
1643	SUHUR~v1	1857	TAR~b	2092	ZATU759@t X
1663	X	1858	X		
1670	X	1866	EN~d		

**4.9 Signs with mismatched number stacks**

Some non-NUMBER signs in the proposal are compounds with NUMBER components. In a few cases the stacking pattern in the compound does not match the glyph for that number in the number section of the proposal. In SAC the decision was made to encode distinct stacking patterns and that would be desirable for PC also: if that happens, the some of the signs in the table below should be aligned with the NUMBER proposal's names.

COMPOUNDS WITH MISMATCHED NUMBER STACKS

#	PCSL	Compound	Components
1993	U4.3(N08)		◇ 
1999	U4.4(N08)~v1		◇ 
1977	U4.(1(N14).5(N08))		◇ • 
1968	U4×1(N01).5(N08)		◇ 
1992	U4×3(N01).3(N08)~v1		◇ 
2001	U4×5(N01)		◇ 
2005	U4×6(N01)		◇ 
2010	U4×8(N01)		◇ 
1995	U4×(3(N14).7(N01))		◇ • 
2024	UKKIN~b×5(N01)		◇ 

5. Notes on Individual Characters






5.1 Signs with N57, N58, and DIŠ

The signs N57 ( — ) and N58 ( | ) are known in SAC as AŠ and DIŠ respectively. In CDLI-gh N57, N58 and DIŠ are used in sign-names and DIŠ is a sign which appears only in compounds.

5.1.1 DIŠ versus N58

Five signs have DISH as a contained sign and would be better renamed with 1(N58) which would remove DISZ from the proposal entirely and unify the naming with other signs named with 1(N57)/1(N58).










	1529	DUxDISZ	DU×1(N58@t)
	1530	DU6~axDISZ	DU6~a~v1×1(N58)
	1534	[(DUBxDISZ)~a	[(DUB@n~a×1(N58))~a
	1535	[(DUBxDISZ)~a	DUB@n~b×1(N58)~a
	1536	[(DUBxDISZ)~a	[(DUB@n~a×1(N58))~b

### 5.1.2 N57@t/N58@t

The diagonal wedge is called both N57@t and N58@t in CDLI-gh and in AP23. The notation of 1(N57@t) is normalized from 1(N57)@t in several cases and this normalization should also be carried through in additional cases.



CDLI-gh is not entirely consistent in labelling the N57/N58 in a tenu orientation; PCSL revises the names so that in this pair of cases, tenu means “rotated 45 degrees counterclockwise” in both cases. This aligns with the standalone 1(N58@t), U+125DC.




	125DC	1(N58@t)	(unchanged)	(unchanged)	(unchanged)
	12CC7	E2~ax1(N58@t)	(unchanged)	(unchanged)	(unchanged)
	12CCA	E2~bx1(N57)@t	E2~bx1(N58@t)	E2-B TIMES ONE-N57 TENU	E2-B TIMES ONE-N58 TENU
	12D25	Glx1(N58)@t	Glx1(N58@t)	(unchanged)	(unchanged)
	12D4E	Hlx1(N57@t)	(unchanged)	(unchanged)	(unchanged)
	12E4F	U4x1(N58)@t	U4x1(N58@t)	(unchanged)	(unchanged)
	12EA2	ZATU659x1(N58)@t	ZATU659x1(N58@t)	(unchanged)	(unchanged)

## 5.2 DUG Signs

### 5.2.1 DUG~cx1(N57)







CDLI-gh/AP23 list two DUG~c as well as three versions of DUG TIMES ONE-N57:

	1279D	DUG~C
	1279E	DUG~C VARIANT 1

	12CC4	DUG~C TIMES ONE-N57
	12CC5	DUG~C VARIANT 1 TIMES ONE-N57
	12CC6	DUG~C VARIANT 2 TIMES ONE-N57







In DUG~C VARIANT 1 TIMES ONE-N57, the glyph for DUG~C VARIANT 1 does not match the base DUG~C VARIANT 1 glyph—it is DUG~C VARIANT 2 TIMES ONE-N57 that has the match for DUG~C VARIANT 1; The unmarked glyph form of U+12CC4 DUG~C TIMES ONE-N57 is not listed as a form of DUG~C; the glyph form of DUG~C VARIANT 1 TIMES ONE N-57 matches the unmarked form of DUG~C. This is an example where it would be helpful to create an additional DUG~C variant to allow alignment of the DUG~C base forms and DUG~C containers.


The following combination of addition and renaming would rectify this situation:

	1279D	DUG~c	DUG~c1	DUG~C	DUG~C VARIANT 1
	-	-	DUG~c2	ADD COMPOUND-ONLY ITEM	DUG~C VARIANT 2
	1279E	DUG~c1	DUG~c3	DUG~C VARIANT 1	DUG~C VARIANT 3
	12CC4	DUG~cx1(N57)	DUG~c2x1(N57)	DUG~C TIMES ONE-N57	DUG~C VARIANT 2 TIMES ONE-N57
	12CC5	DUG~c1x1(N57)	DUG~c1x1(N57)	DUG~C VARIANT 1 TIMES ONE-N57	DUG~C VARIANT 1 TIMES ONE-N57
	12CC6	DUG~c2x1(N57)	DUG~c3x1(N57)	DUG~C VARIANT 3 TIMES ONE-N57	DUG~C VARIANT 3 TIMES ONE-N57

### 5.2.3 DUG~c@t and DUG~d

CDLI-gh/AP23 list two identical glyphs as DUG~c@t and DUG~d; upon collation of DUG~c@t and DUG~d in CDLI-tc it emerges that there are actually three sign forms underlying the two transliterations:

DUG~a@t (P001077 o ii 4)		DUG~c@t (P003985 i 1); AP23 Glyph		DUG~c2@t (P003508 o ii 2 and r 1)	
					

The sign labelled above DUG~d occurs three times, always with DUG~c3 (  ) immediately following. The sign labelled DUG~a@t occurs once, in clear context, and with no following DUG~c3.

In view of this information the following changes to the proposal are required:

- Add sign DUG~a@t as in table above

- Add sign DUG~c2@t as in table above
- Delete DUG~d.

### 5.2.3 DUG~b×U<sub>2</sub>~b

P000015 o ii 9 has a clear collated glyph form DUG~b×U<sub>2</sub>~b where base DUG~b is the unmarked form of DUG~b which means that neither encoded DUG~b×U<sub>2</sub>~b matches the collated glyph. This requires adding DUG~b×U<sub>2</sub>~b.

### 5.3 Notes on Individual Signs

#### DUB versus DUB@n

The compounds with DUB×X in CDLI-gh and AP23 have forms of DUB that do not have internal hatching; these should be renamed to forms of [DUB@n](#), i.e., DUB NUTILLU (unfinished), which occur only in compounds.

#### |GI+&GI|

The '+' is a typo.

#### GIZZAL~x

CDLI-tc uses GIZZAL~v which is followed by PCSL.

#### IŠ

The basis for choosing the primary forms of IŠ~a and IŠ~b is not clear:

- IŠ~a is the second in the sequence of IŠ~a on CDLI-gh and is the Uruk III form in ZATU
- IŠ~b is the first in the sequence of IŠ~b on CDLI-gh and is an Uruk IV form in ZATU
- In LLATU the reference glyph for IŠ~a corresponds reasonably well to IŠ~a in the proposal
- In LLATU the reference glyph for IŠ~b is IŠ~b VARIANT 1 in the proposal
- PCSL switches IŠ~b and IŠ~b VARIANT 1 so that the IŠ~a and IŠ~b both align with LLATU notation and the Uruk III forms
- The data table includes a newglyph entries for IŠ~b and IŠ~b VARIANT 1 to make this realignment

#### KA<sub>2</sub>×LAM


The reference glyph for KA<sub>2</sub>×LAM in CDLI-gh/AP23 is not a good reflection of either KA<sub>2</sub> or LAM; The current glyph from CDLI-gh is used in LLATU 242\_03 but the reference there, P000034 = ATU 3, pl. 76, W 20266,74 o i 7, is broken and the remaining traces do not conform to the LLATU form of the sign. A new reference glyph is provided based on |KA<sub>2</sub>~d×LAM~b~v2| in P002179 = ATU 6, pl. 056, W 14777,c.






#### |MUŠEN.UR<sub>3</sub>~b2|

Reference glyph is from a less fully written version of the sign than the occurrence in P003441.

#### NINDA×GUDU<sub>4</sub> and friends

The sign “GUDU<sub>4</sub>” is written with several different combinations of AN, HI, and ME. Some variations of NINDA×GUDU<sub>4</sub> also occur in CDLI-gh/AP23 in there decomposed form. Forms with ×GUDU<sub>4</sub> should be deleted or renamed to use the componential naming:

1844	NINDA2 TIMES GUDU4		rename	PROTO-CUNEIFORM SIGN NINDA2 TIMES HI-A1 PLUS ME-A	
------	--------------------	---	--------	---	--

1844.1	NINDA2 TIMES GUDU4 VARIANT 1		rename	PROTO-CUNEIFORM SIGN NINDA2 TIMES HI-A1 PLUS AN PLUS ME-A	
1844.2	NINDA2 TIMES GUDU4 VARIANT 2		delete	Duplicates 1846  NINDA2×(HI.AN.ME~a)	
1844.3	NINDA2 TIMES GUDU4 VARIANT 3		delete	Duplicates 1835  NINDA2×(AN.ME~a)	

**NERGAL~x**

CDLI-tc uses NERGAL~v which is followed by PCSL.

**NIR~a**

Sub 889 sign description should be NUN~a&NUN~a

**NUNUZ~a1**

Sub 902 sign description should be NUNUZ~a0&NUNUZ~a0

**NUNUZ~a2**

Sub 904 sign description should be NUNUZ~a0&NUNUZ~a0&NUNUZ~a0

**RAD~a**

The reference glyph is incorrect and needs rotating 90 degrees to align with RAD~b; RAD~a@t is the horizontal version and is correct. The correct orientation of RAD~a is already used in CDLI-gh/AP23 |EZEN~a×RAD~a|.

**|SIG×1(N57)|**

Add to list of corrections: |1(N57).SIG| is better

**ŠE3@t~v1**

Should be ŠE3~v1@t.

**ŠELU**


Sub 973 stray | in = |SZE.GUG2.

**ŠU2**





CDLI-gh does not label the independent forms of ŠU2 separately, but it does follow the LLATU labelling of the curved ŠU2 as ŠU2~a and the cuneiform ŠU2 as ŠU2~b in the context of GIŠ×ŠU2~a/GIŠ×ŠU2~b. PCSL adopts this approach and renames CDLI-gh/AP23 ŠU2 as ŠU2~a and CDLI-gh/AP23 ŠU2 VARIANT 1 as ŠU2~b. The compounds have also been aligned with this renaming.

**SUHUR**

The following signs involve SUHUR:







1050	12A43		SUHUR	SUHUR
------	-------	---	-------	-------

1051	12A44		SUHUR@g	SUHUR GUNU
1052	12A45		SUHUR@n	SUHUR NUTILLU
1585	12CB2		DUG~b×SUHUR	DUG-B TIMES SUHUR
1643	12CF3		GA2~a1×(HI.SUHUR)	GA2-A1 TIMES HI BESIDE SUHUR
1656	12D00		GA2~a1×SUHUR	GA2-A1 TIMES SUHUR
1669	12D0D		GA2~a2×SUHUR	GA2-A2 TIMES SUHUR
1738	12D52		HI.SUHUR	HI BESIDE SUHUR
1738.1	12D53		HI.SUHUR~v1	HI BESIDE SUHUR VARIANT 1
1738.2	12D54		HI.SUHUR~v2	HI BESIDE SUHUR VARIANT 2
1943	1.20E4		SILA3~a×SUHUR	SILA3-A TIMES SUHUR

As can be seen, most of the elements in compounds conform to  =SUHUR but the treatment of |HI.SUHUR| can benefit from some revision. Taking the base version of  =SUHUR it is more natural to assign the glyph  to |HI.SUHUR| rather than |HI.SUHUR~v2|, and to assign the glyph  to |HI.SUHUR~v2| rather than simple |HI.SUHUR|. These are given as newglyph entries in the revisions data table.

### ŠITA and ŠITA@g/ŠITA@g compounds

The ŠITA@g signs are misaligned with the base ŠITA signs in CDLI-gh/AP23; in PCSL they are aligned so GUNU forms correspond with the variant notations of base signs. This alignment is done by renaming the CDLI-gh/AP23 signs as follows:

ŠITA and ŠITA@g						
#	CHAR	CDLI-gh/AP23	AP23 NAME	PCSL	PCSL NAME	Corresponding ŠITA
997		SZITA@g~a	SHITA GUNU-A	ŠITA~b3@g	SHITA-B3 GUNU	995 ŠITA~b3 
997.1		SZITA@g~a	SHITA GUNU-A VARIANT 1	ŠITA~b1@g	SHITA-B1 GUNU	993 ŠITA~b1 
998		SZITA@g~b	SHITA GUNU-B	ŠITA~a1@g	SHITA-A1 GUNU	990 ŠITA~a3 

Compounds involving ŠITA@g are also aligned with the new ŠITA@g notations.

**UZ~a**

CDLI-tc reserves UZ for an Uruk IV sign that occurs in two tablets in the Schøyen Collection, P252171 = MS 3160 and P252177 = MS 3166. LLATU and CDLI-tc use UZ~a for the sign in Uruk III texts. UZ is not proposed for encoding here because it is in the group of texts from Umma and possibly other sites that has not yet been edited.

**ZA~x**

CDLI-tc uses ZA~v which is followed by PCSL.

## Appendix 1: Compounds and Components

COMPOUNDS AND THEIR COMPONENTS				
#	PCSL	COMPOUND	COMPONENTS	COMPOUND-ONLY
1489	$ A \times AB_2 $		$\parallel \triangleleft$	
1491	$ A \times EN \sim a \sim v_2 $		$\parallel \triangleleft$	
1488	$ A \times 1(N14) $		$\parallel \bullet$	
1492	$ A \times \check{S}UBUR $		$\parallel \triangleleft$	
1493	$ A \times ZATU672 $		$\parallel \triangleleft$	
1495	$ AB \sim a \times A @ t $		$\triangleleft \approx$	
1502	$ AB \sim b \times A $		$\triangleleft \parallel$	
1496	$ AB \sim a \times A \check{S}_2 $		$\triangleleft \parallel$	
1497	$ AB \sim a \times KU_6 \sim a $		$\triangleleft \triangleleft$	
1503	$ AB \sim b \times KU_6 \sim a $		$\triangleleft \triangleleft$	
1494	$ AB \sim a \times 1(N01) $		$\triangleleft \bullet$	
1499	$ AB \sim a \times SUKKAL $		$\triangleleft \parallel$	
1504	$ AB \sim b \times \check{S}A_3 \sim a_1 $		$\triangleleft \triangleleft$	
1498	$ AB \sim a \times (\check{S}E \sim a \& \check{S}E \sim a) $		$\triangleleft \triangleleft$	
1500	$ AB \sim a \times X $		$\triangleleft$	X
1501	$ AB \sim a \times ZATU659 $		$\triangleleft \triangleleft$	
1505	$ AB_2 \times 2(N14) $		$\triangleleft \bullet$	
1505.1	$ AB_2 \sim v_2 \times 2(N14) $		$\bullet$	$AB_2 \sim v_2$
1506	$ AMA \sim a \times E_2 \sim a $		$\triangleleft \triangleleft$	

## COMPOUNDS AND THEIR COMPONENTS

#	PCSL	COMPOUND	COMPONENTS	COMPOUND-ONLY
1509	AMAR~v2×TAR~c			TAR~c
1507	AMAR.1(N02)			
1508	AMAR&AMAR			
1510	APIN~a.APIN~a			
1511	BAD&BAD			
1520	BU~b.NA2~a~v1			
1513	BU~a~v1×A			
1519	BU~a×GIŠ@t			
1512	BU~a×1(N58)			
1514.1	(BU~a&BU~a).NA2~a~v1			
1514	(BU~a&BU~a).NA2~a			
1515	(BU~a~v1%BU~a~v1).NA2~a@n			BU~a~v1%BU~a~v1  NA2~a@n
1517	(BU~a&BU~a).X			X
1518.1	BU~a+DU6~a~v1			
1518	BU~a+DU6~a			
1521	DA~a.LIŠ			
1522	DAR~a×A			
1523	DARA3~c×KAR2~b			
1525.1	DARA3~d×KAR2~b			
1525	DARA3~d1×KAR2~b			DARA3~d1
1525.2	DARA3~d2×KAR2~a1			DARA3~d2 KAR2~a1



## COMPOUNDS AND THEIR COMPONENTS

#	PCSL	COMPOUND	COMPONENTS	COMPOUND-ONLY
1524	DARA3~c×(KAR2~c.ŠE~a)			KAR2~c
1526	DARA3~d2×(KAR2~a1.ŠE~a)			DARA3~d2 KAR2~a1
1529	DU×1(N58@t)			
1530	DU6~a~v1×1(N58)			
1531	DU8~c×HI			
1532	DU8~c×UDU~a			
1533	DU8~c×X			X
1534	DUB@n~a×1(N58))~a			DUB@n~a
1536	DUB@n~a×1(N58))~b			DUB@n~a
1535	DUB@n~b×1(N58)~a			DUB@n~b
1548	DUG~b~v1×AB2			
1549	DUG~b×ANŠE~b			
1550	DUG~b×ANŠE~d			ANŠE~d
1551	DUG~b×BALA~a			
1552	DUG~b×BIR3~c			
1553.1	DUG~b~v1×DIN			
1553	DUG~b×DIN			
1554	DUG~b×DIN)@r			
1556	DUG~b×E~a			
1557	DUG~b×GA~a~v4			
1558	DUG~b×GA~b			

## COMPOUNDS AND THEIR COMPONENTS

#	PCSL	COMPOUND	COMPONENTS	COMPOUND-ONLY
1559.1	DUG~b~v1×GEŠTU~a~v2			
1559	DUG~b×GEŠTU~a~v2			
1560	DUG~b×GEŠTU~b			
1561	DUG~b×GI6			
1562	DUG~b×GIŠ			
1564	DUG~b~v1×HI@g~a			
1563.1	DUG~b~v1×HI			
1563	DUG~b×HI			
1539	DUG~a×KASKAL			
1565	DUG~b×KASKAL			
1566	DUG~b×KU6~a			
1570	DUG~b×KUR@g~a			
1567	DUG~b×KUR~a			
1569	DUG~b×KUR~b			
1568	DUG~b×(KUR~a.X)			
1540	DUG~a×LAM~b			
1571	DUG~b×LAM~a			
1572.1	DUG~b~v1×MAŠ			
1572	DUG~b×MAŠ			
1537	DUG~a×1(N57)			
1545.1	DUG~b~v1×1(N57)			

X

## COMPOUNDS AND THEIR COMPONENTS

#	PCSL	COMPOUND	COMPONENTS	COMPOUND-ONLY
1545	DUG~b×1(N57)		—	
1601.1	DUG~c~v1×1(N57)		—	
1601	DUG~c~v2×1(N57)		—	DUG~c~v2
1601.2	DUG~c~v3×1(N57)		—	
1546	DUG~b×(1(N57).KU3~a)		—	
1547	DUG~b×3(N57)		≡	
1541	DUG~a×NAGA~a			
1573	DUG~b×NAGA~a			
1574	DUG~b×NAM2			
1575	DUG~b×(NI~a@g.ZATU779)			
1576	DUG~b×SA~a			
1580	DUG~b×SI4~a			
1581	DUG~b×(SI4~a.X)			X
1582	DUG~b×SIG2~a1			
1583	DUG~b×SIG2~a2			
1584	DUG~b×SIG7			
1585	DUG~b×SUHUR			
1577	DUG~b×ŠAH2~a			
1578.2	DUG~b~v1×ŠE~a@t			
1578.1	DUG~b~v1×ŠE~a			
1578	DUG~b×ŠE~a			

## COMPOUNDS AND THEIR COMPONENTS

#	PCSL	COMPOUND	COMPONENTS	COMPOUND-ONLY
1579	DUG~b×(ŠE~a.NAM <sub>2</sub> )			
1586	DUG~b×TAK <sub>4</sub> ~a			
1587	DUG~b×(TAK <sub>4</sub> ~a.SA~a)			
1588	DUG~b×(TAK <sub>4</sub> ~a.SAL)			
1589	DUG~b×TI			
1542	DUG~a×U <sub>2</sub> ~a			
1543	DUG~a×U <sub>2</sub> ~b			
1591	DUG~b~v1×U <sub>2</sub> ~b			
1591.1	DUG~b~v2×U <sub>2</sub> ~b			DUG~b~v2
1590	DUG~b×U <sub>2</sub> ~a			
3000	DUG~b×U <sub>2</sub> ~b			
1592	DUG~b×UH <sub>3</sub> ~a			
1593	DUG~b×UH <sub>3</sub> ~a@t			
1594.1	DUG~b~v1×X			X
1594	DUG~b×X			X
1595	DUG~b×ZATU707~a			
1596	DUG~b×ZATU764			
1597	DUG~b×ZATU779			
1598	DUG~b×ZATU780			
1599	DUG~b×ZATU781			
1600	DUG~b×(ZATU789.SA~a)			

## COMPOUNDS AND THEIR COMPONENTS

#	PCSL	COMPOUND	COMPONENTS	COMPOUND-ONLY
1555	DUG~b~v1&DUG~b~v1)×1(N58)			DUG~b~v1&DUG~b~v1
1604	E2~a.LIŠ		>	
1606	E2~b.LIŠ		>	
1602	E2~a×1(N58@t)		\	
1605	E2~b×1(N58@t)		\	
1603	E2~a×3(N58)			
1607	EN~c&EN~c		>	
1608	EN2.E2~a		>	
1609	EN2.E2~b		>	
1610	EŠDA×TAR~a		>	
1611	EZEN~a~v1×EN~a		>	
1612	EZEN~a×EN~b~v1		>	
1613	EZEN~a×(HI×1(N57).AN)		>	
1614	EZEN~a×KAB		>	
1615	EZEN~a×KI		>	
1616.1	EZEN~a×LA~e ~v1		>	
1625.1	EZEN~b×6(N57)		>	
1617	EZEN~a×NIM~b2		>	
1618	EZEN~a×NIMGIR		>	
1619	EZEN~a×RAD~a		>	
1620	EZEN~a×SAG~v1		>	

## COMPOUNDS AND THEIR COMPONENTS

#	PCSL	COMPOUND	COMPONENTS	COMPOUND-ONLY	
1621	EZEN~a×SU~a				
1622	EZEN~a×(U2~b.A)				
1623	EZEN~a×U4				
1624	EZEN~a×X				X
1627	GA~a~v1.ZATU753				
1627.1	GA~a~v4.ZATU753 ~v1				
1629	GA~c×KASKAL				
1628	GA~c×1(N14)				
1626	GA~a~v4×X				X
1633	GA2~a1×A				
1672	GA2~b×DUB~a				
1673	GA2~b×DUB~b~v2				
1634	GA2~a1×EN~b~v1				
1635	GA2~a1×GEŠTU~c3				
1636	GA2~a1×GEŠTU~c5				
1637	GA2~a1×GIR~a				
1638	GA2~a1×(GIR~a.KU6~a)				
1639	GA2~a1×GIŠ@t				
1664	GA2~a2×GU4				
1665	GA2~a2×(ŠE3~v1.GU4)				
1641	GA2~a1×HAL				

## COMPOUNDS AND THEIR COMPONENTS

#	PCSL	COMPOUND	COMPONENTS	COMPOUND-ONLY
1642	GA <sub>2</sub> ~a <sub>1</sub> ×HI			
1643	GA <sub>2</sub> ~a <sub>1</sub> ×(HI.SUHUR~v1)			SUHUR~v1
1644	GA <sub>2</sub> ~a <sub>1</sub> ×KU <sub>3</sub> ~a			
1674	GA <sub>2</sub> ~b×KU <sub>3</sub> ~a			
1645	GA <sub>2</sub> ~a <sub>1</sub> ×KU <sub>6</sub> ~a			
1646	GA <sub>2</sub> ~a <sub>1</sub> ×(KU <sub>6</sub> ~a.KU <sub>6</sub> ~a)			
1647	GA <sub>2</sub> ~a <sub>1</sub> ×LAGAB~b			
1648	GA <sub>2</sub> ~a <sub>1</sub> ×MAŠ			
1630	GA <sub>2</sub> ~a <sub>1</sub> ×1(N14)			
1631	GA <sub>2</sub> ~a <sub>1</sub> ×1(N57)			
1632	GA <sub>2</sub> ~a <sub>1</sub> ×3(N57)			
1649	GA <sub>2</sub> ~a <sub>1</sub> ×NAGA~a			
1666	GA <sub>2</sub> ~a <sub>2</sub> ×NI~a			
1667	GA <sub>2</sub> ~a <sub>2</sub> ×NI~b			
1650	GA <sub>2</sub> ~a <sub>1</sub> ×NIM~b1			
1652	GA <sub>2</sub> ~a <sub>1</sub> ×PAD~b			
1653	GA <sub>2</sub> ~a <sub>1</sub> ×PAP~a			
1655	GA <sub>2</sub> ~a <sub>1</sub> ×SU~a			
1656	GA <sub>2</sub> ~a <sub>1</sub> ×SUHUR			
1669	GA <sub>2</sub> ~a <sub>2</sub> ×SUHUR			
1657	GA <sub>2</sub> ~a <sub>1</sub> ×SUKUD			

## COMPOUNDS AND THEIR COMPONENTS

#	PCSL	COMPOUND	COMPONENTS	COMPOUND-ONLY	
1658	GA2~a1×((SUKUD+SUKUD)~a)				
1659	GA2~a1×((SUKUD+SUKUD)~b)				
1660	GA2~a1×SUMAŠ				
1654	GA2~a1×ŠA				
1668	GA2~a2×ŠE3~v1				
1661	GA2~a1×TI				
1662	GA2~a1×U4				
1663	GA2~a1×X				X
1670	GA2~a2×X				X
1671	GA2~a3×X				X
1675	GA2~b×ZATU659				
1676	GAN~c×DIN				
1688	GAN~d×GEŠTU~a~v2				
1677	GAN~c×HI				
1678	GAN~c×(HI.DIN)				
1679	GAN~c~v1×KAŠ~c				
1680	GAN~c~v1×(KUR~a.A)				
1681	GAN~c×LAGAB~b				
1682	GAN~c×NE~a				
1685	GAN~c×SIG7				
1683	GAN~c~v2×ŠE~a				GAN~c~v2



## COMPOUNDS AND THEIR COMPONENTS

#	PCSL	COMPOUND	COMPONENTS	COMPOUND-ONLY
1684	GAN~c~v2×ŠE <sub>3</sub> @t~v1			GAN~c~v2
1686	GAN~c×X			X
1687	GAN~c~v1×ZATU777~v1			
1691	GEŠTU~a×ŠE~a@t~v1			ŠE~a@t~v1
1699	GI~v1×GIŠ@t			
1692	GI~v1×1(N14)			
1695	GI~v1&GI~v1&GI~v1			
1700	GI×KU~b1			
1701	GI~v1×LAGAB~a			
1693	GI×1(N58@t)			
1702	GI×NAM <sub>2</sub>			
1704	GI×SIG <sub>2</sub> ~d1			
1703	GI×ŠE <sub>3</sub> ~v1			
1705	GI×X			X
1694	GI&GI			
1696	((GI&GI)×GIŠ@t			
1697	((GI&GI)×ŠE <sub>3</sub> ~v1			
1698	((GI&GI)×X			X
1706	GI <sub>4</sub> ~a×A			
1707	GI <sub>4</sub> ~a&GI <sub>4</sub> ~a			
1708	GI <sub>4</sub> ~b&GI <sub>4</sub> ~b			

## COMPOUNDS AND THEIR COMPONENTS

#	PCSL	COMPOUND	COMPONENTS	COMPOUND-ONLY
1710	GIR~b~v1.GIR~b~v1			
1709	GIR~a.KU6~a			
1712	GIR3~c×KAR2~b			
1711	GIR3~a×ŠE~b			
1713	GIR3~c×ŠE3~v1			
1719	GIŠ.TE			
1714	GIŠ×(DIN.DIN))~a			
1715	GIŠ×(DIN.DIN))~b			
1716	GIŠ×(DIN.DIN))~c			
1717	GIŠ×ŠU2~a			
1718	GIŠ×ŠU2~b			
1721	GIŠ3~a&GIŠ3~a			
1722	GU4.ZATU755~b			
1724	GUG2~v1×SILA3~a			
1725	GUG2~v1×TUR~v1			
1726	GUKKAL~a.HI@g~a			
1727	GURUŠ~a×2(N14)			
1728	GURUŠ~b×2(N14)			
1729	GURUŠ~c×2(N14)			GURUŠ~c
1730	HAŠHUR×MA			
1738	HI.SUHUR			

## COMPOUNDS AND THEIR COMPONENTS

#	PCSL	COMPOUND	COMPONENTS	COMPOUND-ONLY
1738.1	[HI.SUHUR~v1]			SUHUR~v1
1738.2	[HI.SUHUR~v2]			SUHUR~v2
1736	[HI×LAGAB~a]			
1732	[HI×1(N57)]			
1733	[(HI×1(N57)).(HI×1(N57))]			
1734	[HI×1(N57@t)]			1(N57@t)
1735	[HI×1(N58)]			
1737	[HI×ŠE3@t~v1]			
1739	[HI×ZATU707~a]			
1740	[IR~a.GA2~a1]			
1742.1	[KA~a~v1.ŠE~a]			KA~a~v1
1742	[KA~a~v2.ŠE~a@t]			KA~a~v2
1741	[KA~a×SAR~a]			
1743	[KA2~d×LAM~b~v2]			
1744	[KAB×1(N58)]			
1745	[KAK~a.GA2~a1]			
1746	[KAŠ~b~v1×ŠE~a@t~v1]			ŠE~a@t~v1
1747	[KI@n×DUB~a]			
1748	[KU6~a.1(N02)]			
1749	[KU6~a+GIŠ]			
1750	[KU6~a+KU6~a]			

## COMPOUNDS AND THEIR COMPONENTS

#	PCSL	COMPOUND	COMPONENTS	COMPOUND-ONLY
1751	[KUR~a.Ez~a]			
1753	[KUR~b.Ez~a]			
1752	[KUR~a.NUNUZ~a1]			
1755	[LAGAB~a×BA]			
1777	[LAGAB~b×BANŠUR~a]			
1756	[LAGAB~a×BIR3~b]			
1757	[LAGAB~a×DU6~a~v1]			
1778	[LAGAB~b×GA'AR~a1]			
1779	[LAGAB~b×HI]			
1758	[LAGAB~a×KAK~a]			
1759	[LAGAB~a×KU6~a]			
1760	[LAGAB~a×(KU6~a+KU6~a)]			
1780	[LAGAB~b×KUR~e]			KUR~e
1761	[LAGAB~a×KUŠU2~a@t]			KUŠU2~a@t
1762	[LAGAB~a×LAGAB~a]			
1763	[LAGAB~a×ME~a]			
1754	[LAGAB~a×2(N14)]			
1764	[LAGAB~a×NUN~b]			
1765	[LAGAB~a×PA~a]			
1782	[LAGAB~b×PA~a]			
1768	[LAGAB~a×SI~v1]			

## COMPOUNDS AND THEIR COMPONENTS

#	PCSL	COMPOUND	COMPONENTS	COMPOUND-ONLY
1769	[LAGAB~a×SIG7~v1]			
1770	[LAGAB~a×SU~a]			
1785	[LAGAB~b×SUH3]			
1766	[LAGAB~a×ŠA]			
1767	[LAGAB~a×ŠITA~a1]			
1771	[LAGAB~a×TI]			
1772	[LAGAB~a×U4]			
1786	[LAGAB~b×U4]			
1773	[LAGAB~a×UB]			
1774	[LAGAB~a×X]			X
1775	[LAGAB~a×ZATU753]			
1781	[LAGAB~b&LAGAB~b]			
1788	[LAL2~a×EZEN~a~v1]			
1789	[LAL2~a×NIM~b2]			
1790	[LU2×GEŠTU~c3]			
1793	[MA~v1×A]			
1792	[MA~v1×2(N57)]			
1795	[MA~v1×X]			X
1794	[MA×MA]			
1791	[MA×1(N58)]			
1796	[MAH~a×AB2]			

## COMPOUNDS AND THEIR COMPONENTS

#	PCSL	COMPOUND	COMPONENTS	COMPOUND-ONLY		
1797	MAH~a×GUKKAL~a					
1798	MAH~a×KU6~a					
1809	MAH~b×KU6~a					
1799	MAH~a×MAŠ					
1810	MAH~b×MAŠ					
1800	MAH~a×NA~a					
1811	MAH~b×NA~a					
1812	MAH~b×SAL					
1801	MAH~a×(SILA3~a×UMBIN~a)					
1802	MAH~a×TUG2~a					
1803	MAH~a×UD5~a~v1					
1804	MAH~a×UDU~a					
1805	MAH~a×UR~a					
1806	MAH~a×UTUA~a					
1807	MAH~a×X				X	
1808	MAH~a×ZATU659					
1813	MAR~b×(LAGAB~b.ŠE3~v1)					
1814	MAR~b×ŠE~a					
1815	MAR~b×X				X	
1821	MUŠEN.UR3~b2					
1817	MUŠEN×1(N57)					

## COMPOUNDS AND THEIR COMPONENTS

#	PCSL	COMPOUND	COMPONENTS	COMPOUND-ONLY
1818	[MUŠEN×2(N57)]			
1819	[MUŠEN×3(N57)]			
1822	[MUŠEN×X]			X
1823	[NAGA~a×TAK <sub>4</sub> ~a]			
1824	[NAM <sub>2</sub> ×1(N01)]			
1826	[NI~a.RU~v1]			
1825	[NI~a×1(N57)]			
1827	[NI~b×4(N57)]			
1828	[NI~b×X]			X
1833	[NINDA <sub>2</sub> ×AN]			
1834	[NINDA <sub>2</sub> ×(AN.HI)]			
1836	[NINDA <sub>2</sub> ×(AN.X)]			X
1837	[NINDA <sub>2</sub> ×BA]			
1838	[NINDA <sub>2</sub> ×EZEN~b]			
1839	[NINDA <sub>2</sub> ×GA'AR~a1]			
1840	[NINDA <sub>2</sub> ×GAR]			
1841	[NINDA <sub>2</sub> ×GIŠ]			
1843	[NINDA <sub>2</sub> ×GU <sub>4</sub> ]			
1835	[NINDA <sub>2</sub> ×(AN.ME~a)]			
1844.1	[NINDA <sub>2</sub> ×(HI~a1.AN.ME~a)]			HI~a1
1844	[NINDA <sub>2</sub> ×(HI~a1.ME~a)]			HI~a1

## COMPOUNDS AND THEIR COMPONENTS

#	PCSL	COMPOUND	COMPONENTS	COMPOUND-ONLY
1846	[NINDA <sub>2</sub> ×(HI.AN.ME~a)]			
1847	[NINDA <sub>2</sub> ×(HI.ME~a)]			
1849	[NINDA <sub>2</sub> ×(1(N06).HI@g~a)]			
1845	[NINDA <sub>2</sub> ×HI]			
1848	[NINDA <sub>2</sub> ×(HI.X)]			X
1850	[NINDA <sub>2</sub> ×KAŠ~b]			
1851	[NINDA <sub>2</sub> ×MAR~b]			
1829	[NINDA <sub>2</sub> ×1(N01)]			
1832	[NINDA <sub>2</sub> ×2(N01)]			
1831	[NINDA <sub>2</sub> ×1(N08)]			
1852	[NINDA <sub>2</sub> ×NE~a~v1]			
1853	[NINDA <sub>2</sub> ×ŠIM~a~v2]			
1854	[NINDA <sub>2</sub> ×U <sub>4</sub> ]			
1855	[NINDA <sub>2</sub> ×(U <sub>4</sub> .X)]			X
1856	[NINDA <sub>2</sub> ×(UDU~a×TAR~a)]			
1857	[NINDA <sub>2</sub> ×(UDU~a×TAR~b)]			TAR~b
1858	[NINDA <sub>2</sub> ×X]			X
1860	[NINDA <sub>2</sub> ×(ZATU659×1(N01))]			
1861	[NIR~a×AN]			
1862	[NU <sub>11</sub> &NU <sub>11</sub> ]			
1863	[NUN~a+A]			



## COMPOUNDS AND THEIR COMPONENTS

#	PCSL	COMPOUND	COMPONENTS	COMPOUND-ONLY
1864	NUN~a+EN~a~v2			
1865	NUN~a+EN~b~v1			
1866	NUN~a+EN~d			EN~d
1868	NUN~b+EN~a			
1867	NUN~a+NAM2			
1869	PIRIG~b1×UR2			
1875	SAG~v1×MA~v1			
1870	SAG~v1×1(N14)			
1873	SAG~v1×GEŠTU~c			GEŠTU~c
1872.1	SAG~v2×GEŠTU~b			
1872	SAG@n×GEŠTU~b			
1871	SAG×GEŠTU~a			
1874	SAG~v1×LAM~c			
1878	SAL.KUR~a			
1879	SAL.LAM~b			
1880	SAL.ŠU2~b			
1877	SAL×1(N58)			
1881	SAR~a×ŠE~a			
1909	SI×GU4			
1910	SI×ŠE3~v1			
1911	SIG×1(N57)			

## COMPOUNDS AND THEIR COMPONENTS

#	PCSL	COMPOUND	COMPONENTS	COMPOUND-ONLY
1912	SIG <sub>2</sub> ~b×1(N14)			
1913	SIG <sub>2</sub> ~b&SIG <sub>2</sub> ~b			
1916	SILA <sub>3</sub> ~a×A			
1917	SILA <sub>3</sub> ~a×AMAR			
1918	SILA <sub>3</sub> ~a~v1×DUG~a			SILA <sub>3</sub> ~a~v1
1918.1	SILA <sub>3</sub> ~a×DUG~a ~v1			
1920	SILA <sub>3</sub> ~a×GA~a~v3			
1921	SILA <sub>3</sub> ~a×GARA <sub>2</sub> ~a			
1922	SILA <sub>3</sub> ~a×GEŠTU~a~v2			
1923	SILA <sub>3</sub> ~a×GEŠTU~c3			
1924	SILA <sub>3</sub> ~a×GEŠTU~c5			
1951	SILA <sub>3</sub> ~b×GUG <sub>2</sub>			
1925	SILA <sub>3</sub> ~a×HAŠHUR			
1927	SILA <sub>3</sub> ~a×HI@g~a			
1926	SILA <sub>3</sub> ~a×HI			
1928	SILA <sub>3</sub> ~a×IB~a			
1929	SILA <sub>3</sub> ~a×KAŠ~a			
1930	SILA <sub>3</sub> ~a×KAŠ~c			
1931	SILA <sub>3</sub> ~a×KAŠ~d			
1932	SILA <sub>3</sub> ~a×KU <sub>6</sub> ~a			
1933	SILA <sub>3</sub> ~a×KUR~a			

## COMPOUNDS AND THEIR COMPONENTS

#	PCSL	COMPOUND	COMPONENTS	COMPOUND-ONLY
1934	SILA3~a×MA~v1			
1935	SILA3~a×MAŠ			
1914	SILA3~a×1(N57)			
1915	SILA3~a×1(N58)			
1936	SILA3~a×NAGA~a			
1952	SILA3~b×NAGA~b			
1937	SILA3~a×NI~a			
1954	SILA3~b×NI~b			
1953	SILA3~c×NI~a			
1957	SILA3~d×NI~a			SILA3~d
1938	SILA3~a×NUN~b			
1943	SILA3~a×SUHUR			
1944	SILA3~a×SUM~a~v1			
1945	SILA3~a×SUM~b			
1940	SILA3~a×ŠE~a@t			
1939	SILA3~a×ŠE~a			
1941	SILA3~a×ŠU			
1955	SILA3~c×ŠU			
1942	SILA3~a×ŠU2~b			
1946	SILA3~a×X			X
1947	SILA3~a×ZATU629~v1			

## COMPOUNDS AND THEIR COMPONENTS

#	PCSL	COMPOUND	COMPONENTS	COMPOUND-ONLY
1948	SILA3~a×ZATU646			
1949	SILA3~a×(ZATU659.TU~c~v1)			TU~c~v1
1956	SILA3~c×ZATU687			
1958	SU~a×1(N58)			
1959	(SUKUD+SUKUD)~a			
1960	(SUKUD+SUKUD)~b			
1962	(SUKUD+SUKUD)~d			
1882	(ŠA×HI@g~a)~a			
1883	(ŠA×HI@g~a)~b			
1884	ŠE~a.KIN2~c			
1885	ŠE~a.NAM2			
1885.1	ŠE~a.NAM2 ~v1			
1886	ŠE~a&ŠE~a			
1887	ŠEN~d×A			
1895	ŠITA@g~b3×1(N04)			
1896	ŠITA@g~b3×1(N06)			
1893	ŠITA~b1@g×HI@g~a			ŠITA~b2@g
1889	ŠITA~a1×KAK~a			
1888	ŠITA~a1×1(N06)			
1894	ŠITA~b3×NAM2			
1890	ŠITA~a1×ŠU			

## COMPOUNDS AND THEIR COMPONENTS

#	PCSL	COMPOUND	COMPONENTS	COMPOUND-ONLY
1891	ŠITA~a1×ŠU2~b			
1892	ŠITA~a1×UDU~a			
1897	ŠU×1(N58)			
1898	ŠU&ŠU			
1902	ŠU2~b.E2~a			
1903	ŠU2~b.E2~b			
1904	ŠU2~a.EN~a~v1			
1904.1	ŠU2~a.EN~a~v2			
1905	ŠU2~a.EN~b~v1			
1908	ŠU2~a.URI3~a~v1			
1901	ŠU2~a.AN			
1907	ŠU2~a.(HI×1(N57))&(HI×1(N57))			
1906	ŠU2~b.GIŠ			
1899	ŠU2~b.1(N02)			
1900	ŠU2~b.2(N57)			
1963	TA~d×MAŠ			
1964	TUG2~a.(BAD&BAD)			
1965	TUR~v1×X			X
1970	U4.1(N08)			
1986	U4.2(N08)			
1993	U4.3(N08)			

## COMPOUNDS AND THEIR COMPONENTS

#	PCSL	COMPOUND	COMPONENTS	COMPOUND-ONLY
1999	$[U_{4,4}(N08)\sim v1]$		$\triangleright$	
2003	$[U_{4,5}(N08)]$		$\triangleright$	
2006	$[U_{4,6}(N08)]$		$\triangleright$	
2008	$[U_{4,7}(N08)]$		$\triangleright$	
2012	$[U_{4,8}(N08)]$		$\triangleright$	
1971	$[U_{4,1}(N14)]$	$\triangleright \bullet$	$\triangleright$ $\bullet$	
1974	$[U_{4,1}(N14).3(N08))]$	$\triangleright \bullet \text{---} \text{---}$	$\triangleright$ $\bullet$	
1976	$[U_{4,1}(N14).4(N08))]$	$\triangleright \bullet \text{---} \text{---}$	$\triangleright$ $\bullet$	
1977	$[U_{4,1}(N14).5(N08))]$	$\triangleright \bullet \text{---} \text{---}$	$\triangleright$ $\bullet$	
1979	$[U_{4,1}(N14).8(N08))]$	$\triangleright \bullet \text{---} \text{---}$	$\triangleright$ $\bullet$	
1987	$[U_{4,2}(N14)]$	$\triangleright \bullet \bullet$	$\triangleright$ $\bullet \bullet$	
2016	$[U_{4,\check{S}U_2\sim b}]$	$\triangleright \times$	$\triangleright$ $\times$	
1967	$[U_{4\times 1}(N01)]$	$\triangleright$	$\triangleright$	
1968	$[U_{4\times 1}(N01).5(N08)]$	$\triangleright \text{---} \text{---}$	$\triangleright$	
1982	$[U_{4\times 2}(N01)]$	$\Phi$	$\triangleright$	
1983	$[U_{4\times 2}(N01).2(N14)]$	$\Phi \bullet$	$\triangleright$	$\bullet$
1984	$[U_{4\times 2}(N01).(2(N14).1(N08))]$	$\Phi \text{---} \text{---}$	$\triangleright$	$\bullet$ $\text{D}$
1985	$[U_{4\times 2}(N01).X]$	$\Phi$	$\triangleright$	$X$
1991	$[U_{4\times 3}(N01)]$	$\Phi$	$\triangleright$	
1992	$[U_{4\times 3}(N01).3(N08)\sim v1]$	$\Phi \text{---} \text{---}$	$\triangleright$	
1997	$[U_{4\times 4}(N01)]$	$\Phi$	$\triangleright$	

## COMPOUNDS AND THEIR COMPONENTS










































#	PCSL	COMPOUND	COMPONENTS	COMPOUND-ONLY
1998	$ U_4 \times 4(N_{01}).2(N_{14}) $		$\rhd \quad \mathbb{B} \quad \bullet$	
2001	$ U_4 \times 5(N_{01}) $		$\rhd \quad \mathbb{B}$	
2002	$ U_4 \times 5(N_{01}).1(N_{14}) $		$\rhd \quad \mathbb{B} \quad \bullet$	
2005	$ U_4 \times 6(N_{01}) $		$\rhd \quad \mathbb{B}$	
2010	$ U_4 \times 8(N_{01}) $		$\rhd \quad \mathbb{B}$	
2011	$ U_4 \times 8(N_{01}).X $		$\rhd \quad \mathbb{B}$	X
2015	$ U_4 \times N(N_{01}) $		$\rhd$	N(N01)
1972	$ U_4 \times 1(N_{14}) $		$\rhd \quad \bullet$	
1973	$ U_4 \times (1(N_{14}).2(N_{01})) $		$\rhd \quad \bullet \quad \mathbb{B}$	
1975	$ U_4 \times (1(N_{14}).4(N_{01})) $		$\rhd \quad \bullet \quad \mathbb{B}$	
1978	$ U_4 \times (1(N_{14}).8(N_{01})) $		$\rhd \quad \bullet \quad \mathbb{B}$	
1988	$ U_4 \times 2(N_{14}) $		$\rhd \quad \bullet$	
1989	$ U_4 \times (2(N_{14}).4(N_{01})) $		$\rhd \quad \bullet \quad \mathbb{B}$	
1994	$ U_4 \times (3(N_{14}).2(N_{01})) $		$\rhd \quad \bullet \quad \mathbb{B}$	
1995	$ U_4 \times (3(N_{14}).7(N_{01})) $		$\rhd \quad \bullet \quad \mathbb{B}$	
1980	$ U_4 \times 1(N_{57}) $	$\rhd$	$\rhd \quad -$	
1990	$ U_4 \times 2(N_{57}) $	$\rhd$	$\rhd \quad =$	
1996	$ U_4 \times 3(N_{57}) $	$\rhd$	$\rhd \quad \equiv$	
2000	$ U_4 \times 4(N_{57}) $	$\rhd$	$\rhd \quad \equiv$	
2004	$ U_4 \times 5(N_{57}) $	$\rhd$	$\rhd \quad \equiv$	
2007	$ U_4 \times 6(N_{57}) $	$\rhd$	$\rhd \quad \equiv$	

## COMPOUNDS AND THEIR COMPONENTS

#	PCSL	COMPOUND	COMPONENTS	COMPOUND-ONLY
2009	$ U_4 \times 7(N57) $		$\circ \equiv \equiv$	
2013	$ U_4 \times 8(N57) $		$\circ \equiv \equiv \equiv$	
2014	$ U_4 \times 10(N57) $		$\circ \equiv \equiv \equiv \equiv$	
1981	$ U_4 \times 1(N58@t) $		$\circ \setminus$	
2017	$ U_4 \times X $		$\circ$	X
2018	$ U_4 \times (X+2(N01)) $		$\circ$	
2019	$ U_8 \times TAR \sim b $		$\oplus$	TAR~b
2020	$ UDU \sim a \times TAR \sim a $		$\oplus \quad  $	
2021	$ UDU \sim a \times TAR \sim b $		$\oplus$	TAR~b
2025	$ UKKIN \sim b \times DIN $		$\oplus \quad \triangleright$	
2026	$ UKKIN \sim b \times (DIN.1(N01)) $		$\oplus \quad \triangleright \quad \triangleright$	
2028	$ UKKIN \sim b \times HI@g \sim a $		$\oplus \quad \boxtimes$	
2022	$ UKKIN \sim b \times 2(N01) $		$\oplus \quad \mathbb{B}$	
2023	$ UKKIN \sim b \times 3(N01) $		$\oplus \quad \mathbb{B}^2$	
2024	$ UKKIN \sim b \times 5(N01) $		$\oplus \quad \mathbb{B}^5$	
2029	$ UKKIN \sim b \times NI \sim a $		$\oplus \quad \triangleright$	
2030	$ UKKIN \sim b \times X $		$\oplus$	X
2031	$ UNUG \sim a \sim v1 \times A@t $		$\triangleright \quad \approx$	
2032	$ UR \sim a \times KAR_2 \sim b $		$\triangleright \quad \mathbb{B}$	
2033	$ UR_2 \times 1(N57) $		$\triangleright \quad -$	
2034	$ UR_2 \times TAR \sim c $		$\triangleright$	TAR~c



## COMPOUNDS AND THEIR COMPONENTS

#	PCSL	COMPOUND	COMPONENTS	COMPOUND-ONLY
2035	[UR3~b1×MAŠ]		 +	
2040	[URU~a1×AMAR~v2]			
2041	[URU~a1×GU4]			
2042	[URU~a1×HI@g~a]			
2047	[URU~a3×KALAM~a]			URU~a3
2037	[URU~a1×1(N57)]			
2038	[URU~a1×2(N57)]			
2046	[URU~a2×1(N58)]			
2043	[URU~a1×NIMGIR]			
2044	[URU~a1×U4]			
2045	[URU~a1×X]			X
2049	[UŠ~b~v2×TAR~c]			UŠ~b~v2 TAR~c
2049.1	[UŠ~b×TAR~c]			TAR~c
2048	[UŠ~a&UŠ~a]			
2051	[UŠ~b&UŠ~b]			
1487	[X(N57).GAR]			X(N57)
2052	[ZATU644~a×1(N14)]			
2053	[ZATU651×AN]			
2054	[ZATU651×EN~a~v2]			
2055	[ZATU651×GAR]			
2056	[ZATU651×MA]			

## COMPOUNDS AND THEIR COMPONENTS

#	PCSL	COMPOUND	COMPONENTS	COMPOUND-ONLY
2057	ZATU651×NUN~a			
2058	ZATU651~v2×ŠE~a			
2059	ZATU651×X			X
2060	ZATU651×ZAR~c			
2061	ZATU659×1(N01)			
2062	ZATU659×1(N14)			
2063	ZATU659×1(N58@t)			
2064	ZATU662×1(N14)			
2064.1	ZATU662~v1×1(N14)			
2064.2	ZATU662~v2×1(N14)			
2066	ZATU711~v1×X			X
2065	ZATU711~v1×HI@g~a			
2068	ZATU714.RU			
2067	ZATU714×HI@g~a			
2069	ZATU714×X			X
2087	ZATU737~v2×X			X
2080	ZATU737~v3×SAL			ZATU737~v3
2085	ZATU737~v3×U4			ZATU737~v3
2070	ZATU737×AB~a			
2071	ZATU737×BU~a			
2072	ZATU737×BUR~a			

## COMPOUNDS AND THEIR COMPONENTS

#	PCSL	COMPOUND	COMPONENTS	COMPOUND-ONLY
2073	ZATU737×DI			
2073.1	ZATU737~v2×DI			
2074	ZATU737×E~a			
2076	ZATU737~v1×EN~b~v1			
2075	ZATU737×EN~a~v2			
2077	ZATU737×GAR			
2077.1	ZATU737~v1×GAR			
2078	ZATU737×NI~a@g			
2079	ZATU737×NIMGIR			
2084	ZATU737×SU~a			
2081	ZATU737×ŠE~a			
2082	ZATU737×ŠITA~a1			
2086	ZATU737×UNUG~a~v1			
2092	ZATU759@t×X			ZATU759@t X
2088	ZATU759×KU6~a			
2090	ZATU759×KU6~d			
2089	ZATU759×(KU6~a+KU6~a)			
2091	ZATU759×X			X
2094	ZATU762~b×AB~a			
2093	ZATU762~a×NIM~a			
1456	1(N02).RU			

## COMPOUNDS AND THEIR COMPONENTS

#	PCSL	COMPOUND	COMPONENTS	COMPOUND-ONLY
1457	1(N08@f)×1(N57)			
1458	1(N34)×1(N58)			
1460	1(N57).AB <sub>2</sub>			
1461	1(N57).ŠAH <sub>2</sub> ~a			
1462	1(N57).ŠUBUR			
1462.1	1(N57).ŠUBUR~v1			ŠUBUR~v1
1465	2(N57).AB <sub>2</sub>			
1466	2(N57).KU <sub>6</sub> ~a			
1468	2(N57).SU~a			
1467	2(N57).ŠUBUR			
1469	3(N57).AMAR			
1470	3(N57).BARA <sub>3</sub>			
1471	3(N57).E <sub>2</sub> ~b			
1472	3(N57).GAR			
1473	3(N57).NUNUZ~a1			
1474	3(N57).NUNUZ~c			
1475	3(N57).PIRIG~b1			
1476	3(N57).ŠUBUR			
1478	4(N57).AMAR			
1479	4(N57).GAR			
1480	4(N57).KU <sub>3</sub> ~a			

COMPOUNDS AND THEIR COMPONENTS				
#	PCSL	COMPOUND	COMPONENTS	COMPOUND-ONLY
1481	4(N57).NI~b			
1482	5(N57).GAR			
1483	5(N57).KU3~a			
1484	6(N57).GAR			
1485	6(N57).KU3~a			
1486	8(N57).NI~b			
1463	1(N58).BAD			
1464	1(N58)~a.BAD~a			BAD~a
1464.1	1(N58)~a.BAD			
1477	3(N58).UR3~b1			

## Appendix 2: Notes on the Data Table

The Data accompanying this submission, ad-L23-190.tab, is a tab-separated table with the following columns:

- serial—the AP23 serial number
- char—the Unicode character
- cdli—the CDLI transliteration from AP23
- ap23-name—the Unicode name from AP23
- action—the action to take for this item, see Section 4 above.
- comment—some action types have a justifying or explanatory comment; otherwise the rationale is in the body of the report
- pcsl—the PCSL transliteration
- new-name—the PCSL Unicode name, if it is different from the AP23 Unicode name
- new-code—the new Unicode code, for newglyph and add types
- sort—the PCSL sort code
- components—the components for compound entries; compound-only items are prefixed with a double hyphen, '--' so this column can also be used to create compound-only references

A sample entry for each action type is given in the following table:

serial	char	cdli	ap23-name	action	comment	pcsl	new-name	new-code	sort	components
352	𐎶𐎵	A@g	A GUNU	remove		A@g			11	
384.1	✱	AN	AN VARIANT 1	delete	Duplicates 384 AN ✱	AN~v1			103	
621	𐎶𐎵𐎶𐎵	GIZZAL~x	GIZZAL-X	rename		GIZZAL~v	PROTO-CUNEIFORM SIGN GIZZAL-V		1555	
678	𐎶𐎵𐎶𐎵	ISZ~b	ISH-B	newglyph	NEW GLYPH= 𐎶𐎵	IŠ~b		12876	1696	
3000	𐎶𐎵𐎶𐎵	DUG~b×U <sup>7</sup> 𐎶𐎵	DUG-B TIMES U2-B	add	Add from VAT 17858+ = P000015 o ii 9 (Uruk)	DUG~b×U <sup>7</sup> 𐎶𐎵		FFFFC	981	DUG~b U <sup>7</sup> 𐎶𐎵