Proposal to encode the Ol Onal script

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Jan Kučera, Charles University
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This is a proposal to encode a new script in the Universal Character Set. The Ol Onal script is used in parts of Odisha, West Bengal and Jharkhand in India to write the Bhumij language.

Document history:

2022-07-16 Added script-specific abbreviation sign and dandas script extensions, fixed line breaking data for signs, changed all letters from Lu to Lo category, assigned codepoints and added metadata and ISO form.

2022-07-07 Added script-specific vowels, comparison to Ol Chiki and Nag Mundari signs, space usage, proposed ISO 639 code and included evidence by the script author.

2022-04-20 Original proposal

1 BACKGROUND

The Ol Onal script (Ol Onal: ଓଲ ଅନଲ; Odia: ଓଲ ଅନଲ; Bengali: অল অনল; Devanagari: ओल अनल) is an alphabetical script written from left to right. It was developed for writing Bhumij (Ol Onal: ଭୂ ମିଜ୍; Odia: ୁୁ ମିଜ୍; Bengali: ভূমি), an Austroasiatic (Munda) language spoken primarily in the states of Jharkhand, Odisha, West Bengal and Assam (Census of India reported 27,506 respondents with mother tongue classified under Bhumij in 2011). Bhumij has been written in the Odia, Bengali, Devanagari and Latin scripts, as well as the script proposed in this document, Ol Onal, which was invented by Mahendra Nath Sardar from Mahadevdih (born 1956), and adopted it as an official script for the Bhumij language. In its initial stage, Ol Onal was a casing alphabetical script – the capital letters are known as Ol Onal, while the small letters are known as Galang Onal (these can be seen in Figure 3 and Figure 5).

However, all the teaching and printed materials in Bhumij were produced using Ol Onal (i.e., capital letters). Galang Onal is not used anymore and it is not proposed for encoding in this proposal.

The Bhumij language is an Austroasiatic language of North Munda group [1, p. 324]. Mundari and Bhumij are closely related and mutually intelligible, but with considerable differences [2, p. 4]. Some scholars consider Bhumij to be a dialect of Mundari, while others treat it as a separate language [3, p. 195]. Odisha recognized Bhumij as a separate language in 2010. Some of the Bhumij speakers call themselves ‘Bhumij Munda’ people [4, p. 14]. The word Bhumij means “one who is born from the soil” and it is derived from ভূমি bhūmi (a land or soil) [5, p. 173].

1 For an alternative etymology of Bhumij, see [6, p. 2].
Information on Ol Onal in English is limited, most of the materials are written in Bhumij, Hindi, Bengali or Odia. A number of different organizations and individuals have published primers for the script, as well as anthologies of stories and poems. There has been a considerable surge of interest in the script in recent years.

1.1 EDUCATION

In West Bengal, there are 26 Bhumij schools run by West Bengal Adibasi Bhumij Language Development Board. In Odisha, there are 9 Bhumij learning schools run by Adim Bhumij Samaj (estd in 1981). In Jharkhand, there are 10 schools run by Ayoan Akhra (estd in 1977-78). Adibashi Saudo Assam runs various workshops all over the Assam.

All India Bhumij Education, Social Cultural & Council, a national level council organizes teaching Ol Onal in schools and runs workshops throughout nearly all Bhumij inhabited districts of Odisha, West Bengal, Assam and Jharkhand.

The Tata Tisco foundation sponsors various Ol Onal learning centers: Shahid Sundar Nagar Singh Ol Onal Akhra, Shahid Raghunath Singh Ol Onal Akhra, Shahid Pratap Singh Bhumij Bhasha Bhakul, etc. The first Bhumij-Ol Onal school opened in Rouanshi, Mayurbhanj, Odisha in 1998. Some of the Bhumij elementary schools in Odisha are run by the state government.

1.2 SCRIPT NAME

In some sources, the script name is spelled as अल अनल (al anal) in Devanagari and ଅଲ ଅନଲ (al anal) in Odia, with Ol Onal used in the Latin script [6, 7]. In other sources, the script name is spelled as ओल ओनोल (ol onol) in Devanagari as well as Ol Onol in the Latin script [8, 9]. In this document, the name Ol Onal is proposed based on its popularity amongst users online. The term Ol Onal is a combination of two words, where ol means to draw and onal means a shape or diagram.

1.3 USAGE

The Ol Onal script is currently used in writing and print for various purposes:

- **Educational Materials:** Primary educational materials for teaching Bhumij and Ol Onal are published by various Bhumij associations and individuals. Example of primers:
  - Barnā Hisir (Bhumij) बर्नाहिसिर (बर्नाहिसिर) by Yudhisthir Sardar (2019)
  - Adim Bhumij Bhāṣā आदिम भूमिज भाषा by Luskū Sāmād (2018)
  - Ol Cheden Tonal ओल चेंडन टोनल by Anil Munda (2014)
  - Aabu Podao Tonal आबू पोडाउ टोनल by Anil Munda (2014)
  - Āṛāṅg ceden tōnōl आरांग चेंडन तोनल by Anil Munda (2001)

- **Magazine:** Ārsi आरसि is a Hindi-Bhumij bilingual quarterly magazine published by Bhumij Bhāṣā Sāhitya Vikās Parisad. Sometimes it carries Ol Onal articles.

- **Ritual Works:** Ol Onal used in various religious or ritual purposes of Bhumij community (Figure 7).

- **Ephemera:** various Bhumij associations produce and distribute Ol Onal banners and pamphlets.

- **Other usage:** Ol Onal used in inscriptions, wedding invitation cards, wall paintings, etc.

1.4 FONTS

To date five fonts were made for Ol Onal, all designed by Anil Kumar Munda of Mayurbhanj district, Odisha in 2013-2014 (see Figure 30 for comparison). They are based a simple non-Unicode mapping of Ol Onal characters to the basic Latin block, without any typographical features. The font used in this proposal is “Ol Onal Krishna”.
2 Script Overview

Ol Onal is an alphabetical script written from left to right. There are no attested conjuncts or ligatures. There is minimal handwritten evidence, all published material is using one of the fonts from 2014. As such, the script is proposed to be encoded as a simple alphabet, without any complex shaping requirements.

2.1 Letters

Similar to Nag Mundari and Ol Chiki, Ol Onal is traditionally presented in a tabular form where the first column are vowels, and each row contains letters whose name start with the respective vowel (see Table 1).

<p>| | | | | | | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>O</td>
<td>OM</td>
<td>ONG</td>
<td>ORR</td>
<td>OO</td>
<td>OY</td>
<td></td>
</tr>
<tr>
<td>/a/</td>
<td>/m/</td>
<td>/ŋ/</td>
<td>/Ɂ/</td>
<td>/ʊ/</td>
<td>/j/</td>
<td></td>
</tr>
<tr>
<td>A</td>
<td>AD</td>
<td>AB</td>
<td>AH</td>
<td>AL</td>
<td>AW</td>
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</tr>
<tr>
<td>/a/</td>
<td>/d/</td>
<td>/b/</td>
<td>/h/</td>
<td>/l/</td>
<td>/w/</td>
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<td>I</td>
<td>IT</td>
<td>IP</td>
<td>ITT</td>
<td>ID</td>
<td>IN</td>
<td></td>
</tr>
<tr>
<td>/i/</td>
<td>/t̪/</td>
<td>/p/</td>
<td>/Ɂ/</td>
<td>/Ɂ/</td>
<td>/n/</td>
<td></td>
</tr>
<tr>
<td>U</td>
<td>UK</td>
<td>UDD</td>
<td>UJ</td>
<td>UNY</td>
<td>UR</td>
<td></td>
</tr>
<tr>
<td>/u/</td>
<td>/k/</td>
<td>/d/</td>
<td>/Ɂ/</td>
<td>/Ɂ/</td>
<td>/r/</td>
<td></td>
</tr>
<tr>
<td>E</td>
<td>ES</td>
<td>EH</td>
<td>EC</td>
<td>ENN</td>
<td>EG</td>
<td></td>
</tr>
<tr>
<td>/e/</td>
<td>/s/</td>
<td>/h/</td>
<td>/ʧ/</td>
<td>/Ɂ/</td>
<td>/g/</td>
<td></td>
</tr>
</tbody>
</table>

Table 1. Overview of Ol Onal letters with their names and pronunciation.

Among these, we find

- Vowels: O O, O O, O A, O I, O U, O E,
- Retroflex: ORR, ITT, UDD,
- Nasals: OM, ONG, IN, UNY, ENN,
- Ejective: AD,
- Dentals: IT, ID,
- Aspirated/Fricative: EH.

2.2 Signs

The script further makes use of 3 signs called tidah ɗɗɗɗɗ, for nasalization, prolongation and glottallization (see Table 2 and below).

<p>| | | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>MU</td>
<td>IKIR</td>
<td>HODDOND</td>
</tr>
<tr>
<td>/s/</td>
<td>/ɔ/)</td>
<td>/Ɂ/</td>
</tr>
</tbody>
</table>

Table 2. Overview of Ol Onal signs with their names and function.
The MU sign is equivalent to NAG MUNDARI SIGN MUHOR and OL CHIKI MU TTUDDAG. The IKIR sign is graphically corresponding to NAG MUNDARI SIGN IKIR and OL CHIKI GAAHLA TTUDDAAG, however, these are all different in function. The Ol Chiki signs are letter modifiers and clearly spacing in character, while the Nag Mundari signs are non-spacing marks.

In Ol Onal the signs are non-spacing. Due to the non-Unicode font limitations, the marks tend to be on the right side of characters in printed text, however, the handwritten evidence suggests that was not the original intention. They are therefore proposed as above and below non-spacing marks.

Both MU and IKIR signs can theoretically co-occur in Ol Onal, with mark-like semantics for collation:

\[ A < A + MU < A + IKIR < A + IKIR + MU = A + MU + IKIR. \]

### 2.2.1 MU sign ◌ (nasalization)

The sign mu (◌̇) is the nasalization sign of Ol Onal, akin to anunāsika in Devanagari. It is a dot positioned above vowels.

While written evidence places the sign on top of base characters, existing fonts always put the dot in the top right position.

Examples of use:

- ◌̇ Q W L /gãwla/ villager
- ◌̇ /mũ/ nose
- ◌̇ /kɔ̃/ a kind of sound
- ◌̇ /hẽde/ black

Occurences in evidence:

<table>
<thead>
<tr>
<th>Base letter:</th>
<th>O</th>
<th>A</th>
<th>E</th>
<th>U</th>
<th>I</th>
</tr>
</thead>
<tbody>
<tr>
<td>Based on the font:</td>
<td>![Image]</td>
<td>![Image]</td>
<td>![Image]</td>
<td>![Image]</td>
<td>![Image]</td>
</tr>
</tbody>
</table>

### Table 3. Examples of vowels carrying the MU sign

Some of the published materials show the mu sign also on non-vowels (namely ◌ AW, ◌ ONG and ◌ UK), but these are deemed to be authoring errors.

### 2.2.2 IKIR sign ◌ (prolongation)

The sign ikir (◌̣) is a long phoneme sign. It is a dot positioned below letter ◌ I only. The script currently does not distinguish lengths of any other vowels, but encoding long A atomatically would create barriers for such development in the future.

While written evidence places the sign at the bottom of base characters, existing fonts always put the dot in the bottom right position.

Examples of use:

- ◌ /dãl/ pulse
- ◌ /haːl/ wet
- ◌ /baːi/ to make
Occurences in evidence:

| Base letter: | A |
| Handwritten: | |
| Based on the font: | |

Table 4. Examples of vowels carrying the IKIR sign

Some of the published materials show the \textit{ikir} sign on IN, but these are deemed to be authoring errors. Since the non-Unicode fonts map this sign to a full stop, some of the materials use it in place of a full stop for various purposes.

2.2.3 HODDOND sign \textit{(glottalization)}

The sign \textit{hoddond} (\texttt{yahaND}) is a glottalizational sign. It can only follow the letters AB and UJ. The \textit{hoddond} mark is visually similar to U+0B03 ORIA SIGN VISARGA, however it is distinct in function. This character is proposed as a separate, uncased letter.

Examples of use:

- \texttt{waba\texttt{hoddond}na} /\textipa{dæbʔna}/ shoulder
- \texttt{waba\texttt{hoddond}hisabʔ} /\textipa{hisabʔ}/ account
- \texttt{waba\texttt{hoddond}bʰɔʤʔ} /\textipa{bʰɔʤʔ}/ feast
- \texttt{waba\texttt{hoddond}dʒahadʒʔ} /\textipa{dʒahadʒʔ}/ ship

Occurences in evidence:

| Base letter: | AB | UJ |
| Handwritten: | | |
| Based on the font: | | |

Table 5. Examples of vowels carrying the IKIR sign

Some of the published materials show the \textit{hoddond} sign on EH and OM, but these are deemed to be authoring errors. Since the non-Unicode fonts map this sign to a colon, some of the materials use it in place of colon.

2.3 DIGITS

Ol Onal has a full set of decimal digits, see Table 6.

\begin{align*}
0 & \quad \mathbf{1} & \quad \mathbf{2} & \quad \mathbf{3} & \quad \mathbf{4} & \quad \mathbf{5} & \quad \mathbf{6} & \quad \mathbf{7} & \quad \mathbf{8} & \quad \mathbf{9}
\end{align*}

Table 6. Ol Onal digits.

Originally the digits had a different design (see Figure 31) but the shapes were changed when the first digital fonts were made in 2013, due to technical difficulties of representing the original shapes. All printed evidence contains the digits as shown above in Table 6.
2.4  PUNCTUATION

Devanagari-like Danda is used by Ol Onal to end a sentence. No evidence contains double danda, although Figure 25 shows two single dandas for both Devanagari and Ol Onal. Since Bengali uses danda and double danda from the Devanagari block via script extensions and therefore keyboard layouts in the area share the same character, it is proposed to extend the same danda and double danda usage to the Ol Onal script as well, to avoid confusion and additional complexity for users.

Figure 26 shows the usage of an abbreviation sign used in Ol Onal text. While this orthographic tradition also comes from the Nagari family of scripts, historically in Unicode each script has its own dedicated abbreviation sign. Since disunifying the characters later would lead to ambiguous texts, the sign is proposed separately as U+1E5F OL ONAL ABBREVIATION SIGN, despite occurring only once in the evidence.

Western-style punctuation is also used. Evidence shows the usage of comma, question marks, dashes, colons, double quotation marks, paranthesis, slashes, backslashes, percent signs and simple mathematical operators. Figure 17 uses full stop instead of danda, for other misuses of dot below as a full stop, see figures in 7.5.5.

Some evidence uses backslash in Ol Onal where slash is used in equivalent text in Latin or Devanagari (e.g. as a date separator).

Words are separated by space (see for example Figure 15 or Figure 17).

2.5  WORD BREAKING

Words written in Ol Onal can be broken across lines. Evidence shows western-like hyphenation in such cases, see Figure 10. No rules of where a word can be broken have been formalised.

While the hoddond sign is graphically based on visarga, it has a distinct function as a glottal stop. As such, no special breaking properties around hoddond are proposed.
This document proposes 41 characters in total – 30 upper case letters (Table 7), 1 sign as other letter (Table 8) and 10 digits (Table 9).

<table>
<thead>
<tr>
<th>Ol Onal</th>
<th>Character Name</th>
<th>IPA</th>
<th>orya</th>
<th>deva</th>
<th>beng</th>
<th>class</th>
</tr>
</thead>
<tbody>
<tr>
<td>OL O</td>
<td>OL ONAL LETTER O</td>
<td>/ɔ/</td>
<td>჎</td>
<td>अ</td>
<td>अ</td>
<td>Lu</td>
</tr>
<tr>
<td>OL O</td>
<td>OL ONAL LETTER OM</td>
<td>/m/</td>
<td>჌</td>
<td>म</td>
<td>म</td>
<td>Lu</td>
</tr>
<tr>
<td>OL O</td>
<td>OL ONAL LETTER ONG</td>
<td>/ŋ/</td>
<td>჏</td>
<td>इ</td>
<td>इ</td>
<td>Lu</td>
</tr>
<tr>
<td>OL O</td>
<td>OL ONAL LETTER ORR</td>
<td>/ɽ/</td>
<td>დ</td>
<td>ढ़</td>
<td>ढ़</td>
<td>Lu</td>
</tr>
<tr>
<td>OL O</td>
<td>OL ONAL LETTER OO</td>
<td>/o/</td>
<td>ე</td>
<td>ओ</td>
<td>ओ</td>
<td>Lu</td>
</tr>
<tr>
<td>OL O</td>
<td>OL ONAL LETTER OY</td>
<td>/j/</td>
<td>ვ</td>
<td>ऑ</td>
<td>ऑ</td>
<td>Lu</td>
</tr>
<tr>
<td>OL O</td>
<td>OL ONAL LETTER A</td>
<td>/a/</td>
<td>გ</td>
<td>आ</td>
<td>आ</td>
<td>Lu</td>
</tr>
<tr>
<td>OL O</td>
<td>OL ONAL LETTER AD</td>
<td>/d'/</td>
<td>მ</td>
<td>औ</td>
<td>औ</td>
<td>Lu</td>
</tr>
<tr>
<td>OL O</td>
<td>OL ONAL LETTER AB</td>
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<td>ब</td>
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<td>Lu</td>
</tr>
<tr>
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<td>OL ONAL LETTER AH</td>
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<td>ო</td>
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<td>Lu</td>
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<tr>
<td>OL O</td>
<td>OL ONAL LETTER AL</td>
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<td>ल</td>
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<td>Lu</td>
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<tr>
<td>OL O</td>
<td>OL ONAL LETTER AW</td>
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<td>ჟ</td>
<td>ओः</td>
<td>ओः</td>
<td>Lu</td>
</tr>
<tr>
<td>OL O</td>
<td>OL ONAL LETTER I</td>
<td>/i/</td>
<td>რ</td>
<td>ई</td>
<td>ई</td>
<td>Lu</td>
</tr>
<tr>
<td>OL O</td>
<td>OL ONAL LETTER IT</td>
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<td>ს</td>
<td>इः</td>
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<td>Lu</td>
</tr>
<tr>
<td>OL O</td>
<td>OL ONAL LETTER IP</td>
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<td>ტ</td>
<td>प</td>
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<td>Lu</td>
</tr>
<tr>
<td>OL O</td>
<td>OL ONAL LETTER ITT</td>
<td>/t/</td>
<td>უ</td>
<td>ट</td>
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<td>Lu</td>
</tr>
<tr>
<td>OL O</td>
<td>OL ONAL LETTER ID</td>
<td>/d/</td>
<td>ფ</td>
<td>द</td>
<td>द</td>
<td>Lu</td>
</tr>
<tr>
<td>OL O</td>
<td>OL ONAL LETTER IN</td>
<td>/n/</td>
<td>ქ</td>
<td>ईः</td>
<td>ईः</td>
<td>Lu</td>
</tr>
<tr>
<td>OL O</td>
<td>OL ONAL LETTER U</td>
<td>/u/</td>
<td>ღ</td>
<td>उ</td>
<td>उ</td>
<td>Lu</td>
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<td>OL ONAL LETTER UK</td>
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<td>Lu</td>
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Table 7. Proposed Ol Onal letters
<table>
<thead>
<tr>
<th>Ol Onal</th>
<th>Character Name</th>
<th>IPA</th>
<th>orya</th>
<th>deva</th>
<th>beng</th>
<th>class</th>
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<tbody>
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<td>OL ONAL SIGN MU</td>
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<td>ṽ</td>
<td>ṽ</td>
<td>Mn</td>
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<td>அ</td>
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<td>/ʔ/</td>
<td>ṽ</td>
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Table 8. Proposed Ol Onal signs

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<th>Ol Onal</th>
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<td>OL ONAL DIGIT ONE</td>
<td>1</td>
<td>9</td>
<td>9</td>
<td>7</td>
<td>Nd</td>
</tr>
<tr>
<td>2</td>
<td>OL ONAL DIGIT TWO</td>
<td>2</td>
<td>9</td>
<td>2</td>
<td>7</td>
<td>Nd</td>
</tr>
<tr>
<td>³</td>
<td>OL ONAL DIGIT THREE</td>
<td>3</td>
<td>9</td>
<td>3</td>
<td>7</td>
<td>Nd</td>
</tr>
<tr>
<td>⁴</td>
<td>OL ONAL DIGIT FOUR</td>
<td>4</td>
<td>9</td>
<td>4</td>
<td>7</td>
<td>Nd</td>
</tr>
<tr>
<td>⁵</td>
<td>OL ONAL DIGIT FIVE</td>
<td>5</td>
<td>8</td>
<td>6</td>
<td>7</td>
<td>Nd</td>
</tr>
<tr>
<td>⁶</td>
<td>OL ONAL DIGIT SIX</td>
<td>6</td>
<td>9</td>
<td>6</td>
<td>6</td>
<td>Nd</td>
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<tr>
<td>⁷</td>
<td>OL ONAL DIGIT SEVEN</td>
<td>7</td>
<td>9</td>
<td>7</td>
<td>5</td>
<td>Nd</td>
</tr>
<tr>
<td>⁸</td>
<td>OL ONAL DIGIT EIGHT</td>
<td>8</td>
<td>9</td>
<td>8</td>
<td>6</td>
<td>Nd</td>
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<tr>
<td>⁹</td>
<td>OL ONAL DIGIT NINE</td>
<td>9</td>
<td>0</td>
<td>9</td>
<td>9</td>
<td>Nd</td>
</tr>
</tbody>
</table>

Table 9. Proposed Ol Onal digits

### 3.1 Character Properties

This proposal does not use complex shaping for rendering Ol Onal.

#### 3.1.1 UnicodeData.txt

1E5D0;OL ONAL LETTER O;Lo;0;L;;;;;N;;;;;
1E5D1;OL ONAL LETTER OM;Lo;0;L;;;;;N;;;;;
1E5D2;OL ONAL LETTER ONG;Lo;0;L;;;;;N;;;;;
1E5D3;OL ONAL LETTER ORR;Lo;0;L;;;;;N;;;;;
1E5D4;OL ONAL LETTER OO;Lo;0;L;;;;;N;;;;;)
1E5D5;OL ONAL LETTER OY;Lo;0;L;;;;;N;;;;;
1E5D6;OL ONAL LETTER A;Lo;0;L;;;;;N;;;;;
1E5D7;OL ONAL LETTER AD;Lo;0;L;;;;;N;;;;;
1E5D8;OL ONAL LETTER AB;Lo;0;L;;;;;N;;;;;
1E5D9;OL ONAL LETTER AH;Lo;0;L;;;;;N;;;;;
1E5DA;OL ONAL LETTER AL;Lo;0;L;;;;;N;;;;;
1E5DB;OL ONAL LETTER AW;Lo;0;L;;;;;N;;;;;
1E5DC;OL ONAL LETTER I;Lo;0;L;;;;;N;;;;;
1E5DD;OL ONAL LETTER IT;Lo;0;L;;;;;N;;;;;
1E5DE;OL ONAL LETTER IP;Lo;0;L;;;;;N;;;;;)
1E5DF;OL ONAL LETTER ITT;Lo;0;L;;;;;N;;;;;
1E5E0;OL ONAL LETTER ID;Lo;0;L;;;;;N;;;;;
1E5E1;OL ONAL LETTER IN;Lo;0;L;;;;;N;;;;;
1E5E2;OL ONAL LETTER U;Lo;0;L;;;;;N;;;;;
1E5E3;OL ONAL LETTER UK;Lo;0;L;;;;;N;;;;;
1E5E4;OL ONAL LETTER UDD;Lo;0;L;;;;;N;;;;;
1E5E5;OL ONAL LETTER UJ;Lo;0;L;;;;;N;;;;;
1E5E6;OL ONAL LETTER UNY;Lo;0;L;;;;;N;;;;;)
1E5E7;OL ONAL LETTER UR;Lo;0;L;;;;;N;;;;;
1E5E8;OL ONAL LETTER E;Lo;0;L;;;;;N;;;;;)
1E5E9;OL ONAL LETTER ES;Lo;0;L;;;;;N;;;;;
1E5EA;OL ONAL LETTER EH;Lo;0;L;;;;;N;;;;;
1E5EB;OL ONAL LETTER EC;Lo;0;L;;;;;N;;;;;)
1E5EC;OL ONAL LETTER ENN;Lo;0;L;;;;;N;;;;;
1E5ED;OL ONAL LETTER EG;Lo;0;L;;;;;N;;;;;)

The collation order follows digits, letters and signs in their encoding order:

\[
\begin{align*}
0 & < \alpha < 2 < \zeta < \gamma < \delta < 2 < \zeta < 9 < \Theta1 < \Theta < \\
E5D2 & E5D3 E5D4 E5D5 E5D6 E5D7 E5D8 E5D9 E5DA E5DB E5DC E5DD \\
E5DE & E5DF E5E0 E5E1 E5E2 E5E3 E5E4 E5E5 E5E6 E5E7 E5E8 E5E9 \\
E5EA & E5EB E5EC E5ED E5EE E5EF E5F0 E5FF
\end{align*}
\]
In an alphabetical list of words, nasalization is expected to come before prolongation, like in the following list (of hypothetical words):

1. ꯿꯿꯿꯿<gaw/> /gawla/ <EG, A, AW, AL, A>
2. ꯿꯿꯿꯿<gaw/> /gəwla/ <EG, A, MU, AW, AL, A>
3. ꯿꯿꯿꯿<gaw/> /gawla/ <EG, A, IKIR, AW, AL, A>
4. ꯿꯿꯿꯿<gaw/> /gəwla/ <EG, A, IKIR, MU, AW, AL, A>

5 METADATA

<table>
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<th>Name</th>
<th>Script_Code</th>
<th>Age</th>
<th>Size</th>
<th>Sample</th>
<th>Sample_Code</th>
<th>Origin Country</th>
<th>Density</th>
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</thead>
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<tr>
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<td>Olon</td>
<td>44</td>
<td>671</td>
<td>1E5D0</td>
<td>India</td>
<td>1</td>
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</tbody>
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<table>
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<th></th>
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<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Mundari</td>
<td>unr</td>
<td>Limited_Use</td>
<td>no</td>
<td>no</td>
<td>min</td>
<td>no</td>
<td>no</td>
</tr>
</tbody>
</table>

The Bhumij language is a language of the Mundari subfamily.

6 ACKNOWLEDGMENT

We would like to thank Ol Guru Mahendra Nath Sardar, the script inventor, for his valuable instructions regarding the proposal and Anil Munda (Jharkhand), the font creator, for providing various linguistic materials, books, etc.

We would also like to thank Dhananjay Sardar, Mensingh Donda, and Sunita Munda, for their help on this proposal, and Tapan Kumar Sardar and Dhananjay Singh Sardar from West Bengal for providing various books and pictures of Ol Onal as used in West Bengal.
### Letters
- **O** : OL ONAL LETTER O
- **O** : OL ONAL LETTER OM
- **O** : OL ONAL LETTER ONG
- **O** : OL ONAL LETTER ORR
- **O** : OL ONAL LETTER OO
- **O** : OL ONAL LETTER OY
- **O** : OL ONAL LETTER A
- **O** : OL ONAL LETTER AD
- **O** : OL ONAL LETTER AB
- **O** : OL ONAL LETTER AH
- **O** : OL ONAL LETTER AL
- **O** : OL ONAL LETTER AW
- **O** : OL ONAL LETTER I
- **O** : OL ONAL LETTER IT
- **O** : OL ONAL LETTER IP
- **O** : OL ONAL LETTER ITT
- **O** : OL ONAL LETTER ID
- **O** : OL ONAL LETTER IN
- **O** : OL ONAL LETTER U
- **O** : OL ONAL LETTER UK
- **O** : OL ONAL LETTER UDD
- **O** : OL ONAL LETTER UJ
- **O** : OL ONAL LETTER UNY
- **O** : OL ONAL LETTER U
- **O** : OL ONAL LETTER ES
- **O** : OL ONAL LETTER E
- **O** : OL ONAL LETTER EC
- **O** : OL ONAL LETTER ENN
- **O** : OL ONAL LETTER EG

### Signs
- **:\xb6** : OL ONAL SIGN MU
- **:\xb7** : OL ONAL SIGN IKIR
- **:\xb8** : OL ONAL SIGN HODDONG

### Digits
- **0** : OL ONAL DIGIT ZERO
- **1** : OL ONAL DIGIT ONE
- **2** : OL ONAL DIGIT TWO
- **3** : OL ONAL DIGIT THREE
- **4** : OL ONAL DIGIT FOUR
- **5** : OL ONAL DIGIT FIVE
- **6** : OL ONAL DIGIT SIX
- **7** : OL ONAL DIGIT SEVEN
- **8** : OL ONAL DIGIT EIGHT
- **9** : OL ONAL DIGIT NINE

### Signs
- **:\xb9** : OL ONAL ABBREVIATION SIGN
7 Evidence

7.1 Primers

7.1.1 Handwritten

Figure 1. Handwritten Ol Onal chart [6, p. 1], Odisha.
Figure 2. Font-based Ol Onal chart [7, p. 4]
Figure 3. Font-based Ol Onal and digits chart [8, p. 1]. Small letters not proposed.
Figure 4. A sample text in both Devanagari and Ol Onal from a primer [8, p. 68].
Shows the usage of danda, parenthesis, quotation marks, digits (1875 3 1900) and dot above.
Figure 5. Font-based Ol Onal chart and its relation to Devanagari [10, pp. 6-7]. Small letters not proposed.
Figure 6. Font-based Ol Onal chart of digits and selection of syllables [10, pp. 10-11].
7.2 PUBLIC SPACES

7.2.1 Odisha

Figure 7. Ol Onal used in Bhumij rituals in Odisha, 2020.

Figure 8. Graveyard headstone in Odisha.
7.2.2 Jharkhand

Figure 9. A banner showing the handwritten form Ol Onal. Bhumij Language and manuscript Launch Programme at Jamshedpur, Jharkhand 2013.

Figure 10. A wedding invitation poster in Jharkhan, 2022. Shows the use of dot above, slashes, commas, and hyphenation including word breaking.
7.2.3 West Bengal

Figure 11. A sign board of Shahid Raghunath Singh Bhumij Ol Onal Aakhra school in West Bengal, established 2018.

Figure 12. A banner of West Bengal Adibasi Bhumij Language Development Board, 2021.
Evidence > Public spaces > West Bengal

Figure 13. Ol Onal inscription on a memorial of Martyr Ganganarayan Singh in West Bengal, 2021.
Figure 14. Ol Onal used on idol Sohid (Martyr) Bir (Brave) Durjon Singh at Jhargram in West Bengal, 2020.
Evidence > Public spaces > West Bengal

Figure 15. Ol Onal used on idol in West Bengal. Shows the usage of the *hoddon* sign.

Figure 16. Ol Onal written on a boundary wall in Jhargram, West Bengal, 2020.
Figure 17. A notice written in Ol Onal, 2020.
Shows the usage of dot below as a full stop instead of danda, backslashes, hyphens and commas.
7.4 **SCRIPT AUTHOR**

*Figure 18. Reeni hala text handwritten by the script author, Mahendra Nath.*
7.5 **SPECIFIC FEATURES**

7.5.1 **MU sign (dot above)**

*Figure 19. Examples of dot above usage in a handwritten primer [6, p. 11]*

*Figure 20. Examples of dot above usage in a font-based primer [8, p. 17]*
7.5.2  IKIR sign (dot below)

Figure 21. Examples of dot below usage in a handwritten primer [6, p. 11].

Figure 22. Examples of dot below usage in a font-based primer [8, p. 18]
HODDON sign

Figure 23. Examples of hoddon sign usage in a handwritten primer [6, p. 7].

Figure 24. Examples of hoddon sign usage in a primer [8, p. 15].
Evidence > Specific features > Devanagari characters

7.5.4 Devanagari characters

Figure 25. An example of two single dandas [10, p. 32].

Figure 26. An example of Devanagari abbreviation mark in Ol Onal [8, p. 75].
7.5.5 Misuse

Figure 27. Full stop as a time separator (the font maps the dot below to full stop) [10, p. 24].
See also Figure 17 for its usage as an end of sentence.

Figure 28. Full stop (dot below in font) used for ordinal numbers [9, p. 18].

Figure 29. The hoddon sign used as a colon due to font mapping [9, p. 24].
8 REFERENCES


<table>
<thead>
<tr>
<th>Font Style</th>
<th>Ol Onal Classic</th>
<th>Ol Onal Normal</th>
</tr>
</thead>
<tbody>
<tr>
<td>OOMONG ORR OO OY</td>
<td>❌❌❌❌</td>
<td>❌❌❌❌</td>
</tr>
<tr>
<td>AAD AB AH AL AW</td>
<td>❌❌❌❌</td>
<td>❌❌❌❌</td>
</tr>
</tbody>
</table>

**Figure 30.** All Ol Onal fonts date, created by Anil Munda in 2013-2014.
Figure 31. Original shapes of Ol Onal digits (pre-font) [6, p. 12]. Not proposed in this document.

Figure 32. An existing keyboard mapping for Ol Onal. Small letters not proposed.
ISO/IEC JTC 1/SC 2/WG 2
PROPOSAL SUMMARY FORM TO ACCOMPANY SUBMISSIONS
FOR ADDITIONS TO THE REPERTOIRE OF ISO/IEC 10646

Please fill all the sections A, B and C below.
Please read Principles and Procedures Document (P & P) from
http://std.dkuug.dk/JTC1/SC2/WG2/docs/principles.html, for
guidelines and details before filling this form.
See also http://std.dkuug.dk/JTC1/SC2/WG2/docs/roadmaps.html for latest Roadmaps.

A. Administrative

| 1. Title: | Ol Onal |
| 2. Requester’s name: | Biswajit Mandal |
| 3. Requester type (Member body/Liaison/Individual contribution): | Individual contribution |
| 4. Submission date: | 2022-07-16 |
| 5. Requester’s reference (if applicable): | |
| 6. Choose one of the following: | This is a complete proposal: **X** |
| | (or) More information will be provided later: |

B. Technical – General

1. Choose one of the following:
   a. This proposal is for a new script (set of characters): **X**
   b. The proposal is for addition of character(s) to an existing block:

   | Name of the existing block: | |

2. Number of characters in proposal: |

3. Proposed category (select one from below - see section 2.2 of P&P document):
   A-Contemporary **X**
   B.1-Specialized (small collection) |
   B.2-Specialized (large collection) |
   C-Major extinct |
   D-Attested extinct |
   E-Minor extinct |
   F-Archaic Hieroglyphic or Ideographic |
   G-Obscure or questionable usage symbols |

4. Is a repertoire including character names provided? **YES**
   a. If YES, are the names in accordance with the “character naming guidelines” in Annex L of P&P document? **YES**
   b. Are the character shapes attached in a legible form suitable for review? **YES**

5. Fonts related:
   a. Who will provide the appropriate computerized font to the Project Editor of 10646 for publishing the standard? Anil Munda
   b. Identify the party granting a license for use of the font by the editors (include address, e-mail, ftp-site, etc.): anilkisna@gmail.com

6. References:
   a. Are references (to other character sets, dictionaries, descriptive texts etc.) provided? **YES**
   b. Are published examples of use (such as samples from newspapers, magazines, or other sources) of proposed characters attached? **YES**

7. Special encoding issues:
   Does the proposal address other aspects of character data processing (if applicable) such as input, presentation, sorting, searching, indexing, transliteration etc. (if yes please enclose information)? **YES**

8. Additional Information:
   Submitters are invited to provide any additional information about Properties of the proposed Character(s) or Script that will assist in correct understanding of and correct linguistic processing of the proposed character(s) or script. Examples of such properties are: Casing information, Numeric information, Currency information, Display behaviour information such as line breaks, widths etc., Combining behaviour, Spacing behaviour, Directional behaviour, Default Collation behaviour, relevance in Mark Up contexts, Compatibility equivalence and other Unicode normalization related information. See the Unicode standard at http://www.unicode.org for such information on other scripts. Also see Unicode Character Database (http://www.unicode.org/reports/tr44/) and associated Unicode Technical Reports for information needed for consideration by the Unicode Technical Committee for inclusion in the Unicode Standard.
## C. Technical - Justification

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<tr>
<th>Question</th>
<th>Answer</th>
<th>Reference</th>
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<tbody>
<tr>
<td>1. Has this proposal for addition of character(s) been submitted before?</td>
<td>NO</td>
<td></td>
</tr>
<tr>
<td>If YES explain</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2. Has contact been made to members of the user community (for example: National Body, user groups of the script or characters, other experts, etc.)?</td>
<td>YES</td>
<td>Bhumij communities in Odisha, Jharkhand and West Bengal</td>
</tr>
<tr>
<td>If YES, with whom?</td>
<td></td>
<td></td>
</tr>
<tr>
<td>If YES, available relevant documents:</td>
<td></td>
<td></td>
</tr>
<tr>
<td>3. Information on the user community for the proposed characters (for example: size, demographics, information technology use, or publishing use) is included?</td>
<td>YES</td>
<td>India Census 2011, community members</td>
</tr>
<tr>
<td>Reference:</td>
<td></td>
<td></td>
</tr>
<tr>
<td>4. The context of use for the proposed characters (type of use; common or rare)</td>
<td>YES</td>
<td></td>
</tr>
<tr>
<td>Reference:</td>
<td></td>
<td></td>
</tr>
<tr>
<td>5. Are the proposed characters in current use by the user community?</td>
<td>YES</td>
<td>Odisha, Jharkhand, West Bengal (figures in 7.2)</td>
</tr>
<tr>
<td>If YES, where? Reference:</td>
<td></td>
<td></td>
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<tr>
<td>6. After giving due considerations to the principles in the P&amp;P document must the proposed characters be entirely in the BMP?</td>
<td>NO</td>
<td></td>
</tr>
<tr>
<td>If YES, is a rationale provided?</td>
<td></td>
<td></td>
</tr>
<tr>
<td>If YES, reference:</td>
<td></td>
<td></td>
</tr>
<tr>
<td>7. Should the proposed characters be kept together in a contiguous range (rather than being scattered)?</td>
<td>YES</td>
<td></td>
</tr>
<tr>
<td>8. Can any of the proposed characters be considered a presentation form of an existing character or character sequence?</td>
<td>NO</td>
<td></td>
</tr>
<tr>
<td>If YES, is a rationale for its inclusion provided?</td>
<td></td>
<td></td>
</tr>
<tr>
<td>If YES, reference:</td>
<td></td>
<td></td>
</tr>
<tr>
<td>9. Can any of the proposed characters be encoded using a composed character sequence of either existing characters or other proposed characters?</td>
<td>NO</td>
<td></td>
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<tr>
<td>If YES, is a rationale for its inclusion provided?</td>
<td></td>
<td></td>
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<tr>
<td>If YES, reference:</td>
<td></td>
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<tr>
<td>10. Can any of the proposed character(s) be considered to be similar (in appearance or function) to, or could be confused with, an existing character?</td>
<td>YES</td>
<td>abbreviation mark (section 2.4)</td>
</tr>
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<td>YES</td>
<td></td>
</tr>
<tr>
<td>If YES, reference:</td>
<td></td>
<td></td>
</tr>
<tr>
<td>11. Does the proposal include use of combining characters and/or use of composite sequences?</td>
<td>YES</td>
<td>dots above and below (section 2.2)</td>
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<tr>
<td>If YES, is a rationale for such use provided?</td>
<td>YES</td>
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<tr>
<td>If YES, reference:</td>
<td></td>
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<tr>
<td>Is a list of composite sequences and their corresponding glyph images (graphic symbols) provided?</td>
<td>NO</td>
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<td></td>
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<tr>
<td>12. Does the proposal contain characters with any special properties such as control function or similar semantics?</td>
<td>NO</td>
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<tr>
<td>If YES, describe in detail (include attachment if necessary)</td>
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<td>13. Does the proposal contain any Ideographic compatibility characters?</td>
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<td>If YES, are the equivalent corresponding unified ideographic characters identified?</td>
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<td></td>
</tr>
<tr>
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<td></td>
<td></td>
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35