



Department of Information Technology,
Ministry of Communications and Information Technology,
Government of India, New Delhi

Draft Policy Document For

INTERNATIONALIZED DOMAIN NAMES

Language: KONKANI



Department of Information Technology,
Ministry of Communications and Information Technology,
Government of India, New Delhi

RECORD OF CHANGES

***A - ADDED M - MODIFIED D - DELETED**

VERSION NUMBER	DATE	PAGES AFFECTED	A* M D	TITLE OR BRIEF DESCRIPTION	COMPLIANCE VERSION OF MAIN POLICY DOCUMENT
1.0	20/11/09	Whole Document	M	Language Specific Policy Document for KONKANI	1.5
1.1	22/11/2010	Page No 10, 17, 20	A	Restriction rule added, Variant modified, ccTLD added	1.6



Department of Information Technology,
Ministry of Communications and Information Technology,
Government of India, New Delhi

1. AUGMENTED BACKUS-NAUR FORMALISM (ABNF).....	5
1.1 Declaration of variables.....	5
1.2 ABNF Operators.....	5
1.3 The Vowel Sequence.....	5
1.4 Consonant Sequence.....	6
1.5 ABNF Applied to the KONKANI IDN.....	8
2. RESTRICTION RULES.....	9
3. EXAMPLES.....	12
4. LANGUAGE TABLE : KONKANI.....	13
5. NOMENCLATURAL DESCRIPTION TABLE OF KONKANI LANGUAGE TABLE	14
6. VARIANT TABLE.....	18
7. EXPERTISE/BODIES CONSULTED.....	20
8. PROPOSED ccTLD FOR KONKANI	21

1. AUGMENTED BACKUS-NAUR FORMALISM (ABNF)

1.1 Declaration of variables

Dash	→ Hyphen -
Digit	→ Indo-Arabic digits [0-9]
C	→ Consonant
M	→ Matra
V	→ Vowel
D	→ Anusvara
B	→ Chandrabindu
X	→ Visarga
Y	→ Avagraha
H	→ Halanta
N	→ Nukta

1.2 ABNF Operators

S. No.	Symbols	Functions
1	“/”	Alternative
2	“[]”	Optional
3	“*”	Variable Repetition
4	“()”	Sequence Group

In what follows the Vowel Sequence and the Consonant Sequence pertinent to Konkani are given.

1.3 The Vowel Sequence

A vowel sequence is made up of a single vowel. It may be followed but not necessarily (optionally) by an Anusvara (D), Chandrabindu (B) or a Visarga (X)

The number of D, B or X which can follow a V in Konkani may be restricted to one.

The vowel sequence in Konkani is therefore V [D | B | X]

Examples :

Vowel	V	अ
Vowel + Anusvara	V[D]	अं
Vowel + Chandrabindu	V[B]	अँ
Vowel + Visarga	V[X]	अः

1.4 Consonant Sequence

A consonant sequence admits the following shapes:

1. A single consonant (C)

Example:

C	क
---	---

2. A consonant optionally followed by dependent vowel sign[M] or Anusvara[D] or Chandrabindu[B] or visarga[X] or Halanta [H]

C[M|D|B|X|H]

Example:

C[M]	कि
C[D]	कं
C[B]	कँ
C[X]	कः
C[H]	क् (Pure Consonant)

2.a. A CM sequence can be optionally followed by D, B or X

(CM)[D|B|X]

Example:

CM[D]	कीं
-------	-----

CM[B] काँ

CM[X] वीः

3. A sequence of consonants (up to 4) joined by Halanta *3(CH)C

Example:

CHCHCHC न्त्रय न+्+क+्+र+्+य

Subsets

3.a. The combination may be followed by M , D,B or X

Example:

CHC[M] क्की क् क् की

CHC[D] क्कं क् क् कं

CHC[B] क्कँ क् क् कँ

CHC[X] क्कः क् क् कः

3.b. *3(CH)CM may be followed by a D, B or X

Example:

CHCM[D] क्कीं क् क् कीं

CHCM[B] क्कीँ क् क् कीँ

CHCM[X] क्कीः क् क् कीः

The final canonical structure of the consonant sequence in IDN can be defined in ABNF as:

*3(CH)C[H|D|B|X][M[D|B|X]]

It should be noted that in the case of Sanskrit the possible sequence could be:

*4(CH)C [H|D|B|X][M[D|B|X]]

as exemplified in the word:

कात्स्न्य

Although this is possible, it is not used in neo-Prakrits unless a potential client chooses it as a possible IDN.



Department of Information Technology,
Ministry of Communications and Information Technology,
Government of India, New Delhi

1.5 ABNF Applied to the KONKANI IDN

The formalism can be applied to create/validate IDN labels. So a valid IDN label can be defined as follows.

Vowel-sequence \rightarrow V [D | B | X]

Consonant-sequence \rightarrow *3(CH)C [H|D|B|X |M[D | B | X]]

Sequence \rightarrow consonant-sequence[Y] | vowel-sequence[Y]

IDN-label \rightarrow (sequence | digit) * ([dash] (sequence |digit))

2. RESTRICTION RULES

The ABNF is generic in nature and when applied to a specific language/script certain restriction rules apply. In other words, in a given language some of the Formalism structures do not necessarily apply. To take care of such cases restriction rules are set in place. These restrictions will help to fine-tune the ABNF.

In the case of Konkani the following rules apply:

1. H | D|B|X |M cannot occur in the beginning of an IDN domain name

Example:

क्

ंक

ँक

ःक

िक

As can be seen they will result automatically in a “golu” marking an invalid character. This is an intrinsic property of the Indic syllable and is quasi automatically applied wherever supported by the OS.

2. H is not permitted after V, D,B, X, M, digit and dash

Example

अक्

कंक्

कँक्

कःक्

क्कि

1क्

-क्

3. Number of D,B or X permitted after consonant-sequence or vowel-sequence or after M is restricted to one

Example

कं

कँ

कः

कीं

कौं

कीः

अं

अँ

अः

4. Number of M permitted after consonant-sequence is restricted to one

Example

कीी

5. M is not permitted after V

Example

ईा

6. The combination Anusvara+Visarga, Chandrabindu+Anusvara, Chandrabindu+Visarga and vice-versa is not permissible.

Example:

कः

कँ

कँः

7. There are only two combinations are possible with Consonant र (0931)

Examples:



Department of Information Technology,
Ministry of Communications and Information Technology,
Government of India, New Delhi

CHC च र् य

CHC ह र् ह

8. A consonant syllable that is intended to end with Halant [H] can only be followed by Hyphen, digit or Avagraha [Y].



Department of Information Technology,
Ministry of Communications and Information Technology,
Government of India, New Delhi

3. EXAMPLES

Following are the some examples of KONKANI IDN.

Combination	Example	Word With Combination
C	स	सरकार
CH	म्	वदारण्यम्
CM	फा	फायदा
CD	सं	संबंदान
CB	लँ	पलँटा
CX	नः	पकोवनः
CMD	नां	नांका
CMB	काँ	काँग्रेस
CMX	दुः	दुःख
CHC	ह्या	ह्या
CHCHC	स्त्र	शस्त्राचा
V	अ	अभ्यास
VD	आं	आंखले
VB	आँ	आँठार



Department of Information Technology,
Ministry of Communications and Information Technology,
Government of India, New Delhi

4. LANGUAGE TABLE : KONKANI¹

0900

Devanagari

097F

	090	091	092	093	094	095	096	097
0	ए	ठ	र	ी	ॐ	ऋ	ॠ	
1	ँ	ऑ	ड	र	ु	ॠ	ॡ	
2	ं	ओ	ढ	ल	ॡ	ॢ	ॣ	॥
3	ः	ओ	ण	ळ	ॣ	।	॥	
4	ऐ	औ	त	ळ	॥	॥	॥	
5	अ	क	थ	व	॥	॥	॥	
6	आ	ख	द	श	॥	॥	॥	
7	इ	ग	घ	ष	॥	॥	॥	
8	ई	घ	न	स	॥	॥	॥	
9	उ	ड	न	ह	॥	॥	॥	
A	ऊ	च	प	॥	॥	॥	॥	
B	ऋ	ॠ	फ	॥	॥	॥	॥	
C	ॠ	ज	ब	॥	॥	॥	॥	
D	ॡ	झ	भ	॥	॥	॥	॥	
E	ॢ	ञ	म	॥	॥	॥	॥	
F	ॣ	ट	य	॥	॥	॥	॥	

Konkani

The Unicode Standard 5.1, Copyright © 1991-2008 Unicode, Inc. All rights reserved.

65

¹ Characters marked in yellow are not applicable to the language.



Department of Information Technology,
Ministry of Communications and Information Technology,
Government of India, New Delhi

5. NOMENCLATURAL DESCRIPTION TABLE OF KONKANI LANGUAGE TABLE

Chandrabindu (B)		
0901	ँ	DEVANAGARI SIGN CANDRABINDU = anunasika
Anusvara (D)		
0902	ं	DEVANAGARI SIGN ANUSVARA = bindi
Visarga(X)		
0903	ः	DEVANAGARI SIGN VISARGA
Independent vowels (V)		
0905	अ	DEVANAGARI LETTER A
0906	आ	DEVANAGARI LETTER AA
0907	इ	DEVANAGARI LETTER I
0908	ई	DEVANAGARI LETTER II
0909	उ	DEVANAGARI LETTER U
090A	ऊ	DEVANAGARI LETTER UU
090B	ऋ	DEVANAGARI LETTER VOCALIC R
090C	ॠ	DEVANAGARI LETTER VOCALIC L
090F	ए	DEVANAGARI LETTER E
0910	ऐ	DEVANAGARI LETTER AI
0911	ऑ	DEVANAGARI LETTER CANDRA O
0913	ओ	DEVANAGARI LETTER O
0914	औ	DEVANAGARI LETTER AU
0972	अँ	DEVANAGARI LETTER CANDRA A Konkani



Department of Information Technology,
Ministry of Communications and Information Technology,
Government of India, New Delhi

Consonants(C)		
0915	क	DEVANAGARI LETTER KA
0916	ख	DEVANAGARI LETTER KHA
0917	ग	DEVANAGARI LETTER GA
0918	घ	DEVANAGARI LETTER GHA
0919	ङ	DEVANAGARI LETTER NGA
091A	च	DEVANAGARI LETTER CA
091B	छ	DEVANAGARI LETTER CHA
091C	ज	DEVANAGARI LETTER JA
091D	झ	DEVANAGARI LETTER JHA
091E	ञ	DEVANAGARI LETTER NYA
091F	ट	DEVANAGARI LETTER TTA
0920	ठ	DEVANAGARI LETTER TTHA
0921	ड	DEVANAGARI LETTER DDA
0922	ढ	DEVANAGARI LETTER DDHA
0923	ण	DEVANAGARI LETTER NNA
0924	त	DEVANAGARI LETTER TA
0925	थ	DEVANAGARI LETTER THA
0926	द	DEVANAGARI LETTER DA
0927	ध	DEVANAGARI LETTER DHA
0928	न	DEVANAGARI LETTER NA
092A	प	DEVANAGARI LETTER PA



Department of Information Technology,
Ministry of Communications and Information Technology,
Government of India, New Delhi

092B	फ़	DEVANAGARI LETTER PHA
092C	ब	DEVANAGARI LETTER BA
092D	भ	DEVANAGARI LETTER BHA
092E	म	DEVANAGARI LETTER MA
092F	य	DEVANAGARI LETTER YA
0930	र	DEVANAGARI LETTER RA
0931	ऱ	DEVANAGARI LETTER RRA • half form is represented as Eyelash Ra
0932	ल	DEVANAGARI LETTER LA
0933	ळ	DEVANAGARI LETTER LLA
0935	व	DEVANAGARI LETTER VA
0936	श	DEVANAGARI LETTER SHA
0937	ष	DEVANAGARI LETTER SSA
0938	स	DEVANAGARI LETTER SA
0939	ह	DEVANAGARI LETTER HA
Dependent vowel signs (Matras)(M)		
093E	ा	DEVANAGARI VOWEL SIGN AA
093F	ि	DEVANAGARI VOWEL SIGN I • stands to the left of the consonant
0940	ी	DEVANAGARI VOWEL SIGN II
0941	ु	DEVANAGARI VOWEL SIGN U
0942	ू	DEVANAGARI VOWEL SIGN UU
0943	ृ	DEVANAGARI VOWEL SIGN VOCALIC R
0945	ँ	DEVANAGARI VOWEL SIGN CANDRA E = candra



Department of Information Technology,
Ministry of Communications and Information Technology,
Government of India, New Delhi

0947	े	DEVANAGARI VOWEL SIGN E
0948	ै	DEVANAGARI VOWEL SIGN AI
0949	ॉ	DEVANAGARI VOWEL SIGN CANDRA O
094B	ो	DEVANAGARI VOWEL SIGN O
094C	ौ	DEVANAGARI VOWEL SIGN AU
0962	ॢ	DEVANAGARI LETTER VOCALIC L
Various signs: Halant (H)		
094D	्	DEVANAGARI SIGN VIRAMA = halant (the preferred name) • suppresses inherent vowel
Avagraha (Y)		
093D	ः	DEVANAGARI SIGN AVAGRAHA



Department of Information Technology,
Ministry of Communications and Information Technology,
Government of India, New Delhi

6. VARIANT TABLE

VARIANTS		
रू 0931+ 094D	- 002D	
द्र 0926+094D+0917	द्र 0926+094D+0930	द्र 0926+094D+0928
द्ध 0926+094D+0927	द्ध 0926+094D+0918	
ष्ट 0937+094D+091F	ष्ठ 0937+094D+0920	
श्च 0936+094D+0935	श्च 0936+094D+0930+094D+0935	
श्न 0936+094D+0928	श्न 0936+094D+0930+094D+0928	
श्च 0936+094D+091A	श्च 0936+094D+0930+094D+091A	
श्ल 0936+094D+0932	श्ल 0936+094D+0930+094D+0932	
त 0924+094D+0924	त 0924	
ँ 0901	ँँ 0945+0902	



Department of Information Technology,
Ministry of Communications and Information Technology,
Government of India, New Delhi

द्व 0926+094D+0935	द्व 0926+094D+092C
-----------------------	-----------------------



Department of Information Technology,
Ministry of Communications and Information Technology,
Government of India, New Delhi

7. EXPERTISE/BODIES CONSULTED

Expertise provided by experts of Konkani Academy. The layout was further ratified at PRSG's held in New Delhi as well as in Pune.



Department of Information Technology,
Ministry of Communications and Information Technology,
Government of India, New Delhi

8. PROPOSED ccTLD FOR KONKANI

India (Bhārat) localized in Konkani - भारत

Note: You can send your feedbacks to ids-feedback@cdac.in