

Universal Multiple-Octet Coded Character Set
International Organization for Standardization
Organisation internationale de normalisation
Международная организация по стандартизации

Doc Type: Working Group Document
Title: Proposal to encode additional grass radicals in the UCS
Source: Michael Everson, Rick McGowan, Ken Whistler
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This document requests additional characters to be added to the UCS and contains the proposal summary form.

A. Administrative

1. Title

Proposal to encode additional grass radicals in the UCS

2. Requester's name

Michael Everson, Rick McGowan, Ken Whistler

3. Requester type

Expert contribution

4. Submission date

2001-04-01

5. Requester's reference

6a. Completion

This is a complete proposal.

6b. More information to be provided?

No

B. Technical -- General

1a. New script? Name?

No.

1b. Addition of characters to existing block? Name?

Yes. Characters to be added to one of the compatibility character blocks.

2. Number of characters

94

3. Proposed category

Category F

4. Proposed level of implementation and rationale

Level 1 because they are non-combining.

5a. Character names included in proposal?

Yes

5b. Character names in accordance with guidelines?

Yes

5c. Character shapes reviewable?

Yes

6a. Who will provide computerized font?

Michael Everson, Everson Gunn Teoranta

6b. Font currently available?

Yes

6c. Font format?

TrueType

7a. Are references (to other character sets, dictionaries, descriptive texts, etc.) provided?

No.

7b. Are published examples (such as samples from newspapers, magazines, or other sources) of use of proposed characters attached?

No.

8. Does the proposal address other aspects of character data processing?

No.

C. Technical -- Justification

1. Contact with the user community?

Yes. The user community has returned repeatedly with requests for additional grass radicals.

2. Information on the user community?

Standardizers.

3a. The context of use for the proposed characters?

Endless, eternal compatibility.

3b. Reference

See above

4a. Proposed characters in current use?

Not yet, but it is only a matter of time.

4b. Where?

5a. Characters should be encoded entirely in BMP?

Yes.

5b. Rationale

Filling the BMP with characters like these will force industry to implement surrogates in order to access less imaginary characters in the SIP.

6. Should characters be kept in a continuous range?

It makes no difference really.

7a. Can the characters be considered a presentation form of an existing character or character sequence?

Of course they can. That's the nature of compatibility characters.

7b. Where?

See below.

7c. Reference

8a. Can any of the characters be considered to be similar (in appearance or function) to an existing character?

Certainly.

8b. Where?

See below.

8c. Reference

9a. Combining characters or use of composite sequences included?

No

9b. List of composite sequences and their corresponding glyph images provided?

No.

10. Characters with any special properties such as control function, etc. included?

No

Proposal.

Among the 61 compatibility characters for JIS X 213 now accepted for encoding in the BMP, it turns out there are *another* two instances of the grass radical. This brings our total to nine:

- U+8278 CJK UNIFIED IDEOGRAPH-8278 ← *This* is the real character.
- U+8279 CJK UNIFIED IDEOGRAPH-8279 ← The 3-stroke radical form
- U+4491 CJK UNIFIED IDEOGRAPH-4491 ← The non-crossing 3-stroke radical form

- U+2F8B KANGXI RADICAL GRASS ← Radical symbol that looks like U+8278
- U+2EBE CJK RADICAL GRASS ONE ← Radical symbol that looks like U+8279
- U+2EBF CJK RADICAL GRASS TWO ← The 4-stroke radical form
- U+2EC0 CJK RADICAL GRASS THREE ← A variant 4-stroke radical form
- U+FA5E CJK COMPATIBILITY IDEOGRAPH-FA5E ← Looks like U+2EC0
- U+FA5F CJK COMPATIBILITY IDEOGRAPH-FA5F ← Looks like U+2EBF

The set of grass radicals proposed here follows. Five abstract characters refer to the glyph shapes in the inventory:

- ABSTRACT CHARACTER FOR RADICAL GRASS GLYPH SHAPE-1 (= 2EBE)
- ABSTRACT CHARACTER FOR RADICAL GRASS GLYPH SHAPE-2 (= 2EBF)
- ABSTRACT CHARACTER FOR RADICAL GRASS GLYPH SHAPE-3 (= 2EC0)
- ABSTRACT CHARACTER FOR RADICAL GRASS GLYPH SHAPE-4 (= 2F8B)
- ABSTRACT CHARACTER FOR RADICAL GRASS GLYPH SHAPE-5 (= FA5E)
- ABSTRACT CHARACTER FOR RADICAL GRASS GLYPH SHAPE-6 (= 4491)

Six dingbat grass radicals, for those users who need to specify an exact shape that is not font-variable:

- DINGBAT RADICAL GRASS-1
- DINGBAT RADICAL GRASS-2
- DINGBAT RADICAL GRASS-3
- DINGBAT RADICAL GRASS-4
- DINGBAT RADICAL GRASS-5
- DINGBAT RADICAL GRASS-6

A superunified grass radical, that unifies all nine entities from the current standard:

CJK SUPERUNIFIED RADICAL GRASS

A set of thirty disunified, language-specific forms:

- TRADITIONAL CHINESE RADICAL GRASS-1
- TRADITIONAL CHINESE RADICAL GRASS-2
- TRADITIONAL CHINESE RADICAL GRASS-3
- TRADITIONAL CHINESE RADICAL GRASS-4
- TRADITIONAL CHINESE RADICAL GRASS-5
- TRADITIONAL CHINESE RADICAL GRASS-6
- SIMPLIFIED CHINESE RADICAL GRASS-1
- SIMPLIFIED CHINESE RADICAL GRASS-2
- SIMPLIFIED CHINESE RADICAL GRASS-3
- SIMPLIFIED CHINESE RADICAL GRASS-4
- SIMPLIFIED CHINESE RADICAL GRASS-5
- SIMPLIFIED CHINESE RADICAL GRASS-6
- JAPANESE RADICAL GRASS-1
- JAPANESE RADICAL GRASS-2
- JAPANESE RADICAL GRASS-3
- JAPANESE RADICAL GRASS-4
- JAPANESE RADICAL GRASS-5
- JAPANESE RADICAL GRASS-6
- KOREAN RADICAL GRASS-1
- KOREAN RADICAL GRASS-2
- KOREAN RADICAL GRASS-3
- KOREAN RADICAL GRASS-4

KOREAN RADICAL GRASS-5
KOREAN RADICAL GRASS-6
VIETNAMESE RADICAL GRASS-1
VIETNAMESE RADICAL GRASS-2
VIETNAMESE RADICAL GRASS-3
VIETNAMESE RADICAL GRASS-4
VIETNAMESE RADICAL GRASS-5
VIETNAMESE RADICAL GRASS-6

Eight glyph pieces, for users who need to compose them:

CJK RADICAL GRASS-2 LEFT HALF
CJK RADICAL GRASS-2 RIGHT HALF
CJK RADICAL GRASS-3 LEFT HALF
CJK RADICAL GRASS-3 RIGHT HALF
CJK COMPATIBILITY IDEOGRAPH-FA5E LEFT HALF
CJK COMPATIBILITY IDEOGRAPH-FA5E RIGHT HALF
KANGXI RADICAL GRASS LEFT HALF
KANGXI RADICAL GRASS RIGHT HALF

Unified Han character selectors: when applied to any other form of the Grass Radical, they will select one of the three unified characters:

GRASS RADICAL UNIFIED IDEOGRAPH-8278 SELECTOR
GRASS RADICAL UNIFIED IDEOGRAPH-8279 SELECTOR
GRASS RADICAL UNIFIED IDEOGRAPH-4491 SELECTOR

A set of eighteen circled characters:

CIRCLED GRASS RADICAL-1
CIRCLED GRASS RADICAL-2
CIRCLED GRASS RADICAL-3
CIRCLED GRASS RADICAL-4
CIRCLED GRASS RADICAL-5
CIRCLED GRASS RADICAL-6
NEGATIVE CIRCLED GRASS RADICAL-1
NEGATIVE CIRCLED GRASS RADICAL-2
NEGATIVE CIRCLED GRASS RADICAL-3
NEGATIVE CIRCLED GRASS RADICAL-4
NEGATIVE CIRCLED GRASS RADICAL-5
NEGATIVE CIRCLED GRASS RADICAL-6
DOUBLE CIRCLED GRASS RADICAL-1
DOUBLE CIRCLED GRASS RADICAL-2
DOUBLE CIRCLED GRASS RADICAL-3
DOUBLE CIRCLED GRASS RADICAL-4
DOUBLE CIRCLED GRASS RADICAL-5
DOUBLE CIRCLED GRASS RADICAL-6

A set of six outline-formatted characters:

DOUBLE-STRUCK GRASS RADICAL-1
DOUBLE-STRUCK GRASS RADICAL-2
DOUBLE-STRUCK GRASS RADICAL-3
DOUBLE-STRUCK GRASS RADICAL-4

DOUBLE-STRUCK GRASS RADICAL-5
DOUBLE-STRUCK GRASS RADICAL-6

Two archaic characters:

ARCHAIC GRASS RADICAL-1
ARCHAIC GRASS RADICAL-2

Two special characters:

FRACTAL GRASS RADICAL (grass mat radical)
DOUBLE TEN GRASS RADICAL (Taiwan national day grass radical)

Two characters for Japanese use (in horizontal and vertical representation):

SQUARE KUSA KANMURI
VERTICAL SQUARE KUSA KANMURI

An ideographic description character that indicates composition with a grass radical:

IDEOGRAPHIC DESCRIPTION CHARACTER GRASS RADICAL ABOVE

A variation indicator, to indicate that the following grass radical is only approximately like the one shown. The sequence can be replaced when an exactly correct grass radical character is added to the standard:

GRASS RADICAL VARIATION INDICATOR

Variant selectors, to choose the six standard forms from a unified character:

GRASS RADICAL VARIANT SELECTOR-1
GRASS RADICAL VARIANT SELECTOR-2
GRASS RADICAL VARIANT SELECTOR-3
GRASS RADICAL VARIANT SELECTOR-4
GRASS RADICAL VARIANT SELECTOR-5
GRASS RADICAL VARIANT SELECTOR-6

Two pre-deprecated format control characters, which allow turning on or off national shaping for the grass radicals:

GRASS RADICAL NATIONAL SHAPES
GRASS RADICAL NOMINAL SHAPES

GRASS RADICALS

	xx0	xx1	xx2	xx3	xx4	xx5	xx6	xx7
0	卩	卩	卩	卩	卩	𦉰		卩
1	卩	𦉰	卩	𦉰	卩	卩		卩
2	卩	𦉰	卩	卩	卩	𦉰		卩
3	卩	卩	𦉰	𦉰	卩	𦉰		卩
4	𦉰	卩	𦉰	卩	卩			卩
5	𦉰	卩	卩	𦉰	𦉰			卩
6	卩	卩	卩	卩	卩			𦉰
7	卩	𦉰	卩	卩	卩			𦉰
8	卩	𦉰	卩	卩	卩			
9	卩	卩	𦉰	𦉰	卩			
A	𦉰	卩	𦉰	卩	卩			
B	𦉰	卩	卩	卩	卩			
C	卩	卩	卩	卩	𦉰			
D	卩	𦉰	卩	卩	𦉰			
E	卩	𦉰	卩	卩	𦉰			𦉰
F	卩	卩	卩	𦉰	𦉰			𦉰

G = 00
P = 00

GRASS RADICALS

hex	Name
00	ABSTRACT CHARACTER FOR RADICAL GRASS GLYPH SHAPE-1 (= 2EBE)
01	ABSTRACT CHARACTER FOR RADICAL GRASS GLYPH SHAPE-2 (= 2EBF)
02	ABSTRACT CHARACTER FOR RADICAL GRASS GLYPH SHAPE-3 (= 2EC0)
03	ABSTRACT CHARACTER FOR RADICAL GRASS GLYPH SHAPE-4 (= 2F8B)
04	ABSTRACT CHARACTER FOR RADICAL GRASS GLYPH SHAPE-5 (= FA5E)
05	ABSTRACT CHARACTER FOR RADICAL GRASS GLYPH SHAPE-6 (= 4491)
06	DINGBAT RADICAL GRASS-1
07	DINGBAT RADICAL GRASS-2
08	DINGBAT RADICAL GRASS-3
09	DINGBAT RADICAL GRASS-4
0A	DINGBAT RADICAL GRASS-5
0B	DINGBAT RADICAL GRASS-6
0C	CJK SUPERUNIFIED RADICAL GRASS
0D	TRADITIONAL CHINESE RADICAL GRASS-1
0E	TRADITIONAL CHINESE RADICAL GRASS-2
0F	TRADITIONAL CHINESE RADICAL GRASS-3
10	TRADITIONAL CHINESE RADICAL GRASS-4
11	TRADITIONAL CHINESE RADICAL GRASS-5
12	TRADITIONAL CHINESE RADICAL GRASS-6
13	SIMPLIFIED CHINESE RADICAL GRASS-1
14	SIMPLIFIED CHINESE RADICAL GRASS-2
15	SIMPLIFIED CHINESE RADICAL GRASS-3
16	SIMPLIFIED CHINESE RADICAL GRASS-4
17	SIMPLIFIED CHINESE RADICAL GRASS-5
18	SIMPLIFIED CHINESE RADICAL GRASS-6
19	JAPANESE RADICAL GRASS-1
1A	JAPANESE RADICAL GRASS-2
1B	JAPANESE RADICAL GRASS-3
1C	JAPANESE RADICAL GRASS-4
1D	JAPANESE RADICAL GRASS-5
1E	JAPANESE RADICAL GRASS-6
1F	KOREAN RADICAL GRASS-1
20	KOREAN RADICAL GRASS-2
21	KOREAN RADICAL GRASS-3
22	KOREAN RADICAL GRASS-4
23	KOREAN RADICAL GRASS-5
24	KOREAN RADICAL GRASS-6
25	VIETNAMESE RADICAL GRASS-1
26	VIETNAMESE RADICAL GRASS-2
27	VIETNAMESE RADICAL GRASS-3
28	VIETNAMESE RADICAL GRASS-4
29	VIETNAMESE RADICAL GRASS-5
2A	VIETNAMESE RADICAL GRASS-6
2B	CJK RADICAL GRASS-2 LEFT HALF
2C	CJK RADICAL GRASS-2 RIGHT HALF
2D	CJK RADICAL GRASS-3 LEFT HALF
2E	CJK RADICAL GRASS-3 RIGHT HALF
2F	CJK COMPATIBILITY IDEOGRAPH-FA5E LEFT HALF
30	CJK COMPATIBILITY IDEOGRAPH-FA5E RIGHT HALF
31	KANGXI RADICAL GRASS LEFT HALF
32	KANGXI RADICAL GRASS RIGHT HALF
33	GRASS RADICAL UNIFIED IDEOGRAPH-8278 SELECTOR
34	GRASS RADICAL UNIFIED IDEOGRAPH-8279 SELECTOR
35	GRASS RADICAL UNIFIED IDEOGRAPH-4491 SELECTOR
36	CIRCLED GRASS RADICAL-1
37	CIRCLED GRASS RADICAL-2
38	CIRCLED GRASS RADICAL-3
39	CIRCLED GRASS RADICAL-4
3A	CIRCLED GRASS RADICAL-5
3B	CIRCLED GRASS RADICAL-6
3C	NEGATIVE CIRCLED GRASS RADICAL-1
3D	NEGATIVE CIRCLED GRASS RADICAL-2
3E	NEGATIVE CIRCLED GRASS RADICAL-3
3F	NEGATIVE CIRCLED GRASS RADICAL-4
40	NEGATIVE CIRCLED GRASS RADICAL-5
41	NEGATIVE CIRCLED GRASS RADICAL-6
42	DOUBLE CIRCLED GRASS RADICAL-1
43	DOUBLE CIRCLED GRASS RADICAL-2
44	DOUBLE CIRCLED GRASS RADICAL-3
45	DOUBLE CIRCLED GRASS RADICAL-4
46	DOUBLE CIRCLED GRASS RADICAL-5
47	DOUBLE CIRCLED GRASS RADICAL-6
48	DOUBLE-STRUCK GRASS RADICAL-1
49	DOUBLE-STRUCK GRASS RADICAL-2
4A	DOUBLE-STRUCK GRASS RADICAL-3
4B	DOUBLE-STRUCK GRASS RADICAL-4
4C	DOUBLE-STRUCK GRASS RADICAL-5
4D	DOUBLE-STRUCK GRASS RADICAL-6
4E	ARCHAIC GRASS RADICAL-1
4F	ARCHAIC GRASS RADICAL-2
50	FRACTAL GRASS RADICAL
51	DOUBLE TEN GRASS RADICAL
52	SQUARE KUSA KANMURI

hex	Name
53	VERTICAL SQUARE KUSA KANMURI
54	(This position shall not be used)
55	(This position shall not be used)
56	(This position shall not be used)
57	(This position shall not be used)
58	(This position shall not be used)
59	(This position shall not be used)
5A	(This position shall not be used)
5B	(This position shall not be used)
5C	(This position shall not be used)
5D	(This position shall not be used)
5E	(This position shall not be used)
5F	(This position shall not be used)
60	(This position shall not be used)
61	(This position shall not be used)
62	(This position shall not be used)
63	(This position shall not be used)
64	(This position shall not be used)
65	(This position shall not be used)
66	(This position shall not be used)
67	(This position shall not be used)
68	(This position shall not be used)
69	(This position shall not be used)
6A	(This position shall not be used)
6B	(This position shall not be used)
6C	(This position shall not be used)
6D	(This position shall not be used)
6E	(This position shall not be used)
6F	(This position shall not be used)
70	IDEOGRAPHIC DESCRIPTION CHARACTER GRASS RADICAL ABOVE
71	GRASS RADICAL VARIATION INDICATOR
72	GRASS RADICAL VARIANT SELECTOR-1
73	GRASS RADICAL VARIANT SELECTOR-2
74	GRASS RADICAL VARIANT SELECTOR-3
75	GRASS RADICAL VARIANT SELECTOR-4
76	GRASS RADICAL VARIANT SELECTOR-5
77	GRASS RADICAL VARIANT SELECTOR-6
78	(This position shall not be used)
79	(This position shall not be used)
7A	(This position shall not be used)
7B	(This position shall not be used)
7C	(This position shall not be used)
7D	(This position shall not be used)
7E	GRASS RADICAL NATIONAL SHAPES
7F	GRASS RADICAL NOMINAL SHAPES