

ATypI: TypeTech Forum Prague 2004



IKARUS[®] & DTL FontMaster

Introduction and History

- Ikarus was the first professional font production system
- Ikarus format was the first industry standard for digital font data
- The development started as early as 1976
- Ikarus was the source for many inventions and developments in font technology:
 - Hinting technology
 - Interpolation (Multiple Master)
 - Autotracing
 - AutoKerning
 - Microtypographic extensions like HZ (InDesign)

Ikarus has been continuously developed for more than 25 years on varying platforms and operating systems like:

- | | |
|---------------------------|----------------------------|
| ▪ General Automation (GA) | Ikarus V2 |
| ▪ LSI, PDP-11 (DEC) /RSX | Ikarus V3 |
| ▪ VAX (DEC) /VMS | Ikarus V4 |
| ▪ SUN /Unix | Ikarus V4 |
| ▪ Vax Station / VMS | Ikarus V4 |
| ▪ Sony NEWS / UNIX | Ikarus V4 |
| ▪ MAC / OS 1–9 | Ikarus M |
| ▪ PC / DOS | Ikarus B |
| ▪ PC / Windows | DTL FontMaster |
| ▪ MAC / OS X | Ikarus V4 + DTL FontMaster |

General Features and Functionality

- Data base structure (Archive, Font, Glyph)
- Batch oriented
- Command language
- Modular structure (>100 modules available)
- Fully scriptable since V4 (1985)
- Editors X-Window based
- 4 byte data structures:
 - Full support of Unicode 4.0 and non BMP characters
 - More than 200.000 glyphs in one data base file
- Platform independent data formats

Detailed Functionality (1)

- Data Management
Merge, Delete, Copy, Merge Composites...
- List/Plot/Proof
Glyph, font or archive level
- Editing modules for:
Outline (IK, Bézier)
Hints
Bitmaps
Interpolation
Kanji Separation
TrueType table editing
- Autotracing
- Digitizer Interface for manual digitizing
- Modification modules (Contour, Shadow, Italic...)

10101	A	A	A	A	A	A	A	A
10102	B	B	B	B	B	B	B	B
10103	C	C	C	C	C	C	C	C
10104	D	D	D	D	D	D	D	D
10105	E	E	E	E	E	E	E	E
10106	F	F	F	F	F	F	F	F
10107	G	G	G	G	G	G	G	G
10108	H	H	H	H	H	H	H	H
10109	I	I	I	I	I	I	I	I
10110	J	J	J	J	J	J	J	J
10111	K	K	K	K	K	K	K	K
10112	L	L	L	L	L	L	L	L
10113	M	M	M	M	M	M	M	M
10114	N	N	N	N	N	N	N	N
10115	O	O	O	O	O	O	O	O
10116	P	P	P	P	P	P	P	P
10117	Q	Q	Q	Q	Q	Q	Q	Q
10118	R	R	R	R	R	R	R	R
10119	S	S	S	S	S	S	S	S
10120	T	T	T	T	T	T	T	T

F015003T ; 5019437 ; 6837 ; F01 macfont:~ font\$ sudo mount pinguin:/TRANSFER /TRANSFER

ek - Version 6.0 beta by URW Hamburg (c)

A:	9999	FONT DISPLAY	PREVIOUS	NEXT	SAVE	ORIGINAL
T:	hya3gjm.ik	BACKGROUND	SAVE COMP:	AUTO	SEMI	MANUAL
C:	0:0					END

LSB:	0	YMIN:	0	IK:	1
W:	0	YMAX:	0	CN:	1
RSB:	7500	TOTW:	7500		17118/*****

丽	举	丿	乃	久	毛	么
20029	20030	20031	20035	20037	20039	20040
义	之	乌	乍	乎	乏	乐
20041	20043	20044	20045	20046	20047	20048
兵	兵	乔	乖	乘	乙	乜
20050	20051	20052	20054	20056	20057	20060
九	乞	乜	习	乡	书	乚
20061	20062	20063	20064	20065	20070	20073
买	乱	乳	乾	了	予	争
20080	20081	20083	20094	20102	20104	20105
事	二	亍	于	亏	云	互
20107	20108	20109	20110	20111	20113	20114

SEPARATION		
swf	previous	next
X		
T		
I		
P		
L		
Automatic		
info		
#		

SELECTION					
p	co	cg	ch		
EDIT	IMPRO	MOD	KA	INST	SPEC
EDIT					
quick			undo		
delete	insert	change label			
shift	shift hor.	shift ver.			
shift smooth	quick on co	adj to guide			
merge	copy	channelize			
scale	rotate	mirror			
fit	merge comp.	hidden lines			
sidebearings	text	typ. header			
store 1	2	3	4	paste 1	2 3 4
5	6	7	8	9	10 5 6 7 8 9 10

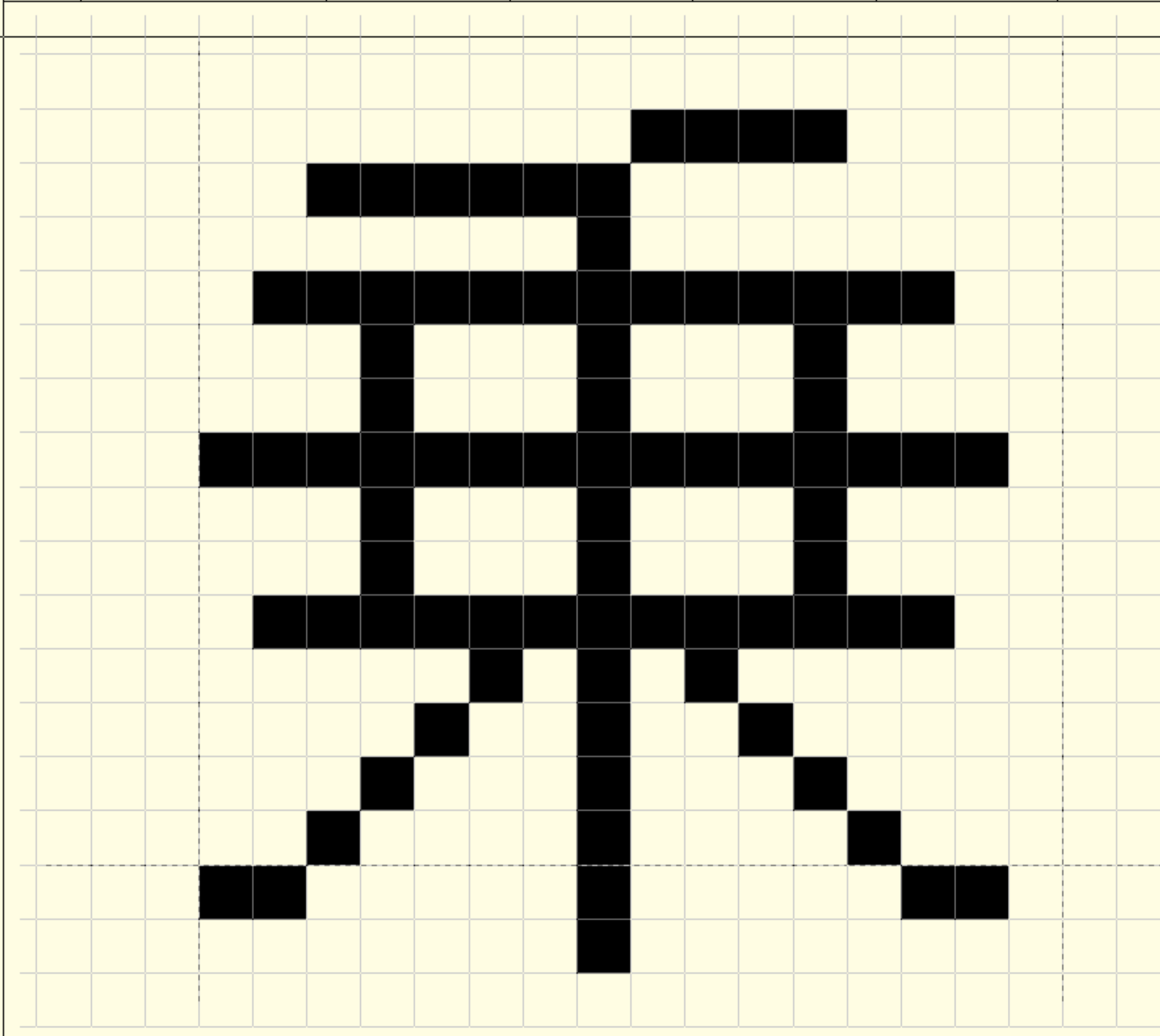
DISPLAY			
reset	zoom +	zoom -	setup
measure	marks	numbers	coords
fill	perm	compare	shift bg
flat curv	inflect.	stems	hide co
guides	cp guides	move	edit
H guides	V guides	grid	copy bg

F015003T
F015004D
F015004T
F015006D
F015006T
F015022D
F015022T
F015023T
F015023D
F015024T
F015024D
F015026T
F015026D
F015042T
F015042D
F015043T
F015043D
F015044T
F015044D
F015047T
F015047D
F015048T
F015048D
F015062T
F015062D
F015063T
F015063D
F015064T
F015064D
F015802T
F015802D
F015803T
F015803D
macfont

es - Version 6.0 beta by URW Hamburg (c)

A:	9999	FONT DISPLAY	SAVE AS	PREVIOUS	QUIT	L:	0
T:	tbgm16uni					W:	15
C:	x4e57	BACKGROUND	SAVE	NEXT	END	R:	1

Ymin: -1
Ymax: 14
TotW: 16



DISPLAY	
reset	measure
guides	grid
zoom +	zoom -
setup	

SELECTION	
P	A
nA	Ch
LV	LH
w in	w out

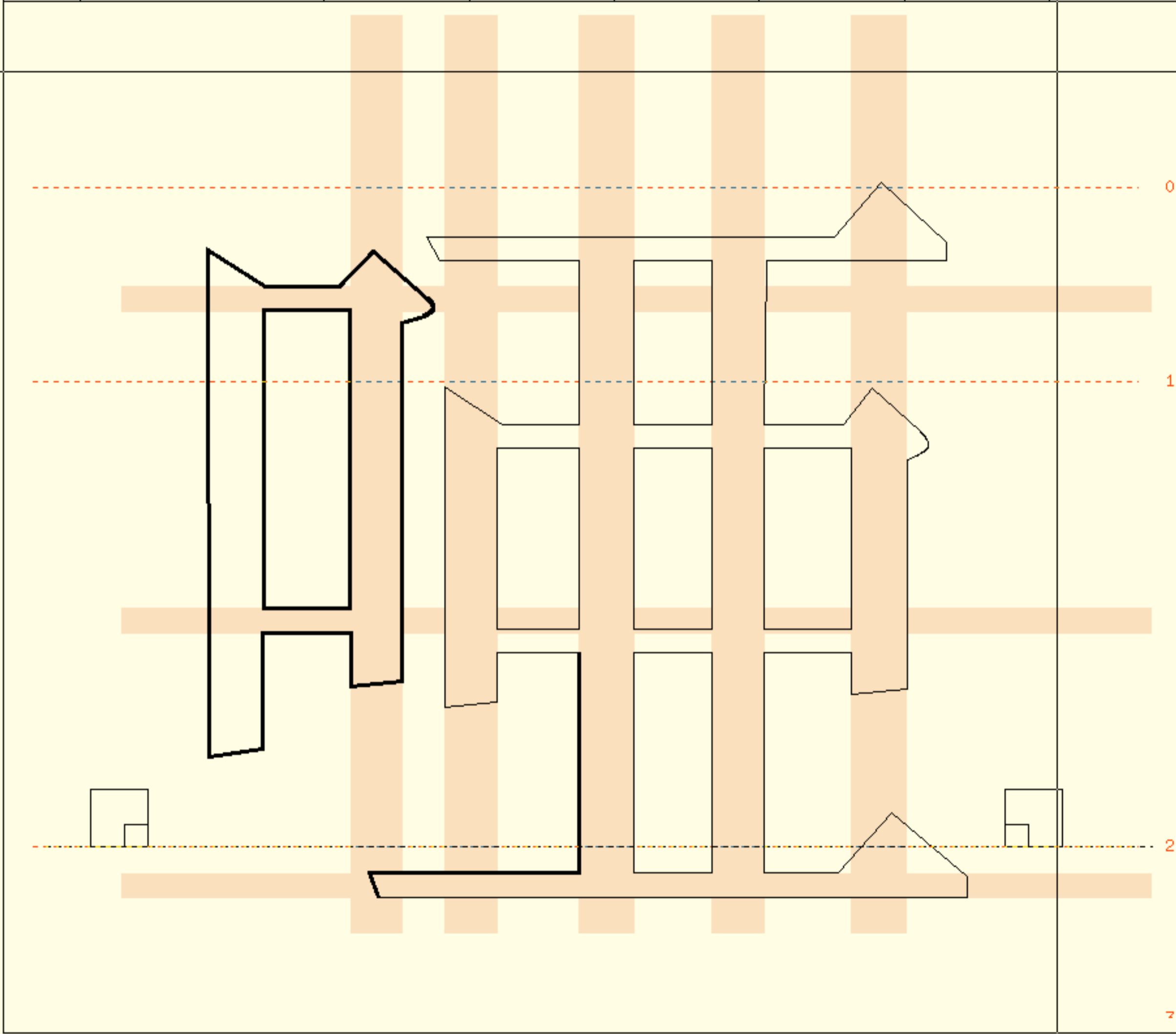
EDIT			
undo	divide		
font header	skeletonize		
quick	delete		
invert	shift		
insert	copy		
rotate	mirror		
sidebear.	scale		
ch. weight	smooth		
pattern	merge		
circle	rectangle		
ellipse	rhombus		
insert brush	delete brush		
invert brush	define brush		
set text	push	pop	
cut 1	2	3	4
paste 1	2	3	4
18/ 16			

F015003T
F015004D
F015004T
F015006D
F015006T
F015022D
F015022T
F015023T
F015023D
F015024
F015024D
F015026
F015026D
F015042
F015043
F015044
F015047
F015048
F015062
F015063
F015064
F015802
F015803
macfont

eb - Version 5.0 by URW Hamburg (c)

A:	9999	FONT DISPLAY	SAVE AS	PREVIOUS	QUIT	EDIT HINTS
T:	hm.ib					
C:	1602	BACKGROUND	SAVE	NEXT	END	EDIT OUTLINE

L:	1046	IK:	88
W:	13303	CN:	8
R:	651	TOTW:	15000
YMIN:	-879	YMAX:	11626



DISPLAY	
fill	measure
guides h	guides v
marks	numbers
zoom +	zoom -
reset	grid
scroll bg	setup

SELECT HINTS	
<input checked="" type="checkbox"/> h str stem	<input type="checkbox"/> v str stem
<input type="checkbox"/> h cur stem	<input type="checkbox"/> v cur stem
<input type="checkbox"/> h stem zone	<input type="checkbox"/> v stem zone
<input type="checkbox"/> h counter	<input type="checkbox"/> v counter
<input type="checkbox"/> ghoststems	

DISPLAY IB-HINTS	
<input type="checkbox"/> all	<input type="checkbox"/> selected

DISPLAY T1-HINTS	
<input checked="" type="checkbox"/> T1-stems	<input type="checkbox"/> T1-counter
<input type="checkbox"/> prev group	<input type="checkbox"/> next group
hint group 1 of 2	

EDIT HINTS	
<input type="checkbox"/> undo	<input type="checkbox"/> add
<input type="checkbox"/> delete	<input checked="" type="checkbox"/> modify
<input type="checkbox"/> change start	<input type="checkbox"/> reorder cont

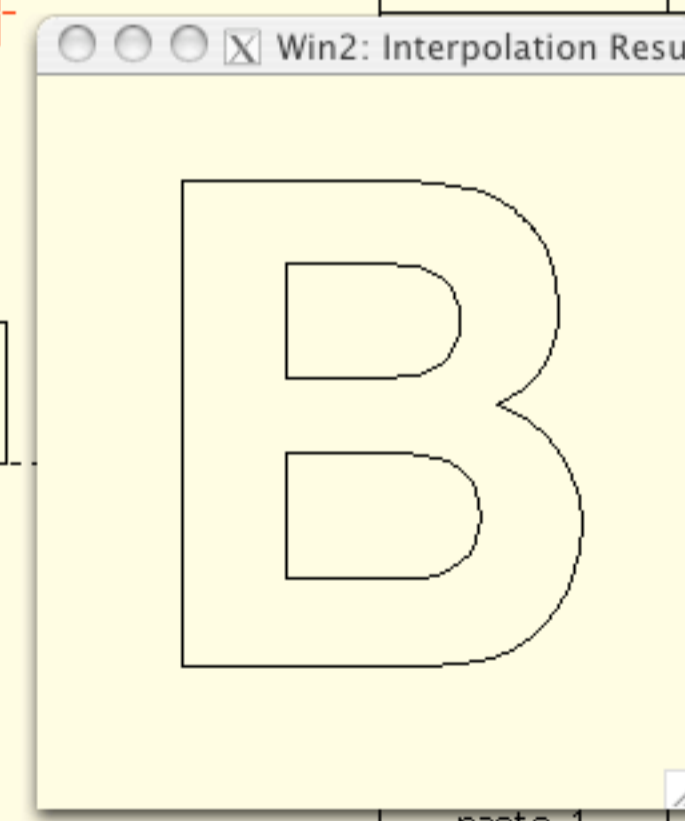
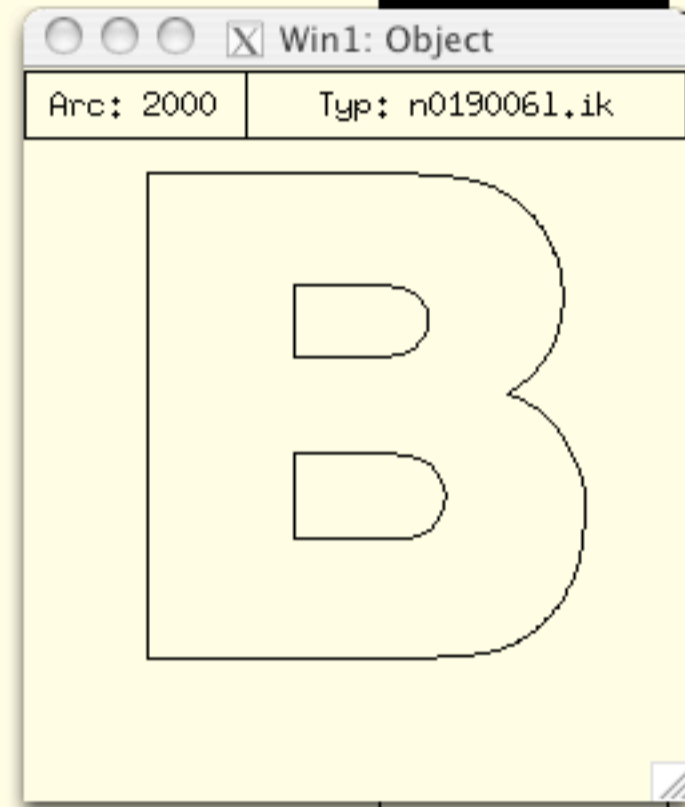
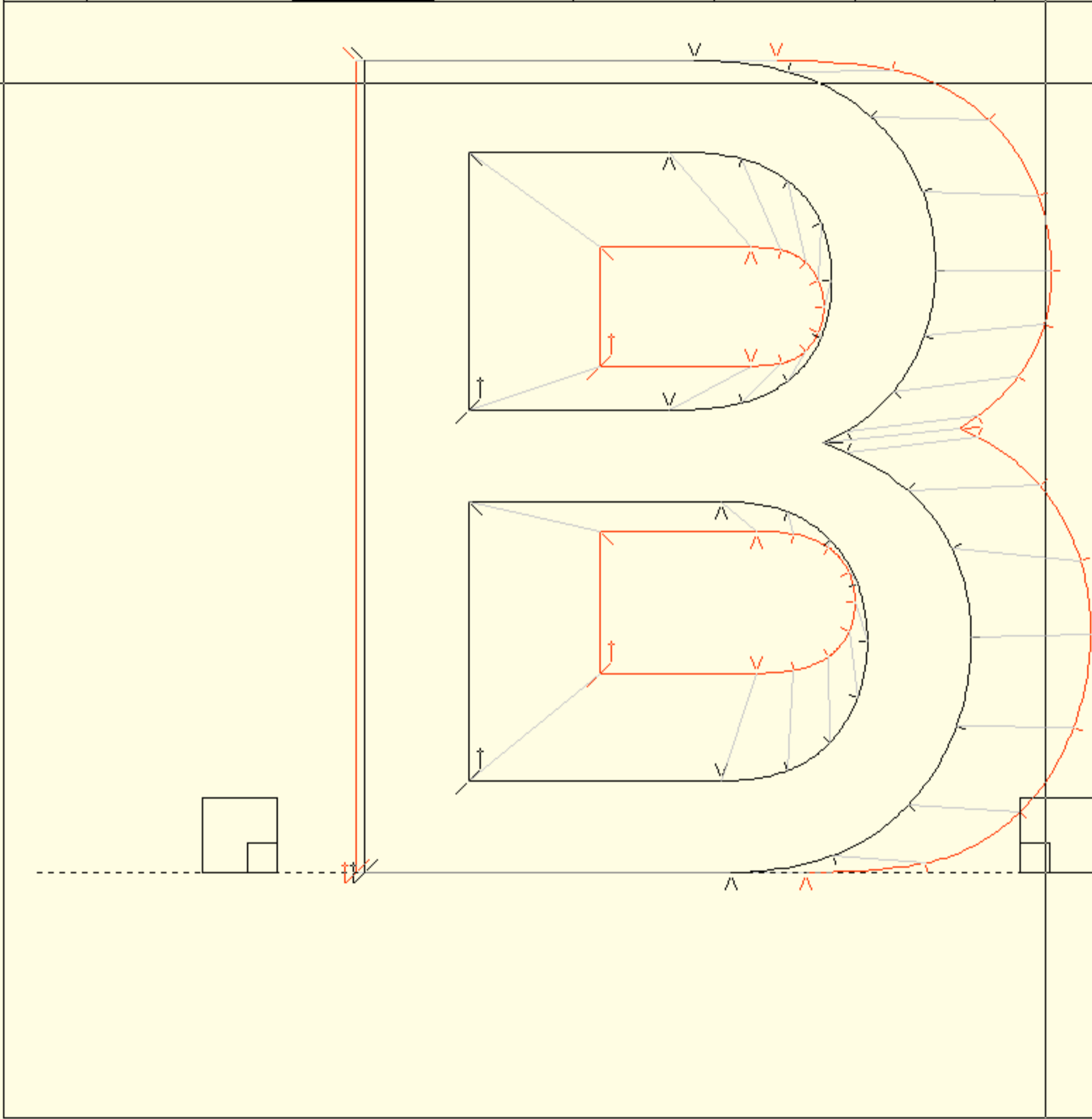
7



F015003T
F015004D
F015004T
F01500
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F01504
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F01504
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F01504
F01506
F01506
F01506
F01580
F01580
macfon

A:	2000	FONT DISP	OBJECT	SAVE AS	PREVIOUS	QUIT	EDIT	L:	1185	IK:	44
T:	n0190031							W:	8160	CN:	3
C:	102	BACKGROUND	SWAP	SAVE	NEXT	END	MODIFY	R:	660	TOTW:	10005
								YMIN:	0	YMAX:	10935

grid	perm	hico	conn
measure		guides	
guides h		guides v	
fg marks		fg numbers	
s e c t	con	seq	res



con	seq	res	
win1	win2		
reset	fill		
offset			
co			
ch			
undo			
insert			
smooth			
shift y			
quick on co			
sort co			
scissor			
rotate			
scale			
merge			
set extrema			
digitize			
circle			
hidden lines			
sidebearings			
2	3	4	
paste 1	2	3	4



Detailed Functionality (2)

- Interpolation (does not require isomorphic data)
- Hinting
- Kerning
- Metric and spacing modification
- Import from
T1, TT, OTF, TTC, CID, SfontCID, EPS
TIFF, BDF
- Export to
OCF, T1, TT, OTF, TTC, CID, SfontCID, EPS
TIFF, BDF, FON, Proprietary custom formats
Support for any Encoding
- Bitmap Embedding
- OpenType feature generation (CJK)
- Kanji Separation

DTL FontMaster Functionality

Based on Ikarus and Bezier Format
Compatible with Ikarus V4 and Ikarus M

Modular structure:

Editing

Improver

DataMaster (T1, TT, OpenType Import and Export)

TraceMaster

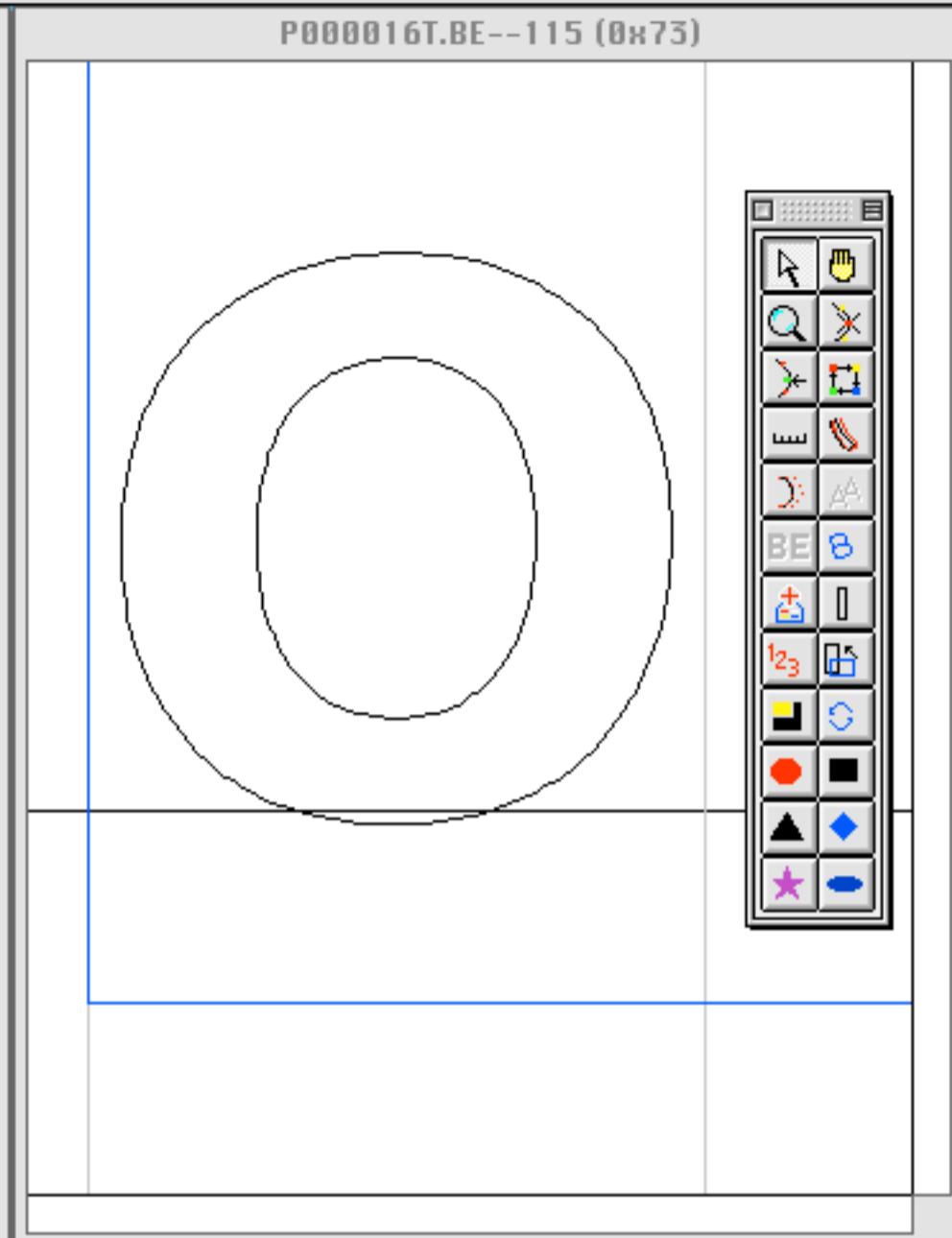
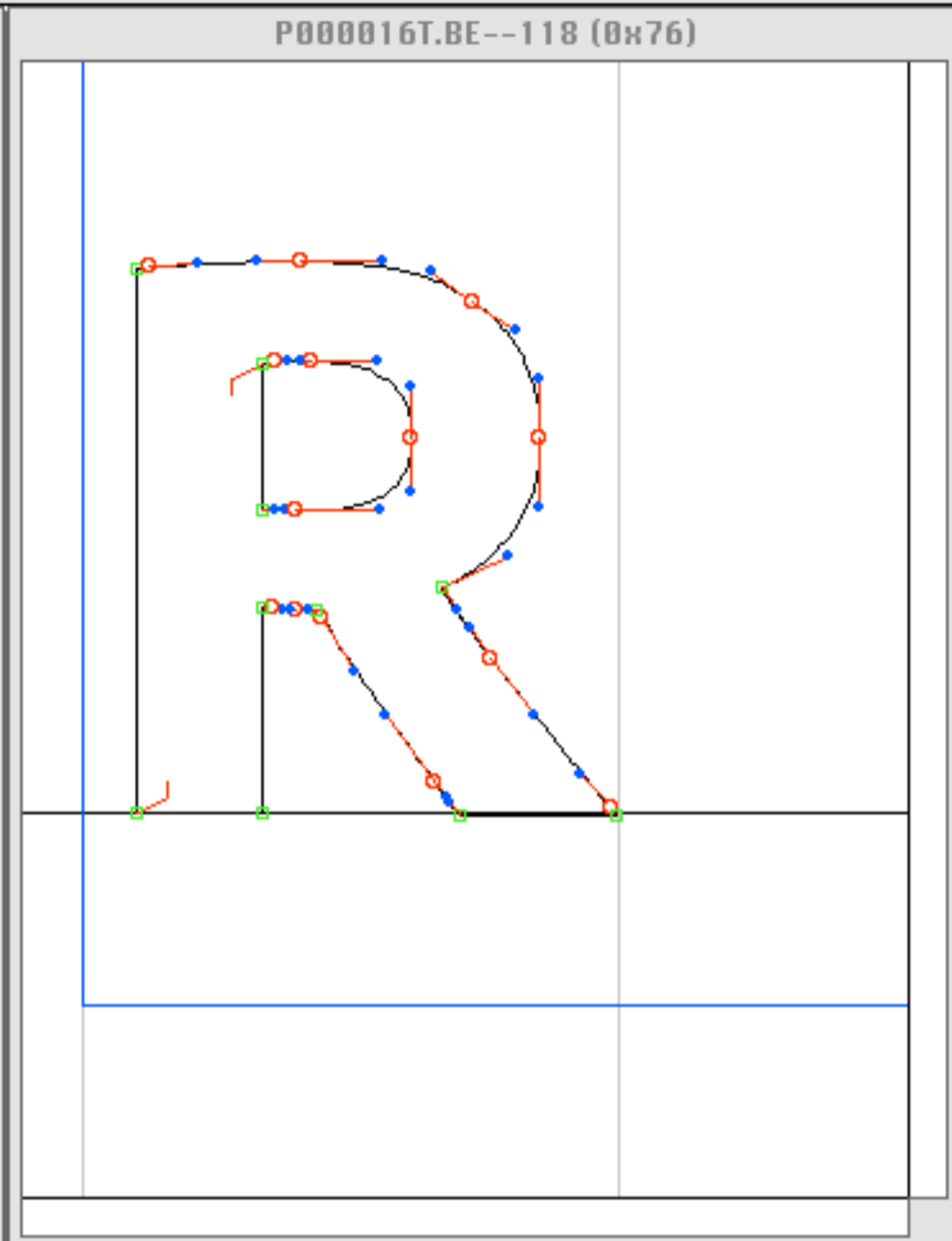
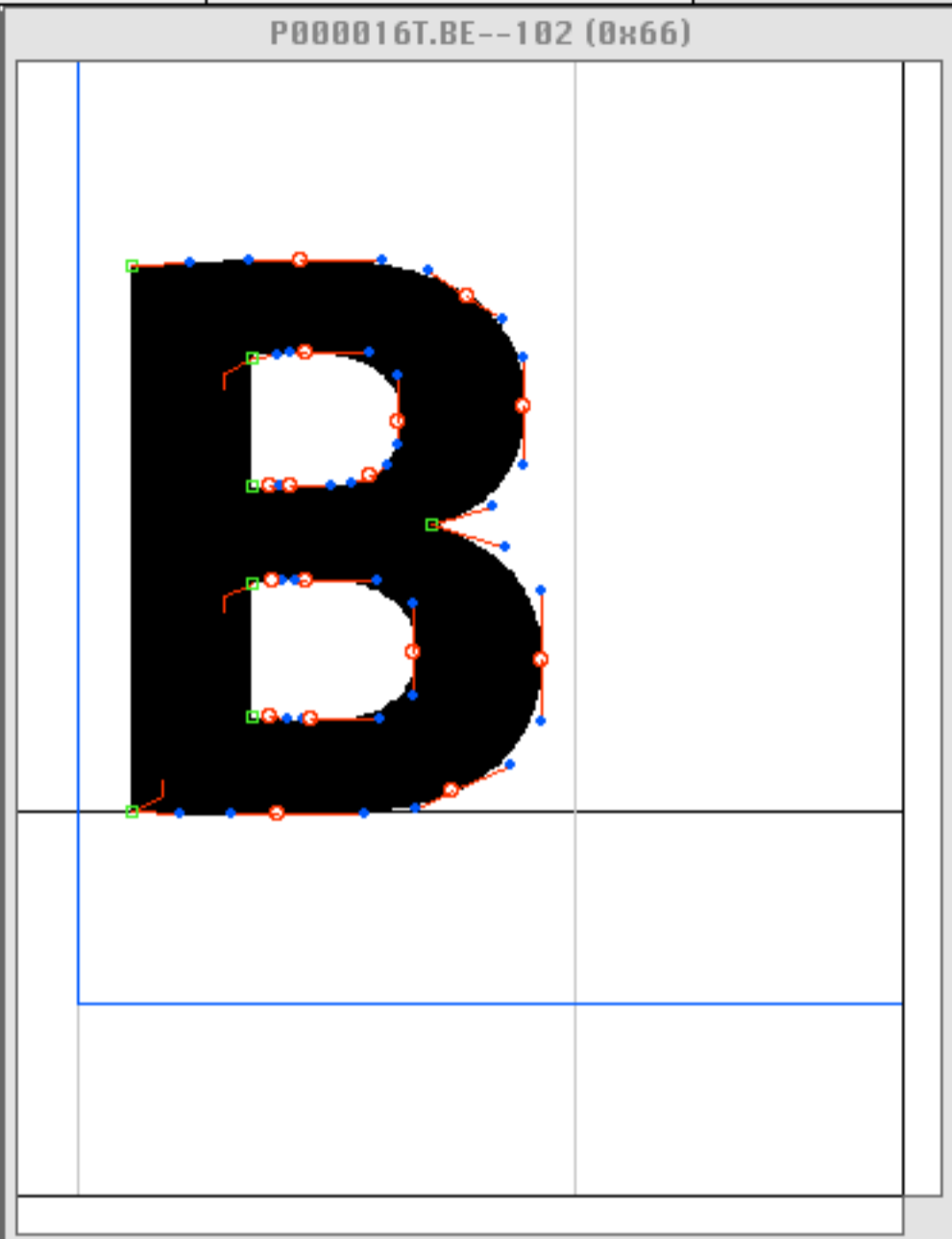
KernMaster

Graphical User Interface for Windows.
Easy creation of OpenType fonts.



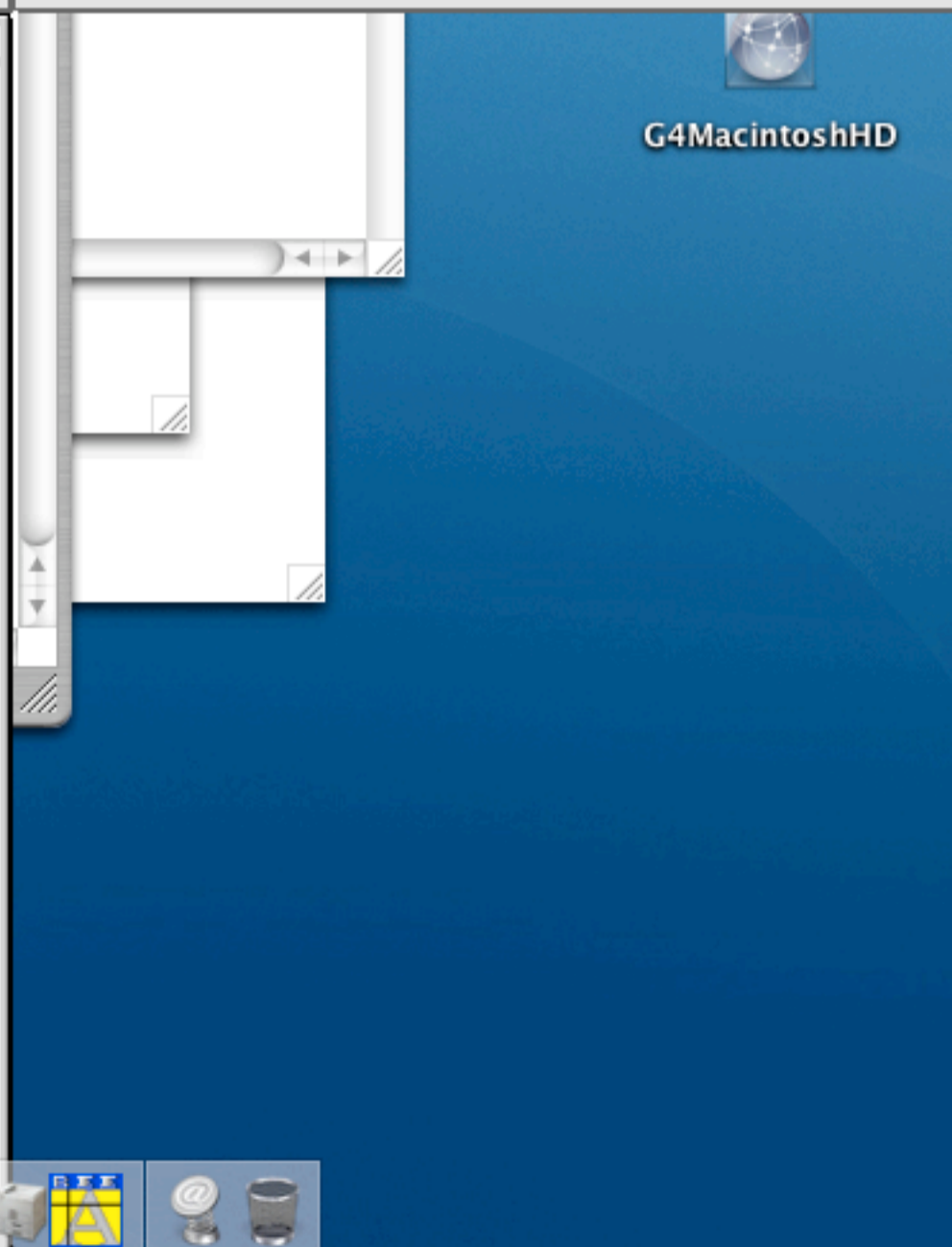
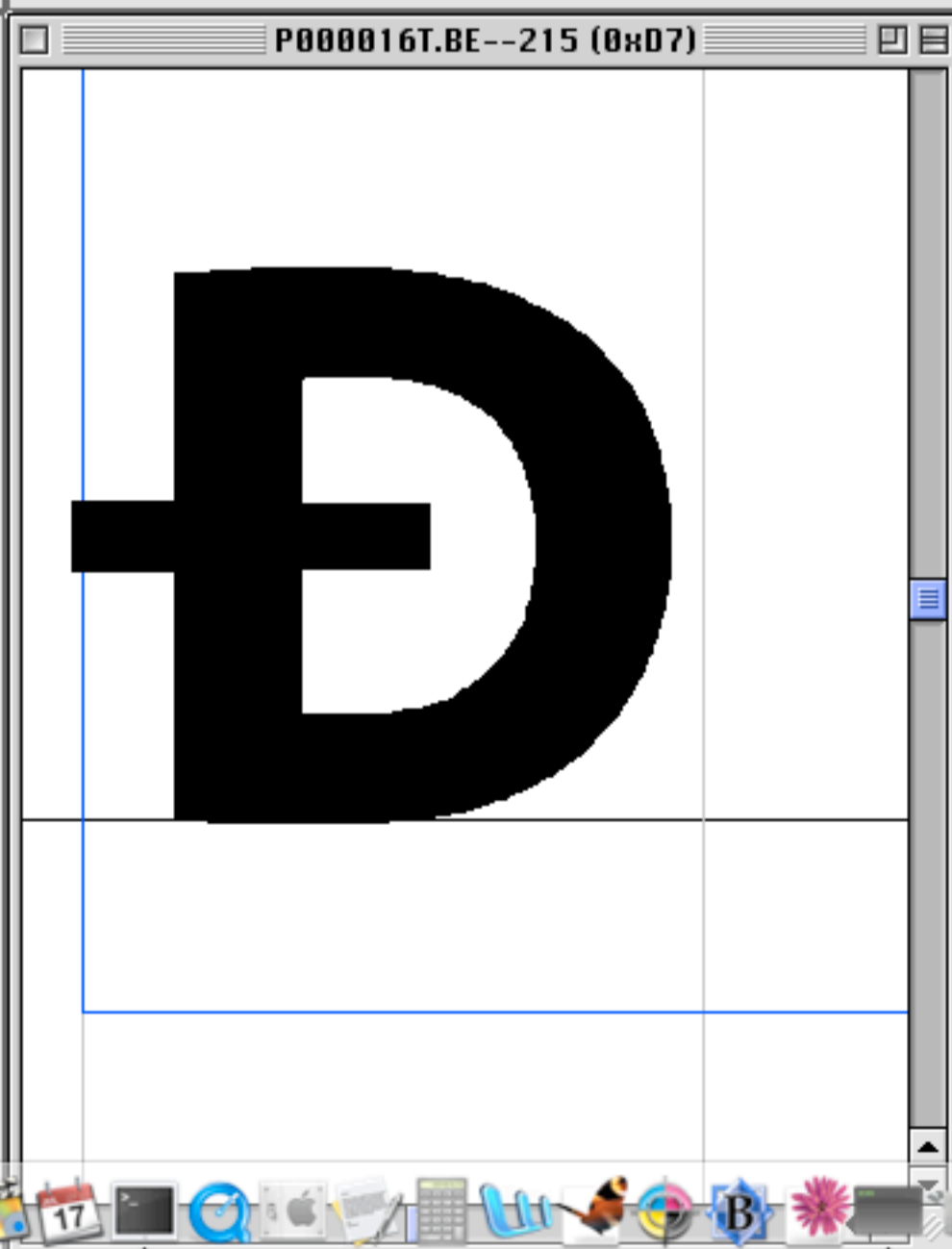
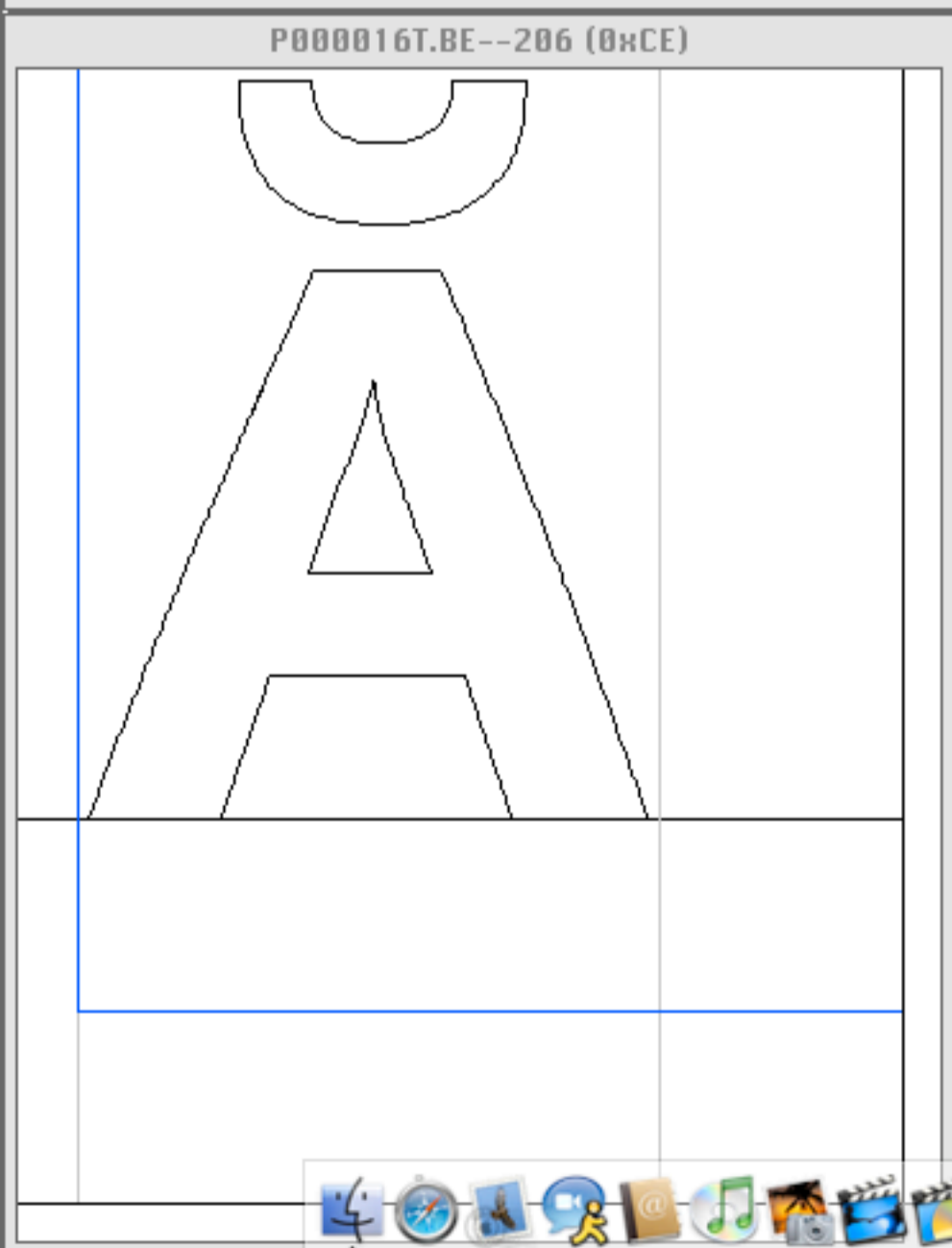
P000016T.BE:1

g	S	i	s
9	10	12	14
ñ	l	d'	á
15	16	17	18
A	B	C	D
101	102	103	104
E	F	G	H
105	106	107	108
I	J	K	L
109	110	111	112
M	N	O	P
113	114	115	116
Q	R	S	T
117	118	119	120
U	V	W	X
121	122	123	124
Y	Z	Æ	Œ
125	126	127	128
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P000016T.BE--206 (0xCE)

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236	237	238	239
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240	241	242	243
Ń	Ń	Ń	Ń



Why should I use Ikarus or DTL FontMaster?

URW++ has the longest experience in font technology

Ikarus and DTL FontMaster will be continuously developed and always be up to date with new requirements like OpenType and Unicode 4.0

Ikarus is still the most powerful font tool with an unrivaled functionality and DTL FontMaster will follow.

Why should I drive a Porsche ?