



FM: Automation at your fingertips

- *Frank E. Blokland*

Ů	Ý	Ž	Ž	Ž	Đ	Ā	Ṭ	Ĉ	Ŵ	Ŷ
256	257	258	259	260	261	262	263	264	265	266
Ē	Ĝ	Ĥ	Ī	Ī		Ḷ		Ḷ	Ḷ	
272	273	274	275	276	277	278	279	280	281	282
	Ů	Ū	Ū	À				Ě	Ě	Ĝ
288	289	290	291	292	293	294	295	296	297	298
d	e	f	g	h	i	j	k	l	m	n
304	305	306	307	308	309	310	311	312	313	314
t	u	v	w	x	y	z	æ	œ	ø	ß
320	321	322	323	324	325	326	327	328	329	330
ff	fi	fl	ft		ffi	ffl	fft		ff	fi
336	337	338	339	340	341	342	343	344	345	346
			e				i			l
352	353	354	355	356	357	358	359	360	361	362
r	s	t								



Font production process: *what to automate?*



Font production process: *what to automate?*

- Design stage



Font production process: *what to automate?*

- Design stage
- Editing stage



Font production process: *what to automate?*

- Design stage
- Editing stage
- Data management stage



Font production process: *what to automate?*

- Design stage
- Editing stage
- Data management stage
- Font generation stage



Font production process: *what to automate?*

- Design stage
- Editing stage
- Data management stage
- Font generation stage
- Format enhancement stage



The IKARUS file structure of DTL FontMaster

A versatile system for batch production:



The IKARUS file structure of DTL FontMaster

A versatile system for batch production:

- Glyph database (BE/IK)



The IKARUS file structure of DTL FontMaster

A versatile system for batch production:

- Glyph database (BE/IK)
- UFM file (font naming/metrics)



The IKARUS file structure of DTL FontMaster

A versatile system for batch production:

- Glyph database (BE/IK)
- UFM file (font naming/metrics)
- AFM/kern.fea file (kerning information)

} font data



The IKARUS file structure of DTL FontMaster

A versatile system for batch production:

- Glyph database (BE/IK)
- UFM file (font naming/metrics)
- AFM/kern.fea file (kerning information)
- Character layout file

} font data



The IKARUS file structure of DTL FontMaster

A versatile system for batch production:

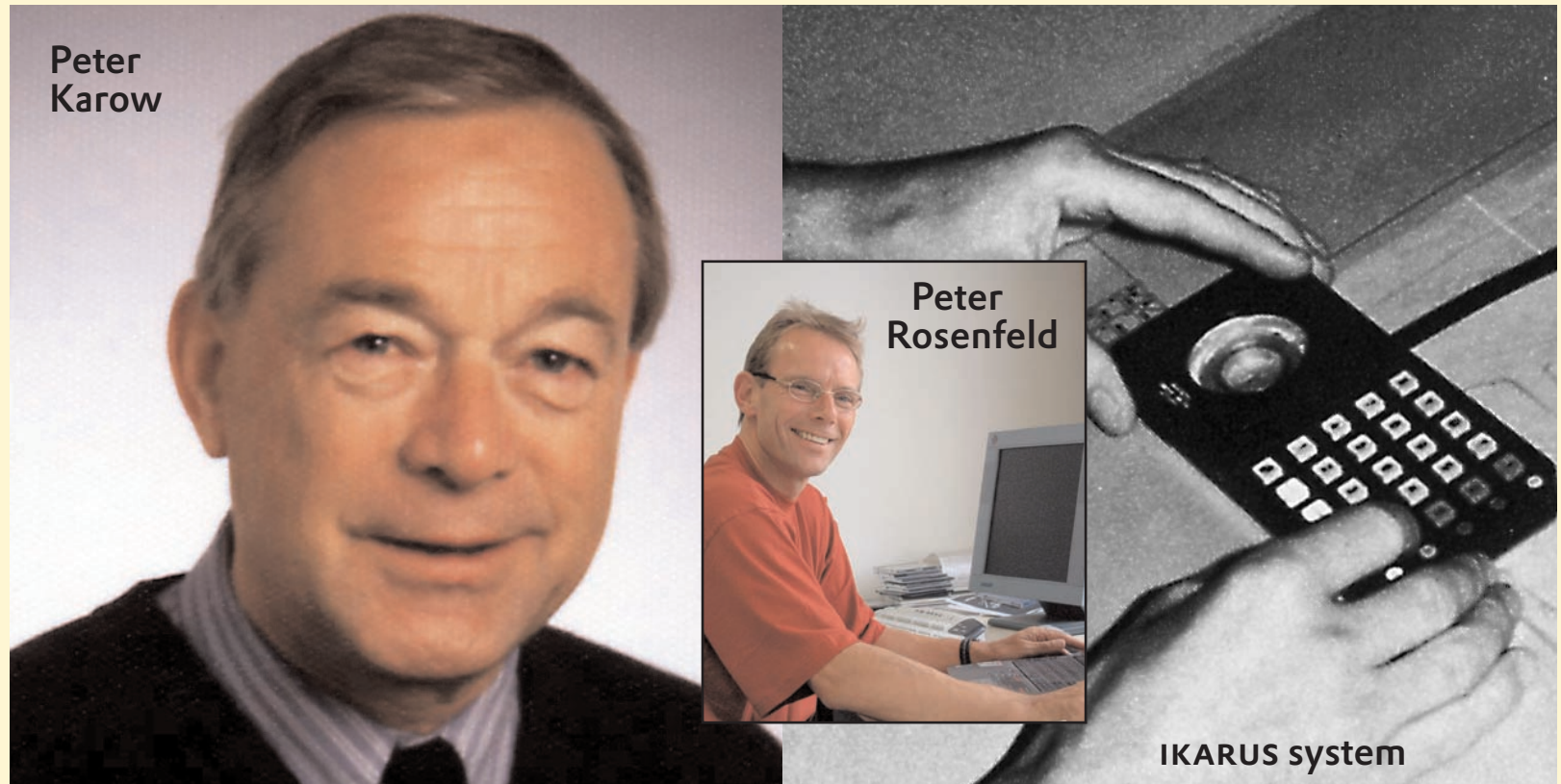
- Glyph database (BE/IK)
- UFM file (font naming/metrics)
- AFM/kern.fea file (kerning information)
- Character layout file
- OpenType layout features file

} font data



The IKARUS file structure of DTL FontMaster

Bundling URW's thirty+ years of experience...





The IKARUS file structure of DTL FontMaster

A versatile system for batch production:



The IKARUS file structure of DTL FontMaster

A versatile system for batch production:

- Platform independent



The IKARUS file structure of DTL FontMaster

A versatile system for batch production:

- Platform independent
- Easy to edit text files:
 - UFM file (font naming/metrics)
 - AFM/kern.fea file (kerning information)
 - Character layout file
 - OpenType layout features file



Glyph database (BE/IK)

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
Ø	Ä	Á	À
129	201	202	203

101

102

103



Glyph database (BE/IK)

For the storage of glyphs:



Glyph database (BE/IK)

For the storage of glyphs:

- Only contour descriptions



Glyph database (BE/IK)

For the storage of glyphs:

- Only contour descriptions
- Ordering controlled with .cha files



Glyph database (BE/IK)

For the storage of glyphs:

- Only contour descriptions
- Ordering controlled with .cha files
- Easy to re-order



Glyph database (BE/IK)

For the storage of glyphs:

- Only contour descriptions
- Ordering controlled with .cha files
- Easy to re-order
- Easy to edit & merge



Glyph database (BE/IK)

For the storage of glyphs:

- Only contour descriptions
- Ordering controlled with .cha files
- Easy to re-order
- Easy to edit & merge
- Batch handling via command files



Glyph database (BE/IK)

For the storage of glyphs:

- Only contour descriptions
- Ordering controlled with .cha files
- Easy to re-order
- Easy to edit & merge
- Batch handling via command files
- Platform independent



UFM file (font naming & metrics)

For the storage of naming & metrics info:



UFM file (font naming & metrics)

For the storage of naming & metrics info:

- Easy to edit text file



UFM file (font naming & metrics)

For the storage of naming & metrics info:

- Easy to edit text file
- Easy to duplicate for related fonts



UFM file (font naming & metrics)

For the storage of naming & metrics info:

- Easy to edit text file
- Easy to duplicate for related fonts
- Connected with glyph data via file name



UFM file (font naming & metrics)

For the storage of naming & metrics info:

- Easy to edit text file
- Easy to duplicate for related fonts
- Connected with glyph data via file name
- Platform independent



UFM file (font naming & metrics)

```
Version 001.000
FamilyName DTL Antares TPRO
FontName DTLAntaresTPRO-Regular
FullName DTL Antares TPRO Regular
UniqueID 5083209
Weight Regular
IsFixedPitch false
Ascender 750
Descender -250
UnderlinePosition -133
UnderlineThickness 20
Bodysize 1000
CapHeight 715
FigureSize 725
XHeight 477
```



Dutch Type Library

FM: AUTOMATION AT YOUR FINGERTIPS

◀ 32 ▶

Advanced: view/change UFM and PAR file entries

Common | Type 1 | TTF/OTF (1) | TTF/OTF (2) | TTF/OTF (3) | Macintosh | PAR (1) | PAR (2)

TrueType Naming Table Information

FontFamilyName: Name table ID 1

TrueType ID: Name table ID 3

SubfamilyName: Regular Name table ID 2 ▾

Designer Name: Name table ID 9

Vendor URL: Name table ID 11

License URL: Name table ID 14

TrueType Horizontal Header Information (hhea)

AscenderHHEA [units]: 950 DesenderHHEA [units]: -250 LineGapHHEA [units]: 0

OK Cancel Apply

TTF/OTF (1) dialog for editing the UFM file



AFM file / kern.fea files

For the storage of kern data:



AFM file / kern.fea files

For the storage of kern data:

- Easy to edit text files



AFM file / kern.fea files

For the storage of kern data:

- Easy to edit text files
- Connected with glyph data via file name



AFM file / kern.fea files

For the storage of kern data:

- Easy to edit text files
- Connected with glyph data via file name
- Platform independent



Character layout file

For database organization & font encoding:



Character layout file

For database organization & font encoding:

- Easy to edit text file (Excel)



Character layout file

For database organization & font encoding:

- Easy to edit text file (Excel)
- Easy to generate or customize for other database structures



Character layout file

For database organization & font encoding:

- Easy to edit text file (Excel)
- Easy to generate or customize for other database structures
- Batch handling



Character layout file

C character mapping file based on AGL_1.2;;
Starttable;;

URWNum;	UNINum;	PSNum;	PSName;
100;	x0041;	65;	A;
101;	x00C6;	225;	AE;
102;	x01FC;	;	AEacute;
103;	x01E2;	;	AEmacron;
104;	xF7E6;	;	AEsmall;
105;	x00C1;	;	Aacute;
106;	xF7E1;	;	Aacutesmall;
107;	x0102;	;	Abreve;
108;	x1EAE;	;	Abreveacute;
109;	x04D0;	;	Abrevecyrillic;
110;	x1EB6;	;	Abrevedotbelow;
111;	x1EB0;	;	Abrevegrave;



Character layout file

C character mapping file;;											
C Multiple code pages;;											
C DTL Standard layout ;;											
C Copyright DTL Germany, 2005;;											
C Version 1.2, 8 June 2005;;											
Version 002.000;;											
Starttable;;											
URWNum;	UNINum;	ANNumLat	QDNumLat	ANNumLat	QDNumLat	ANNumGr;	QDNumGr;	ANNumTu;	QDNumTu;	ANNumCy;	QD
101;	x0041;	065;	065;	065;	065;	065;	065;	065;	065;	065;	065
102;	x0042;	066;	066;	066;	066;	066;	066;	066;	066;	066;	066
103;	x0043;	067;	067;	067;	067;	067;	067;	067;	067;	067;	067
104;	x0044;	068;	068;	068;	068;	068;	068;	068;	068;	068;	068
105;	x0045;	069;	069;	069;	069;	069;	069;	069;	069;	069;	069
106;	x0046;	070;	070;	070;	070;	070;	070;	070;	070;	070;	070
107;	x0047;	071;	071;	071;	071;	071;	071;	071;	071;	071;	071
108;	x0048;	072;	072;	072;	072;	072;	072;	072;	072;	072;	072
109;	x0049;	073;	073;	073;	073;	073;	073;	073;	073;	073;	073
110;	x004a;	074;	074;	074;	074;	074;	074;	074;	074;	074;	074
111;	x004b;	075;	075;	075;	075;	075;	075;	075;	075;	075;	075
112;	x004c;	076;	076;	076;	076;	076;	076;	076;	076;	076;	076
113;	x004d;	077;	077;	077;	077;	077;	077;	077;	077;	077;	077
114;	x004e;	078;	078;	078;	078;	078;	078;	078;	078;	078;	078
115;	x004f;	079;	079;	079;	079;	079;	079;	079;	079;	079;	079
116;	x0050;	080;	080;	080;	080;	080;	080;	080;	080;	080;	080
117;	x0051;	081;	081;	081;	081;	081;	081;	081;	081;	081;	081
118;	x0052;	082;	082;	082;	082;	082;	082;	082;	082;	082;	082
119;	x0053;	083;	083;	083;	083;	083;	083;	083;	083;	083;	083
120;	x0054;	084;	084;	084;	084;	084;	084;	084;	084;	084;	084
121;	x0055;	085;	085;	085;	085;	085;	085;	085;	085;	085;	085
122;	x0056;	086;	086;	086;	086;	086;	086;	086;	086;	086;	086



OpenType layout features file

For generating GSUB & GPOS features:



OpenType layout features file

For generating GSUB & GPOS features:

- Easy to edit text file (Adobe syntax)



OpenType layout features file

For generating GSUB & GPOS features:

- Easy to edit text file (Adobe syntax)
- Supports everything that is available in Adobe's OT SDK



OpenType layout features file

For generating GSUB & GPOS features:

- Easy to edit text file (Adobe syntax)
- Supports everything that is available in Adobe's OT SDK
- For OpenType CFF & TTF



OpenType layout features file

For generating GSUB & GPOS features:

- Easy to edit text file (Adobe syntax)
- Supports everything that is available in Adobe's OT SDK
- For OpenType CFF & TTF
- Batch handling



OpenType layout features file

Conditions for OT fonts with auto features:



OpenType layout features file

Conditions for OT fonts with auto features:

- The glyphs must be present in the database



OpenType layout features file

Conditions for OT fonts with auto features:

- The glyphs must be present in the database
- The characters must be identically named in the Features and Character layout files



OpenType layout features file

Conditions for OT fonts with auto features:

- The glyphs must be present in the database
- The characters must be identically named in the Features and Character layout files
- The characters must be listed in the Character layout file. If not, features will be removed during font building



Font production process:

Advantages of automating (OT production):



Font production process:

Advantages of automating (OT production):

- Better overview & control



Font production process:

Advantages of automating (OT production):

- Better overview & control
- Easy maintenance & updating



Font production process:

Advantages of automating (OT production):

- Better overview & control
- Easy maintenance & updating
- Consistency throughout a font library



Font production process:

Conditions for automating (at DTL):



Font production process:

Conditions for automating (at DTL):

- Standard file naming structure



Font production process:

Conditions for automating (at DTL):

- Standard file naming structure
- Fixed directory structure
(file distribution via AppleScripts)



Font production process:

Conditions for automating (at DTL):

- Standard file naming structure
- Fixed directory structure
(file distribution via AppleScripts)
- Standard structured batch files
(command, management, production)
for easy duplicating & editing



File naming conventions at DTL



File naming conventions at DTL

- Eight character file names



File naming conventions at DTL

- Eight character file names
- Based on URW++'s model



File naming conventions at DTL

- Eight character file names
- Based on URW++'s model
- Used for glyph database, UFM & AFM files



File naming conventions at DTL

- Eight character file names
- Based on URW++'s model
- Used for glyph database, UFM & AFM files
- Used for font file naming
- Used for archiving



File naming conventions at DTL

- Eight character file names
- Based on URW++'s model
- Used for glyph database, UFM & AFM files
- Used for font file naming
- Used for archiving
- Also unique TrueType & OpenType ID



File naming conventions at DTL

DTL Argo West PS Type1 & TT Standard

Light	A057012T	A057032T
Regular	A057013T	A057033T
Medium	A057014T	A057034T
Bold	A057016T	A057036T
Black	A057019T	A057039T



File naming conventions at DTL

DTL Argo East PS Type1 & TT Special

Light	AE57C12T	AE57C32T
Regular	AE57C13T	AE57C33T
Medium	AE57C14T	AE57C34T
Bold	AE57C16T	AE57C36T
Black	AE57C19T	AE57C39T



File naming conventions at DTL

DTL Argo Cyrillic OpenType Standard

Light	AC57X12T	AC57X32T
Regular	AC57X13T	AC57X33T
Medium	AC57X14T	AC57X34T
Bold	AC57X16T	AC57X36T
Black	AC57X19T	AC57X39T



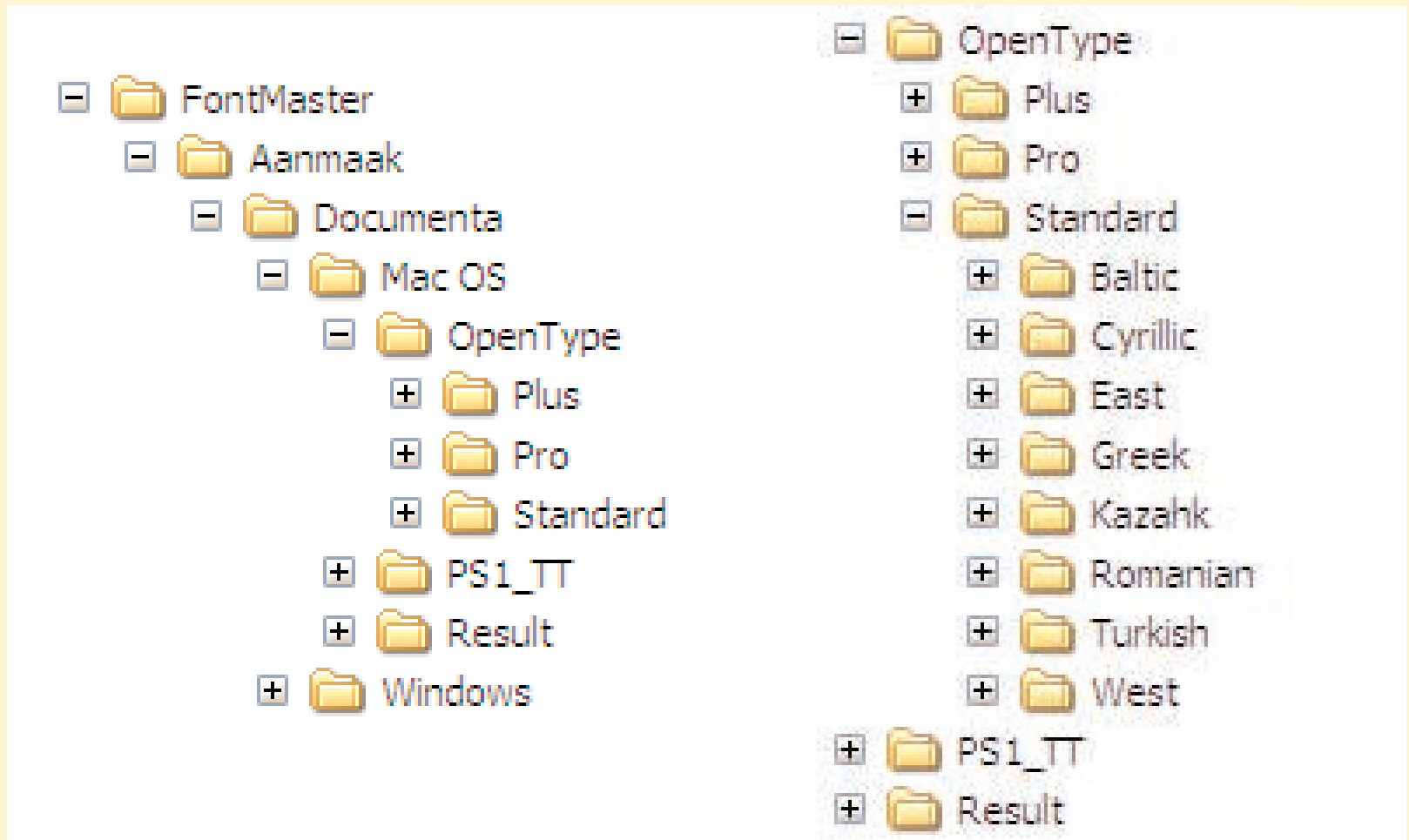
File naming conventions at DTL

DTL Argo OpenType PRO

Light	AP57X12T	AP57X32T
Regular	AP57X13T	AP57X33T
Medium	AP57X14T	AP57X34T
Bold	AP57X16T	AP57X36T
Black	AP57X19T	AP57X39T



Fixed directory structure at DTL





Hierarchy of font production files at DTL

A few examples:

1. Top/library level:

1.1.1 All.cmd (all typefaces, all formats)

1.1.2 CFF_All.cmd (all OpenType CFF fonts)

1.1.3 PS1_All.cmd (all PS Type1 fonts)

1.1.4 TT_All.cmd (all TrueType fonts)



Hierarchy of font production files at DTL

1.2 All, per font format and code page for both Mac OS and Windows:

1.2.1 CFF_West_All.cmd (only TOT)

1.2.2 CFF_East_All.cmd (only TOT)

1.2.3 CFF_Cyrillic_All.cmd (only TOT)

1.2.4 PS1_West_All.cmd

1.2.5 PS1_East_All.cmd



Hierarchy of font production files at DTL

2. Typeface level:

2.1.1 Antares_All.cmd

2.1.2 Antares_CFF_All.cmd

2.1.3 Antares_PS1_All.cmd

2.1.4 Antares_TT_All.cmd

3. Format level (sub of Typeface level):

et cetera



Standard structured batch files

CharacterLayoutFile

```
FontProduction:FontMaster:Support_Files:Character  
Layout files:OpenType:Pro:pro_otf.cha
```

```
CharacterLayoutCodePage PostScript-Number
```

```
BasicEmSquare 1000
```

```
BasicFormat BE Format
```

```
BasicFontDirectory
```

```
FontProduction:FontMaster:Aanmaak:Antares:Mac  
OS:OpenType:Pro
```

```
SelectBasicFont all
```

```
ExportFontFormat OpenType (CFF)
```

```
ExportTargetDirectory
```

```
FontProduction:FontMaster:Aanmaak:Antares:Mac  
OS:Result:OTF
```

```
ExportFontFormat OpenType (CFF)
```



FM: Automation at your fingertips

- *Frank E. Blokland*

Ů	Ý	Ž	Ž	Ž	Ɔ	Ā	Ṭ	Ĉ	Ŵ	Ŵ
256	257	258	259	260	261	262	263	264	265	266
Ē	Ĝ	Ĥ	Ī	Ī		Ḷ		Ḷ	Ḷ	
272	273	274	275	276	277	278	279	280	281	282
	Ů	Ū	Ū	À				Ě	Ě	Ĝ
288	289	290	291	292	293	294	295	296	297	298
d	e	f	g	h	i	j	k	l	m	n
304	305	306	307	308	309	310	311	312	313	314
t	u	v	w	x	y	z	æ	œ	ø	ß
320	321	322	323	324	325	326	327	328	329	330
ff	fi	fl	ft		ffi	ffl	fft		ff	fi
336	337	338	339	340	341	342	343	344	345	346
			e				i			l
352	353	354	355	356	357	358	359	360	361	362
r	s	t								