Inventor 11 Frame Generator

EMEA Manufacturing Bootcamp

Disclaimer

Modification to the Frame Generator Database are not supported and are done on your own risk.

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Stuff Relevant to Customization

•LocalizationXML.xml

• LocalizationXML.xml is an xml file holding all the profile standard (DIN, ANSI, GB…) and their sub-types (ANSI AISC FLAT) available in FrameGenerator.

•Template ipt file

• Every ipt file contains two planar sketches describing shape and orientaion info for every profile type.

•mdb databases

• mdb databases is a set of Microsoft Access based databases holding key profile standard's info, especial size info.

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LocalizationXML.xml (1)

Structure

```
<?xml version="1.0" encoding="UTF-8" ?>
- <ProfileNames>
  - <ProfileStandard InternalName="ANSI" DisplayName="ANSI">
      <ProfileType InternalName="ANSI_AISC_FLAT" DisplayName="ANSI AISC FLAT" />
      <ProfileType InternalName="ANSI_AISC_RET" DisplayName="ANSI AISC Rect" />
      <ProfileType InternalName="ANSI_AISC_SQT" DisplayName="ANSI AISC Sqare" />
      <ProfileType InternalName="ANSI_ASTM" DisplayName="ANSI ASTM" />
      <ProfileType InternalName="ANSI_HP" DisplayName="ANSI HP" />
      <ProfileType InternalName="ANSI_L_EQUAL" DisplayName="ANSI L EQUAL" />
      <ProfileType InternalName="ANSI_L_UNEQUAL" DisplayName="ANSI L UNEQUAL" />
      <ProfileType InternalName="ANSI_M" DisplayName="ANSI M" />
      <ProfileType InternalName="ANSI_MC_C" DisplayName="ANSI MC/C" />
      <ProfileType InternalName="ANSI_S" DisplayName="ANSI S" />
      <ProfileType InternalName="ANSI_ST" DisplayName="ANSI ST" />
      <ProfileType InternalName="ANSI_W" DisplayName="ANSI W" />
      <ProfileType InternalName="ANSI_WT_MT" DisplayName="ANSI WT/MT" />
    </ProfileStandard>
  - <ProfileStandard InternalName="AS" DisplayName="AS">
      <ProfileType InternalName="AS_1163_1991_RET" DisplayName="AS 1163-1991 Rect" />
      <ProfileType InternalName="AS_1163_1991_ROUND" DisplayName="AS 1163-1991 Round" />
      <ProfileType InternalName="AS_1163_1991_SQT" DisplayName="AS 1163-1991 Square" />
      <ProfileType InternalName="AS_3679_1990_BEAM" DisplayName="AS 3679-1990 Uni. Beam" />
      <ProfileType InternalName="AS_3679_1990_COLUMNS" DisplayName="AS 3679-1990 Uni. Columns" />
      <ProfileType InternalName="AS_3679_1990_EQUAL" DisplayName="AS 3679-1990 Equal L" />
      <ProfileType InternalName="AS_3679_1990_JOIST" DisplayName="AS 3679-1990 Joist w Tap" />
      <ProfileType InternalName="AS_3679_1990_PARALLEL" DisplayName="AS 3679-1990 Parallel Fla" />
      <ProfileType InternalName="AS_3679_1990_T" DisplayName="AS 3679-1990 t-asubp" />
      <ProfileType InternalName="AS_3679_1990_TAPERED" DisplayName="AS 3679-1990 Tapered Fla" />
      <ProfileType InternalName="AS_3679_1990_UNEQUAL" DisplayName="AS 3679-1990 Unequal L" />
    </ProfileStandard>
  - <ProfileStandard InternalName="BS" DisplayName="BS">
      <ProfileType InternalName="BS_4_1_BEAM" DisplayName="BS 4 : Part 1 Un. Beam" />
      <ProfileType InternalName="BS_4_1_BEARING" DisplayName="BS 4 : Part 1 Un. Bearing" />
      <ProfileType InternalName="BS_4_1_CHANNEL" DisplayName="BS 4 : Part 1 Channel" />
      <ProfileType InternalName="BS_4_1_COLUMNS" DisplayName="BS 4 : Part 1 Un. Columns" />
      <ProfileType InternalName="BS_4_1_JOIST" DisplayName="BS 4 : Part 1 Joist" />
      <ProfileType InternalName="BS_4_1_ROLLED" DisplayName="BS 4 : Part 1 Rolled T" />
      <ProfileType InternalName="BS_4_1_STRUCTURAL" DisplayName="BS 4 : Part 1 Structural T" />
      <ProfileType InternalName="BS_4848_2_RET" DisplayName="BS 4848 : Part 2 Rect" />
      <ProfileType InternalName="BS_4848_2_ROUND" DisplayName="BS 4848 : Part 2 Round" />
      <ProfileType InternalName="BS_4848_2_SQT" DisplayName="BS 4848 : Part 2 Square" />
      <ProfileType InternalName="BS_4848_4_EQUAL" DisplayName="BS 4848 : Part 4 Equal" />
      <ProfileType InternalName="BS_4848_4_UNEQUAL" DisplayName="BS 4848 : Part 4 Unequal" />
    </ProfileStandard>
  - <ProfileStandard InternalName="CNS" DisplayName="CNS">
      <ProfileType InternalName="CNS_1490_EQUAL" DisplayName="CNS 1490 Equal" />
      <ProfileType InternalName="CNS_1490_PARALLEL" DisplayName="CNS 1490 Parallel" />
```

All subtypes in ANSI

All subtypes in AS

All subtypes in BS

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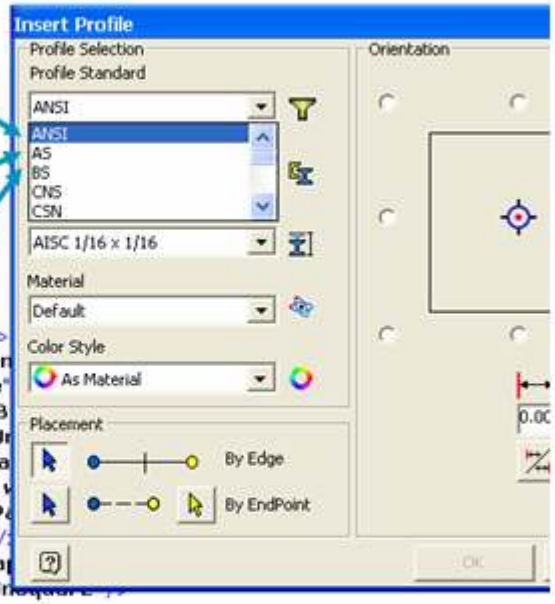
LocalizationXML.xml (2)

ProfileStandard's DisplayName

```
<?xml version="1.0" encoding="UTF-8" ?>
- <ProfileNames>
  - <ProfileStandard InternalName="ANSI" DisplayName="ANSI">
      <ProfileType InternalName="ANSI_AISC_FLAT" DisplayName="ANSI AISC FLAT" />
      <ProfileType InternalName="ANSI_AISC_RET" DisplayName="ANSI AISC Rect" />
      <ProfileType InternalName="ANSI_AISC_SQT" DisplayName="ANSI AISC Sqare" />
      <ProfileType InternalName="ANSI_ASTM" DisplayName="ANSI ASTM" />
      <ProfileType InternalName="ANSI_HP" DisplayName="ANSI HP" />
      <ProfileType InternalName="ANSI_L_EQUAL" DisplayName="ANSI L EQUAL" />
      <ProfileType InternalName="ANSI_L_UNEQUAL" DisplayName="ANSI L UNEQUAL" />
      <ProfileType InternalName="ANSI_M" DisplayName="ANSI M" />
      <ProfileType InternalName="ANSI_MC_C" DisplayName="ANSI MC/C" />
      <ProfileType InternalName="ANSI_S" DisplayName="ANSI S" />
      <ProfileType InternalName="ANSI_ST" DisplayName="ANSI ST" />
      <ProfileType InternalName="ANSI_W" DisplayName="ANSI W" />
      <ProfileType InternalName="ANSI_WT_MT" DisplayName="ANSI WT/MT" />
    </ProfileStandard>
  - <ProfileStandard InternalName="AS" DisplayName="AS">
      <ProfileType InternalName="AS_1163_1991_RET" DisplayName="AS 1163-1991 Rect" />
      <ProfileType InternalName="AS_1163_1991_ROUND" DisplayName="AS 1163-1991 Roun
      <ProfileType InternalName="AS_1163_1991_SQT" DisplayName="AS 1163-1991 Square"
      <ProfileType InternalName="AS_3679_1990_BEAM" DisplayName="AS 3679-1990 Uni. B
      <ProfileType InternalName="AS_3679_1990_COLUMNS" DisplayName="AS 3679-1990 Ur
      <ProfileType InternalName="AS_3679_1990_EQUAL" DisplayName="AS 3679-1990 Equa
      <ProfileType InternalName="AS_3679_1990_JOIST" DisplayName="AS 3679-1990 Joist
      <ProfileType InternalName="AS_3679_1990_PARALLEL" DisplayName="AS 3679-1990 P
      <ProfileType InternalName="AS_3679_1990_T" DisplayName="AS 3679-1990 t-asubp" /
      <ProfileType InternalName="AS_3679_1990_TAPERED" DisplayName="AS 3679-1990 Ta
      <ProfileType InternalName="AS_3679_1990_UNEQUAL" DisplayName="AS 3679-1990 Un
    </ProfileStandard>
  - <ProfileStandard InternalName="BS" DisplayName="BS">
      <ProfileType InternalName="BS_4_1_BEAM" DisplayName="BS 4 : Part 1 Un. Beam" />
      <ProfileType InternalName="BS_4_1_BEARING" DisplayName="BS 4 : Part 1 Un. Bearing" />
      <ProfileType InternalName="BS_4_1_CHANNEL" DisplayName="BS 4 : Part 1 Channel" />
      <ProfileType InternalName="BS_4_1_COLUMNS" DisplayName="BS 4 : Part 1 Un. Columns" />
      <ProfileType InternalName="BS_4_1_JOIST" DisplayName="BS 4 : Part 1 Joist" />
      <ProfileType InternalName="BS_4_1_ROLLED" DisplayName="BS 4 : Part 1 Rolled T" />
      <ProfileType InternalName="BS_4_1_STRUCTURAL" DisplayName="BS 4 : Part 1 Structural T" />
```



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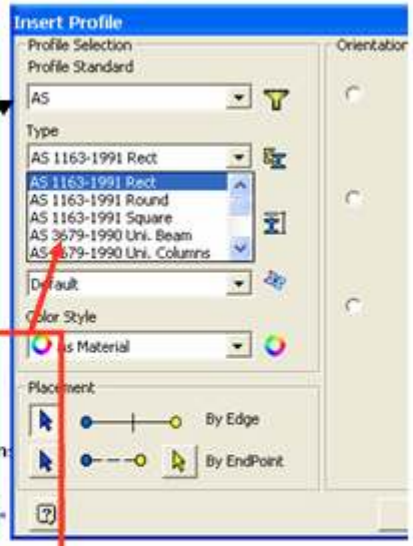
LocalizationXML.xml (3)

ProfileType's DisplayName

```
<?xml version="1.0" encoding="UTF-8" ?>
- <ProfileNames>
  - <ProfileStandard InternalName="ANSI" DisplayName="ANSI">
      <ProfileType InternalName="ANSI_AISC_FLAT" DisplayName="ANSI AISC FLAT" />
      <ProfileType InternalName="ANSI_AISC_RET" DisplayName="ANSI AISC Rect" />
      <ProfileType InternalName="ANSI_AISC_SQT" DisplayName="ANSI AISC Sqare" />
      <ProfileType InternalName="ANSI_ASTM" DisplayName="ANSI ASTM" />
      <ProfileType InternalName="ANSI_HP" DisplayName="ANSI HP" />
      <ProfileType InternalName="ANSI_L_EQUAL" DisplayName="ANSI L EQUAL" />
      <ProfileType InternalName="ANSI_L_UNEQUAL" DisplayName="ANSI L UNEQUAL" />
      <ProfileType InternalName="ANSI_M" DisplayName="ANSI M" />
      <ProfileType InternalName="ANSI_MC_C" DisplayName="ANSI MC/C" />
      <ProfileType InternalName="ANSI_S" DisplayName="ANSI S" />
      <ProfileType InternalName="ANSI_ST" DisplayName="ANSI ST" />
      <ProfileType InternalName="ANSI_W" DisplayName="ANSI W" />
      <ProfileType InternalName="ANSI_WT_MT" DisplayName="ANSI WT/MT" />
    </ProfileStandard>
  - <ProfileStandard InternalName="AS" DisplayName="AS">
      <ProfileType InternalName="AS_1163_1991_RET" DisplayName="AS 1163-1991 Rect" />
      <ProfileType InternalName="AS_1163_1991_ROUND" DisplayName="AS 1163-1991 Round" />
      <ProfileType InternalName="AS_1163_1991_SQT" DisplayName="AS 1163-1991 Square" />
      <ProfileType InternalName="AS_3679_1990_BEAM" DisplayName="AS 3679-1990 Uni. Beam" />
      <ProfileType InternalName="AS_3679_1990_COLUMNS" DisplayName="AS 3679-1990 Uni. Column
      <ProfileType InternalName="AS_3679_1990_EQUAL" DisplayName="AS 3679-1990 Equal L" />
      <ProfileType InternalName="AS_3679_1990_JOIST" DisplayName="AS 3679-1990 Joist w Tap" />
      <ProfileType InternalName="AS_3679_1990_PARALLEL" DisplayName="AS 3679-1990 Parallel Fla"
      <ProfileType InternalName="AS_3679_1990_T" DisplayName="AS 3679-1990 t-asubp" />
      <ProfileType InternalName="AS_3679_1990_TAPERED" DisplayName="AS 3679-1990 Tapered Fla" />
      <ProfileType InternalName="AS_3679_1990_UNEQUAL" DisplayName="AS 3679-1990 Unequal L" />
    </ProfileStandard>
  - <ProfileStandard InternalName="BS" DisplayName="BS">
      <ProfileType InternalName="BS_4_1_BEAM" DisplayName="BS 4 : Part 1 Un. Beam" />
      <ProfileType InternalName="BS_4_1_BEARING" DisplayName="BS 4 : Part 1 Un. Bearing" />
```



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Template ipt File (1)

Containing shape and orientation info for every profile type.

Two planar sketches are needed, AFG_Detailed and AFG_Simplified.

AFG_Detailed provides detailed shape info.

AFG_Simplified provides nothing but the width and height, which is vital for end treatments.

The orientation info is provide by Parameters.

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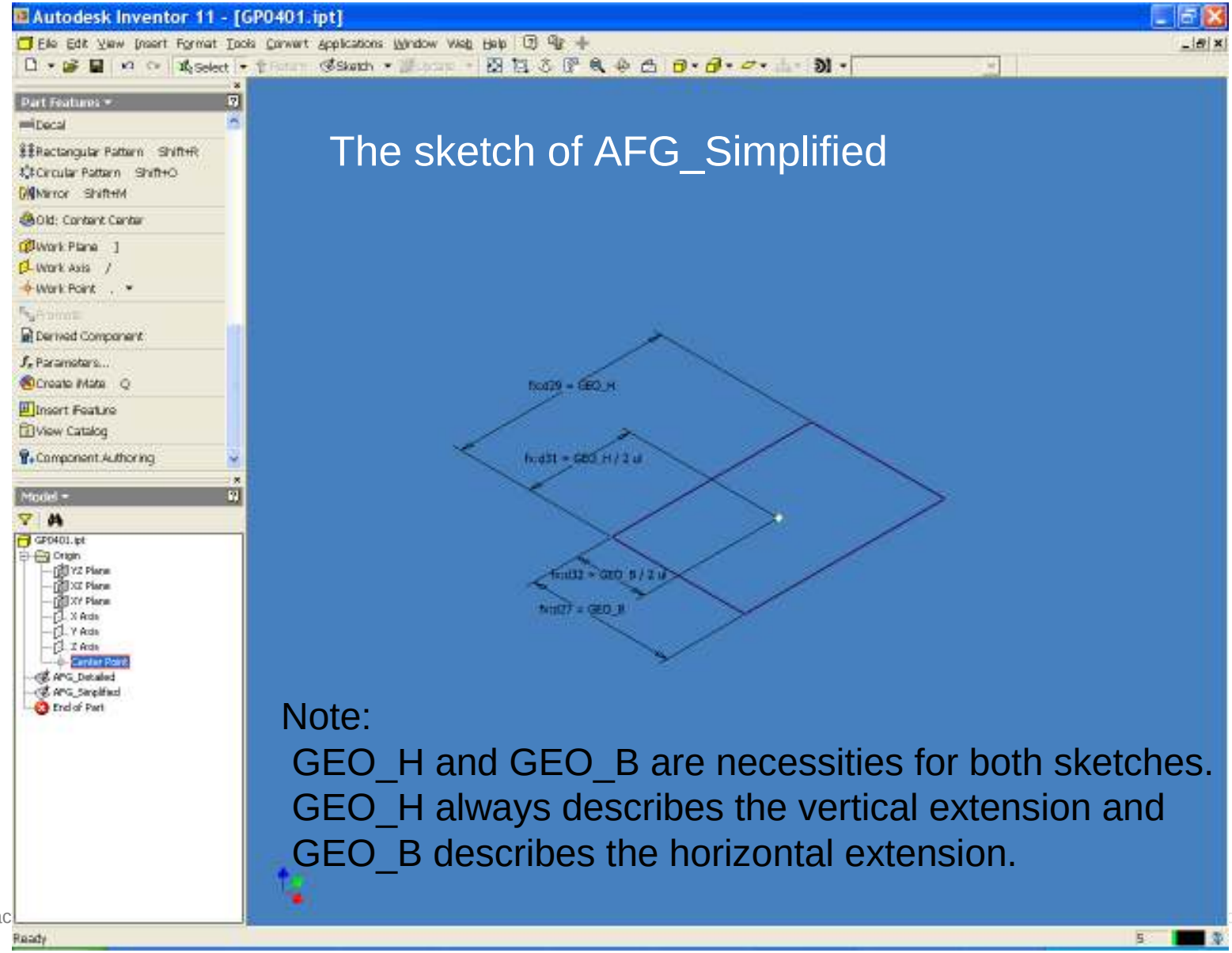
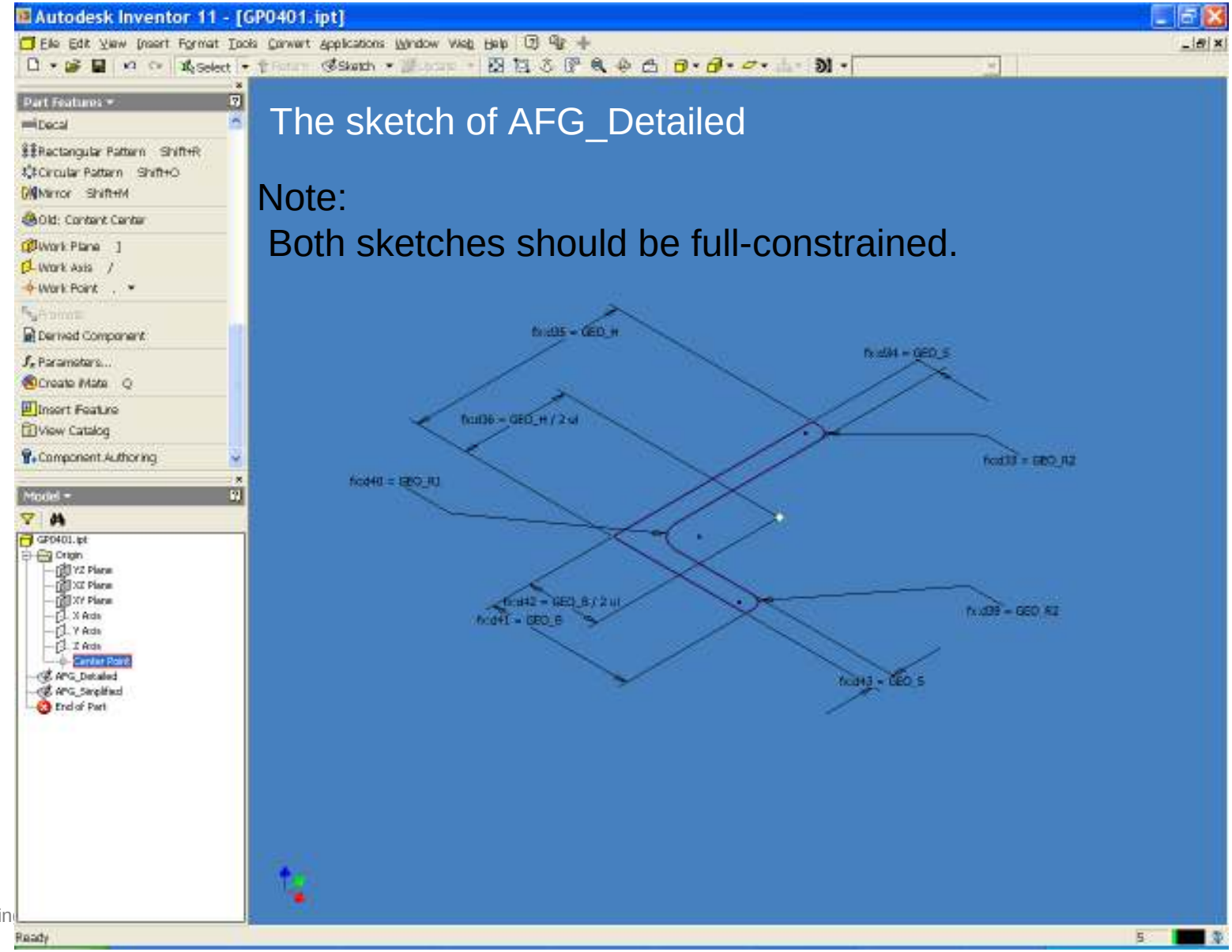
Template ipt File (2)

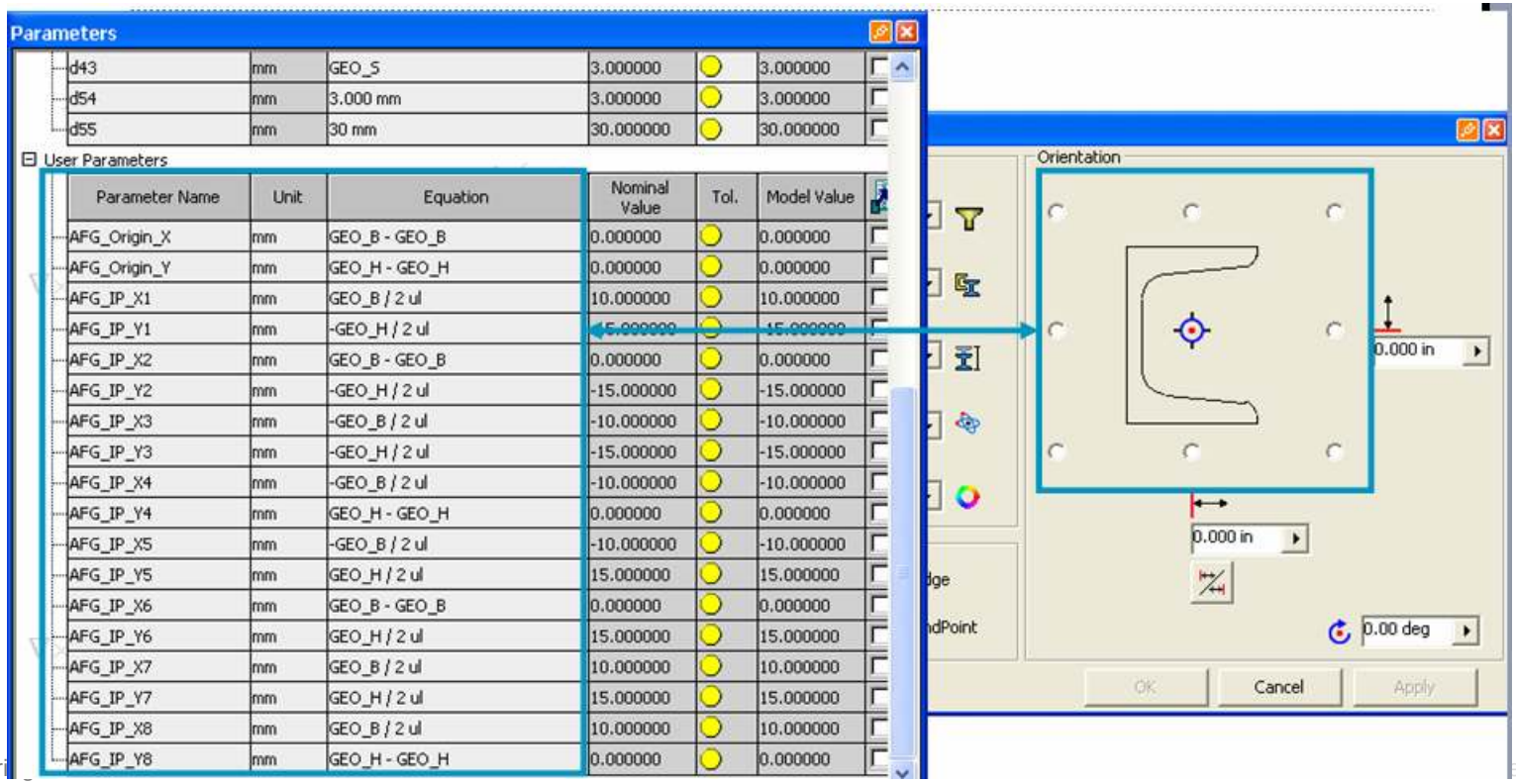


Template ipt File (3)



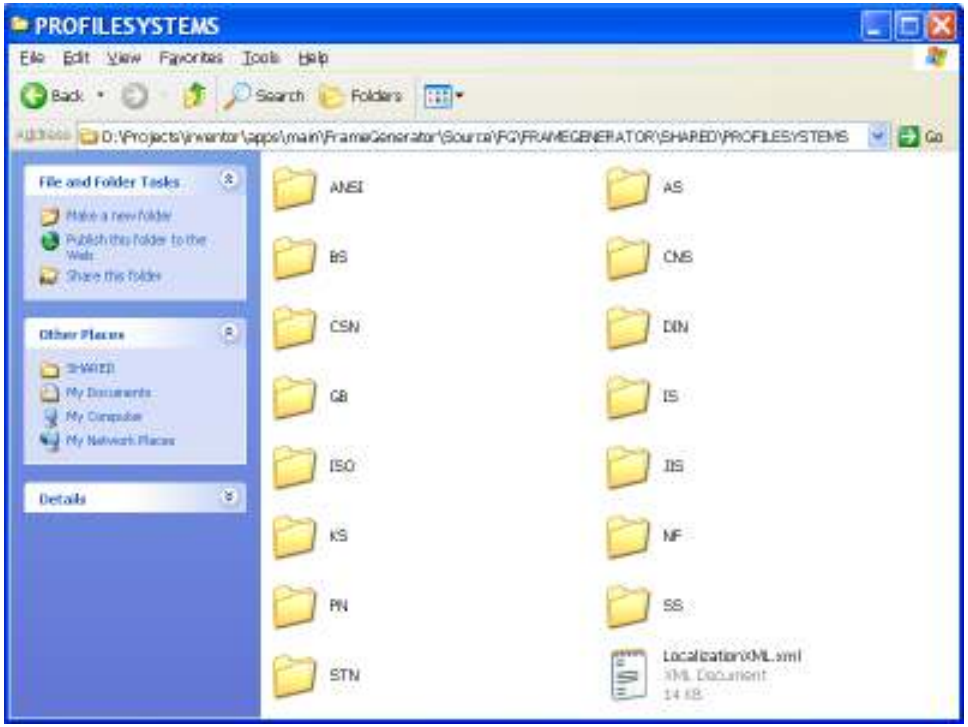
Template ipt File (4)

AFG_Origin_X and AFG_Origin_Y gives the default origin.
(AFG_IP_X1, AFG_IP_Y1)… give the other 8 orientaion points.



mdb (1)

Every Standard has an individual folder in “SHARED\PROFILESYSTEMS”



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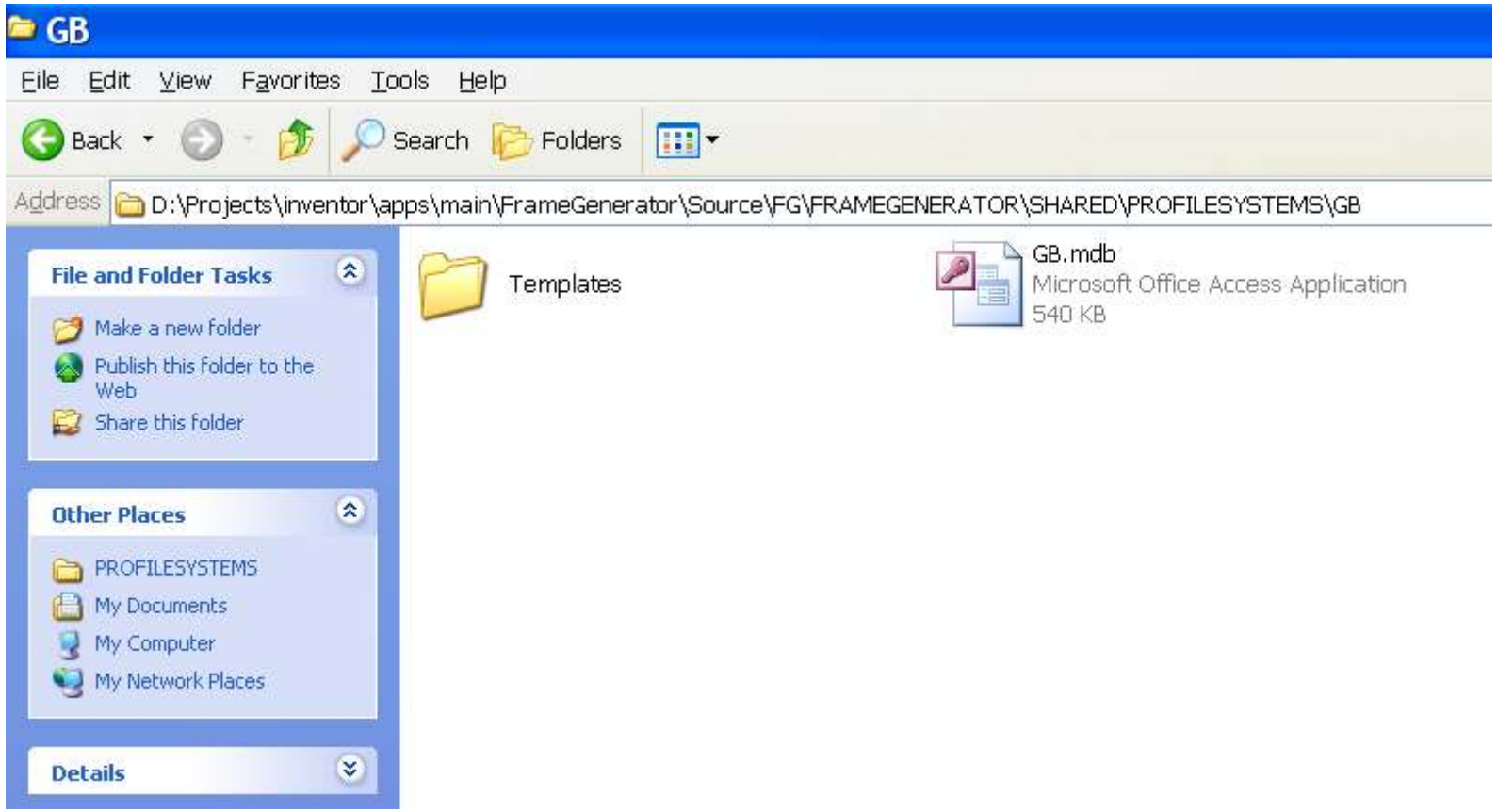
mdb (2)

Every folder has a XX.mdb and a subfolder called "Templates"



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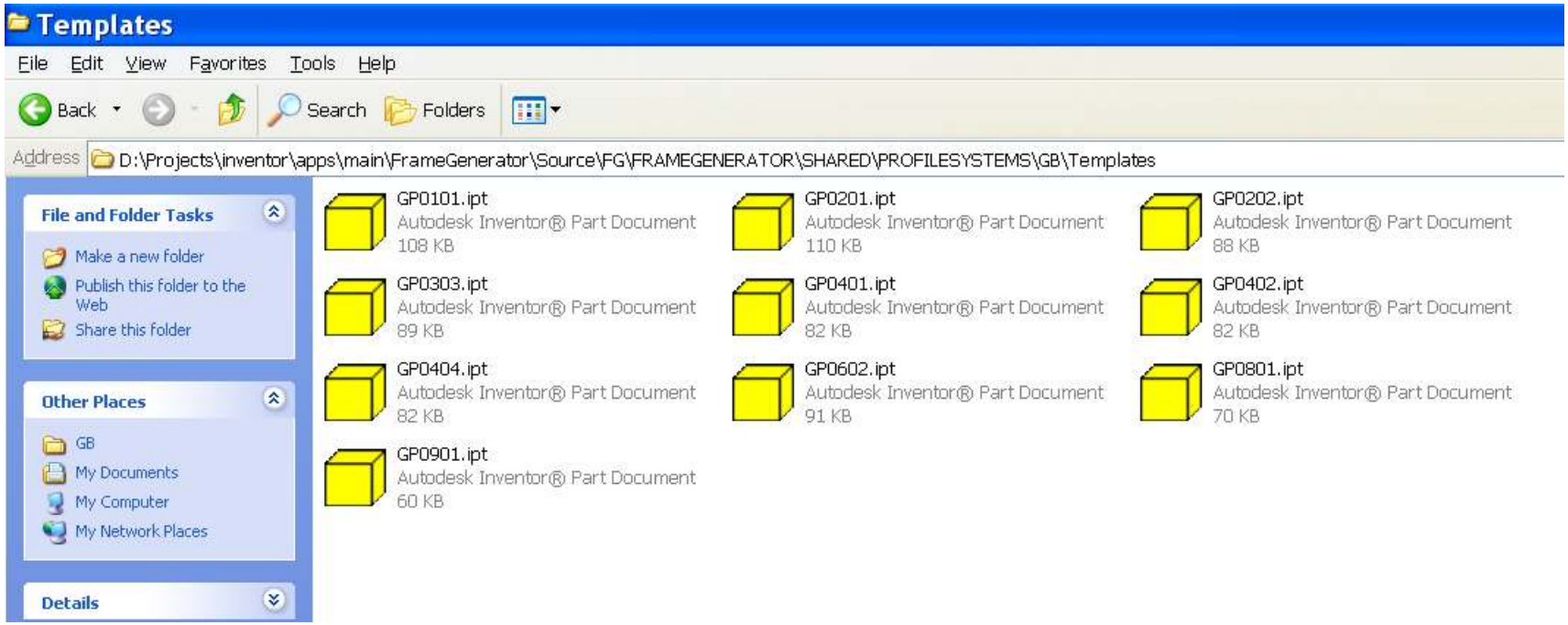
mdb (3)

The subfolder “Templates” contains the template ipt files. Every subtype in GB, for example, has an ipt file.



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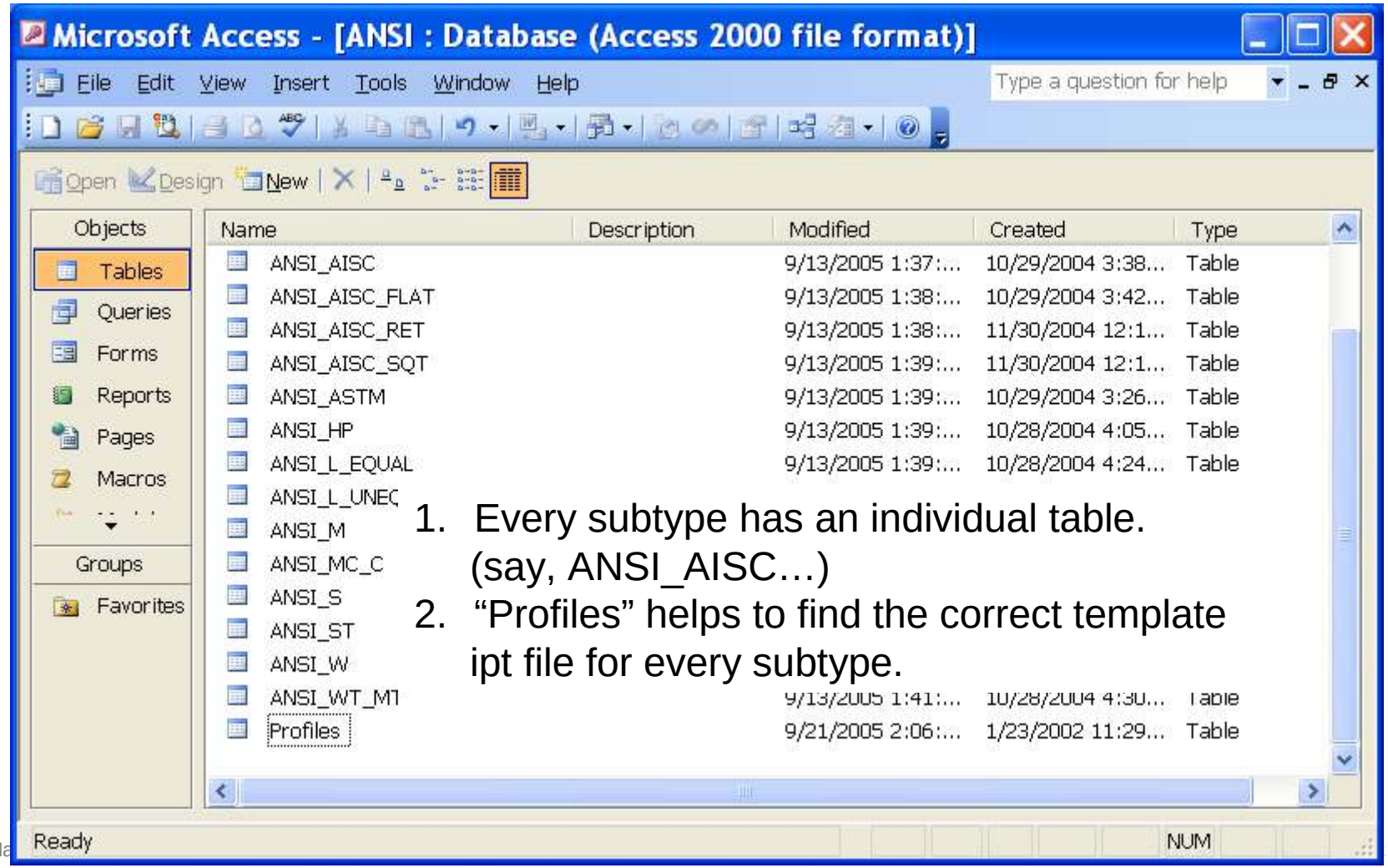
mdb (4)

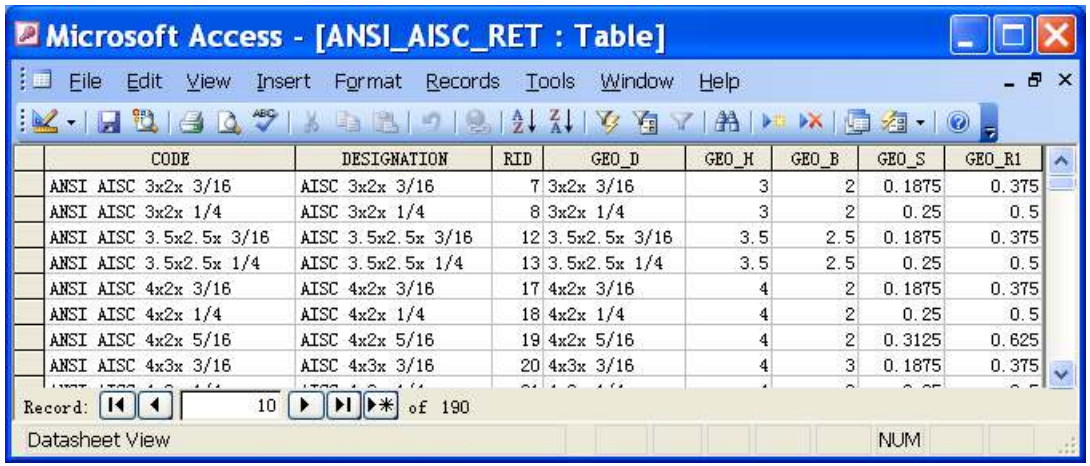
Two kinds of tables in every mdb database.



1. Every subtype has an individual table. (say, ANSI_AISC…)
2. “Profiles” helps to find the correct template ipt file for every subtype.

mdb (5)

Every subtype table (say, ANSI_AISC_RET) gives detailed size info.
“DESIGNATION” is the display name for Size.
“GEO_D, GEO_B, GEO_S…” is the relevant parameters’ name in the template ipt file.
So every size has a row giving values for every named parameter.



CODE	DESIGNATION	RID	GEO_D	GEO_H	GEO_B	GEO_S	GEO_R1
ANSI AISC 3x2x 3/16	AISC 3x2x 3/16	7	3x2x 3/16	3	2	0.1875	0.375
ANSI AISC 3x2x 1/4	AISC 3x2x 1/4	8	3x2x 1/4	3	2	0.25	0.5
ANSI AISC 3.5x2.5x 3/16	AISC 3.5x2.5x 3/16	12	3.5x2.5x 3/16	3.5	2.5	0.1875	0.375
ANSI AISC 3.5x2.5x 1/4	AISC 3.5x2.5x 1/4	13	3.5x2.5x 1/4	3.5	2.5	0.25	0.5
ANSI AISC 4x2x 3/16	AISC 4x2x 3/16	17	4x2x 3/16	4	2	0.1875	0.375
ANSI AISC 4x2x 1/4	AISC 4x2x 1/4	18	4x2x 1/4	4	2	0.25	0.5
ANSI AISC 4x2x 5/16	AISC 4x2x 5/16	19	4x2x 5/16	4	2	0.3125	0.625
ANSI AISC 4x3x 3/16	AISC 4x3x 3/16	20	4x3x 3/16	4	3	0.1875	0.375

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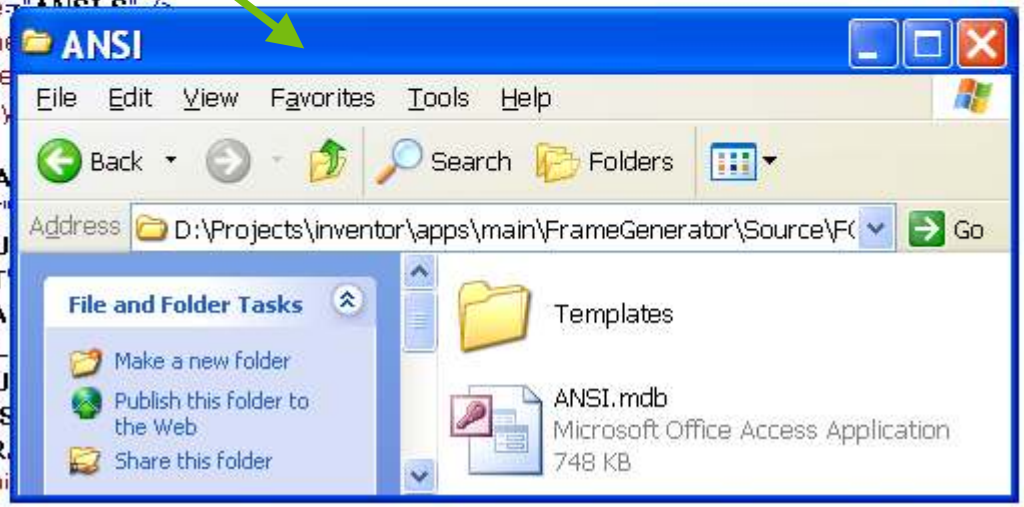
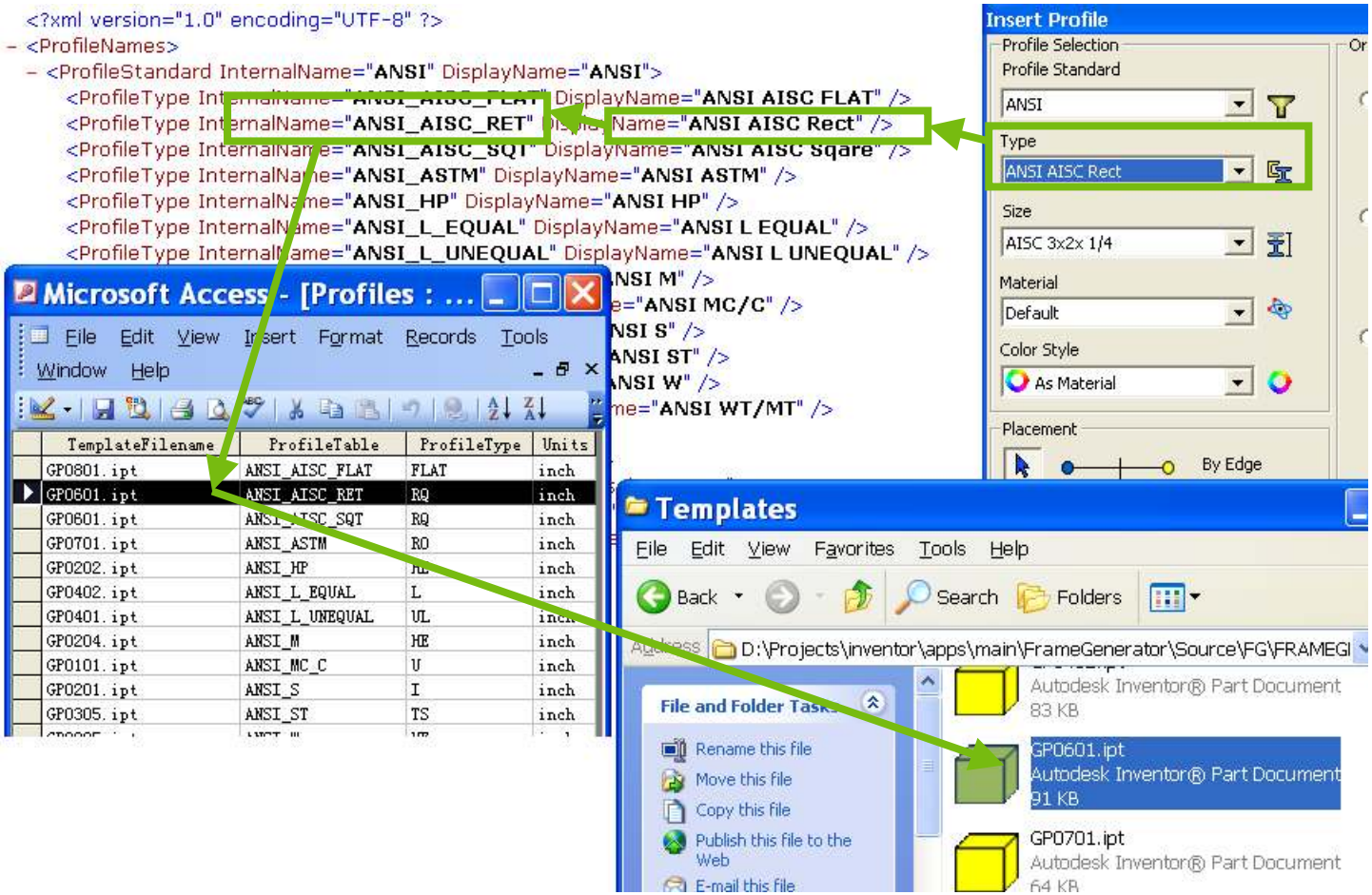
The Relationship of the Stuff (1)

Every ProfileStandard's InternalName is used to find the associated subfolder.

```
<?xml version="1.0" encoding="UTF-8" ?>
- <ProfileNames>
  - <ProfileStandard InternalName="ANSI" DisplayName="ANSI">
      <ProfileType InternalName="ANSI_AISC_FLAT" DisplayName="ANSI AISC FLAT" />
      <ProfileType InternalName="ANSI_AISC_RET" DisplayName="ANSI AISC Rect" />
      <ProfileType InternalName="ANSI_AISC_SQT" DisplayName="ANSI AISC Sqare" />
      <ProfileType InternalName="ANSI_ASTM" DisplayName="ANSI ASTM" />
      <ProfileType InternalName="ANSI_HP" DisplayName="ANSI HP" />
      <ProfileType InternalName="ANSI_L_EQUAL" DisplayName="ANSI L EQUAL" />
      <ProfileType InternalName="ANSI_L_UNEQUAL" DisplayName="ANSI L UNEQUAL" />
      <ProfileType InternalName="ANSI_M" DisplayName="ANSI M" />
      <ProfileType InternalName="ANSI_MC_C" DisplayName="ANSI MC/C" />
      <ProfileType InternalName="ANSI_S" DisplayName="ANSI S" />
      <ProfileType InternalName="ANSI_ST" DisplayNam
      <ProfileType InternalName="ANSI_W" DisplayNam
      <ProfileType InternalName="ANSI_WT_MT" Display
    </ProfileStandard>
  - <ProfileStandard InternalName="AS" DisplayName="A
      <ProfileType InternalName="AS_1163_1991_RET"
      <ProfileType InternalName="AS_1163_1991_ROU
      <ProfileType InternalName="AS_1163_1991_SQT
      <ProfileType InternalName="AS_3679_1990_BEA
      <ProfileType InternalName="AS_3679_1990_COL
      <ProfileType InternalName="AS_3679_1990_EQU
      <ProfileType InternalName="AS_3679_1990_JOIS
      <ProfileType InternalName="AS_3679_1990_PAR
      <ProfileType InternalName="AS_3679_1990_T" Di
```



The Relationship of the Stuff (2)



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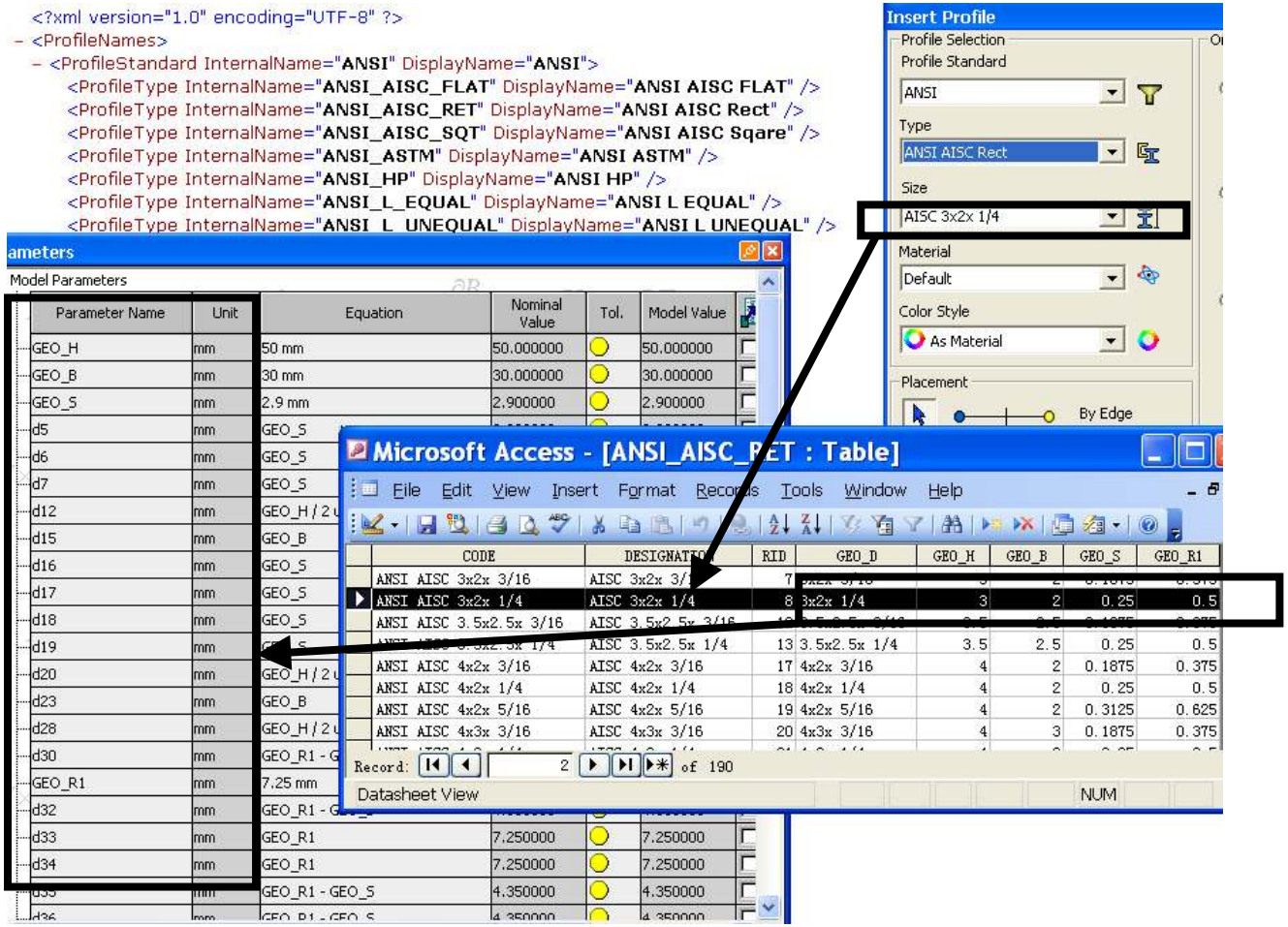
The Relationship of the Stuff (3)



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Example to Add a Customized Type (1)

Step1. Create a template ipt file.

Note:

1. Make sure it contains both a detailed sketch (AFG_Detailed) and a simplified sketch (AFG_Simplied).

2. Make sure both sketches are full-constrained.

3. Remember to name some key Parameters relating to sizing info, GEO_B and GEO_H are necessities.

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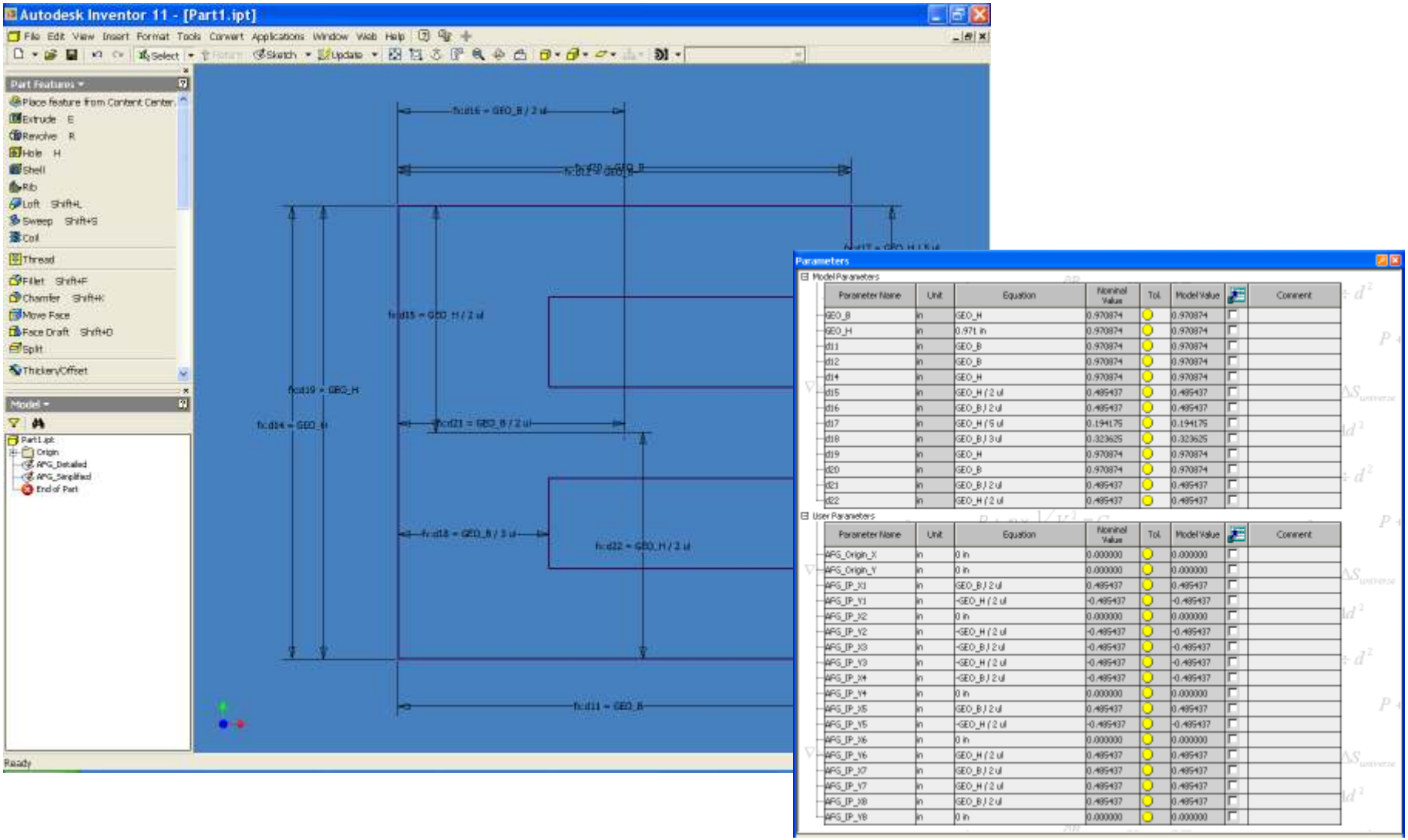
Example to Add a Customized Type (2)



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Example to Add a Customized Type (3)

Step 2. Create a mdb file “Example.mdb”
Create a table called “Profiles”.
Create a table called “EXAMPLE_01” containg size info.

Pofiles

TemplateFilename	ProfileTable	ProfileType	Units
EXAMPLE01.ipt	**EXAMPLE_01**	CUSTOM	**inch**

Always “CUSTOM”

EXAMPL_01

CODE	DESIGNATION	RID	GEO_H	GEO_B
EXAMPLE_01_01	**SIZE 01**	**1**	**1**	**2**
EXAMPLE_01_02	**SIZE 02**	**2**	**2**	**2**
EXAMPLE_01_03	**SIZE 03**	**3**	**3**	**3**

Unique value

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Example to Add a Customized Type (4)

Step4: Modifying XML
Create a folder called “Example”
Create a folder called “Templates” under “Example”.
Move the new created ipt file into “Templates”.
Move the new created mdb into “Example”.
Add new entries to LocalizationXML.xml.

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Example to Add a Customized Type (5)


```xml
<?xml version="1.0" encoding="UTF-8" ?>
- <ProfileNames>
  - <ProfileStandard InternalName="ANSI" DisplayName="ANSI">
      <ProfileType InternalName="ANSI_AISC_FLAT" DisplayName="ANSI AISC FLAT" />
      <ProfileType InternalName="ANSI_AISC_RET" DisplayName="ANSI AISC Rect" />
      <ProfileType InternalName="ANSI_AISC_SQT" DisplayName="ANSI AISC Sqare" />
      <ProfileType InternalName="ANSI_ASTM" DisplayName="ANSI ASTM" />
      <ProfileType InternalName="ANSI_HP" DisplayName="ANSI HP" />
      <ProfileType InternalName="ANSI_L_EQUAL" DisplayName="ANSI L EQUAL" />
      <ProfileType InternalName="ANSI_L_UNEQUAL" DisplayName="ANSI L UNEQUAL" />
      <ProfileType InternalName="ANSI_M" DisplayName="ANSI M" />
      <ProfileType InternalName="ANSI_MC_C" DisplayName="ANSI MC/C" />
      <ProfileType InternalName="ANSI_S" DisplayName="ANSI S" />
      <ProfileType InternalName="ANSI_ST" DisplayName="ANSI ST" />
      <ProfileType InternalName="ANSI_W" DisplayName="ANSI W" />
      <ProfileType InternalName="ANSI_WT_MT" DisplayName="ANSI WT/MT" />
    </ProfileStandard>
  - <ProfileStandard InternalName="Example" DisplayName="Example">
      <ProfileType InternalName="EXAMPLE_01" DisplayName="Example 01" />
    </ProfileStandard>
  - <ProfileStandard InternalName="AS" DisplayName="AS">
      <ProfileType InternalName="AS_1163_1991_RET" DisplayName="AS 1163-1991 Rect
      <ProfileType InternalName="AS_1163_1991_ROUND" DisplayName="AS 1163-1991 R
      <ProfileType InternalName="AS_1163_1991_SQT" DisplayName="AS 1163-1991 Squa
```


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