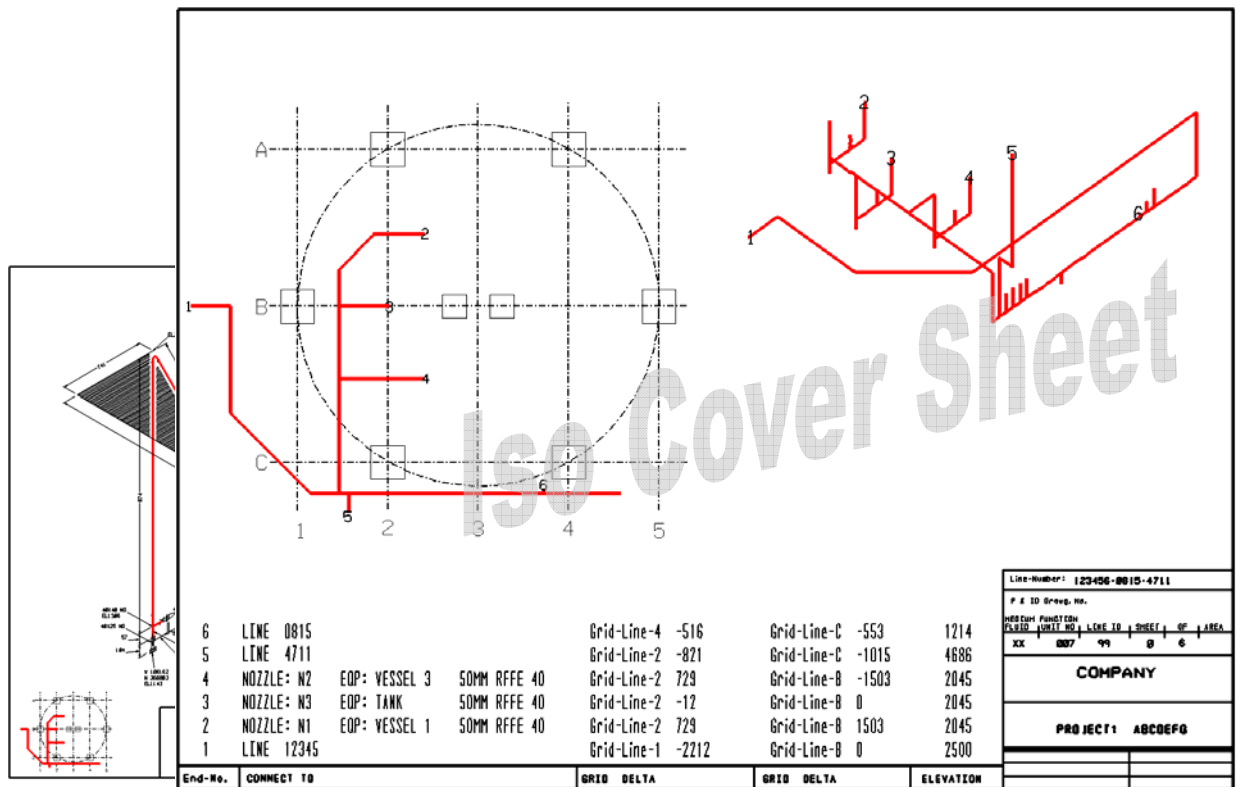


ISO Over View



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1. Introduction

Numerous discussions with my customers have revealed that this key plan was, in the past, always expressed in terms manual isometric methods and proved to be extremely useful.

This was the starting point for this program.

2. Software description

This software product positions a key plan of the installation on each sheet of an Isogen isometric drawing.

This key plan traces the **entire** pipeline system.

All the software parameters are set in a single **INI file**. These can also be specially set for a project or design area.

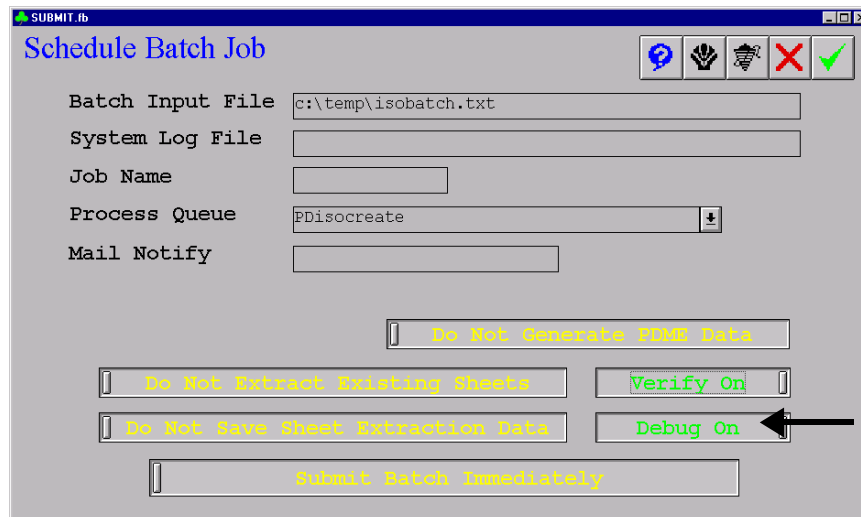
The pipeline information is read from the hits file and idf file.

In addition, a cover sheet (IsoCoverSheet) is generated for each pipeline. The pipeline is drawn on the basis of the grid on this cover sheet. The connection points in the pipeline are measured on the basis of the grid.

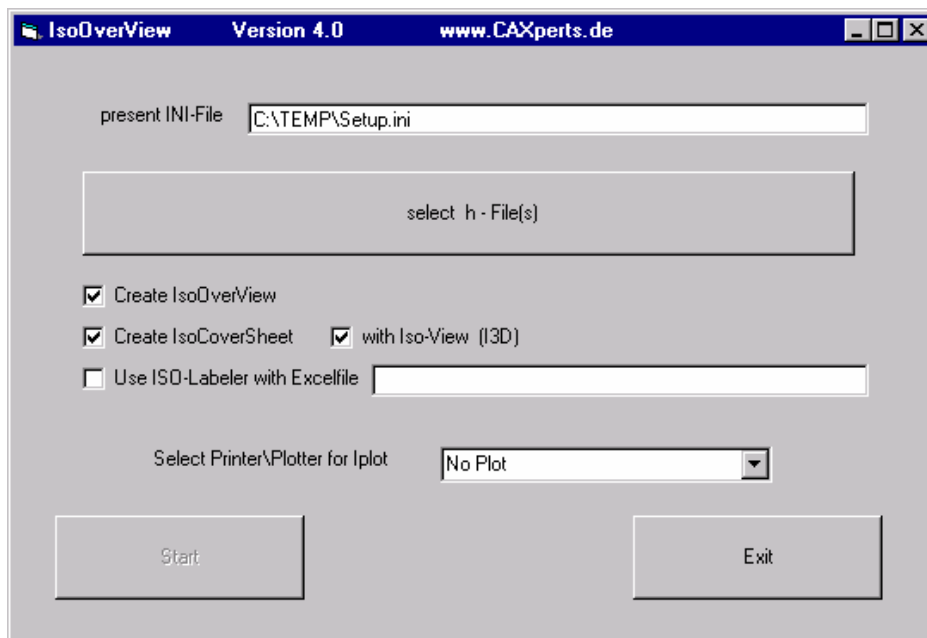
A further display presents the entire pipeline in an isometric, undistorted view. Here again, the connection points are labelled.

3. For users

- Set the **Debug On** switch in the Schedule Batch Job screen during isometric sheet creation and start Iso as usual.



- Start IOV (ioy.exe)
- Select the project-specific ini file



- Select one or more h files (isometric sheets).
- Select the plotter or printer.
- Click on "Start".
- Wait until Microstation terminates and the IOV message "ISO Over View completed" is displayed.

4. For the administrator

4.1 Automatic hits file generation

IOV requires the Hits file for each pipeline. Users can either set the *Debug On* switch on generation of the isomorphic sheets or word 16 can be set to 0 in INTERGRAPH_OPTIONS_BLOCK.

4.2 Program execution

Below is a brief summary of how the program executes in order to improve readers' understanding of the process.

- The `iov.ini` file in the program folder is read
- The INI file selected by the user is read
- The seed file is copied to an iov file
- All the elements in the iov file are set to *pipelv* level
- The pipeline is drawn
- The isometric sheet is opened
- All elements on *pipelv* are deleted
- The view *mstnseedview* from the iov file is referenced with the scale *refscale* and insertion point *refpoint*
- The reference file is copied into the isometric sheet
- The iov file is detached
- The line terminal numbers are written to the IOV file
- The grid file is read and the distance is calculated
- The "Connect to" information is read from the IDF file
- The IsoCoverSheet is created (ICSseed copied)
- The IOV file is copied in (via refernece)
- The table is created
- The I3D file is created
- The line terminal numbers are written to the I3D file
- The I3D file is copied in (via reference)
- Microstation is terminated

4.3 Creation of the Seed files

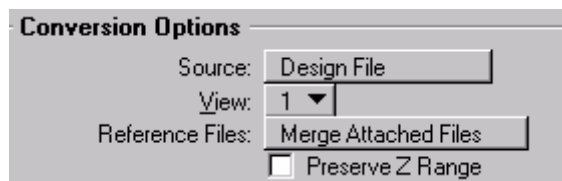
Seed files are Microstation **2D files**.

4.3.1 IsoOverView seed file

This contains the key plan drawing with the original coordinates and the *Saved View* with the name taken from the *mstnseedview* variable.

The recommended procedure for creating the seed file is as follows.

- Open the PDS model (Piping or EQP) with the referenced grid.
- Reference the model with the most important components.
- File → Export → 2D...
- Select View: Top View.



-
- Edit the seed file, e.g. delete any surplus lines.
- Create a Saved View with the name from the *mstnseedview* variable.

4.3.2 IsoCoverSheet (ICS) seed file

This file is usually a copy of the IsoGen border file. The additional dimension table entries should also be made here.

4.4 LOG file

The Temp folder (often c:\temp) contains a LOG file (iov.log). Thanks to this file, it is easy to identify errors.

5. INI file

```
[IsoOverView]
seedfile=o:\sk\proj\lingen\defset\iovseed.dgn
pipeco=3
pipelv=40
pipewt=4
pipelc=0
'Name of the Saved view in the IOV seed file
mstnseedview=iov
'Insertion scale of the view in the Iso sheet (???.i01)
refscale=7:1
```

```
'Insertion point of the view in the Iso sheet (???.i01)
refpoint=100,35
isopath=0:\sk\proj\lingen\iso\
'Factor for unit conversion (default 1000)
Unitfactor=1000
'Elements that are not to be displayed (e.g. support segment), name
from the hits file (1st column). Multiple names can be specified if
separated by spaces.
NotUsedComponent=SUPP

[IsoCoverSheet]
'Color, Level, Weight, Text Height, etc. of the line terminal number
in the CoverSheet top view (for ISO view, see [I3D])
LENtextco=2
LENtextlv=1
LENtextwt=1
LENtextlc=0
LENtexttx=0.2
LENtexttw=0.2
LENtextJustification=CC

'Color, Level, Weight, Text Height, etc. of the table in the
CoverSheet
TABtextco=1
TABtextlv=1
TABtextwt=1
TABtextlc=0
TABtexttx=3.5
TABtexttw=2.5
TABtextft=29
TABtextJustification=LC

'Table settings (measured with reference to grid)
'Y coordinate of first line
TABlineheight=10
'Line spacing
TABlinespacing=6
'C coordinate of serial number
TABnumberpoint=15
'X coordinate of label (connection to)
TABlabelpoint=35
'X coordinate of delta x
TABXpoint=250
'X coordinate of delta y
TABYpoint=320
'X coordinate of delta z
TABZpoint=400

'Number of decimals for distance to grid lines
TABround=0
'The distance to the grid lines is multiplied by this distance
TABfactor=1000
'Coordinates read from the h file and the idf file are different,
value necessary to locate the "Connected to" text
TABaccuracy=0.05

'MicroStation macro, fill in text field in ICS file. Isometric sheet
???.i01 is automatically referenced, this macro can then be used to
copy out the text field
ICSmacro=0:\sk\proj\lingen\defset\icsmacro.bas
'ICS-Seed-File
```

```
ICSseedfile=o:\sk\proj\lingen\defset\icsseed.dgn
'PDS file for grid measurement. Created using PDS.
Gridfile=o:\sk\proj\lingen\defset\FW_lingen.dat
'Insertion scale for IOV in ICS file
ICSrefscale=25:1
'Insertion point for IOV in ICS file
ICSrefpoint=220,230

[Programm]
'These variables are used by the program itself.
Lizenz=338070
inifile=o:\sk\proj\lingen\defset\io.v.ini
createIOV=1
createICS=1
createI3D=1

[IPlot]
'IPlot Iparm file
IParmfile=o:\sk\proj\lingen\defset\plotseed.i
'Printer in format: \\server\drucker
IPlotque1=\\XNS178\ls802_A3
IPlotque2=\\XNS178\ls802_A4
IPlotque3=\\S_MT200\5000A4Q

[I3D]
'3D mstnfile as seed file for isometric view
I3Dseedfile=o:\sk\proj\lingen\defset\I3Dseed.dgn
'Insertion scale for IOV in ICS file
I3Drefscale=2.2:1
'Insertion point for IOV in ICS file
I3Drefpoint=450,320
'Color, Level, Weight, Text Height, etc of line terminal numbers or
isometric view
I3DLEntextco=2
I3DLEntextlv=1
I3DLEntextwt=1
I3DLEntextlc=0
I3DLEntexttx=2
I3DLEntexttw=2
I3DLEntextJustification=CC
```

5.1 Variables in the IsoOverView section

5.1.1 Seedfile

Specifies the seed file for IOV (e.g.: EQP top view exported to a 2D file).

5.1.2 Pipeco

Color number of the drawn pipeline.

5.1.3 Pipelv

Level of the drawn pipeline.

Note! All Microstation elements on this level in the isometric sheet are deleted.

5.1.4 Pipewt

Line weight of the drawn pipeline.

5.1.5 Pipelc

Line type of the drawn pipeline.

5.1.6 DelLevel

Deletes all elements on this level. This is useful if the level has been changed during testing.

Specify as usual in MicroStation (e.g. 10,12,50-60)

5.1.7 Mstnseedview

Name of the Saved View in the IOV seed file

5.1.8 Refscale

Scaling for referencing the IOV file in the ISO sheet.

5.1.9 Refpoint

Insertion point for the IOV file in the ISO sheet.

5.1.10 isopath

The software itself enters the value of this variable.

5.1.11 Unitfactor

Factor for unit conversion (default 1000)

5.1.12 NotUsedComponent

Elements that are not to be displayed (e.g. support segments), name from the hits file (1st column). You can specify multiple names as long as they are separated by spaces.

5.2 Variables in the IsoCoverSheet section

5.2.1 LENtext??

Color, level, weight, text height etc. of the line terminal number in the CoverSheet top view (for the ISO view, see [I3D])

5.2.2 TABtext??

Color, level, weight, text height etc. of the table in the CoverSheet

5.2.3 TABlineheight

Table settings (measured with reference to the grid). Y coordinate of the first line (line height)

5.2.4 TABlinespacing

Table settings (measured with reference to the grid). Line spacing.

5.2.5 TABnumberpoint

Table settings (measured with reference to the grid). X coordinate of the serial number.

5.2.6 TABlabelpoint

Table settings (measured with reference to the grid). X coordinate of the label (Connected to.)

5.2.7 TAB?point

Table settings (measured with reference to the grid). X coordinate of delta X, delta Y or delta Z

5.2.8 TABround

Number of decimal places for distance to grid lines.

5.2.9 TABfactor

The distance to the grid lines is multiplied by this factor.

5.2.10 TABaccuracy

Coordinates from the h file and the idf file are different. This value is necessary to identify the "Connection to" text.

5.2.11 ICSmacro

MicroStation macro, fill in text field in the ICS file. Isometric sheet ???i01 is automatically referenced. This macro can be used to copy out the text field.

5.2.12 ICSseedfile

ICS seed file.

5.2.13 Gridfile

The PDS file for grid measurement. This is created using PDS.

5.2.14 ICSrefscale

Insertion scale for IOV in the ICS file.

5.2.15 ICSrefpoint

Insertion point for IOV in the ICS file.

5.2.16 gridextension

Excess grid. The terminal point may lie outside the grid if still within this value. This is of value if multiple grids are in use.

If this value is not specified then the terminal point may be located at any distance from the edge of the grid.

5.3 Variables in the Programm section

5.3.1 Lizenz

You enter the license number here. The license number is supplied by ITC-Schlegel. The license applies to the entire domain, i.e. you can use the program throughout the entire network.

5.3.2 INI-File

The value of this variable is entered by the software itself.

5.4 Variables in the Iplot section

5.4.1 Iparmfile

This variable specifies the Iplot-Iparm file.

5.4.2 IPlotque1 to Iplotque5

These variables make it possible to specify up to 5 plotters or printers. These are then listed in the drop-down list box.

5.5 Variables in the I3D section

5.5.1 I3Dseedfile

3D mstnfile as the seed file for the isometric view.

5.5.2 I3Drefscale

Insertion scale for IOV in the ICS file.

5.5.3 I3Drefpoint

Insertion point for IOV in the ICS file.

5.5.4 I3DLENtext??

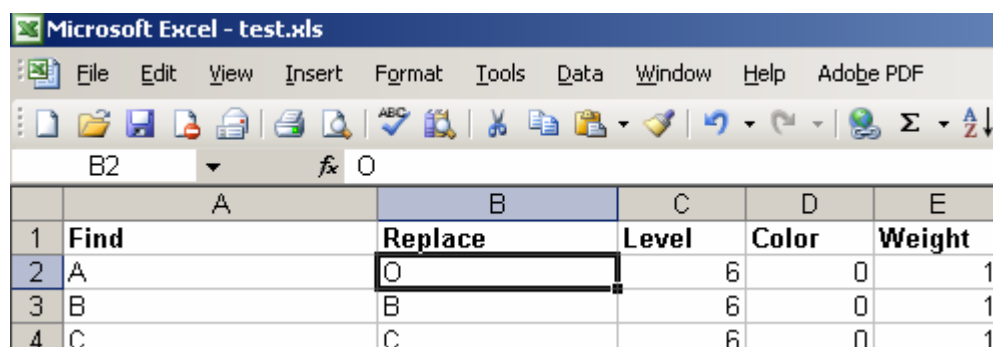
Color, level, weight, text height etc. of the line terminal number for the isometric view.

6. Tools

6.1 DGN Find and Replace

DGNFindReplace is a tool to find text in DGN files and replace the text with desired text defined in one Excel sheet.

In following example sheet, the text 'A' in level 6, with color 0 and weight 1 will be replaced with text 'O'.



	A	B	C	D	E
1	Find	Replace	Level	Color	Weight
2	A	O	6	0	1
3	B	B	6	0	1
4	C	C	6	0	1

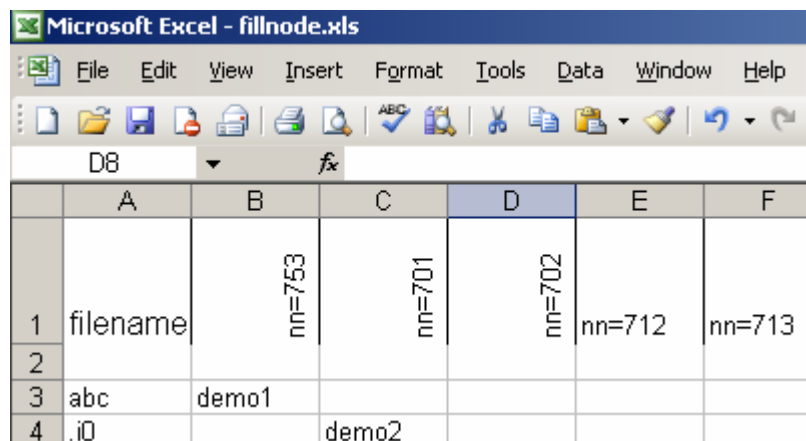
One can define a folder, where the DGN files will be searched with given extensions. And one can also add the desired DGN files to the file list to process them.

The Excel configuration file can be created manually, or can be created automatically using “Extract text to Excel” function.

6.2 DGN Fill Text Nodes

DGN FillNode is a tool to fill DGN file text nodes with text defined in one Excel sheet.

In following example Excel sheet, all files, whose names contain substring ‘abc’, will be filled with text ‘demo1’ for text node number 753. All files, whose names contain substring ‘.i0’ will be filled with text ‘demo2’ for text node number 701.



	A	B	C	D	E	F
1	filename	nn=753	nn=701	nn=702	nn=712	nn=713
2						
3	abc	demo1				
4	.i0		demo2			