



Accessible Data

The Intelligent Rail Tools create a representation of the railway network where the lines and symbols are more than just dumb graphics.

Elements in an Intelligent Drawing 'know' what they are. For example, a signal 'knows' which track it is associated with and what the distance to the next and previous signals are.

An Intelligent Drawing consists of two parts: the graphics and the intelligence. The graphics are stored in a MicroStation design file and the intelligence is stored in an XML file.

PUBLICLY AVAILABLE

A variety of export options extract information from both the design file and the XML data. The XML format is publicly available to allow third-party tools access to the underlying data.

Data for every part of the model is accessible: Track centre lines, rail geometry, bridge details, signal locations, asset status, point configuration, structure details (e.g. REFOS), wire heights ... the list is endless.

The table below shows an extract of signalling asset data viewed in a spreadsheet.

	A	B	C	D	E
1	ID	ELR	TRID	Description	Datum distance
2	46	HDB	1100	Foot Access Point	30804.745
3	48	HDB	1100	Foot Access Point	38527.247
4	60	HDB	1100	IRJ	30024.312
5	62	HDB	1100	IRJ	31259.336
6	64	HDB	1100	IRJ	38605.126
7	66	HDB	1100	IRJ	43916.089
8	68	HDB	1100	IRJ	44081.408
9	70	HDB	1100	Signal	31258.389
10	226	HDB	1100	Point Machine	45041.215
11	436	HDB	1100	Driver Signage	28470.673
12	438	HDB	1100	Groundframe	38948.255
13	440	HDB	1100	Foot Access Point	44365.503
14	442	HDB	1100	IRJ	32474.902
15	444	HDB	1100	IRJ	34221.565

Extracting data is useful, but the intelligent tools take this a stage further. After manipulating the data in a spreadsheet you can feed the data back into the Intelligent Tools and update the underlying model.

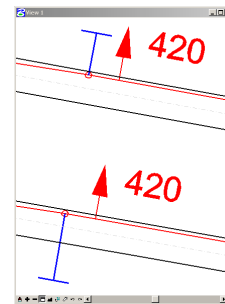
The table below is a list of staggers in an OLE (Overhead Line Electrification) drawing. As well as the ID, the structure reference, wire name and stagger value are shown.

16	67	NEC1-100-010	W2	420
17	57	NEC1-100-011	W1	-420
18	68	NEC1-100-011	W2	-420
19	58	NEC1-100-012	W1	420
20	69	NEC1-100-012	W2	420
21	106	NEC1-100-013	W1	420
22	105	NEC1-100-014	W2	420

The stagger value at structure NEC1-100-014 is 420.

The graphical representation of two structures is shown below. The top structure is NEC1-100-014 and the bottom structure is NEC1-100-013.

The structures are shown in blue. The stagger arrows and the wires are red. The rails are black. The colours represent the status of the asset: modified, proposed and existing respectively. If there were any assets to be removed they would be shown in green.

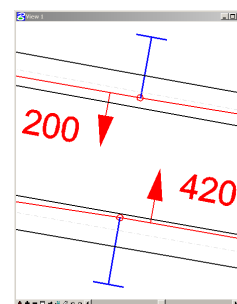


We can change the stagger at structure NEC1-100-014 in the spreadsheet. The example below shows the value being changed from 420 to -200. After saving the spreadsheet we feed the altered data back into the Intelligent Tools.

16	67	NEC1-100-010	W2	420
17	57	NEC1-100-011	W1	-420
18	68	NEC1-100-011	W2	-420
19	58	NEC1-100-012	W1	420
20	69	NEC1-100-012	W2	420
21	106	NEC1-100-013	W1	420
22	105	NEC1-100-014	W2	-200

The diagram below shows the graphic updated with the new stagger value. The location of the stagger has changed and the wire redrawn. The cantilever arm has also been extended to the new location.

No CAD manipulation was required. All the changes were performed only by editing the spreadsheet.



By exposing the underlying data in this way it is possible to edit the data using a variety of third-party custom tools and then update the graphics with the Intelligent Rail Tools.