

*Laser-Scan Ltd.*

*IFJ - IFF Junction Creation Program*

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*IFJ - IFF Junction creation program*

Based on user-specified criteria, IFJ forms junctions from line segments in an IFF file, and creates a full 'link and node' IFF junction structure suitable for subsequent processing (e.g. using IFNODE). It produces a separate output file of type .IFJ and does not affect the input file in any way. Any junction entries already present in the input file (correct or incorrect) are ignored and not reflected in the output file.

Optional switches available are:-

/NS:<int>:<int>

To aid searching for matching junctions the IFF file is considered to be split up into a grid of sectors. This switch allows the user to specify the number of sectors required in the X and Y directions respectively (/NS:5:5 would result in a 5 x 5 grid). The default is 10 x 10.

/TO:<real>

This switch allows the user to specify a tolerance which is used when deciding if end-points meet at the same junction. The real value should be specified in the same units as the IFF data being processed. The default is 0.0.

Segments which are recognised as being connected to a particular junction will have their end-points adjusted to match the position of the junction. The position of the junction is set to be the same as the end-point of the first segment considered.

/AR:<int>

This is used to specify the maximum number of arms that a junction can have (default 4). If a junction with more than the specified number is found then an error occurs. Note that ALL junctions created will be allocated this number of arms, and that at the end of the run any unwanted arms will simply not be set. This could be a source of confusion for the unwary!

/TY

This enables diagnostic typing. All IFF entries found in the input file are reflected on the users terminal. This is useful for detecting the positions of obscure errors in the data but should not be used in normal circumstances.

/OV:n:m:...

This selects particular layers (overlays) n,m,... for junction formation. Up to 50 layers may be selected. Features in other layers are not considered, but are copied to the output file. In the absence of this switch, all layers are selected.

The program is usually set up as a foreign command, and may then be invoked by, for example:

```
$ IFJ
IFJ> filename/AR:5/TO:2.0
IFJ> ^Z
$
```

IFJ adds junctions onto the ends of all features found in the file (including layers 0 and 32 at the moment). 'Islands' (loops) will therefore have a common junction for both end-points if these are within the specified tolerance (LAJ and VTRAK should produce identical end-points).

Errors in the data likely to be detected by IFJ are:-

'No room in junction at position (X,Y) for new arm.'

The suggested solution is to use LITES2 to check the offending junction and, if necessary, to increase the number of arms allowed using the /AR switch as appropriate. If the junction on the original map does not contain an excessive number of arms then the tolerance should be checked.

'Unexpected sector <int> found - check RAnge.'

This means that the values in the IFF RAnge entry do not represent the true extent of the data. Consequently the data outside the given range is outside of the known sectors (sector positions are generated from the RAnge). The solution is to set the RAnge correctly.

'Warning - segment in NF <int> already has zero length or repeated points'

The specified feature contains invalid data in the form of single point ST entries or strings where the first (or last) two points are superimposed (making it impossible to calculate the arm angles).

In addition, the following warning message may occur:

'Warning - segment in NF <int> shrunk to zero length'

'To keep this segment, the tolerance would have to be less than <real>'

The specified tolerance is such that two 'junctions' which may, in reality, be distinct have been merged into one, causing the segment joining them to be shrunk to zero length. IFJ tells you what tolerance is required to retain this segment. In some circumstances, unfortunately, there may be a conflict of interests where poor digitising requires a large tolerance in order to avoid 'hanging arms', but where a number of very close junctions exist which must be preserved. At present the only course of action is to edit the data such that a smaller tolerance can be used successfully. If all else fails, the short segment can be deleted and the junctions merged into one. In any case, you MUST take some action if this message appears, as the file created by IFJ is, strictly speaking, corrupt if it contains zero length segments.