Confidence Index Parameters

The Cell Tracker assigns a tracking confidence index for each tracked object in the time-lapse sequence. The confidence index is only an indicator of how well we trust the track of a given cell during its entire cell cycle. There are three components that can affect the computation of the confidence index; each one can be disabled if needed: cell lifetime threshold, neighbor density, and border distance. All cells start with the same confidence index value of 1, and then we analyze the confidence index parameters of each cell. For example, if a cell meets the minimum expected lifetime defined by the user, the confidence increases by a point. The confidence index decreases if a cell was in a very confluent area and was touching other cells or if a cell was too close to the border (as defined by the user).

Surrounding Density
If enabled, a lower confidence index will be assigned to cells that have grouped into colonies or become close to other cells.

Touching FOV Border
If enabled, only cells that never touch the Field of View boundaries will increase their corresponding confidence index by a point.

Min Cell Life (nb frames)
The minimum cell life is the number of frames a cell must be present throughout to increase its confidence by a point. This index does not affect cells that are present at the beginning of the experiment (first frame).

Cell Death Delta Centroid Threshold
If a cell centroid does not move more than this value (in pixels) the cell will be recorded as dead.