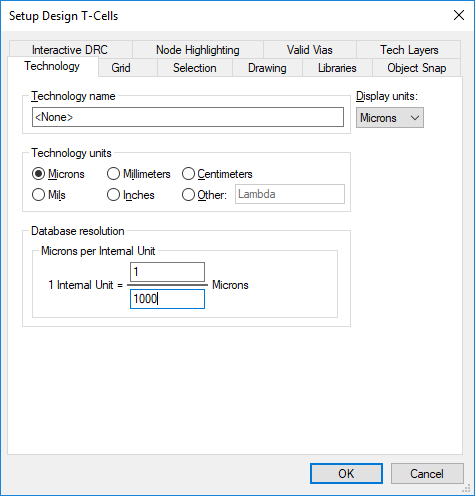
# Internship T-Cell.tdB review

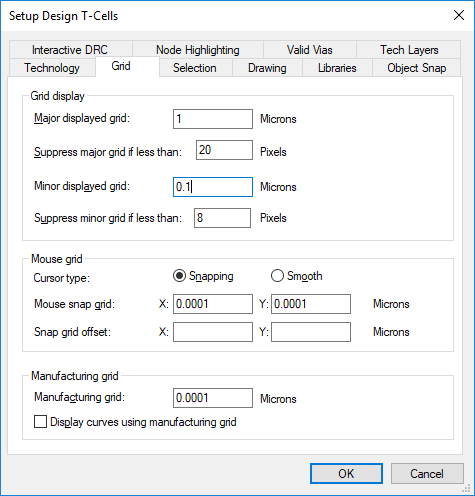
## 2019-05-27 Review

### General comments:

Please increase internal unit database to 1/10000



Recommendation for grid setting on WG layers



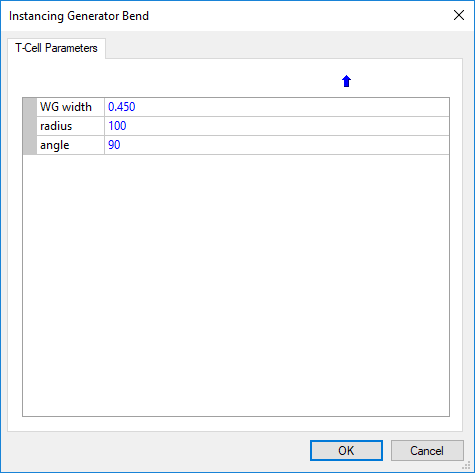
### T-Cells comments

#### Waveguide

* N/A

#### Bend

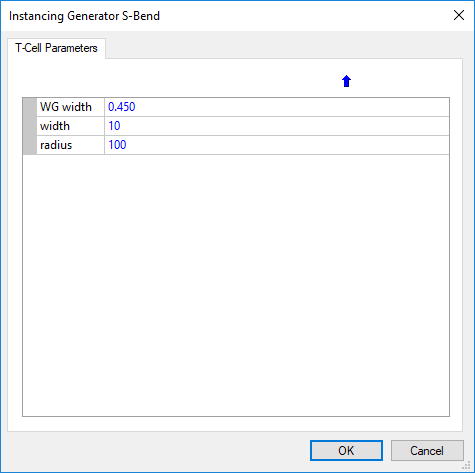
* Parameters

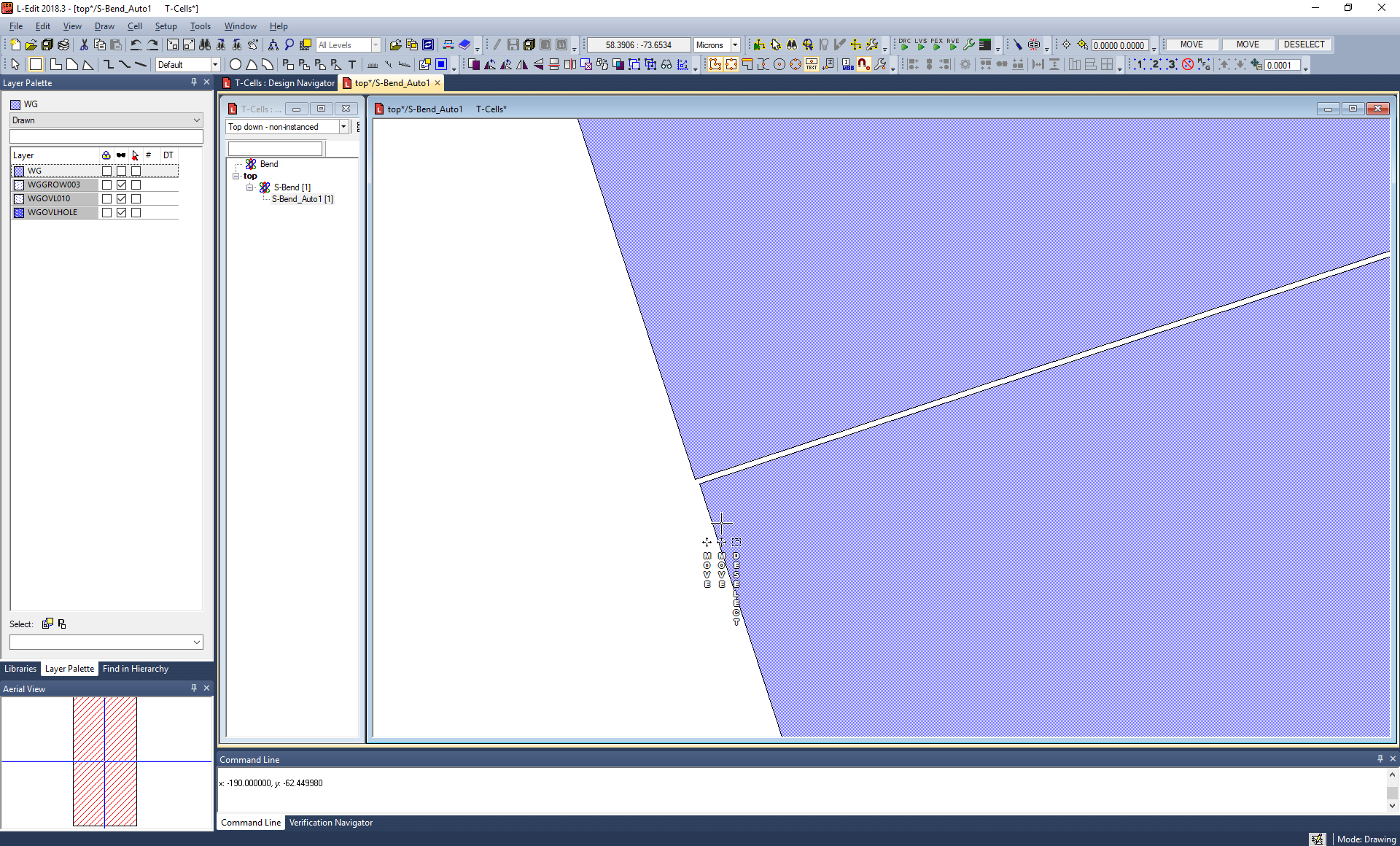


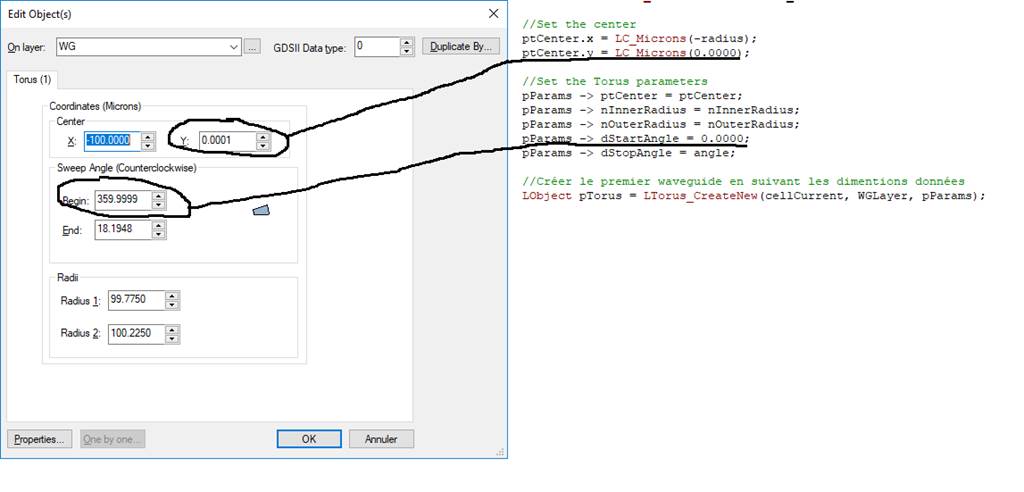
* ~~For the next version:~~
  + ~~Raster the WG layer~~
  + ~~Parameter add~~ 
    - ~~WGGROW width dimension (3µm) – not to include WG width~~
    - ~~WGOVL width dimension (10µm) – not to include WG width~~
    - ~~Overlay width dimension (1.5µm)~~
  + ~~Place origin at center of bottom waveguide~~
* ~~To investigate (with the help of Tanner):~~
  + ~~Can we change the name of the instance? (i.e Bend450\_R100\_A90\_Raster)~~

#### S-Bend

* Parameters



* ~~For the next version:~~
  + ~~Raster the WG layer~~
  + ~~Parameter add~~ 
    - ~~WGGROW width dimension (3µm) – not to include WG width~~
    - ~~WGOVL width dimension (10µm) – not to include WG width~~
    - ~~Overlay width dimension (1.5µm)~~
  + ~~Place origin at center of bottom waveguide~~
* ~~To investigate (with the help of Tanner):~~
  + ~~Can we change the name of the instance? (i.e. SBend450\_R100\_w10o0\_Raster)~~
* Issues:
  + Small gaps in waveguide junction. 
  + ~~Might not be present after raster~~



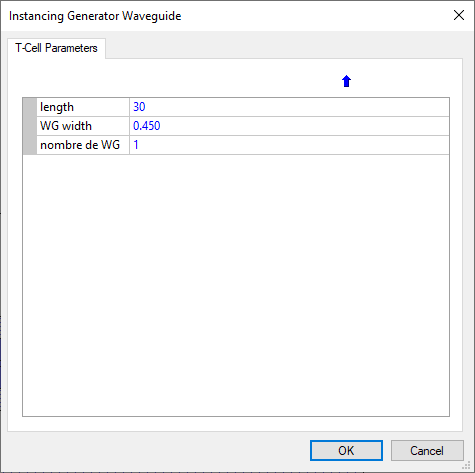
## 2019-06-06 Review

List of structures:

* Waveguides
* Bend
* SBend
* Tapers
* MMI

### Waveguide

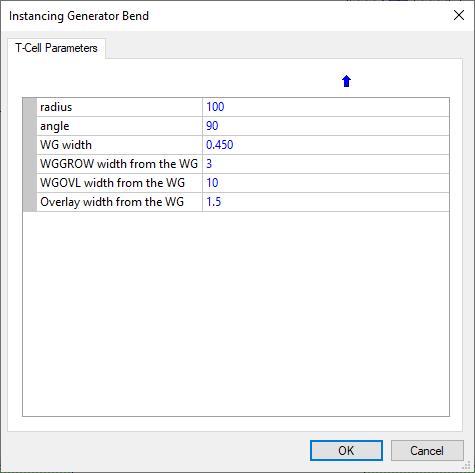
* Parameters:



* ~~Would also like to have WGGROW width, WGOVL width and Overlay width width parameters.~~
* ~~As other structure the name should be WG(width of waveguide)\_L(Length of waveguide). In this example WG0o45\_L30~~
* ~~The origin should be placed at center of WG on the left, 0.225 to low in this case.~~

### Bend

* Parameters



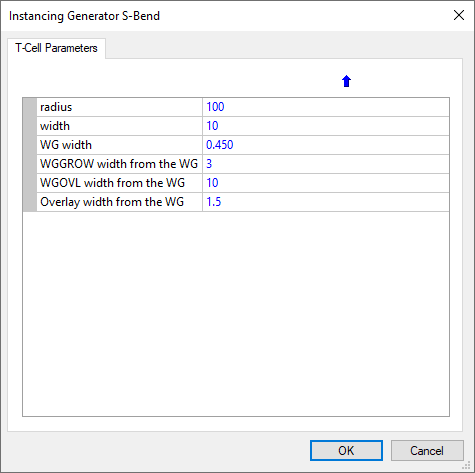
* The naming shall be Bend0o450\_R100\_A90\_Raster (just the nanometer padding)

~~I’m very please with the naming showing up in the cell!!! Nice work!~~

~~Also tested many instances with same parameters to look at the naming behaviour conflict. It is very nice to see that this is taking care of automatically, i.e two T-Cell with the same parameter would not be duplicated but a new instance will be created!~~

### S-Bend

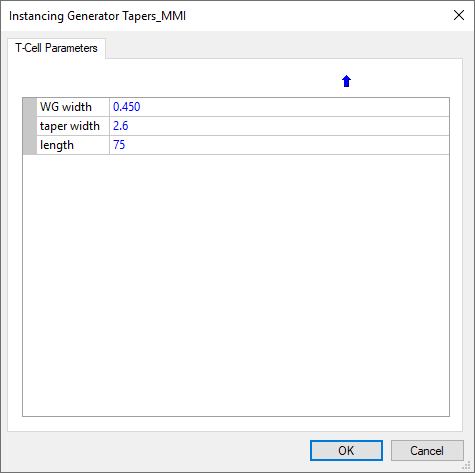
* Parameters



* Still the gap. Might find the condition where we need to add 0.0001 to the angle to the lower bend. It’s not always 0.0001 so I can’t do that

### Taper

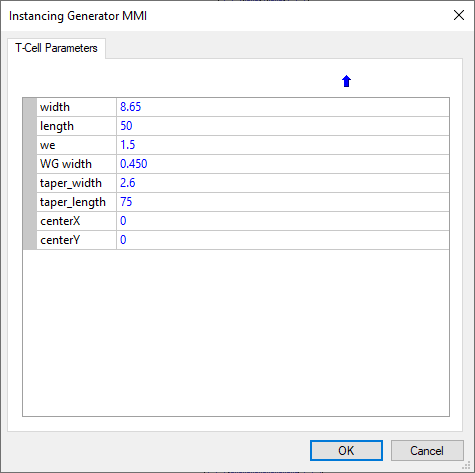
* Parameters



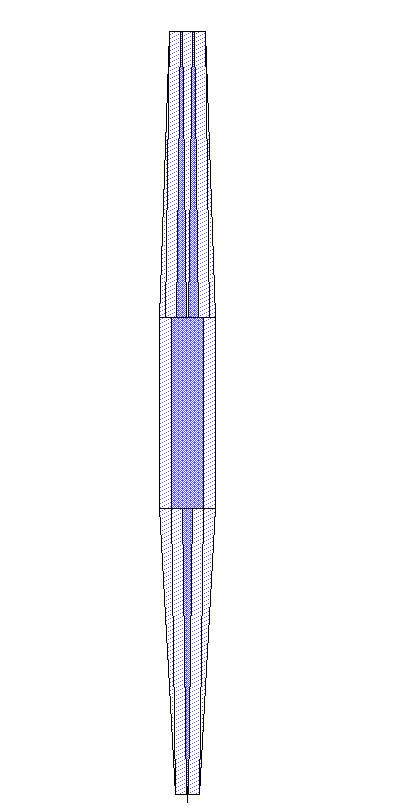
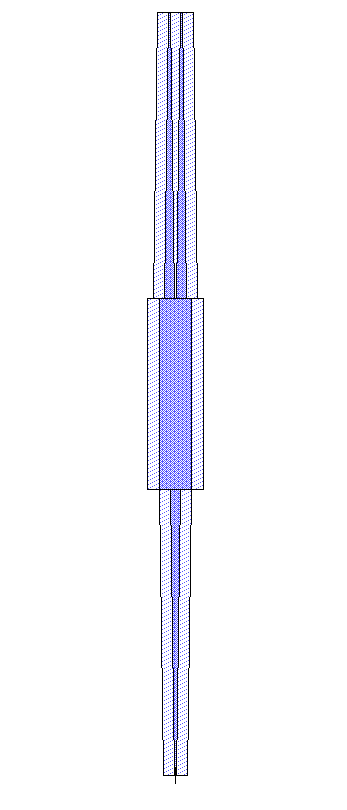
* ~~Name of the T-Cell should not include MMI, just Tapers~~
* ~~Name of instance should be Taper0o45\_L75\_W2o6~~

### MMI1x2

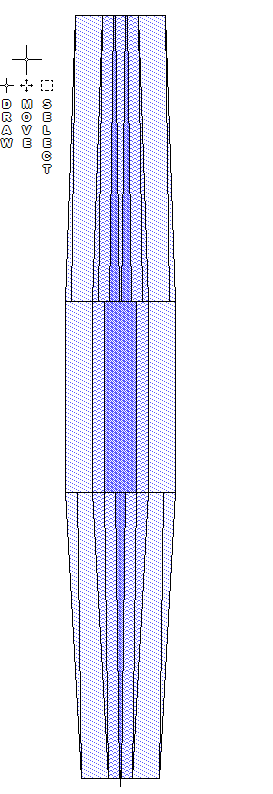
* Parameters



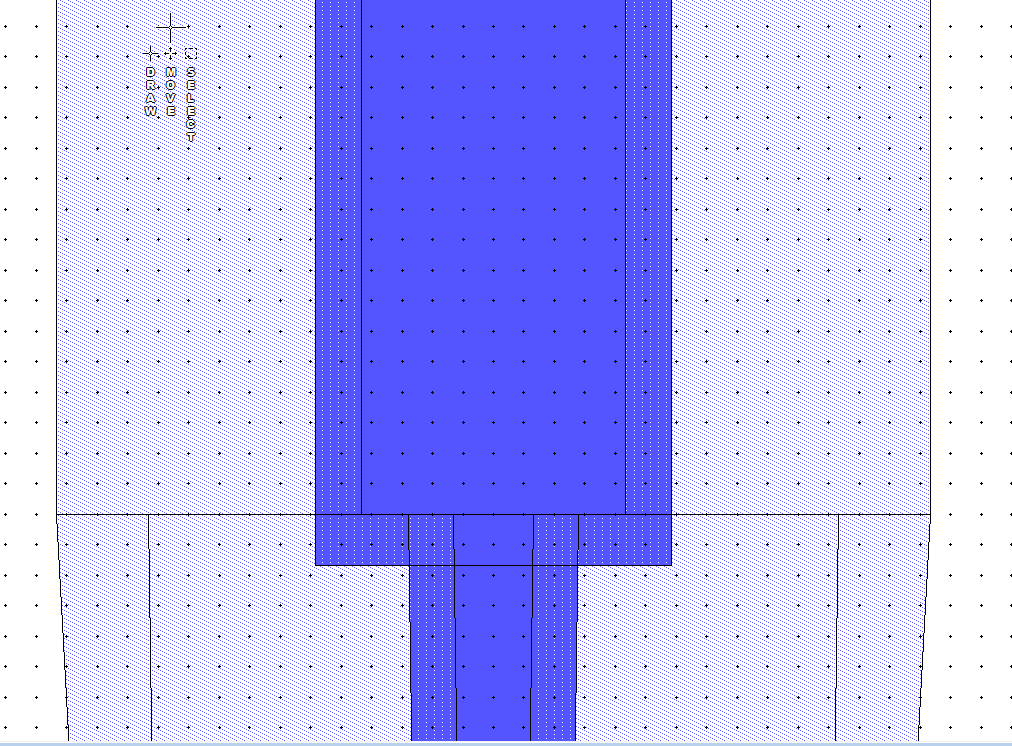
* ~~Name of the instance: 1x2MMI0o450\_W8o65\_L50\_We1o5~~
* ~~Should try to find a solution to instantiate Taper Cell inside to not duplicate similar structure on design~~
* ~~Layer modification for this particular instance:~~
  + - ~~WG Layer: This one is fine~~
  + ~~Grow Layer: This one will require to adjust it to get rid of Acute~~



* + ~~Overlay Layer: Same thing~~

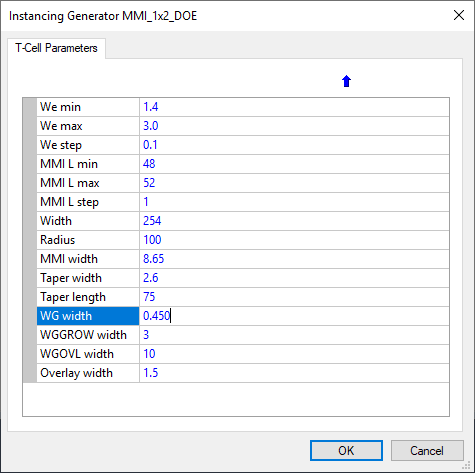


* + ~~Overlay Hole Layer: This one is a bit trickier (without showing the WG layer)~~



### MMI1x2\_DOE

* Parameters



* ~~The name surface grating coupled to be named MMI1x2\_SGC, but instance add 450$ based on waveguide width.~~
* ~~The name of the DOE T-Cell should be MMI1x2\_DoE~~
* ~~The instance MMI instance naming should reflect more their parameters:~~
  + ~~450$WG\_Lxxxoyyyy~~
  + ~~450$Bend\_~~
  + ~~450$MMI1x2\_Lxxoyyy\_Wexxoyyy~~
  + ~~450$MMI1x2\_Lxxoyyy\_Wexxoyyy\_SGC~~
* ~~Ajouter Bend WGREF (Bend prior to Rasterized)~~
* ~~Ajouter WGLBL en layer 10 datatype 11 (text size 25) sous le format :~~
  + ~~(-15,100) TE2\_450$MMI\_1x2\_L48\_We3061\_1; et~~
  + ~~(15,100) TM2\_450$MMI\_1x2\_L48\_We3061\_1~~
* ~~SBend to call 2 identical Bend instances~~
* Small gaps on default layout at We = 1.5, 1.6, 2.3, 2.4, 2.6, 2.8, 3.0. We need to find the right algorithm to get rid of those gaps by adjusting the angle to +0.0001 when necessary.

## 2019-06-14 Problems

* Une T-Cell appelée à partir d'une autre T-Cell n'est pas considéré comme ayant les même paramètres qu'une appelée directement et on donc des noms différents.

*Cause :*

* + Si j’appelle des Bend (exemple) à partir du MMI1x2\_SGC, MMI2x2\_SGC ou MMI1x2\_DOE (exemple) ce problème n’apparaitra pas. Donc je ne sais pas si c’est important.

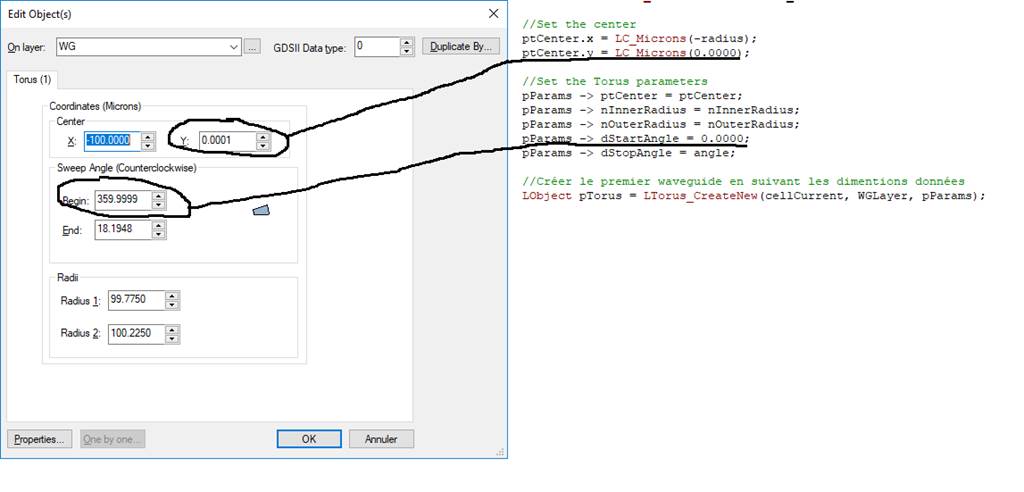
### MMI1x2\_SGC

* Waveguide trop court

*Cause : Ne prend pas en compte le 4e chiffre après la virgule.*

* + J’ai allongé le waveguide manuellement
  + Mentor est en train de jeté un œil au problème
* Gap dans le SBend

*Cause : l’angle ne commence pas au bon endroit et le centre n’est pas positionné convenablement.*

*e.g.* 

* Texte de remplacement généré par une machine :

  Texte de remplacement généré par une machine :

  Si j'ajoute 0.0001 à l'angle du Bend du dessus il n'y a plus de gap, mais pour certains waveguide il se passe ceci:



* Si j'ajoute 0.0001 au 2 Bends il arrive ceci pour la majorité des waveguides: