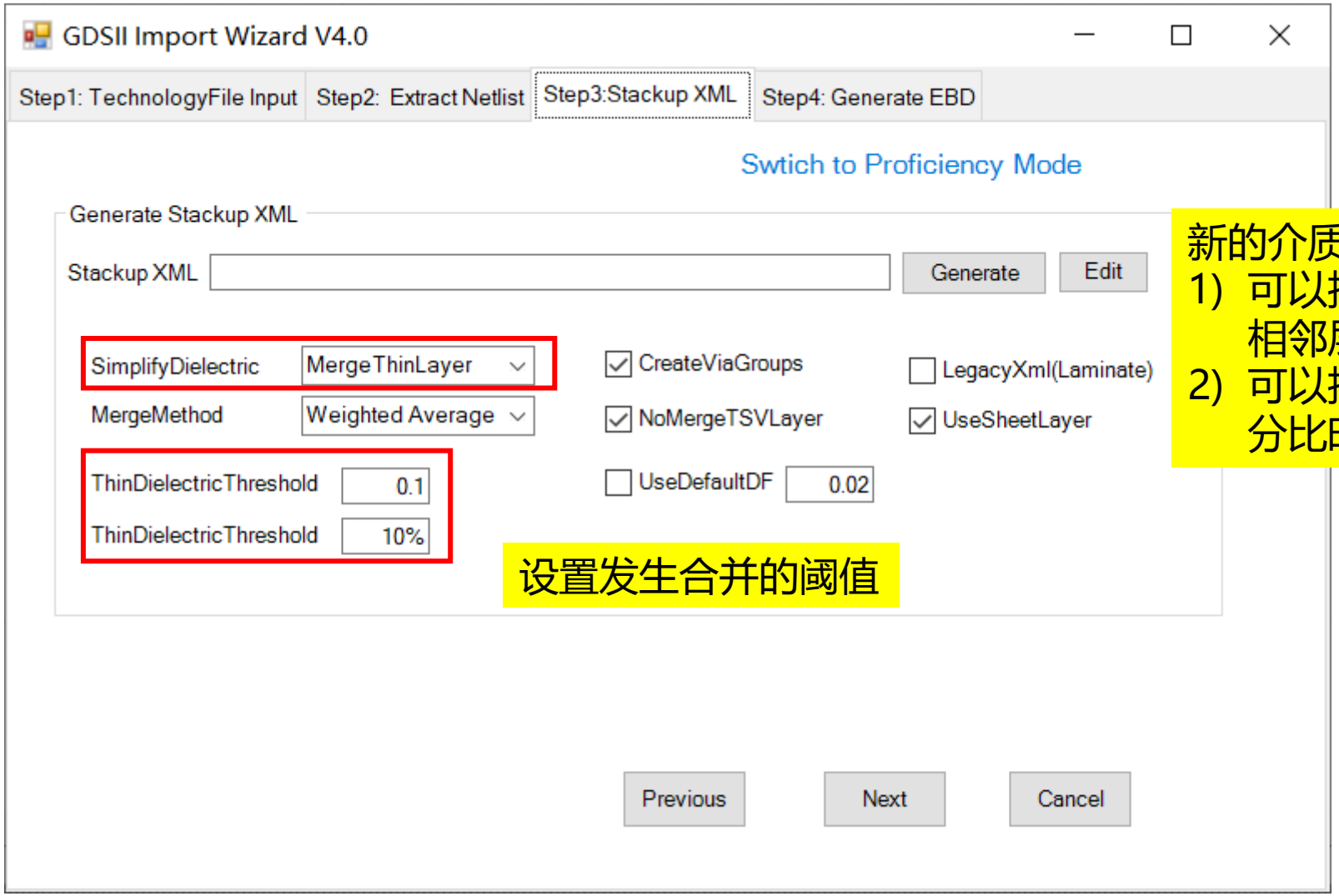
What is new in V4.0

- 新的介质层简化（MergeThinLayer）方式，适应性更强，更加稳定。
- 支持使用Sheet层简化薄层，比如0.001um的金属层。
- 增加Layers自动对齐功能，避免叠层运算引入的Small Gap，导致网格生成问题。
- 引入配置文件，用户可以自定义设定值，部分UI没有展现的字段可以通过配置文件修改。
- 修复了在V3.0反馈的小bug。

MergeThinLayer



新的介质合并方法“MergeThinLayer”：

1）可以指定IRCX介质厚度小于某个数值时，和相邻层合并。默认值0.1um

2）可以指定2个相邻介质层的DK插值小于xx百分比时，进行合并。默认值10%

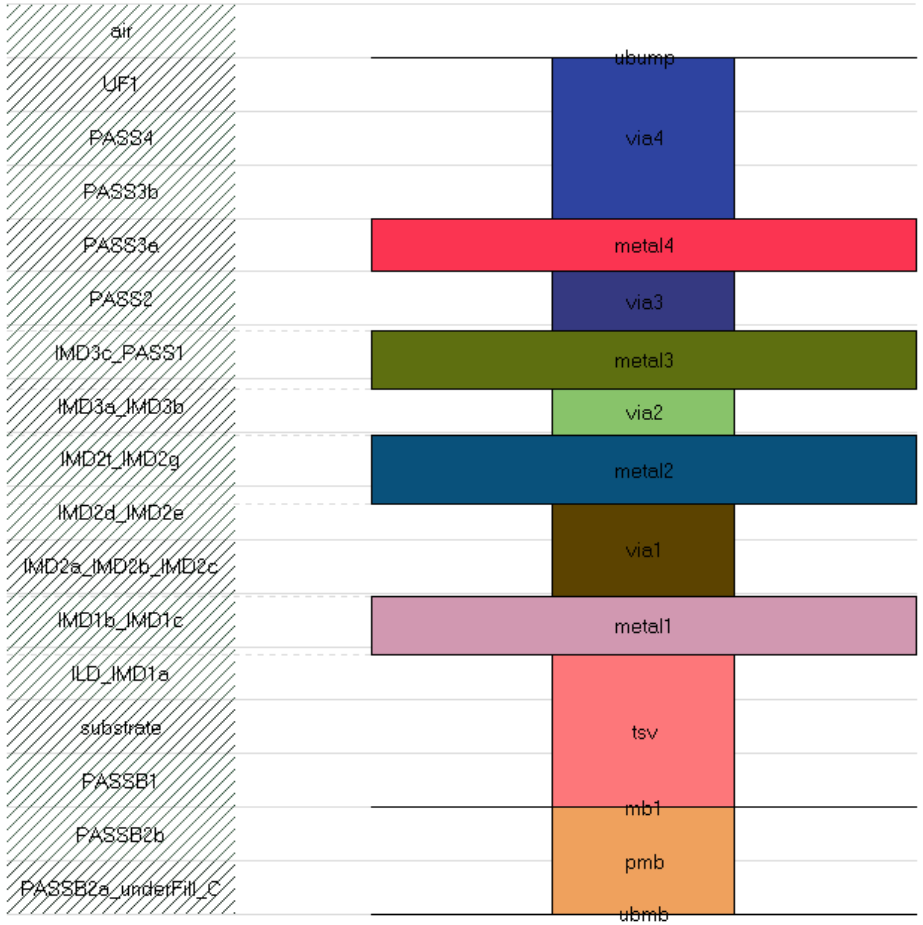
MergeThinLayer

```
* DIELECTRIC 25 11 (NAME:V, TYPE:V, HEIGHT:V, THICKNESS:V,
FIELD       TYPE       HEIGHT       THICKNESS    CONSTANT
NAME
UF1         D    107.640000   35.000000        3.70     N/A
PASS4       P    107.040000    0.600000        8.10     N/A
PASS3b      P    106.640000    0.400000        4.20     N/A
PASS3a      P    105.190000    1.450000        4.20     N/A
PASS2       P    104.490000    0.700000        4.20     N/A
PASS1       P    104.415000    0.075000        8.10     N/A
IMD3c       D    103.690000    0.725000        4.20     N/A
IMD3b       D    103.640000    0.050000        8.10     N/A
IMD3a       D    103.020000    0.620000        4.20     N/A
IMD2g       D    102.970000    0.050000        5.00     N/A
IMD2f       D    102.245000    0.725000        4.20     N/A
IMD2e       D    102.195000    0.050000        8.10     N/A
IMD2d       D    101.873000    0.322000        4.20     N/A
IMD2c       D    101.793000    0.080000        4.20     N/A
IMD2b       D    101.775000    0.018000        4.20     N/A
IMD2a       D    101.575000    0.200000        4.20     N/A
IMD1c       D    101.525000    0.050000        5.00     N/A
IMD1b       D    100.800000    0.725000        4.20     N/A
IMD1a       D    100.750000    0.050000        8.10     N/A
ILD         D    100.000000    0.750000        4.00     N/A
substrate   D    0.000000    100.000000       11.90     N/A
PASSB1      P   -0.800000     0.800000        6.70     N/A
PASSB2b     P   -2.800000     2.000000        6.70     N/A
PASSB2a     P   -3.200000     0.400000        6.70     N/A
underFill_C D   -3.201000     0.001000        6.70     N/A
```

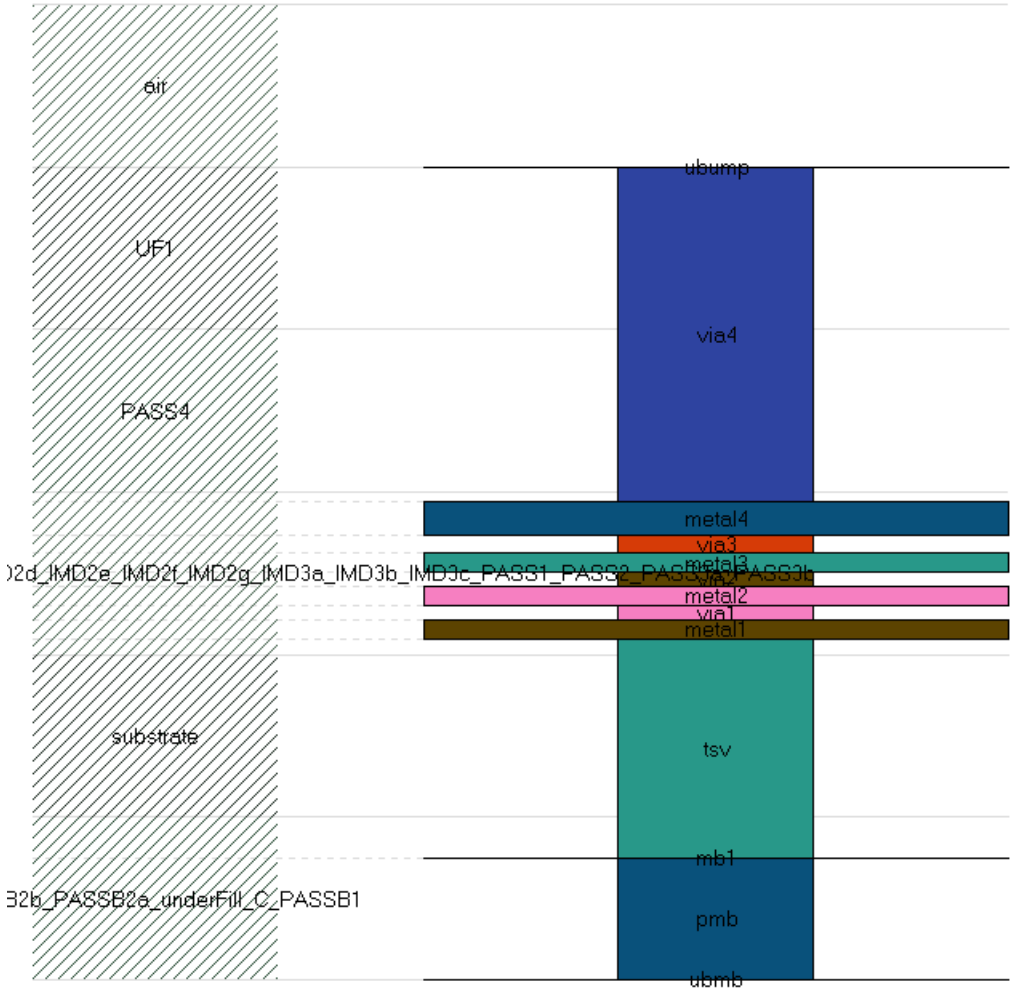
Thickness<0.1um，合并到相邻层
优先合并到DK值接近的相邻层
DK值会按照选定的方法进行平均运算。

DK值一致，发生合并

MergeThinLayer

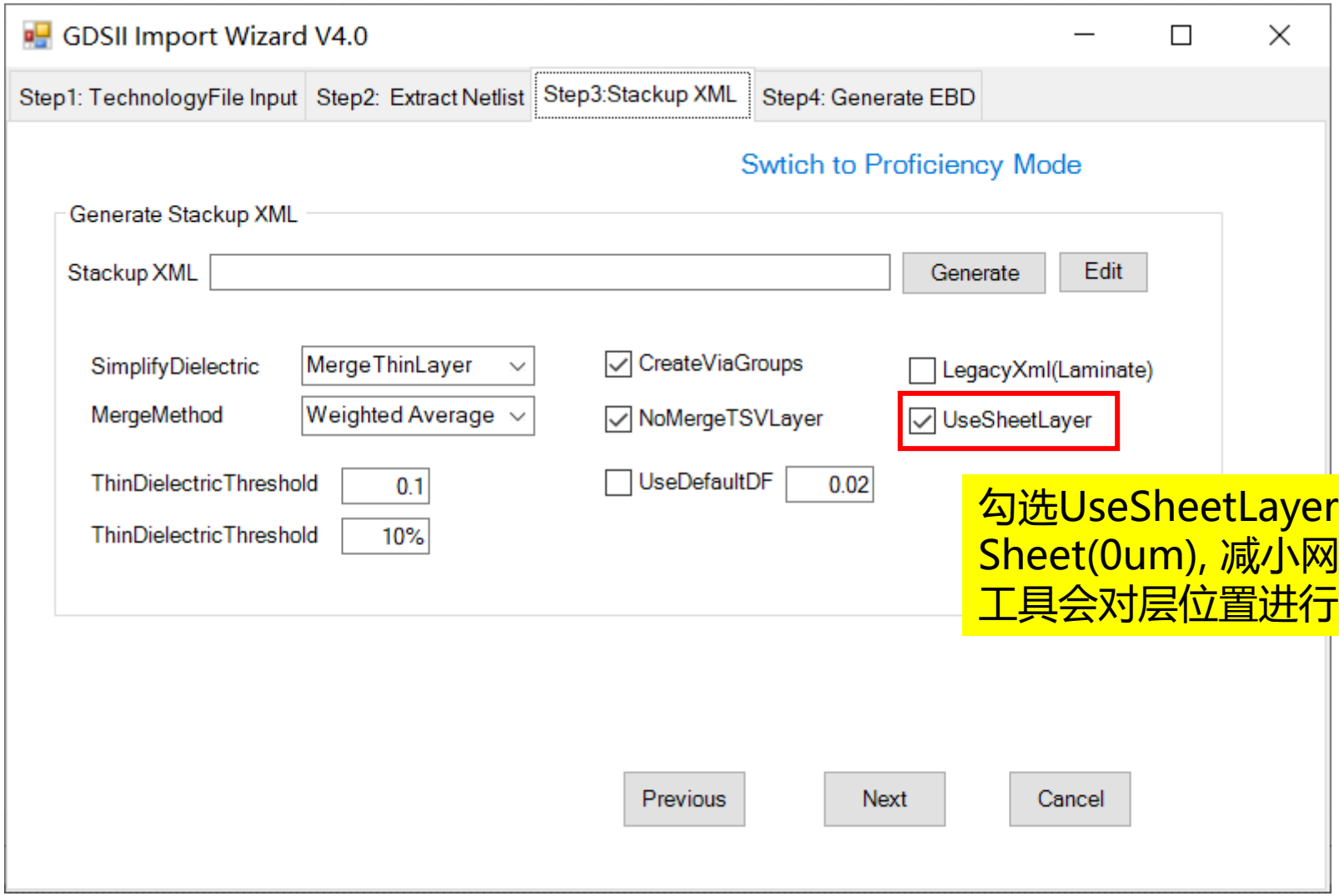


thinDielectricThreshold = 0.1
dkDeviationThreshold = -1



thinDielectricThreshold = 0.1
dkDeviationThreshold = 0.1

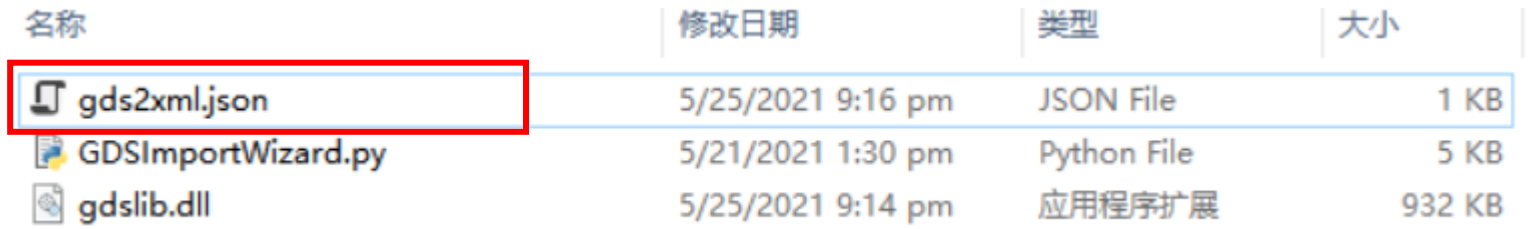
UseSheetLayer



勾选UseSheetLayer，工具会把0.001um的层转成Sheet(0um), 减小网格的生成。
工具会对层位置进行对齐，避免转换后带来的Gap。

Configuration字段配置（JSON文件）

首次运行，会在工具目录下生成gds2xml.json配置文件，通过修改配置文件中的字段，可以修改工具的默认配置。



名称	修改日期	类型	大小
gds2xml.json	5/25/2021 9:16 pm	JSON File	1 KB
GDSImportWizard.py	5/21/2021 1:30 pm	Python File	5 KB
gdslib.dll	5/25/2021 9:14 pm	应用程序扩展	932 KB

```
{
    "CreatViaGroupLayersReg": ".*via.*",
    "fixedSmallLayerGap": 0.005000000000000001,
    "defaultDF": 0.02,
    "ignorLayersReg": "ctm|cbm|air",
    "useDefaultDF": false,
    "sheetLayerThreshold": 0.0015,
    "dkDeviationThreshold": "10%",
    "thinDielectricThreshold": 0.10000000000000001,
    "useSheetLayer": true,
    "simplifyIgnoreLayersReg": ".*tsv.*"
}
```

gds2xml.json

Configuration字段配置（JSON文件）

thinDielectricThreshold， dkDeviationThreshold字段，控制MergeThinLayer的行为:

	thinDielectricThreshold	dkDeviationThreshold	Note
1	0.1	0.1	Merge when layer thickness<0.1um, or 2 layers dk difference less than 10%
2	0.05	-1	Only merge when layer thickness<0.05um
3	-1	0.05	Only merge when 2 layers dk difference less than 5%

useSheetLayer， sheetLayerThreshold字段，控制是否使用SheetLayer提示求解效率:

	default	Note
useSheetLayer	true	true: use SheetLayer, false: not use
sheetLayerThreshold	0.0015	Default value is <0.0015um will use SheetLayer if useSheetLayer is true. The unit is “um”