PSUB2 Layer Usage Guideline

LVS
LVSRCE/DTP

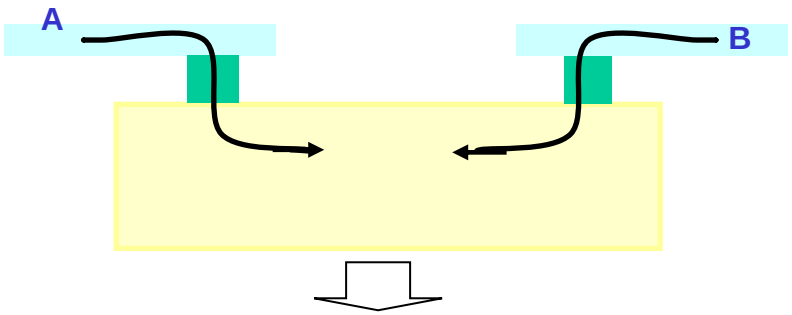
V1.1
2021/06/01

PSUB2 Layer Definition

- TSMC internally used LVS dummy layer, for isolating power domains of PW, is used to waive SOFTCHK errors in multi-power design
- It's NOT a mask layer so there is no physical isolation derived by PSUB2

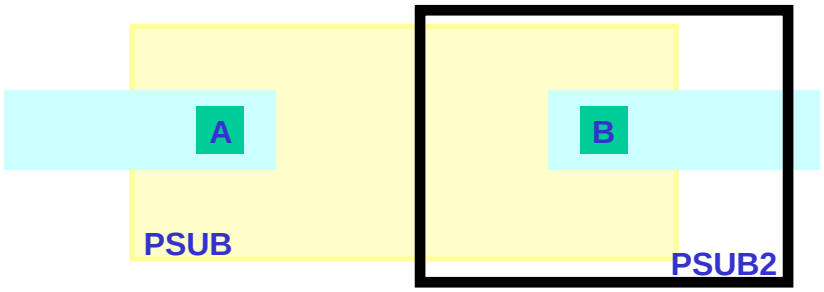
How Does PSUB2 Work in LVS

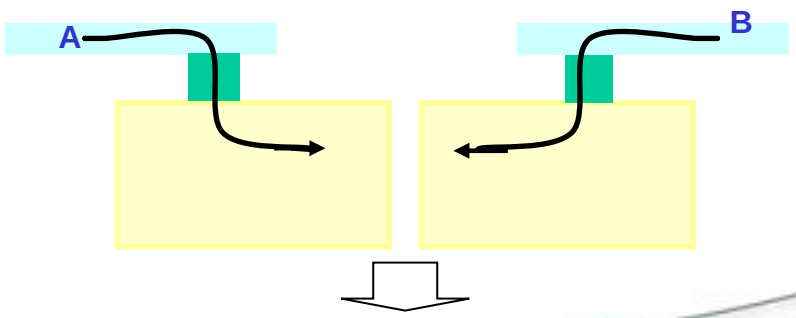
- PSUB2 separates PSUB into individual portions, so different well-ties won't be highlighted soft-connect errors
- Example:
  - without PSUB2



Soft Connect Error

  - with PSUB2

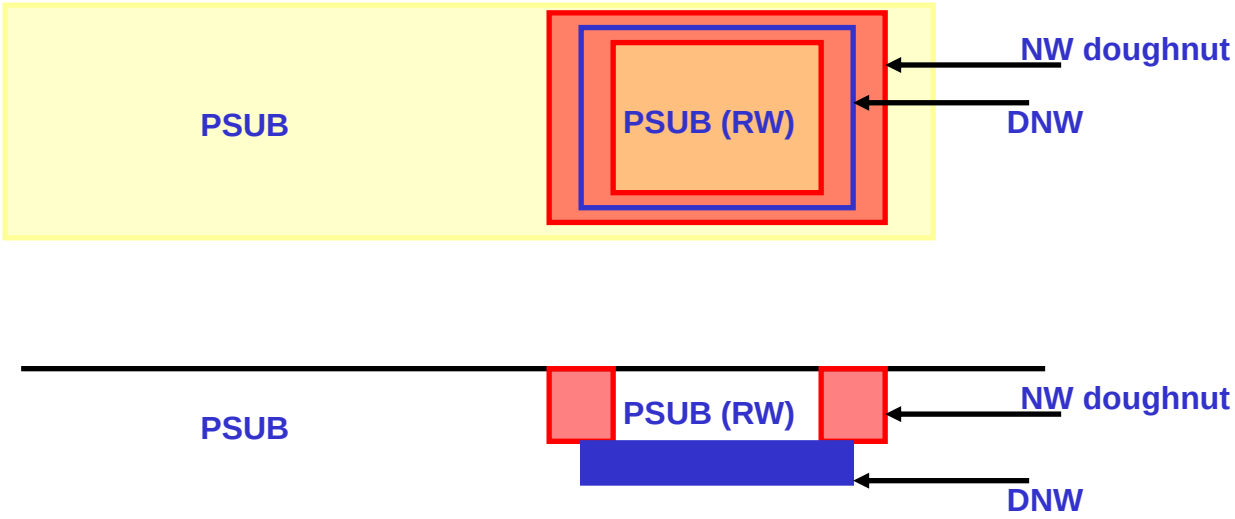




NO Soft Connect Error

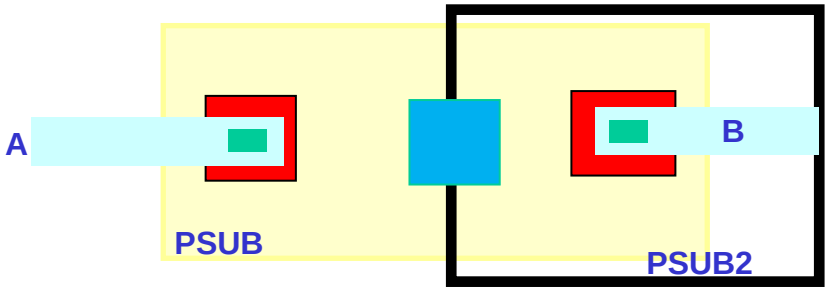
Isolated PSUB Recommendation

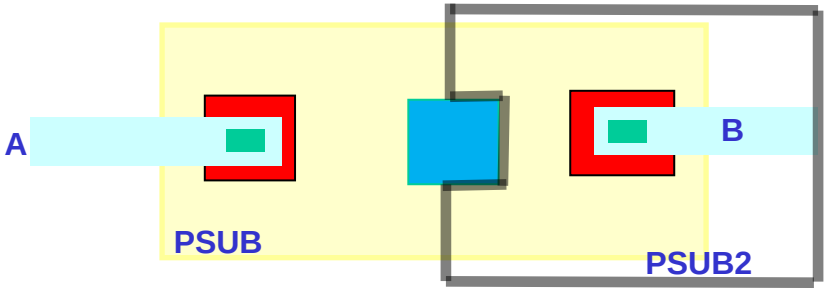
- Not recommend customer to use PSUB2 to isolate PSUB region
- If customer uses a PSUB2 layer, designer is better to do the layout review
- It is better to use the NWELL doughnut combined with DNW to isolate PSUB

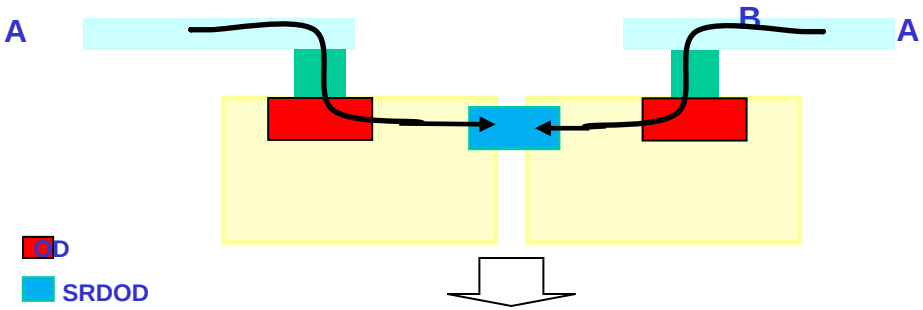


PSUB2 Region

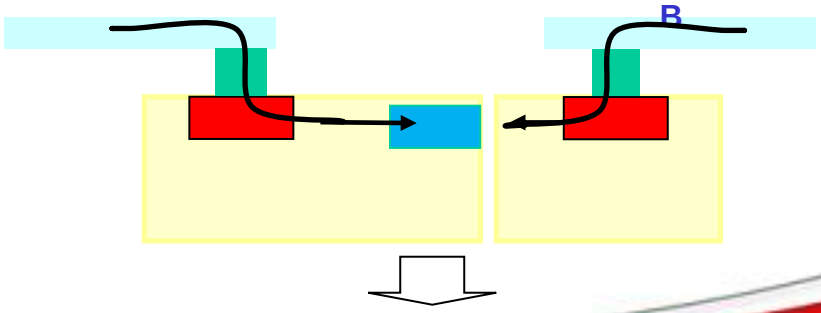
- PSUB2 Region = PSUB2 NOT (SRDOD CUT PSUB2)
  - Solve Dummy Utility's SRDOD short issue
- Example:
  - Before change PSUB2 Region
  - After change PSUB2 Region







Short in SRDOD

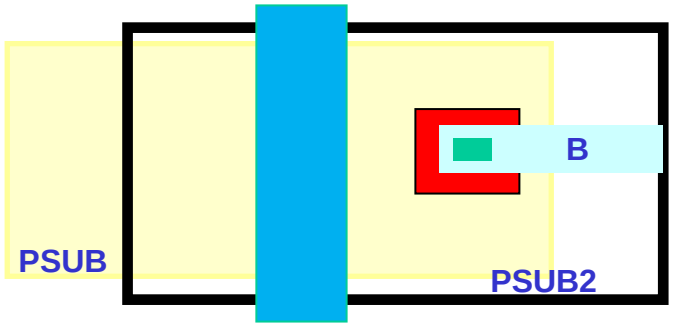


No Short in SRDOD

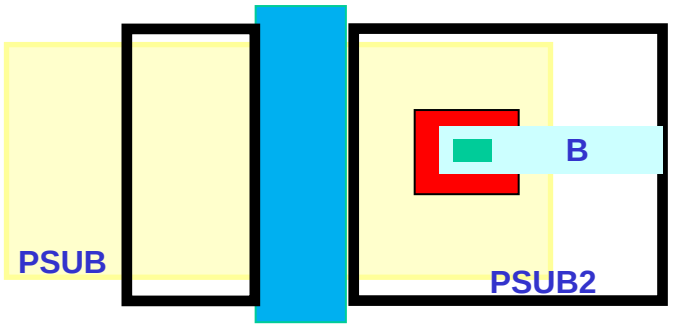
PSUB2 ERC Checking

- Highlight PSUB2 region be separated by SRDOD
- Example:

■ Before change PSUB2 Region



■ After change PSUB2 Region



Highlight SRDOD to separate PSUB2 from one to multi

OD
SRDOD