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# Collaborations



# Collaborations



Calculate when good to collaborate...



So, let's talk about  
collaborations...  
So many would like to  
see us talking about this.

## Menu for discussion:

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- Genesis of collaborations, i.e. stimulation v.s. natural setting up of collaborations:
  - Having satisfactorily funded R&D projects or projects for targeted application (ongoing)
  - Not having enough own resources (offloading) to meet milestones and timelines (*and knowing each other*)
  - Being in need of simultaneous exploration of alternative ways of achieving goals
  - Reaching out for complementary skills/expertise and infrastructure elsewhere
  - Cost / platform sharing even working for different projects
  - Having means of executing collaborative efforts

## Menu for discussion:

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- Environment ingredients and means allowing collaborations:
  - Having in place equal level NDAs/DLAs/PLAs with technology vendors individually in collaborating institutions (two-way: TSMC-Institution, three-way: MOSIS-TSMC-Institution)
  - Having mutual NDAs/DLAs/PLAs in place with technology vendors and collaborating institutions (four-way: MOSIS-TSMC-InstitutionA-InstitutionB)
  - Being on equal grounds with terms of CAD/EDA licenses in collaborating institutions, e.g. educational licenses do not work for `the used in science delivery` and commercial projects
  - Possessing communication means and project data management tools compatible with CAD/EDA software

## Menu for discussion:

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- Tools for successful results in collaborative work
  - Establishing project lead (and chip top-level assembly) institution
  - Setting common project database repository
  - Using database management tool allowing check-out/check-in and version control proces that is compatible with the CAD/EDA framework
  - Decrease effective geographical distance
    - Get people working in one place as much as possible
    - Invite Guest/Visitors from satellite collaborting institutions (what about license seats)
    - Use electronic communiucation channels (but are videoconferences really efficient)

## Menu for discussion:

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- Lists of successful collaborative efforts (chip designs)
  - COLDATA (FNAL and SMU) 2011-2017
  - VIPIC-L (FNAL and AGH-UST Krakow Poland) 2014-2017
  - FEI3/FEI4 (LBL and U. Bonn and CPPM) 2000-2017
  - SVX (FNAL and LBL) 1990s
  - ...



# Summary

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Think, what will happen, if we do not collaborate

