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Modular BAG configuration

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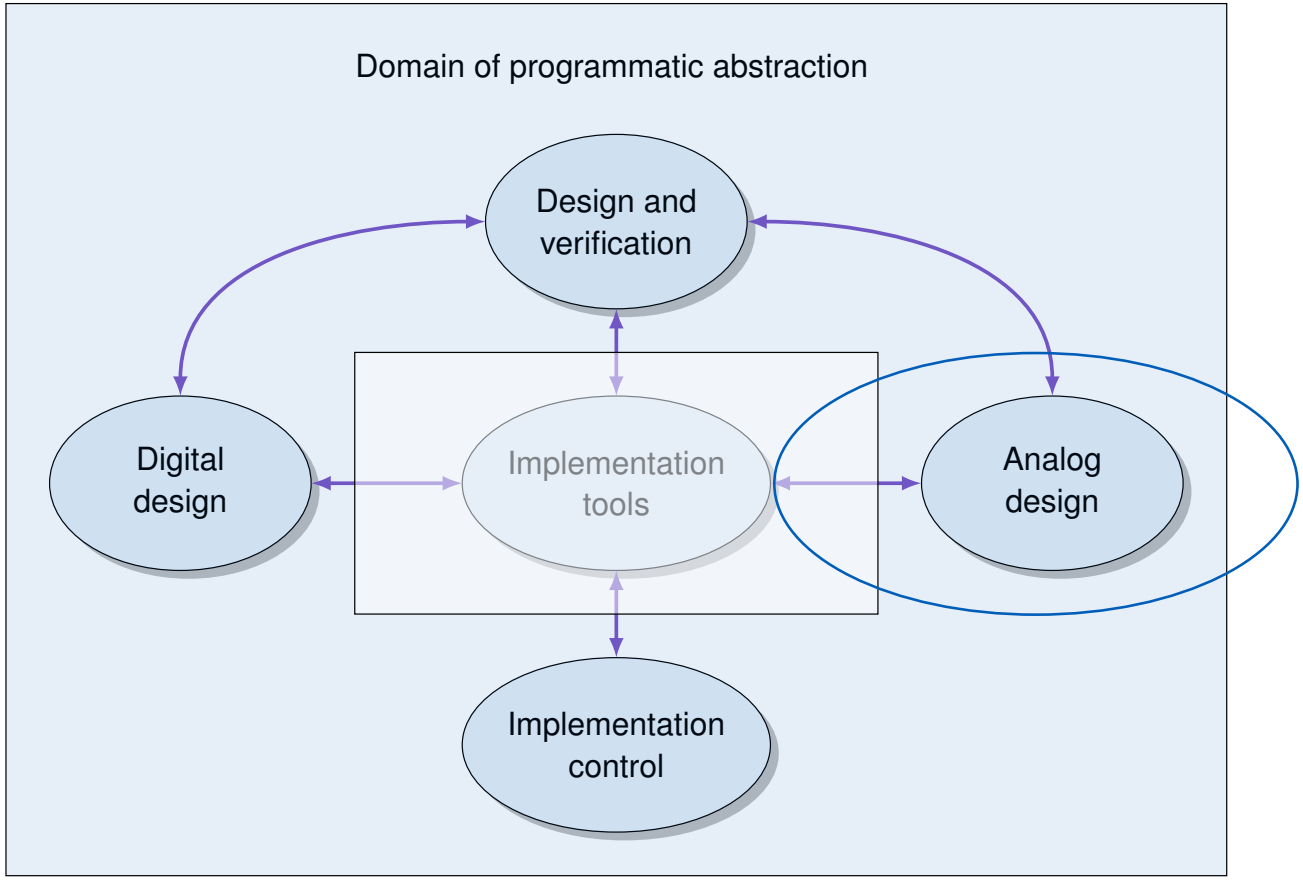
18.12.2019

Outline

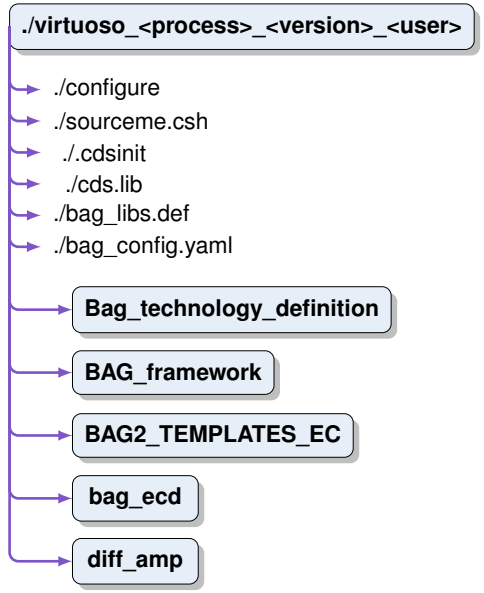
- Programmatic design environment
- Modular BAG design environment
- BAG_technology_definition
- Design module
- BAG-ecd and bag_design classes
- Generator demo

Programmatic design environment



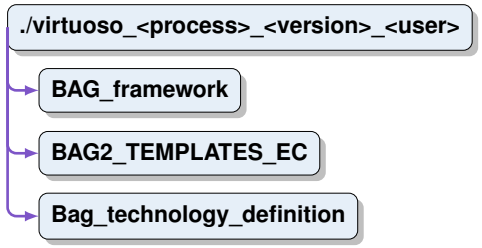
Modular BAG design environment principles

- Virtuoso design environment and technology definitions BAG independent.
- BAG configuration and modules added as git modules.
- BAG Configuration files created by configure script
- Software paths defined by sourceme.csh
- Design specific information imported with design specific configure scripts or as a part of the design procedure.



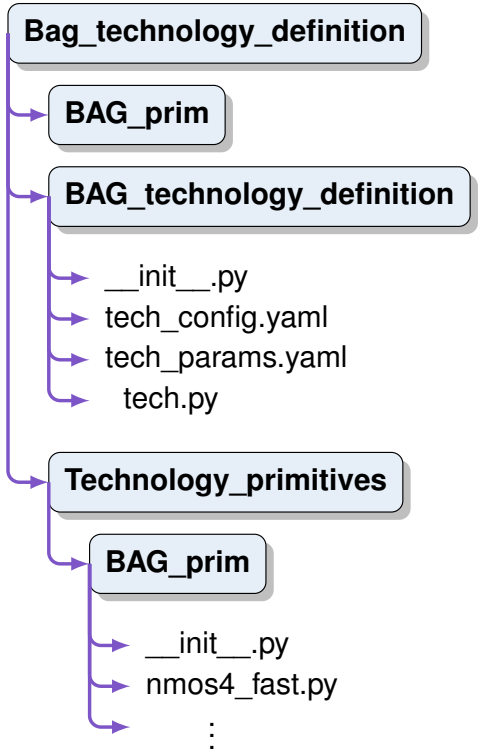
Essential BAG modules

- BAG_framework and BAG2_TEMPLATES_EC
  - Forked from *https://github.com/ucb-art*.
  - Some bugfixes filed as PR.
- BAG_technology_definition
  - In-house collection of *all* technology dependent data and BAG virtuoso primitives (git submodule).



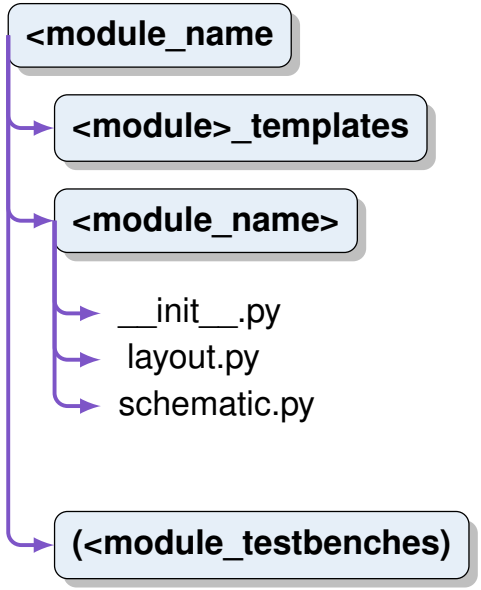
BAG technology definition module

- BAG_prim contain the Virtuoso primitives.
- tech_config.yaml referenced in bag_config.yaml
- tech_params.yaml referenced in BAG_technology_definition/__init__.py



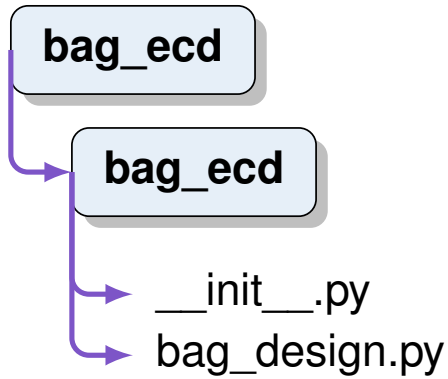
BAG design generator module

- Python package
  - Module and class layout layout generation code (for this design only).
  - Module and class schematic for schematic generation code.
  - Information import handled by bag_ecd class
  - Generator calls defined in bag_ecd.bag_design class.



BAG ECD design structure definition module

- Python package
  - Bag_ecd class as parent adds the essential bag modules and all generator modules to PYTHONPATH automatically during generator invocation.
  - Bag_ecd.bag_design class:
    - Defines common parameters for all designs.
    - Defines a method *import_design* for importing the template information to python environment.
    - Defines method *generate* that imports the design and generates the schematic and layout with help of methods defines layout and schematic classes of the design.



Further actions

- A generic BAG_technology_definition (Cadence gpdk) with ECD-compatible structure
- A process generic example design using bag_ecd structure virtuoso setup for Cadence gpdk
- Documentation with docstrings
- If willing to contribute, contact *marko.kosunen@aalto.fi* ,
  or file an issue.