Tiziana Fanni
University of Cagliari

Automatic generation of dataflow-based low-power reconfigurable systems

EOLAB

CPS Design
From concept to implementation

Cyber Physical Systems

CGR approach for high run-time adaptivity

Complex systems with different **interacting components**, that need to **adapt** their behavioural modality according to **functional** and **non-functional** requirements.

http://www.cerbero-h2020.eu/

Cyber Physical Systems

CGR approach for high run-time adaptivity

Complex systems with different **interacting components**, that need to **adapt** their behavioural modality according to **functional** and **non-functional** requirements.

Adopting **Corse Grain Reconfigurable Approach** to achieve high run-time adaptivity.

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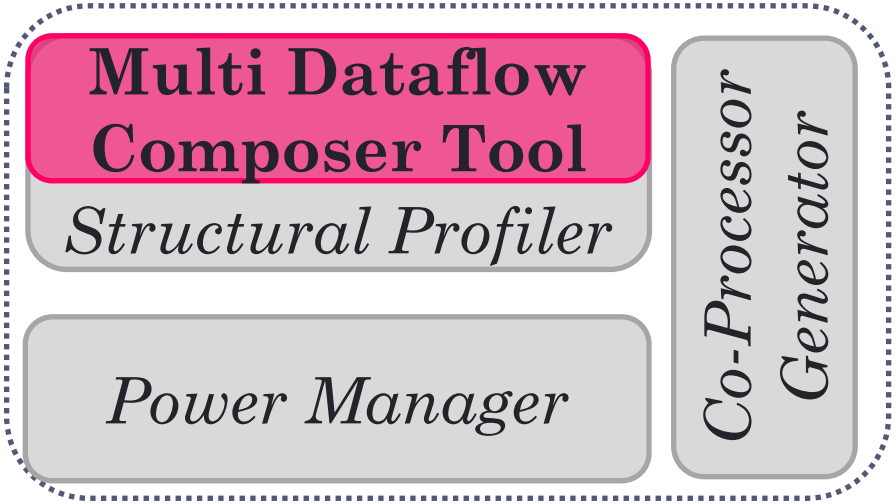
Multi Dataflow Composer Tool

Coarse-Graine Reconfiguration



MDC design suite

http://sites.unica.it/rpct/

Multi Dataflow Composer Tool

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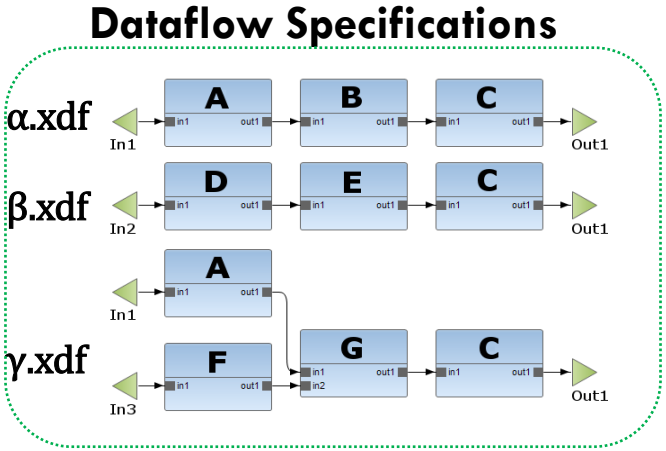

Multi Dataflow Composer Tool

Structural Profiler

Power Manager

Co-Processor Generator

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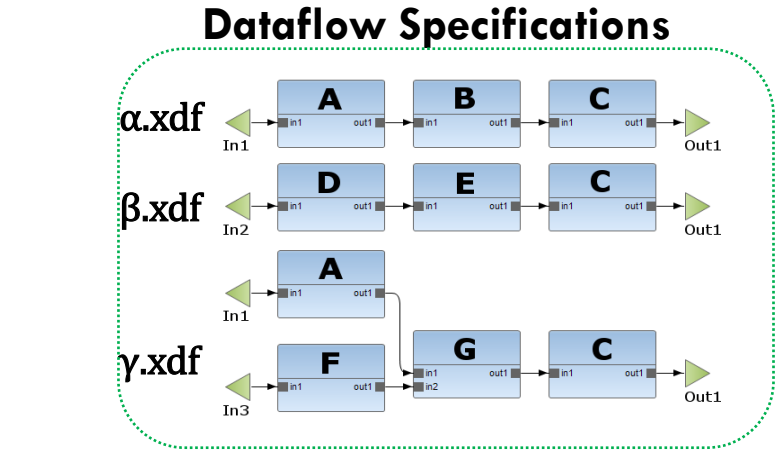

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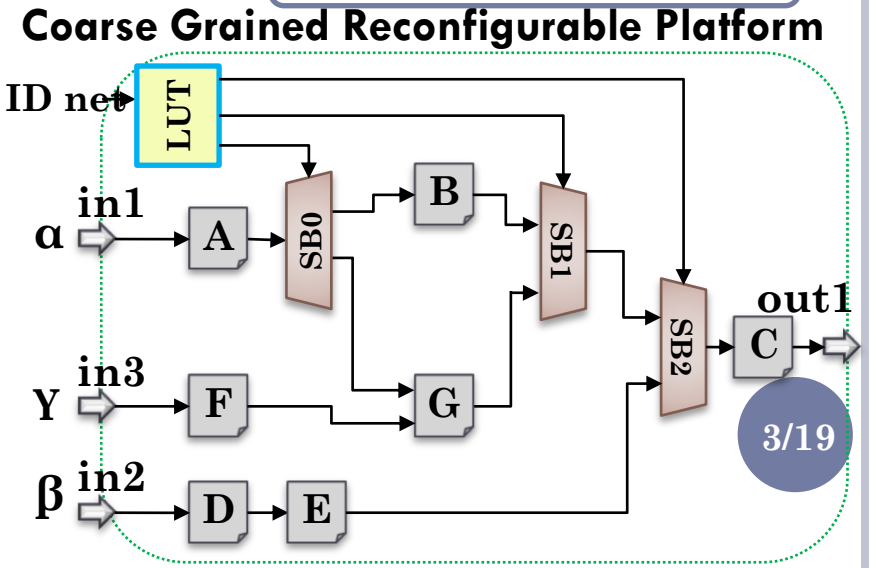
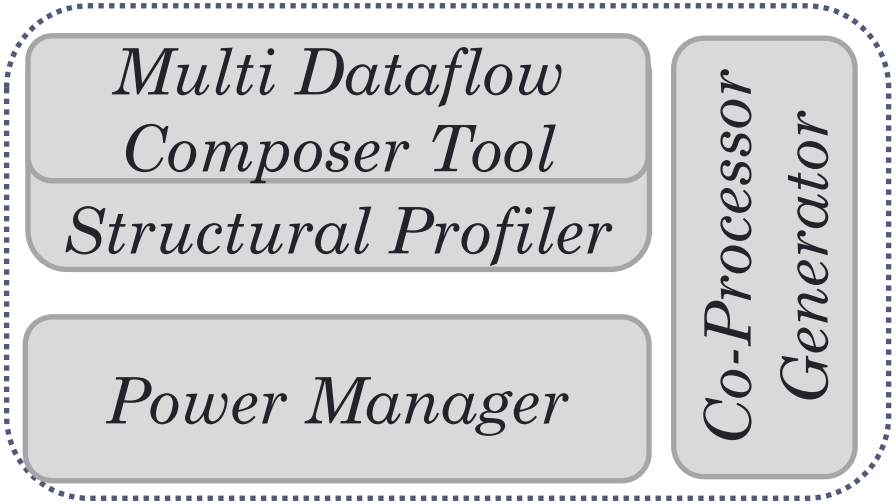


Multi Dataflow Composer Tool

Additional features



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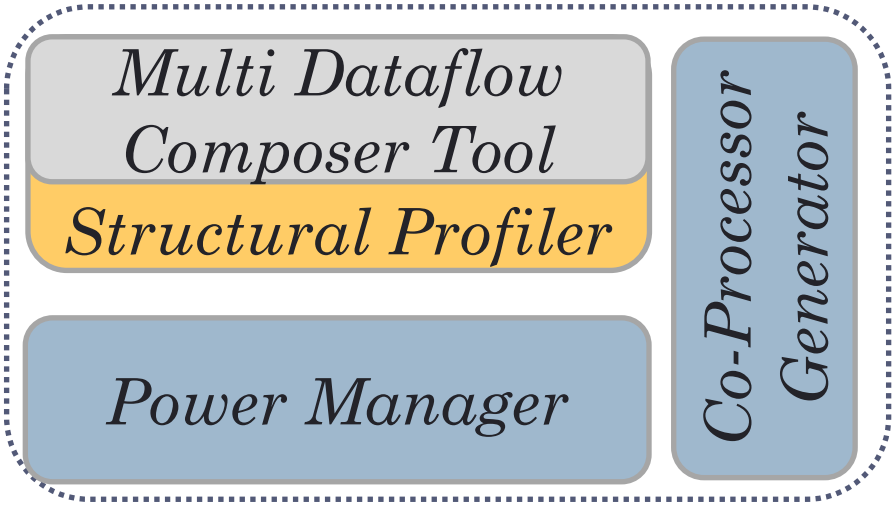

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Structural Profiler:

low-level feedback (from synthesis) and DSE for topology optimization.

- (ASIC + FPGA)

Co-Processor Generator:

generation of ready-to-use Xilinx Ips

- (FPGA)

Power Manager:

automatic application of clock-gating and/or power-gating.

- CG (ASIC + FPGA)
- PG(ASIC)

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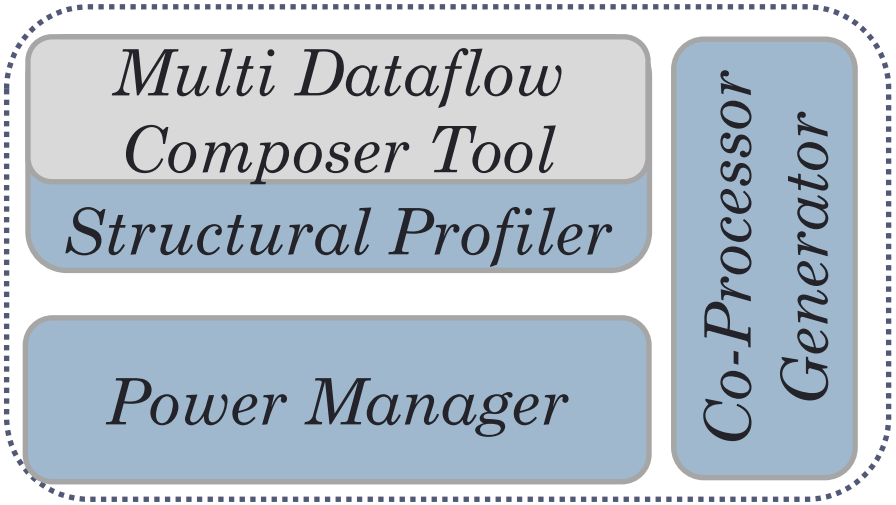

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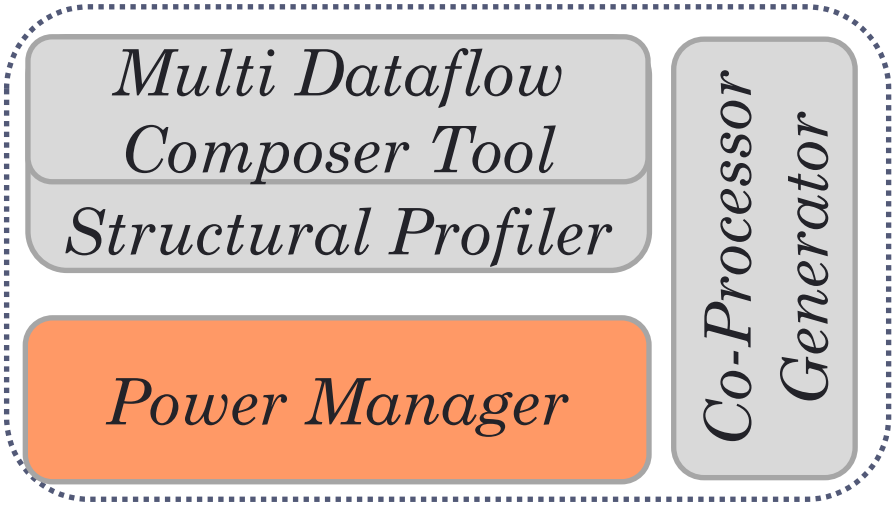

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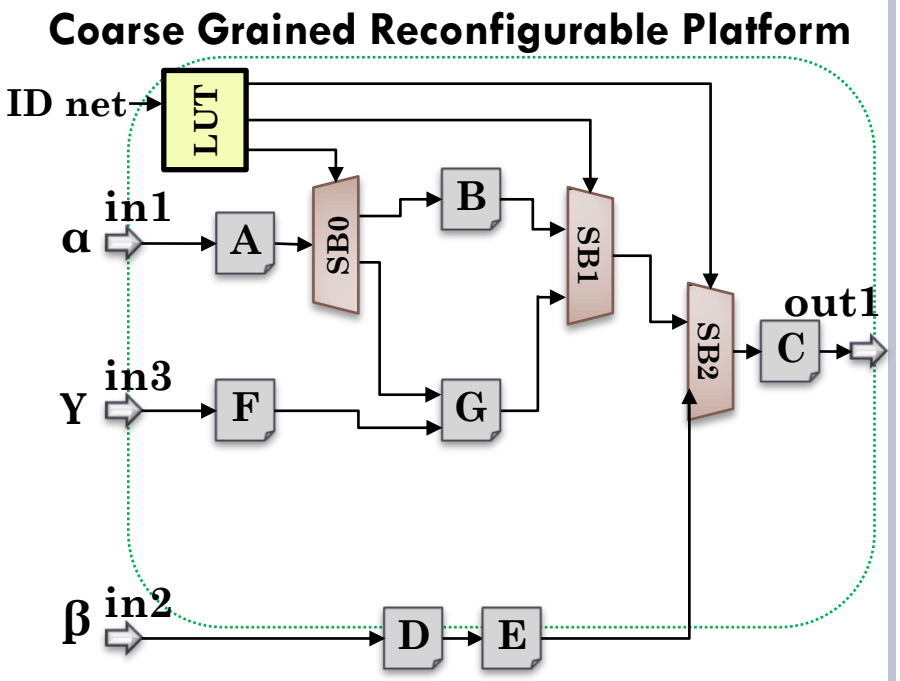

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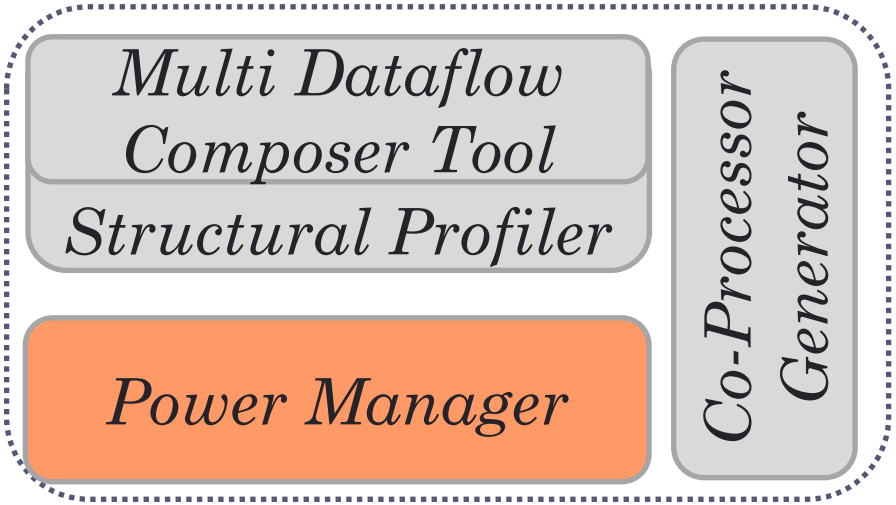

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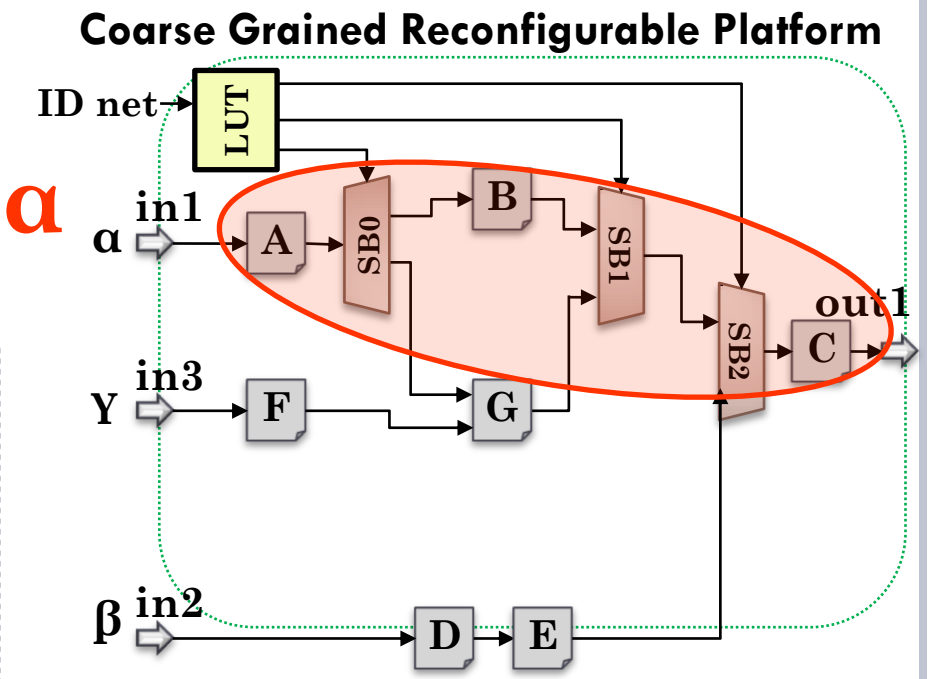

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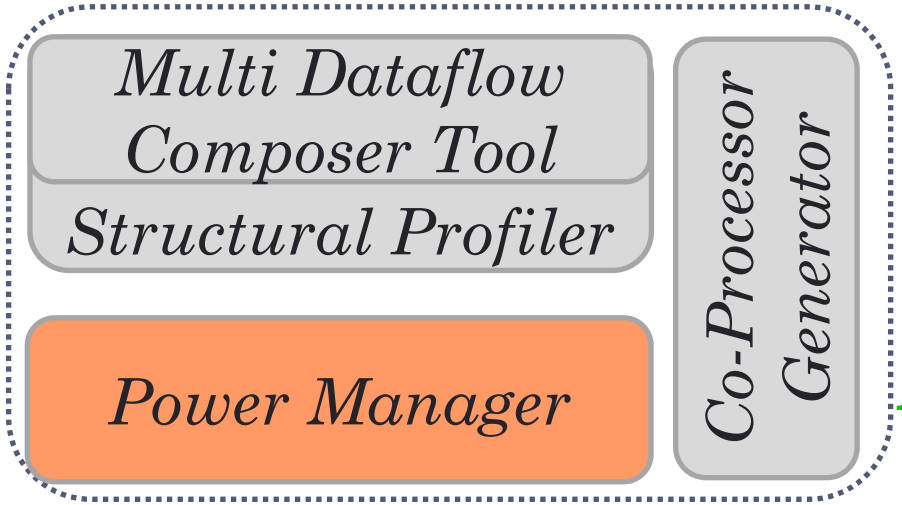

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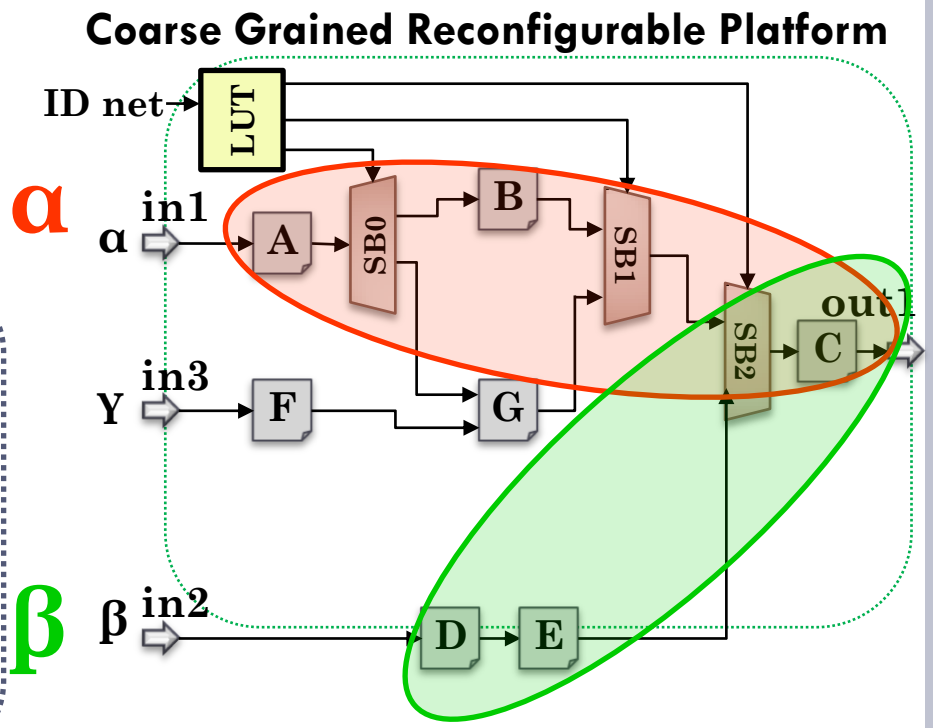

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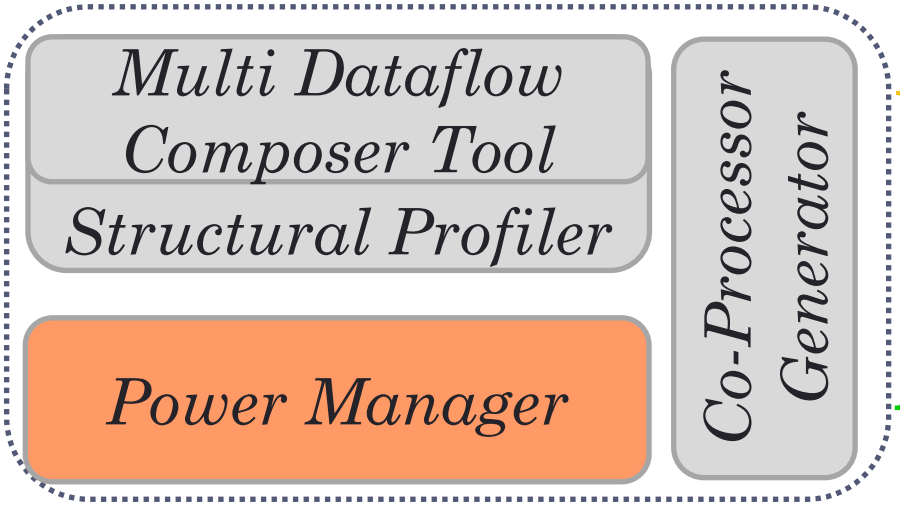

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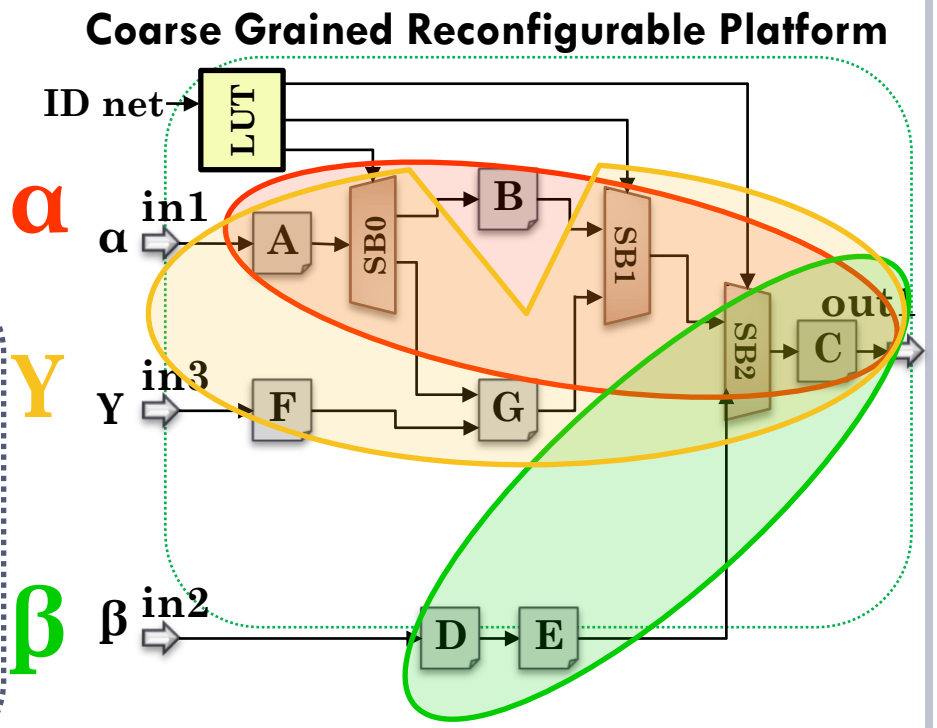

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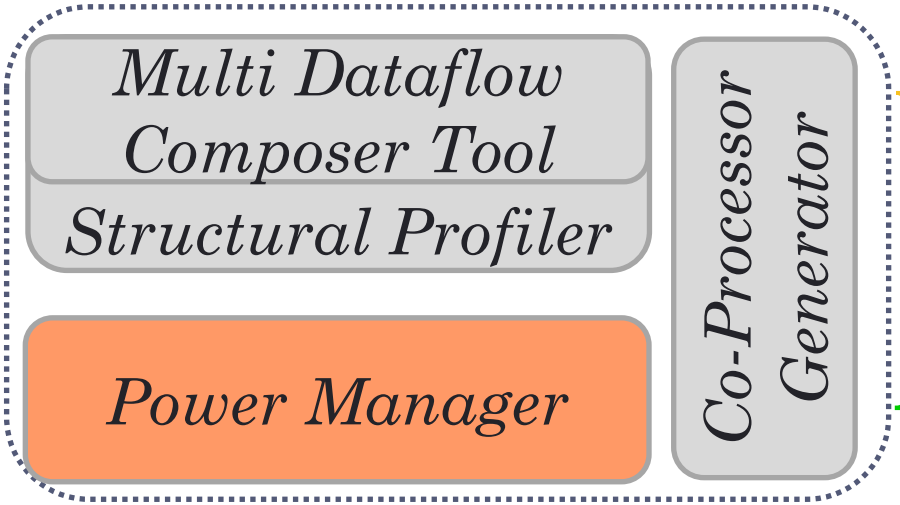

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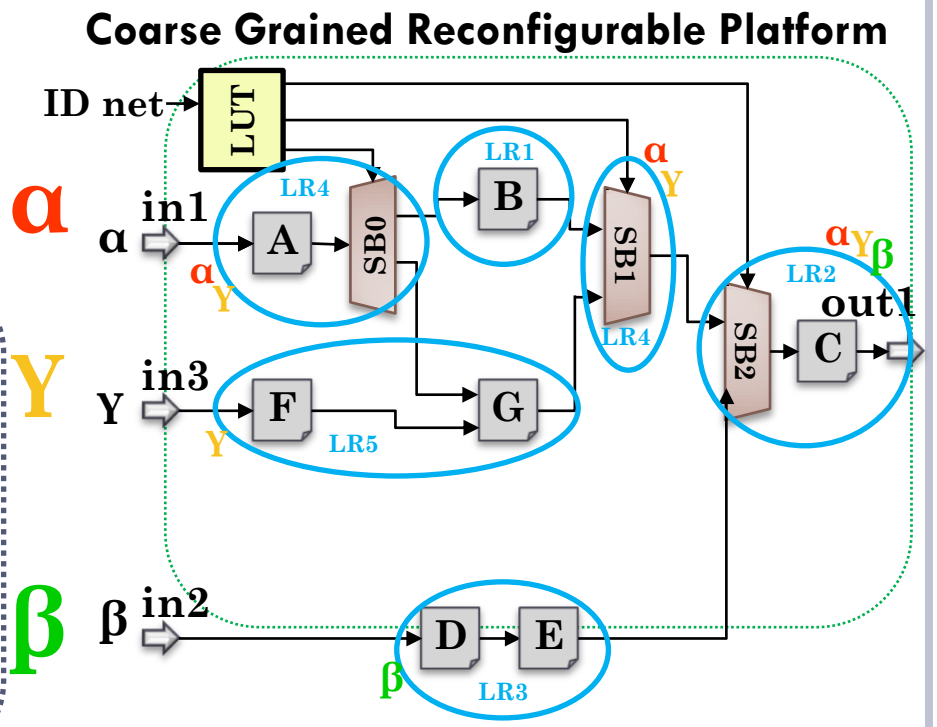

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Acknowledgements

The CERBERO project has received funding from the EU Commission's H2020 Programme under grant agreement No 732105.