FBE-ASIC GmbH

On- and Off-site ASIC Design Services

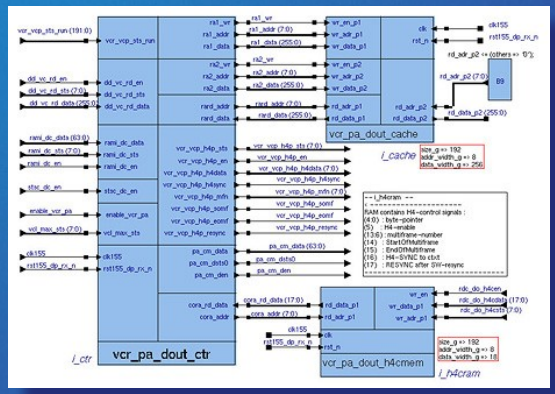
FBE-ASIC GmbH

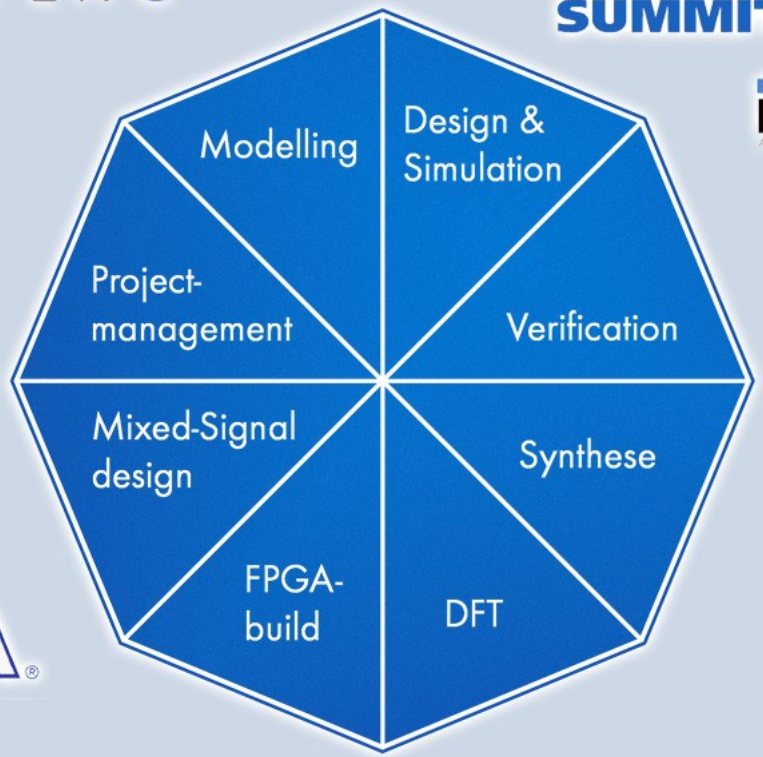
For small- and medium-sized enterprises in industrial, automotive, medical and telecom

- Turn-key solutions (design and delivery of Mixed-Signal Gate Arrays, ASICs and FPGAs)

For microelectronics industry

- Verification solutions from small blocks to complete systems and automated environments for IC-families in SystemC, MatLab, Specman e, SystemVerilog and/or VHDL/Verilog
- Digital and Mixed signal IP-development
- Analog layout
- Development of IP- and system-models in SystemC and VHDL-AMS
- Consulting services, subcontracting





SYSTEMC™

SUMMIT

Synchronicity

Model Technology™
A MENTOR GRAPHICS COMPANY

Verisity

cadence

SYNOPSYS®

ALTERA®

Synplicity®
Simply Better Results™

XILINX®
The Programmable Logic Company℠

Mentor Graphics®

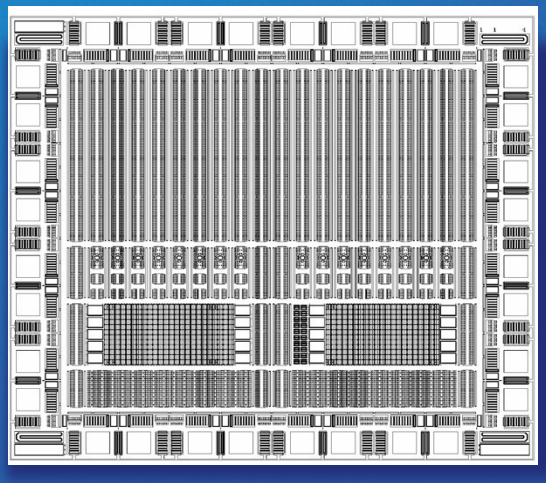

PEPPERL+FUCHS
BOSCH
FUJITSU
intel
fbe
NXP
founded by Philips
Dialog
Semiconductor
Infineon
technologies

Your bridge to higher integration

- Low NRE cost
- Available in small, medium and large quantities
- No deadlines as with MPW (multiple-project-wafers)
- Shorter design times since only few masks have to be customized
- Low risk approach (components have to be connected „only“)

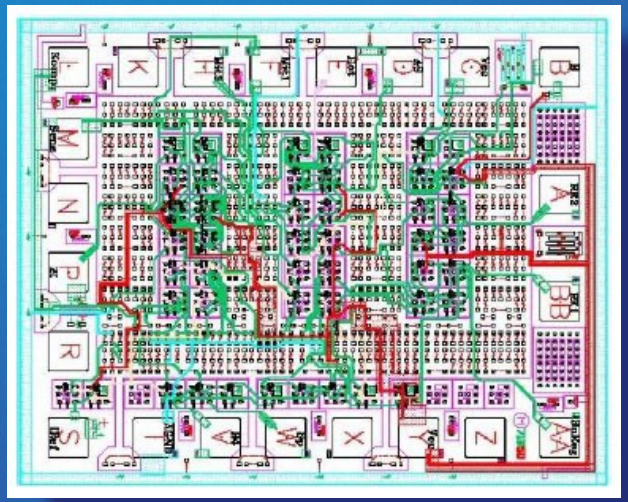
Application Fields:

- Sensor signal conditioning
- Audio amplification filtering
- Automation & control
- Motor control
- Telecommunication



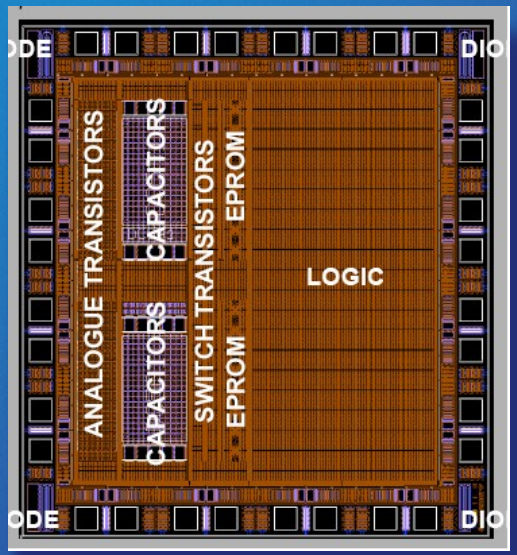
ZETEX 700 Series

- Bipolar analog transistor arrays
- Wide range of sizes (each ~30% larger than next smaller one)
- (Very) limited amount of digital gates
- Max supply voltage 20 V
- Strong current drive with large npn/pnp transistors
- low ESD and latchup sensitivity (better than CMOS technologies)



Microdul MD Series

- CMOS gate arrays for mixed analog/digital electronics
- Single or multiple use of basic cells
- Wafers are manufactured through PHILIPS Semiconductors in C175SC (1um) CMOS process
- Internal supply voltage max 6V, output max. 9V
- EPROM programmability
- 4kV ESD (human body model)



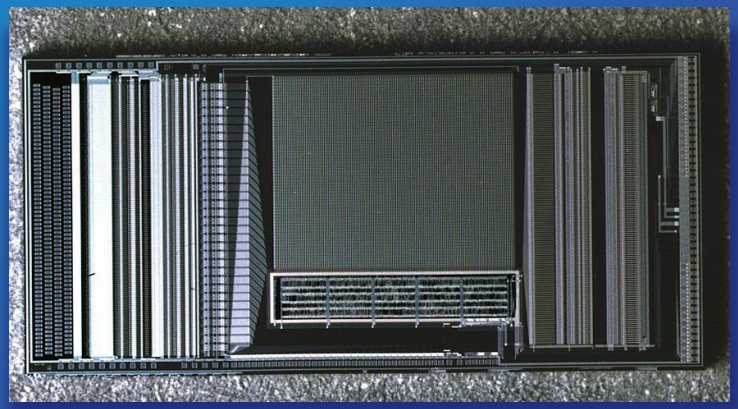
Full custom ASIC

Most versatile solution available for research, industrial, telecom, automotive and consumer markets

- Wafer-Supplier: XFAB, Erfurt (D)
  (Europes most popular ASIC manufacturer)
- Manufacturing sites in Germany (Erfurt),
  UK (Plymouth, Devon) and USA (Lubbock, Texas)
- Wafer starts per month, 1.000 employees worldwide

Supply chain handled by partnering test houses,
FBE ASIC GmbH keeps control of full supply chain

- Test program installation
- Wafer sort
- Assembly (packaging)
- Final test
- Shipping

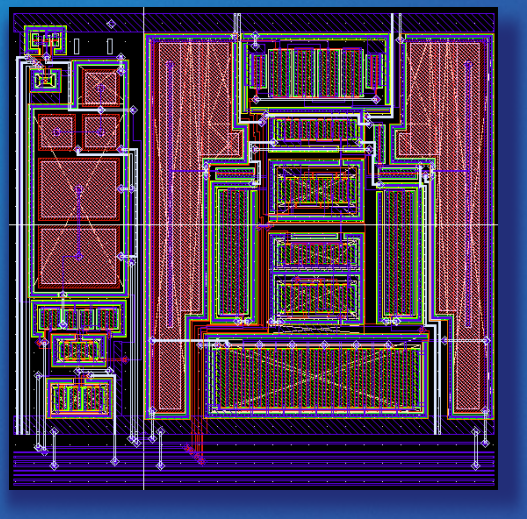


IP available in many areas of LF analog/mixed-signal design:

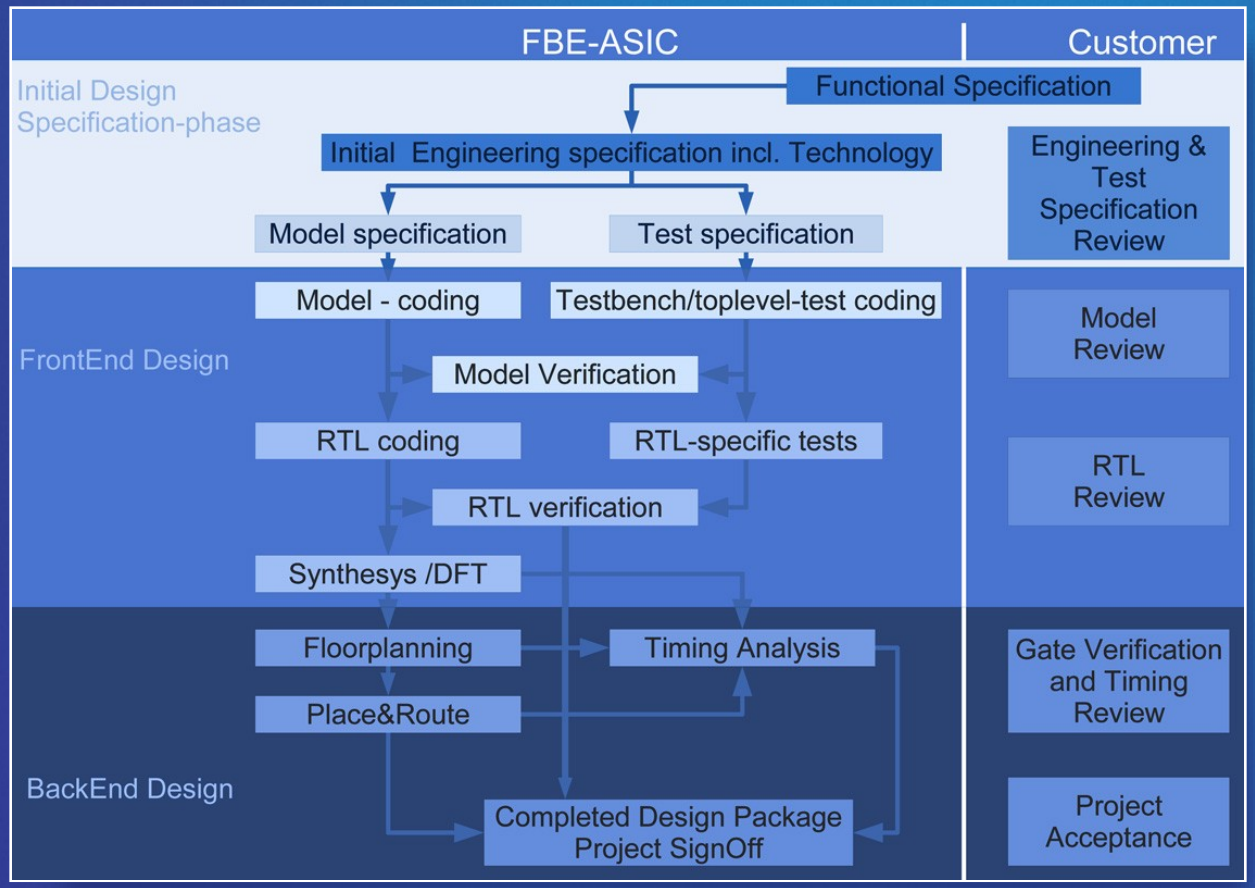
- Low noise, low-offset, high-precision amplifiers (see also next slide)
- Opamps (rail-to-rail, low power, strong drive, etc.)
- Comparators, Schmitt triggers
- DACs (current-based)
- ADCs (SAR, sigma-delta, flash)
- TDCs (time-to-digital converter)
- Power management circuits (charge pump, inductive)
- LDO regulators
- PLL

IP available in many areas of LF analog/mixed-signal design:

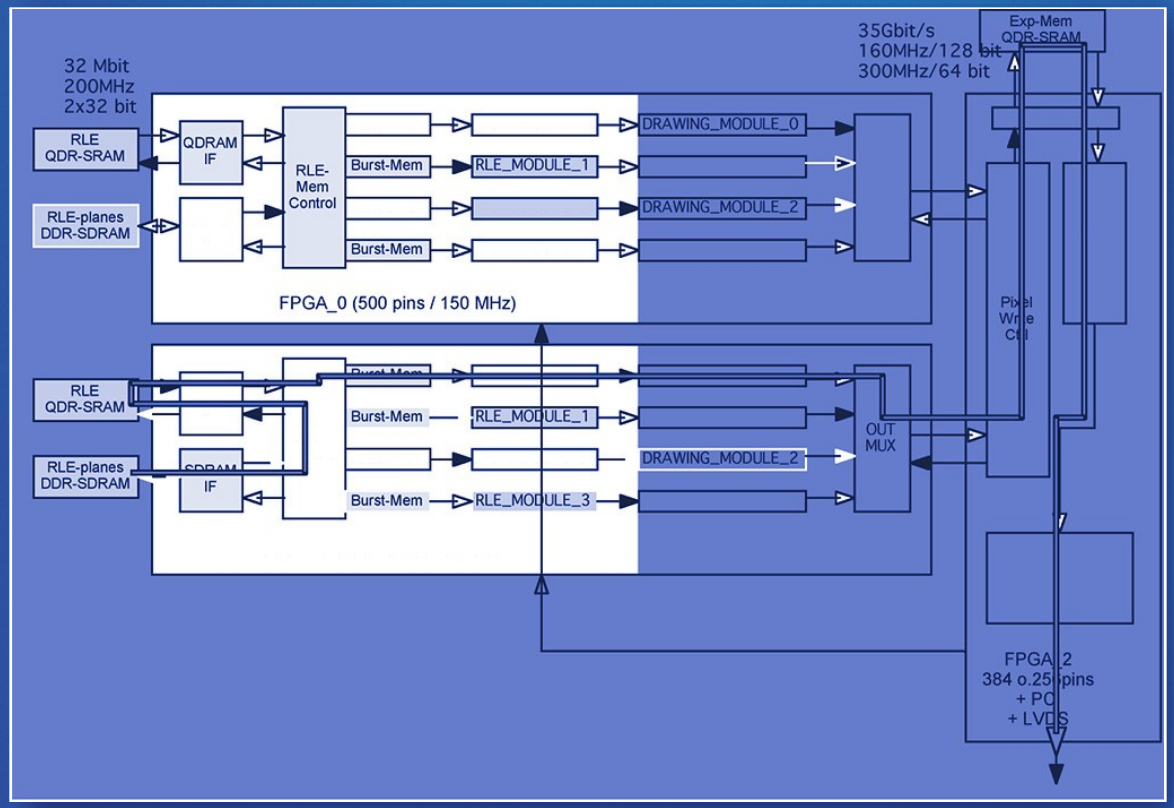
- IP stored mostly as schematic data in different processes (e.g. TSMC 0.35um, XFAB 0.6um, TI 0.35m ..)
- almost every IP cell has been proven on silicon
- adaption of schematic to target technology can usually be done quickly
- Block layouts in GDS-format can be delivered too, but availability of design kit needs to be checked
- Different license models available



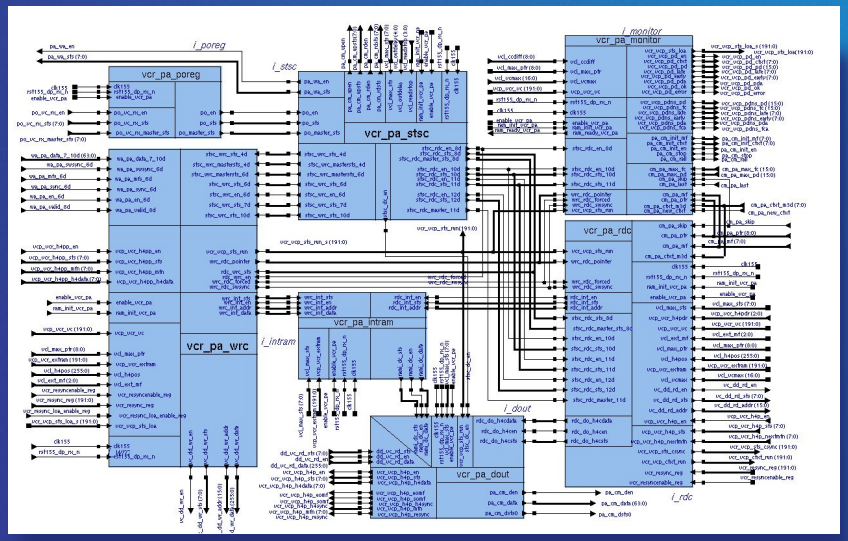
Design flow digital ASIC/FPGA

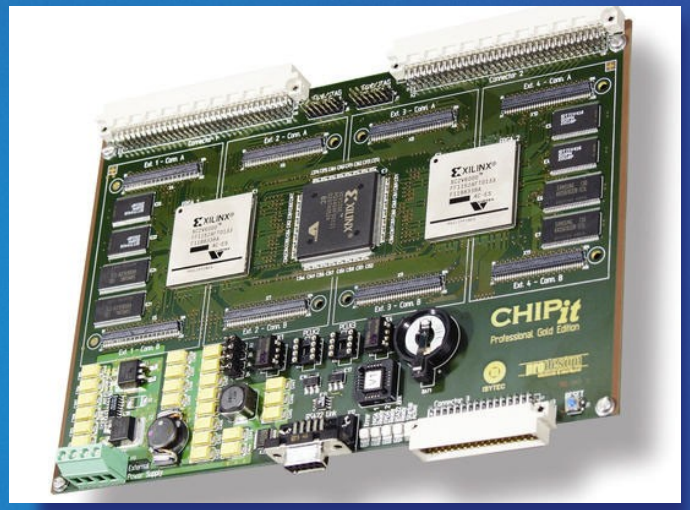


First choice for small volume high-performance systems



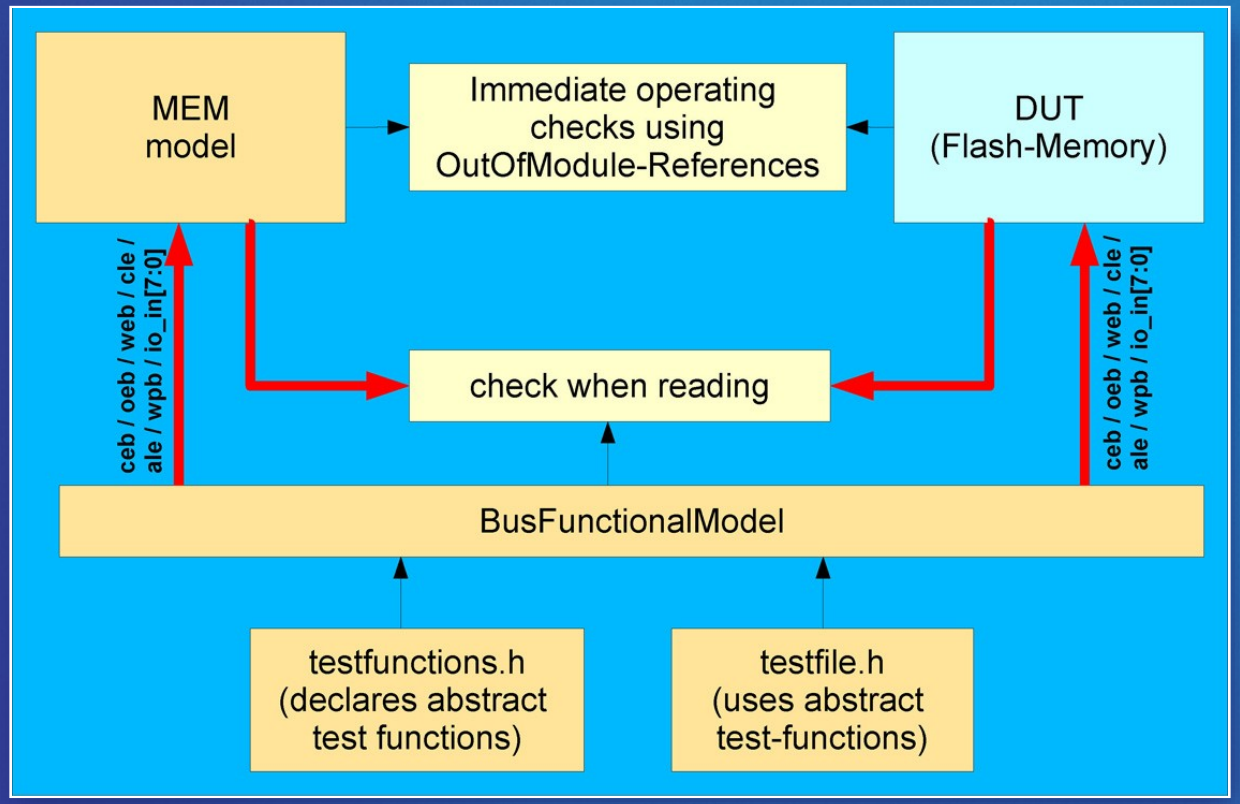
For Rapid Prototyping



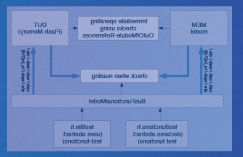


Board by ProDesign

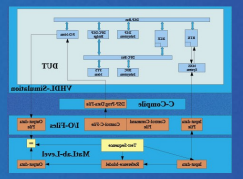
Verilog / Simple TLM based (Flash-Memory)



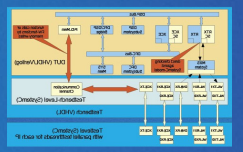
Verilog only



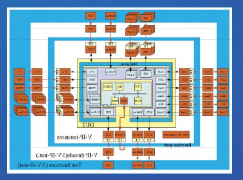
VHDL/MATLAB



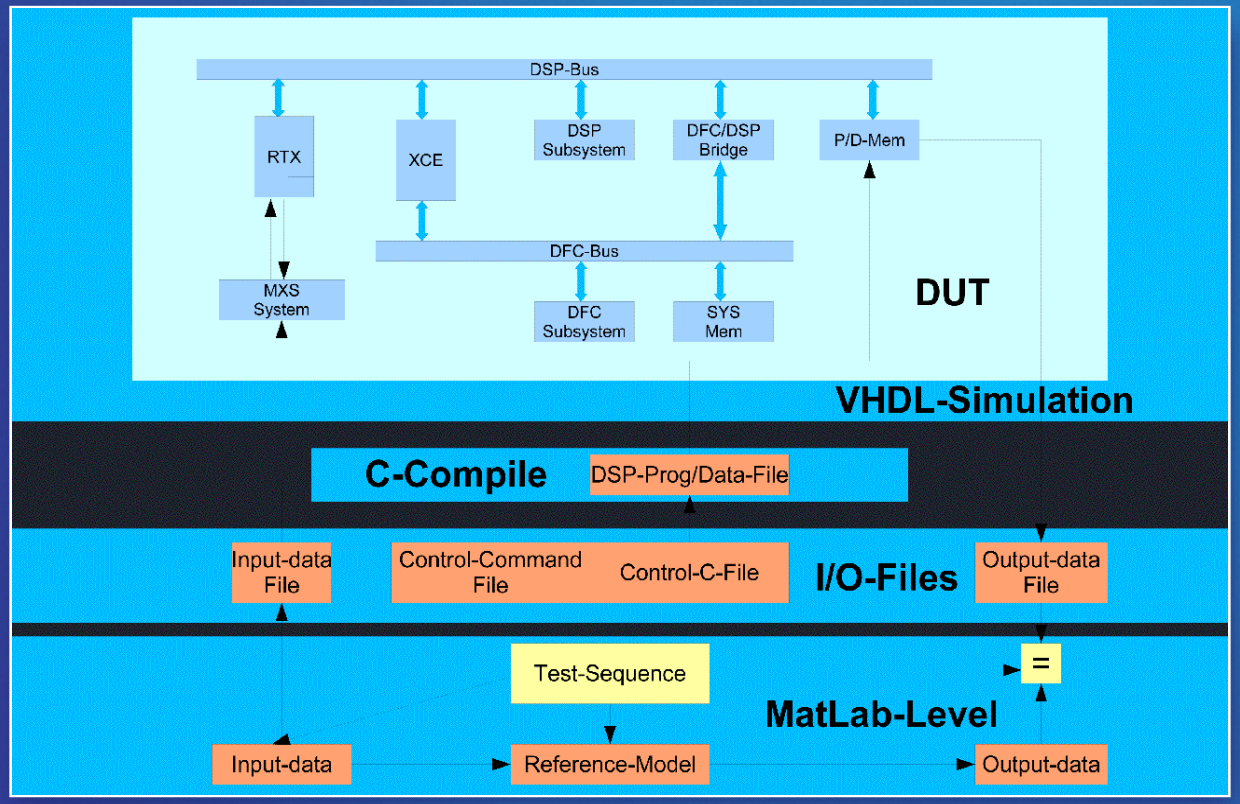
VHDL/MATLAB/SystemC



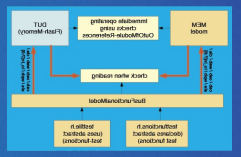
SystemC-based Platform



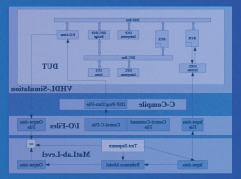
VHDL / MATLAB (Digital Signal processing)



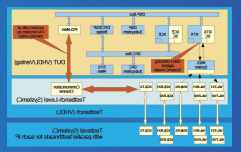
Verilog only



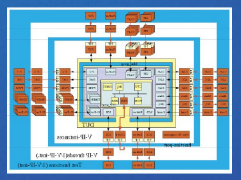
VHDL/MATLAB



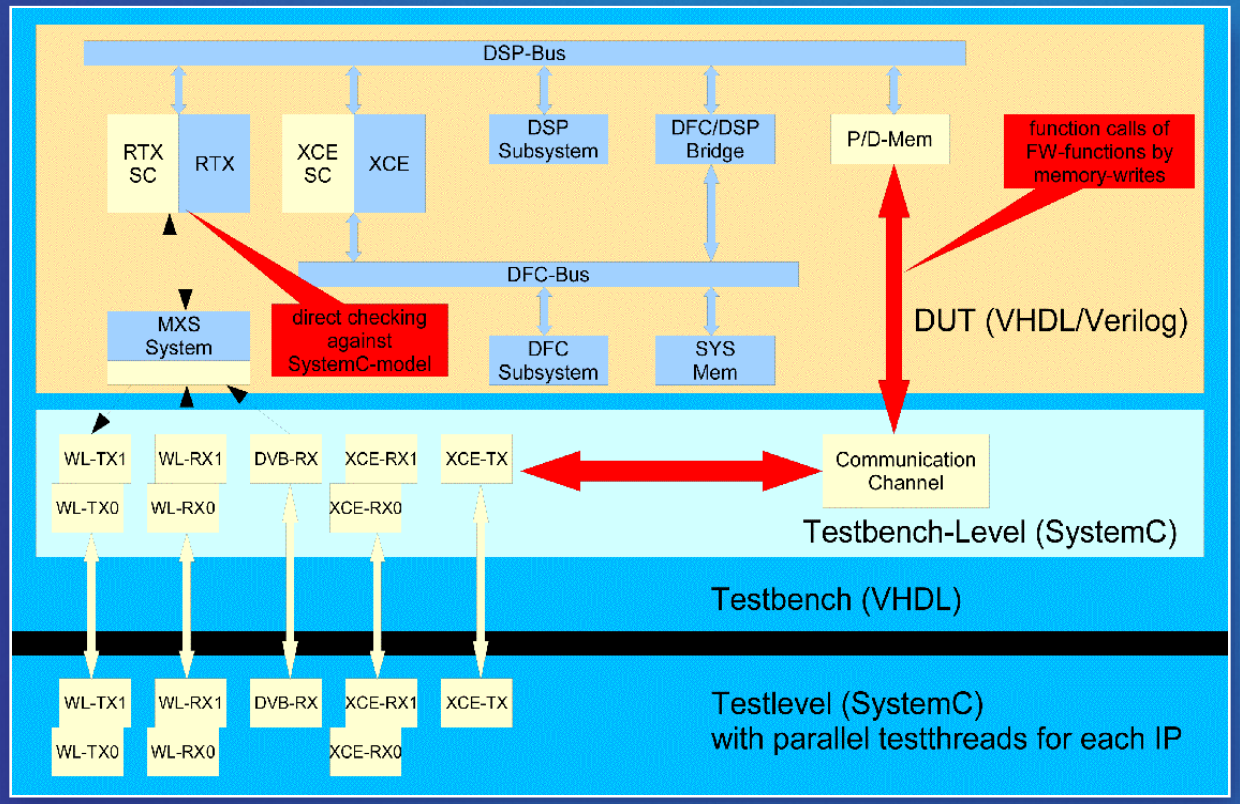
VHDL/MATLAB/SystemC



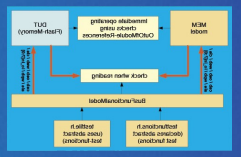
SystemC-based Platform



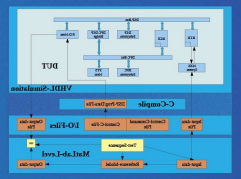
VHDL / MATLAB / SystemC (Baseband-ICs)



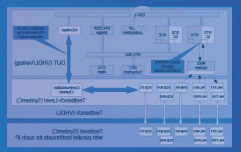
Verilog only



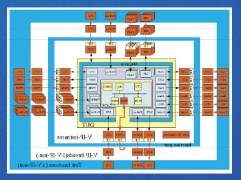
VHDL/MATLAB



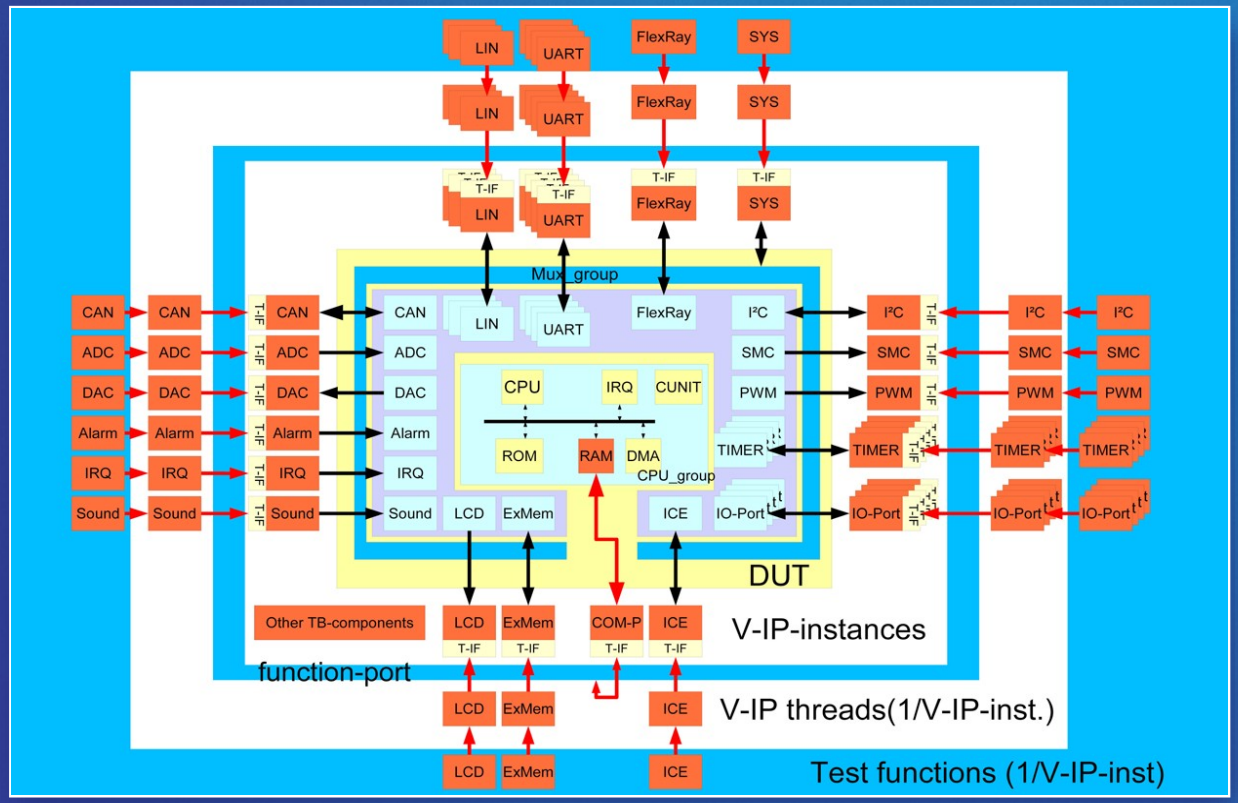
VHDL/MATLAB/System



SystemC-based Platform



SystemC based platform systems



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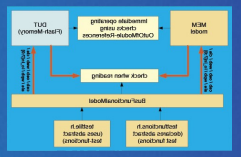
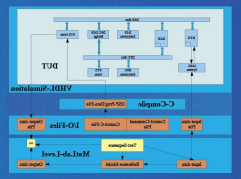
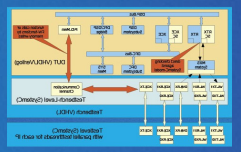


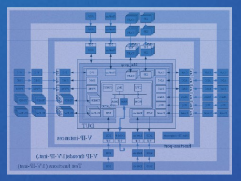
VHDL/MATLAB



VHDL/MATLAB/SystemC



SystemC-based Platform



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