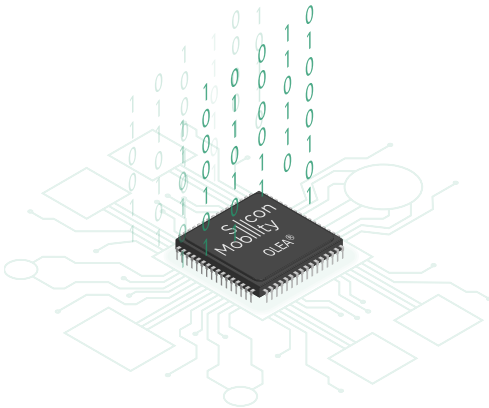# OLEA® COMPOSER

Silicon Mobility

OLEA® COMPOSER
Application Development Environment

Seamless development and calibration framework of tools, software and evaluation boards for OLEA® FPCU

OLEA® COMPOSER supports:
- All stages of V design cycle: MiL, SiL and HiL
- Most popular design, simulation, debug and validation tooling
- Automatic C and HDL code generation for OLEA® FPCU
- Real-time variables / parameters debug and calibration in CPU and/or AMEC® FLU

Changing developers' life

OLEA® COMPOSER orchestrates a wide set of leading development tools all along the V-Model design cycle and accelerate development on OLEA® FPCU.

From Model-in-the-Loop (MiL), Software-in-the-Loop (SiL) down to Hardware-in-the-Loop (HiL), developers drastically reduce development, validation and calibration time while significantly improving performances using the Hardware/Software split provided in the framework.

OLEA® COMPOSER includes the following products:

OLEA® COMPOSER – T222 Target Framework: Framework driving the model-based development steps from the theoretical model to the FPCU target porting.

OLEA® COMPOSER – AGILIS Precision RTL: Mentor Graphics's based RTL synthesis tool combined with AGILIS P&R.

OLEA® COMPOSER – T222 FPCU Configurator: GUI based I/O configuration.

OLEA® COMPOSER – T222 MCAL: AUTOSAR 4.3 Compliant drivers for OLEA® FPCU.

OLEA® COMPOSER – T222 Starter Kit: OLEA® T222 FPCU Board with software design kit and Flash downloader

OLEA® COMPOSER – T222 Inverter Starter Kit: OLEA® T222 FPCU Board + Inverter Power Board + 24-Volt motor for a rapid inverter project jump start
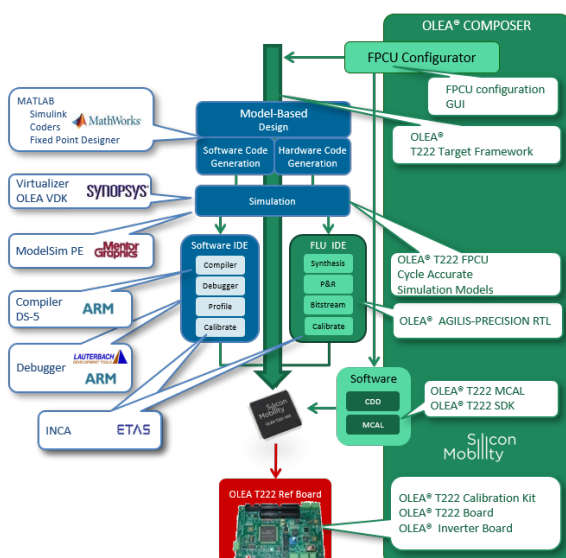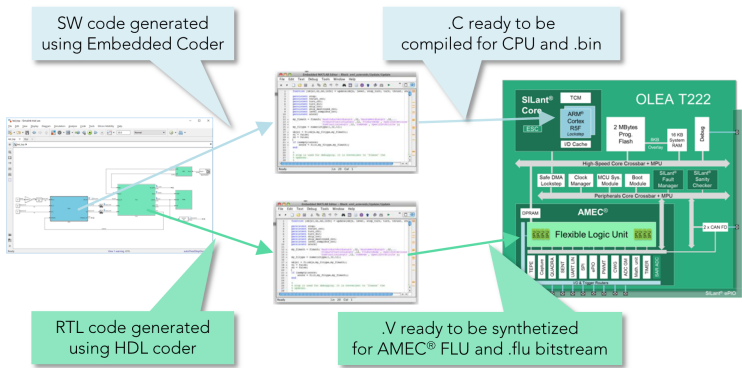

OLEA® COMPOSER in OLEA® FPCU development flow
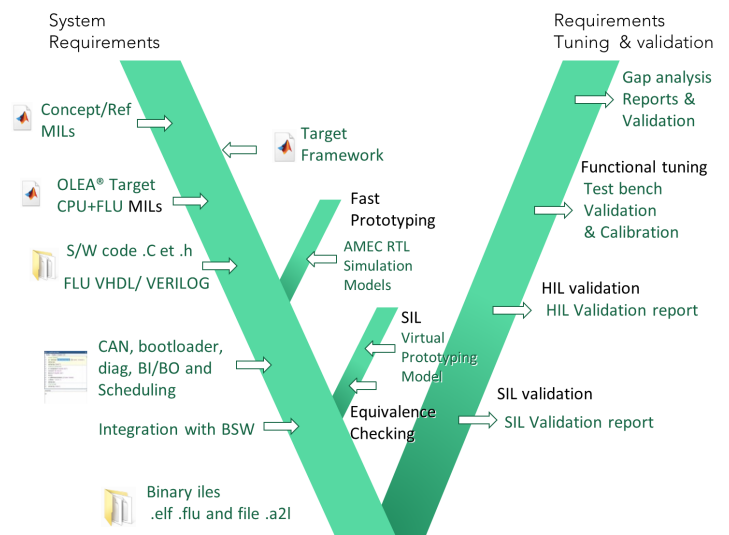
OLEA® COMPOSER in V design cycle

Model in the Loop

OLEA® COMPOSER - T222 Target Framework is a driven and instrumented framework using OLEA® LIB Target library for fast and seamless MATLAB Simulink reference model porting to OLEA® T222 FPCU with pre-defined CPU / AMEC® communication protocol. It allows simultaneous C and HDL automatic code generation from MATLAB/Simulink. The generated code is directly usable as an AUTOSAR Complex Device Driver.

SW code generated using Embedded Coder

.C ready to be compiled for CPU and .bin

RTL code generated using HDL coder

.V ready to be synthetized for AMEC® FLU and .flu bitstream

- All AMEC® FLU hardware resources available as target models (e.g ADC, PWM, Timers, CWG, PIO, QUADRA, CAPTURE)
- Automatic generation of the CPU / AMEC communication
- Automatic variables and parameters instrumentation for measurement and calibration on hardware targets

Software in the Loop

OLEA® COMPOSER - T222 Virtual Prototype VDK and **OLEA® COMPOSER - T222 AMEC RTL Simulation Models** are simulation environments enabling fast and accurate software and hardware validations.

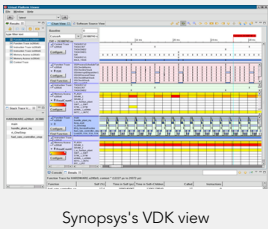### Accurate Virtual Prototyping
- Transaction / Memory Map
- Programming

Software development/validation
- Boot / OS / AUTOSAR BSW
- Complex Device Driver
- Co-simulation with SIMULINK

VDK ECU System Simulator
- Early software development
- H/W & S/W split & correlation
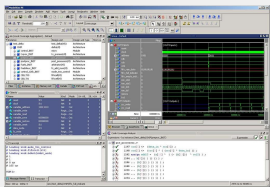- Fast simulation and debug

Synopsys's VDK view

Cycle Accurate AMEC® RTL Model
- AMEC
- FLU I/F

RTL Simulation
- Reference tests bench
- Including CPU & DMA access
- FLU design integration validation
- Signal debugging

Mentor Graphics's ModelSIM view

Hardware in the Loop

OLEA® COMPOSER T222 Starter Kit
Complete package which includes OLEA® T222 FPCU based development boards, software and documentation for quick application design. Available with the 176 pins or 100 pins packages versions.
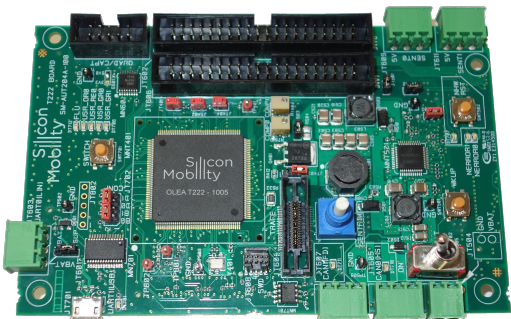
OLEA® COMPOSER T222 INVERTER Starter Kit
Complete package which includes OLEA® T222 FPCU Starter Kit + Inverter board + 24 Volts -196 Watts 3-phase PMSM motor + OLEA® APP INVERTER HE for inverter application development

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