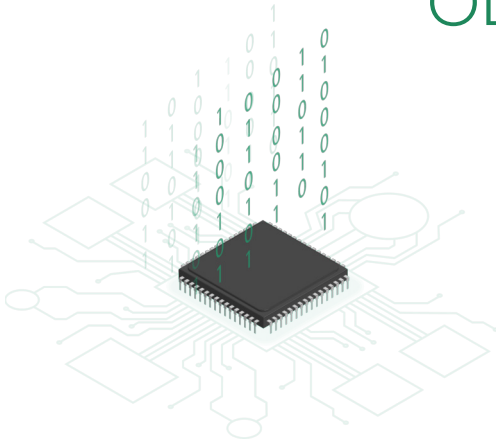


# Silicon Mobility

## OLEA® COMPOSER



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.

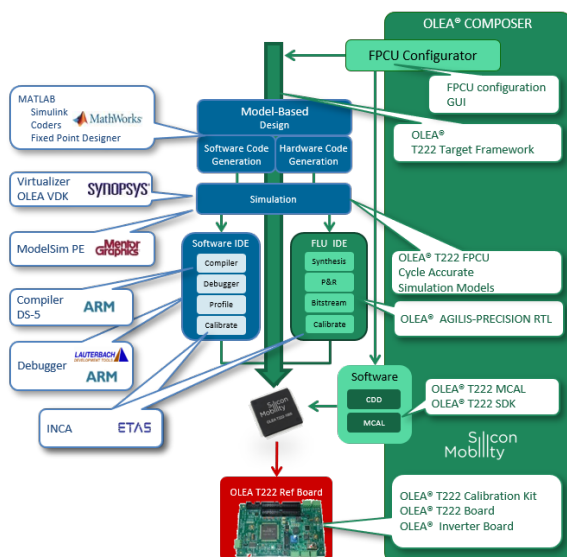
**OLEA® COMPOSER – T222 Virtual Prototyping Model:** System C model of OLEA® T222 FPCU for SiL simulation

**OLEA® COMPOSER – T222 AMEC RTL Simulation Models :** RTL model of AMEC® FLU interface of OLEA® FPCU for cycle accurate simulation and in-depth debug and tuning.

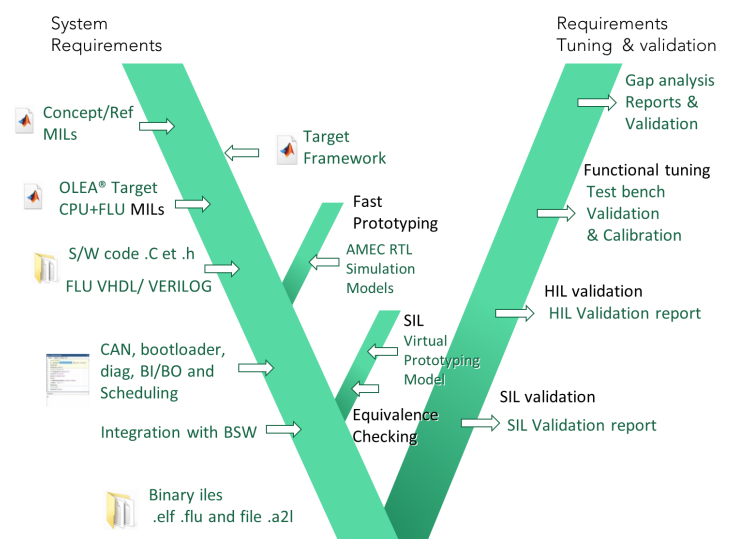
**OLEA® COMPOSER – T222 MCAL:** AUTOSAR 4.3 Compliant drivers for OLEA® FPCU

**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



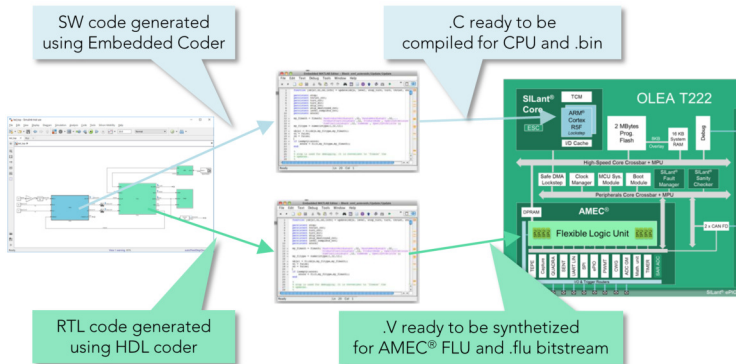
OLEA® COMPOSER in OLEA® FPCU development flow



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.



- 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

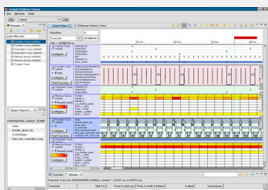
- Transaction / Memory Map
- Programming

## Software development/validation

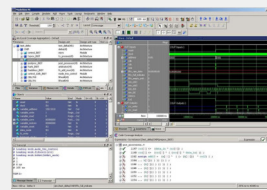
- Boot / OS / AUTOSAR BSW
- Complex Device Driver
- Co-simulation with SIMULINK

## VDK ECU System Simulator

- Early software development
- H/W & S/W split & correlation
- Fast simulation and debug



Synopsys's VDK view



Mentor Graphics's ModelSIM view

## Cycle Accurate AMEC® RTL Model

- AMEC
- FLU I/F

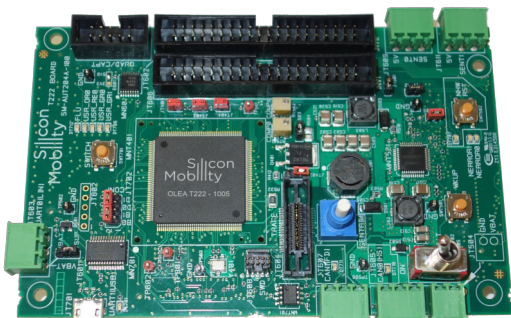
## RTL Simulation

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

# Hardware in the Loop

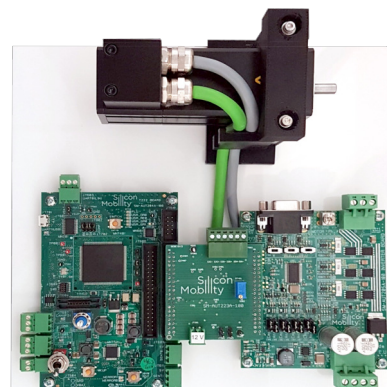
## OLEA® COMPOSER T222 Starter Kit

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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