## The component Model Editor Prototype (from COrDeT3) – A complete Toolchain from Components to Binary (from COrDeT2)

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The COrDeT (Component Oriented Development Technique) studies have been supporting SAVOIR-FAIRE on the definition of the On-board Software Reference Architecture (OSRA).

The COrDeT-2 study started in September 2010 and finalised in December 2012. A development framework named the *COrDeT-2 Tooling Framework* was built up. The tooling framework is based on the Space Component Model (SCM) and fully understands OSRA and its internal organization. The toolset includes the graphical editor and implements transformation engines to generate the final executable image. This generation is tightly coupled with the TASTE tool chain. TASTE tools are used to produce the executable.

Following the COrDeT-2 study, COrDeT-3 started in October 2013. In this case, the toolset is implemented as a proof of concept of the OSRA specification and the associated metamodel of the component model. Therefore, only the **COrDeT-3 Graphical Editor** is being extended. The COrDeT-2 graphical editor is taken as reference, but the development environment differs. COrDeT-3 is based on open-source tools, namely Sirius is supporting this graphical editor.

TheCOrDeT-3 graphical editor defines five different views intended to show a partial representation of the OSRA model according to a particular concern:

- <u>Component View</u>: Definition of the software system.
- <u>Non-Functional View</u>: Specification of non-functional properties (e.g. concurrency kind) of the components.
- <u>M&C View</u>: Specification of the Monitoring and Control (M&C) features.
- <u>Hardware View</u>: Definition of the hardware topology.
- <u>Deployment View</u>: Allocation of components onto (hardware) nodes.

The editor guides the user to design the on-board software using different representations (e.g., diagrams and tables) according to the proposed OSRA methodology. The figure below depicts this graphical editor.

