# Calytrix SIMplicity - *an MDA approach to distributed simulation*

Over the last three years Calytrix Technologies has been promoting an MDA™-like approach to component-based software development. We have done this through the application of innovative visual development environments and flexible code generation mechanisms. Our first product, Calytrix SIMplicity™, delivers these benefits to the HLA[1] simulation community.

Calytrix SIMplicity™ is an integrated development environment (IDE) that enables developers and scientists to rapidly assemble component-based HLA simulations from new and pre-existing components in a visual environment. SIMplicity assists the developer throughout the development life cycle, from design, through to development, deployment and execution. SIMplicity dramatically reduces the effort required to develop and manage HLA simulations.

As described by MDA™, development in SIMplicity is based around a platform independent model (PIM) created within the SIMplicity visual environment. This model is used by SIMplicity to encapsulate the simulation's data objects, the simulation's components and their relationships within the system, as well as providing physical deployment modelling. SIMplicity then uses a template-driven code generation process to create all the simulation entities for the targeted *platform specific* simulation *model* (PSM).

SIMplicity version 1.0 allows you to create simulations for the DMSO RTI 1.3 NG4, 5 and 6 in C++. As more *platform specific models* become available you will be able to transition your simulation between different RTI implementations, including seamless transitions between DMSO 1.3 and IEEE 1516 standards, as well as supporting different component development languages including Java and VB.
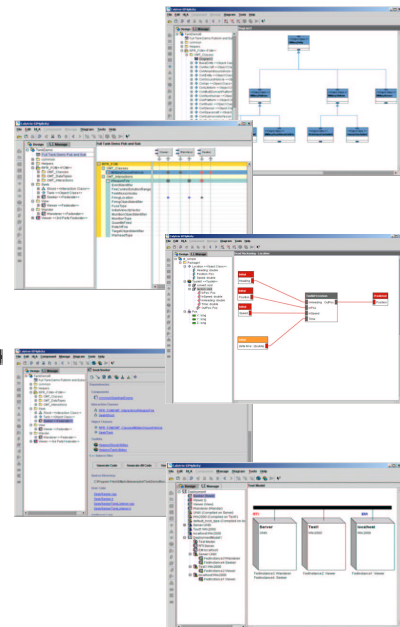
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[1]   The High-Level Architecture (HLA) was developed by the US Defense Modelling and Simulation Office (DMSO) to facilitate the development of reusable and interoperable distributed simulations. HLA describes a set of simulation services, accessible through its Run-Time Infrastructure's (RTI) API, which can be utilized to create time-managed HLA compliant simulation objects. The compliant simulation objects, called Federates, can then be combined in an interchangeable fashion to develop complex simulations of real-world phenomena.