



Mirabilis Design's Integrated Modular Avionics (IMA) Architecture templates enable avionics designers to evaluate the architecture for the target application and predict the system bottlenecks early in the design cycle.

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## **Mirabilis Design adds Integrated Modular Avionics (IMA) templates to explore the system configuration to meet Performance, Power and Reliability constraints**

#### **Highlights:**

- Large number of pre-build IMA configurations to experiment with different speed, size, and scheduling options for the proposed application
- System libraries include models of processors, memories, communication channels, interconnects and software task generators
- Avionics specific technology library for AFDX, TTEthernet, RapidIO, ARINC 653 models, Ethernet, Spacewire, PCIe and DRAM

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**Sunnyvale, CA. — February 29, 2016** - Mirabilis Design Inc. today announced the release of the first system simulation suite for Integrated Modular Avionics (IMA) Architectures. This suite provides the largest library of hardware and software models to fully define a avionics system. The library includes processor models for PowerPC, Coldfire, x86, Intel Atom and ARM; interconnects models of AFDX, TTEthernet, RapidIO, and memory models for DDRx, Flash and SSD. Avionics System architects and designers can use this suite to design and evaluate proposed IMA architectures. The solution has been used to trade-off between variations in ARINC 653 Virtual Machine Processing, AFDX configurations, software task scheduling and interconnect topology. Using this suite, Architects can conduct hardware-software partitioning, power management design, explore system behavior in the event of non-deterministic faults, schedule hardware in the event of a graceful degradation and test the viability of the system in the event of software task table faults.

“A periodic loss of packets in a defense flight control system could not be detected using hardware diagnostics,” said Deepak Shankar, CEO of Mirabilis Design Inc. “VisualSim IMA Suite detected a RapidIO switch buffer was receiving spikes of data due to an alarm from one of the sensor systems. Without VisualSim, this error could have taken many months to detect and the project delay would have been considerable, causing a huge late fee.”

#### **Features:**

- Rapid and Accurate Model construction to select hardware resources, define application behavior flow, power management and redundancy management
- Highly Extensible Library blocks that support existing and future technologies
- ARINC 653 Scheduler table and analysis tools to capture dead or alive tasks



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- Supports Modeling of multi-core platform and shared hardware resources to predict system bottlenecks and challenges
- Heterogeneous modeling and simulation environment combining hardware, software and communication infrastructure in a single Simulation Model

#### **Webinar:**

To help and educate, Mirabilis Design Inc. is conducting a webinar - 'Is Integrated Modular Avionics (IMA) for you? Ways to confirm before committing' on 3rd March at 11 AM PST/ 2 PM EST. In this webinar, K. R. Ranjith and Deepak Shankar would discuss about complexities involved in IMA implementation and role of early design exploration. [Click here](#) to register.

#### **Availability:**

VisualSim Avionics Modeling Suite is available now at no additional charges for existing Avionics Customers. This extension kit requires VisualSim Architect as base product. The product is supported on Windows, Linux and Mac OS/X.

Image of VisualSim Avionics Modeling Kit is available at:

<http://mirabilisdesign.com/Resources/Images/VisualSim%20Avionics%20Kit.png>

Images of library is available at:

[http://www.mirabilisdesign.com/Resources/Images/PPC\\_RapidIO\\_Model\\_V3.gif](http://www.mirabilisdesign.com/Resources/Images/PPC_RapidIO_Model_V3.gif)

#### **About VisualSim Architect:**

VisualSim Architect is a system-level modeling, simulation, and analysis environment with a wide-ranging set of libraries and application templates that significantly improve model construction and analysis time. The environment enables designers to rapidly converge to a design which meets a diverse set of interdependent time- and power requirements. Additional information is available at: <http://mirabilisdesign.com/new/visualsim/>

#### **About Mirabilis Design:**

Mirabilis Design is a Silicon Valley company, providing software solutions to identify and eliminate risk in the product specification; accurately predict the human and time resources required to develop the product; and improve communication between diverse engineering teams. Additional information is available at: <http://mirabilisdesign.com/new>

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