Our goal at Applied Dynamics is to be a technology partner with each of our customers. When our customers’ projects are successful, we are successful. At ADI, we are proud of our highly trained experts who have been involved in many of the most demanding aircraft and defense integration projects since 1957.

Real-time simulation and test are activities used to develop advanced aerospace, defense and automotive technology. In order for our customers to maintain a leadership position in their respective technology fields, their embedded system development and test capabilities must be continuously evolving. Real-time simulation and test involves a challenging continuum of electronics and software skills.

Supplying built-to-order, real-time, hardware-in-the-loop simulation systems requires deep application knowledge across a wide range of cutting-edge aerospace, defense and automotive development programs. Applied Dynamics has worked closely on major development programs with organizations including Boeing, Pratt & Whitney Rocketdyne, Raytheon, NASA, U.S. Navy, U.S. Air Force, U.S. Army, General Dynamics, BAE Systems, Honeywell, Gulfstream, Boeing Satellite Systems, Rolls-Royce, Goodrich and many more to supply application-specific turnkey systems and to support system integration activities.

Our customers often find their resources restricted due to tight project timelines and/or a lack of in-house capabilities. Our highly skilled team is experienced in real-time development and will be there when you need assistance.
Systems Integration

Applied Dynamics provides complete HIL and control system solutions using a variety of commercial-off-the-shelf (COTS) technology and, where applicable, specialized solutions. Applied Dynamics will integrate ADvantage Framework-based simulation systems or The MathWorks, Inc. xPC Target systems.

Many criteria drive the selection of the right system architecture based on test system requirements such as up-time requirements, life expectancy, expandability, facility requirements, process integration and budgets.

Applied Dynamics’ expertise provides:
- Best-value technology applied to solve the customer’s requirements
- Integration of COTS, standards-based components
- Single supplier for integrated systems including warranty/maintenance

Applied Dynamics can bring together a diverse set of technology to meet customer requirements:
- High-speed processors: Pentium 4, Opteron, Dual-Opteron, multi-core
- PCI, PXI, cPCI, and VME form factors
- Node-to-node communication: gBit Ethernet, SCRAMNet, etc.
- Integrated I/O interfaces

System Solutions

In order to effectively test electronic subsystems in a simulation environment, it is important that the sensor or actuator operate as in the actual vehicle. Applied Dynamics has a vast knowledge of sensor and actuator emulation and can provide consultation on hardware-in-the-loop applications to help determine interface requirements.

Applied Dynamics experts have applications knowledge of the diverse communication buses contained in automobiles, aircraft, defense vehicles and other complex systems. ADI can supply integration of standards such as AFDX, ARINC 429 and Mil-Std 1553 to your simulation environment.

Applied Dynamics has helped customers put together turnkey simulation and test systems. Many of these modular solutions developed can be reused in other applications. Modular products include fault insertion, power supply interfaces, motion table interfaces, force loading system interfaces, as well as items such as capability to easily switch to different devices under test with flexible test adapters.

Engineering Services

In addition to products, ADI provides engineering services to assist the customer in many ways. Our application experts have a broad range of experience in integration techniques, control system design, I/O interfacing, sensor emulation and communication bus interfacing.

Applied Dynamics is able to offer applications and software assistance for:
- Getting projects up and running quickly
- Automating tests
- User interface programming
- Process integration solutions
- Driver development for ADvantage simulation systems and xPC Target

In addition, Applied Dynamics has a strong engineering group to design custom components such as circuit boards, custom packaging, interface panels, and integration of specialized components.