

Aonix

*A World-Wide Leader in
Safety-Critical Solutions*

*Safety-Critical Background
Information*



Aonix

The source for complete
software-development solutions

AONIX AT A GLANCE

Aonix is a major provider of lifecycle software-development tools, mentoring, and support services and is one of the largest software companies in the world. The company was formed in November 1996 as a result of the merger of two successful development tools companies: Interactive Development Environments, Inc. (IDE), a veteran player in the modeling, analysis and design tools market, and Thomson Software Products, a diversified tools company.

Installed base:	20,000 installations and 500,000 users worldwide
Worldwide direct sales force:	80+
Direct sales offices:	U.S., France, Germany, Sweden, and England
Employees:	120+
US Corporate Headquarters:	San Diego, California
Executive Management:	Nicolas Hadjidakis, President and CEO
Internet Address:	www.aonix.com
Main Telephone Number:	(800) 97-AONIX

Aonix's products and array of consulting services provide complete lifecycle solutions for analyzing requirements, designing, implementing testing, and deploying software for even the most challenging commercial or technical projects. This comprehensive set of offerings address the most popular object-oriented and structured-development languages including C, C++, Ada, Java, IDL, and others on a variety of development platforms.

- **Software Modeling Solutions** - Visual modeling tools for analysis and design and test reliable applications
Product: Software Through Pictures™ (StP)
- **Critical-Software Development Solutions** - Solutions for mission-critical, business-critical, and safety-critical applications
Product: ObjectAda®
- **User-Interface Management Solutions** – Solutions for GUI development and management
Product: TeleUSE™

Aonix – Support for Technical Systems Development and Deployment, a Historical View:

Over the last 20 years, Aonix has been a leading provider of Ada language solutions including Ada83 and Ada95. The company incorporates the heritage of three premier suppliers of Ada technology: TeleSoft, Alsys (which was founded by Jean Ichbiah, the “father of the Ada language”), and Thomson Software Products. In 1996, after the merger with IDE which created Aonix, the company earned a position among the top software vendors in the world with 120+ employees worldwide.

Aonix is a leader in defining and delivering Ada solutions for native, embedded, and safety-critical application development. We began shipping early native compiler versions in 1985, followed with embedded and real-time products in 1987. Most recently, Aonix has continued this rich tradition by being the first vendor to provide validated Ada 95 solutions on Solaris, HP, and Windows 95/NT platforms. Aonix also has the distinction of being the most prolific Ada95 supplier, shipping over 75,000 copies of the ObjectAda[®] development system since the beginning of 1996.

Aonix is the first and only vendor to provide an Ada development environment that produces Java byte code. Using the Intermetrics AppletMagic technology, Aonix provides a mature Ada95 development environment with all of the characteristics of the Ada language such as strong typing facilities and object-oriented development. This same development technology can support projects that require not only Ada and Java, but C and C++ as well.

Aonix also offers a family of component-based, analysis and modeling tools called Software through Pictures[®] (StP). StP further strengthens Aonix’s position by offering high-end modeling tools that support Ada and Java byte code. Furthermore, Aonix was the first company to produce modeling tools that supported the Unified Modeling Language (UML). StP solutions even support code generation of Ada95 and Java from OMT models as well as structured models, and the latest version of StP provides round-trip engineering support from UML to Java and back. Round-trip engineering support for UML to Ada95 is currently in development.

A key component of safety-critical system development and especially the certification of safety critical applications is the thoroughness of tests to prove the application code meets its original requirements. Testing to the stringent requirements of certification can be quite expensive so Aonix supports the automation of this kind of testing with Validator/Req, a testing solution that manages the creation and execution of tests via input directly from the original design elements. Validator delivers a complete thread of proof starting from the original requirements through the design and development process and into the testing phase of the project.

Aonix and Safety-Critical Systems Development

Aonix began shipping Ada safety-critical runtime solutions in 1989. Available solutions include UNIX and Windows NT-hosted development systems for Ada83 targeting Motorola 68K, Intel x86, MIPS, and transputer processors. These products provide compilation systems that protect against the use of unverifiable Ada constructs and implement a non-tasking Ada runtime environment that is certifiable to DO-178B Level A. Additionally, documentation and test results relating to the Ada runtime can be produced for submission to the FAA for certification.

Aonix has provided products and consulting for a wide range of safety-critical and mission-critical projects. A partial list of programs where Aonix is still an active participant includes:

Trains and Railways -

- □ Subway network control systems: Paris, Calcutta, and Cairo (GEC ALSTHOM)
- □ Railway and signal control system: TGV for north lines and the Chunnel

- □ Brake system for the TGV: the TVM 430 project (CSEE Transports)
- □ Brake and signals system: London Underground, Jubilee Line extension (Westinghouse)

Aircraft/Avionics -

- □ Global Positioning System (GPS) (Sextant Avionique)
- □ Flight control data concentrator: AIRBUS A330-A340 (Sextant Avionique)
- □ Braking and steering control unit: AIRBUS A330-A340 (Thomson CSF/DOI and Messier Bugatti)
- □ Air Traffic Control (ATC): Ground-based instrument landing system (Navia, formerly Normarc)
- □ Air Traffic Control (ATC): Germany, England, France and Belgium (EUROCONTROL)
- □ Flight Management System (FMS): (EUROCONTROL)
- □ Air Traffic Control (ATC): Denmark, Belgium, New Zealand, South Africa, Kenya, Pakistan, and Greece (Thomson CSF/SDC)
- □ Air Traffic Control simulators: Switzerland, Ireland (Thomson CSF/SDC)
- □ Air Traffic Control System (ATC): (FAA)
- □ Radar system: Civil avionics (Wilcox Electric)
- □ Engine control system: (Chandler Evans)
- □ Flight Management: Lockheed C130J (Lockheed Martin)
- □ Ground Collision Avoidance: Lockheed C130J (Aerosystems International)
- □ Displays: Lockheed C130J (Lockheed Sanders)
- □ Global Positioning System: Boeing 777 (Canadian Marconi)
- □ Axle Steering System: Boeing 777 (Parker/Abex-NWL)
- □ Power Management System: Boeing 777 (Sundstrand)
- □ Brakes: Boeing 777 (Crane/Hydro-Air)

Nuclear and Electricity -

- □ Power plant control: (Sema Group)
- □ Power generating system simulation: (Thomson CSF/DSI)
- □ Nuclear reactor project: (Nuclear Electric)
- □ Power plant power transmission system: (ABB Relays AG)
- □ Nuclear reactor control simulation: (CEA Cadarache)
- □ Nuclear Shutdown System: Nuclear power station in Czech Republic (Westinghouse Electric)

Space –

- □ Satellite positioning system: (Alcatel SEL)
- □ Launching platform: Ariane V project (Aerospatiale with the CNES and Matra Marconi Space)
- □ Switching and telemeasuring systems: Galileo Mars probe project (CNES)
- □ Satellite imaging system: SPOT project (CNES)
- □ Columbus part of Freedom Space Station: (ERNO Raumfahrttechnik)
- □ Data management systems and network control system: Freedom Space Station (NASA)
- □ Data management system: APM (Atmospheric Pressure Module) for Freedom Space Station (Matra Marconi)