Introducing Atego

Tom Grosman– May 2010

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Introducing Atego

- Founded 2010
  - Merger between Aonix and Artisan Software Tools and Extessy
  - Provides critical mass & visibility to better address market challenges
- Employee Owned, Venture Backed
  - European Technology Ventures, Spark Ventures (LSE), Volkswagen
- Profitable, Debt-Free, Growing
  - 150+ People
- Headquarters in UK (Cheltenham)
  - Offices Worldwide: France, Germany, Italy, UK and USA
- Strong Customer Base
  - Thousands of installations worldwide
  - Decades of Successful Projects
- Global Strategic Partner and Distributor Networks
- Supporting Industry Standards & Innovative Research

Vision

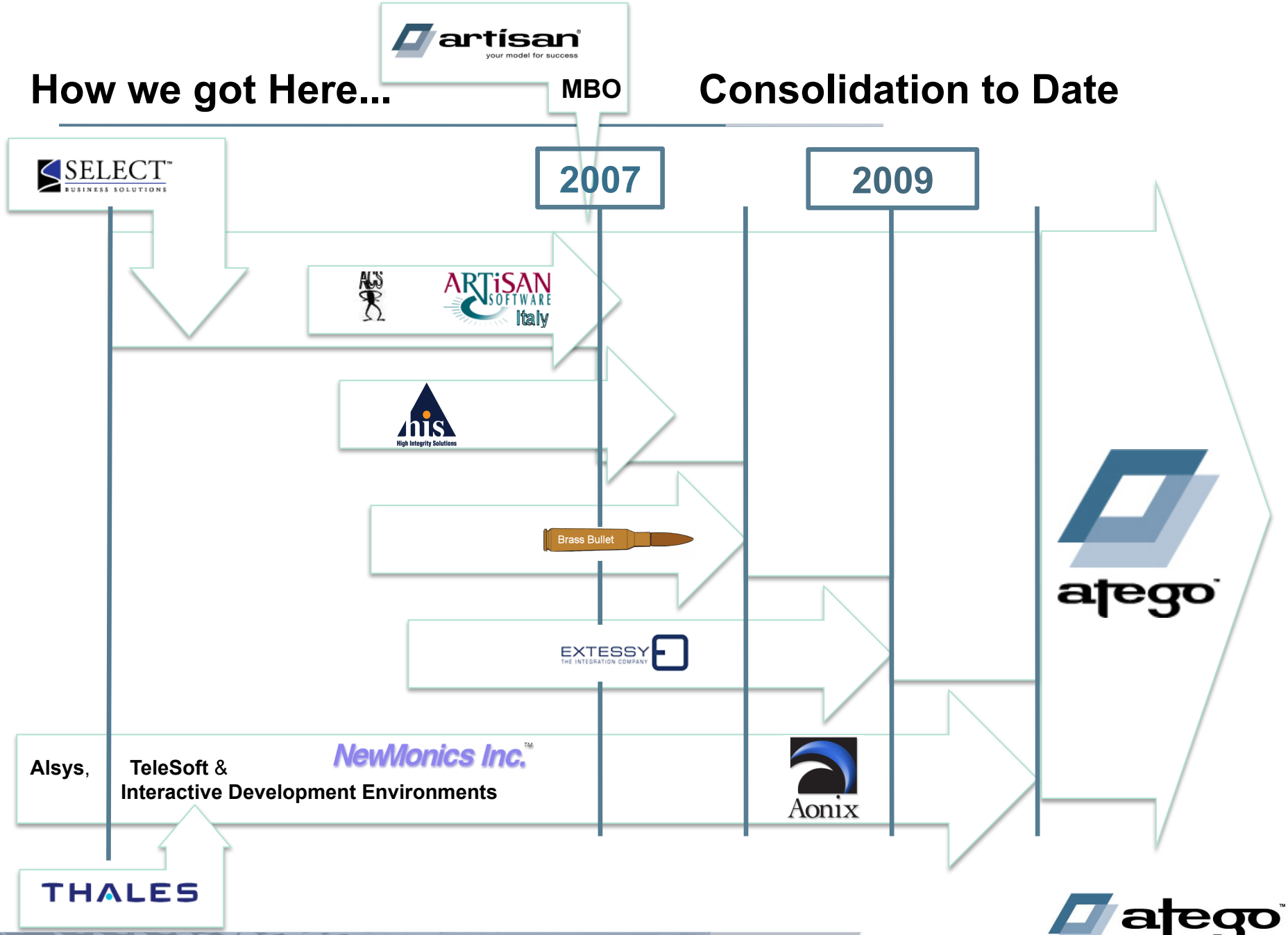
Work as One

We see a world where complex mission- and safety-critical development engineering challenges are solved

Atego is focused on delivering on the promise of an integrated application lifecycle environment, allowing architecture, systems , software and hardware engineering teams to work as one – from concept through to delivery and maintenance of complex, mission- and safety- critical or embedded systems.

How we got Here...

Consolidation to Date



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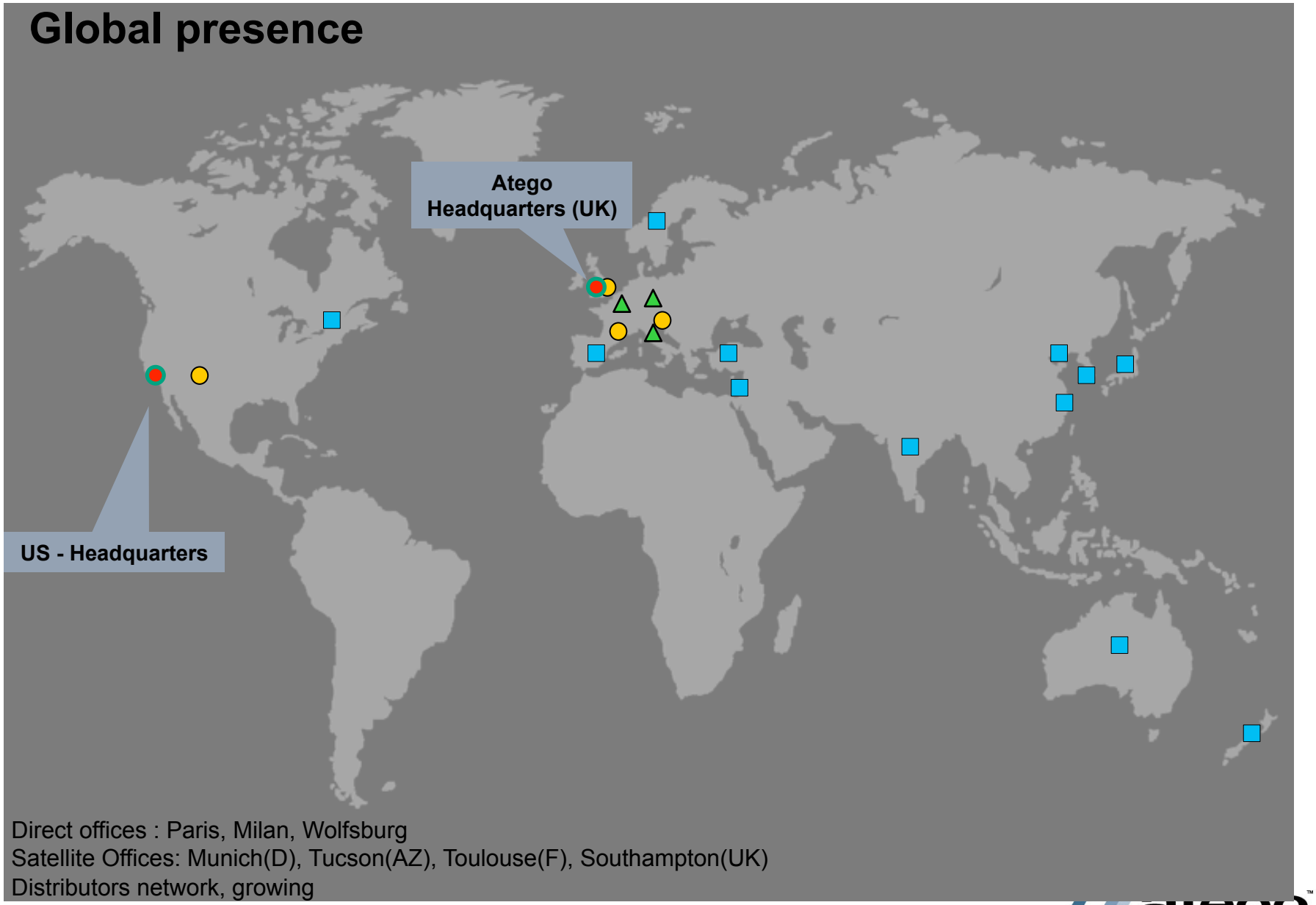
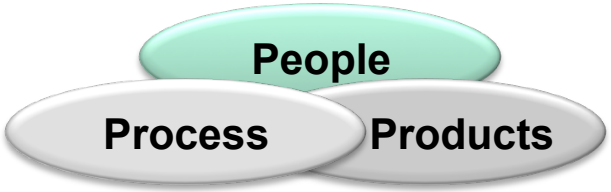
Global presence



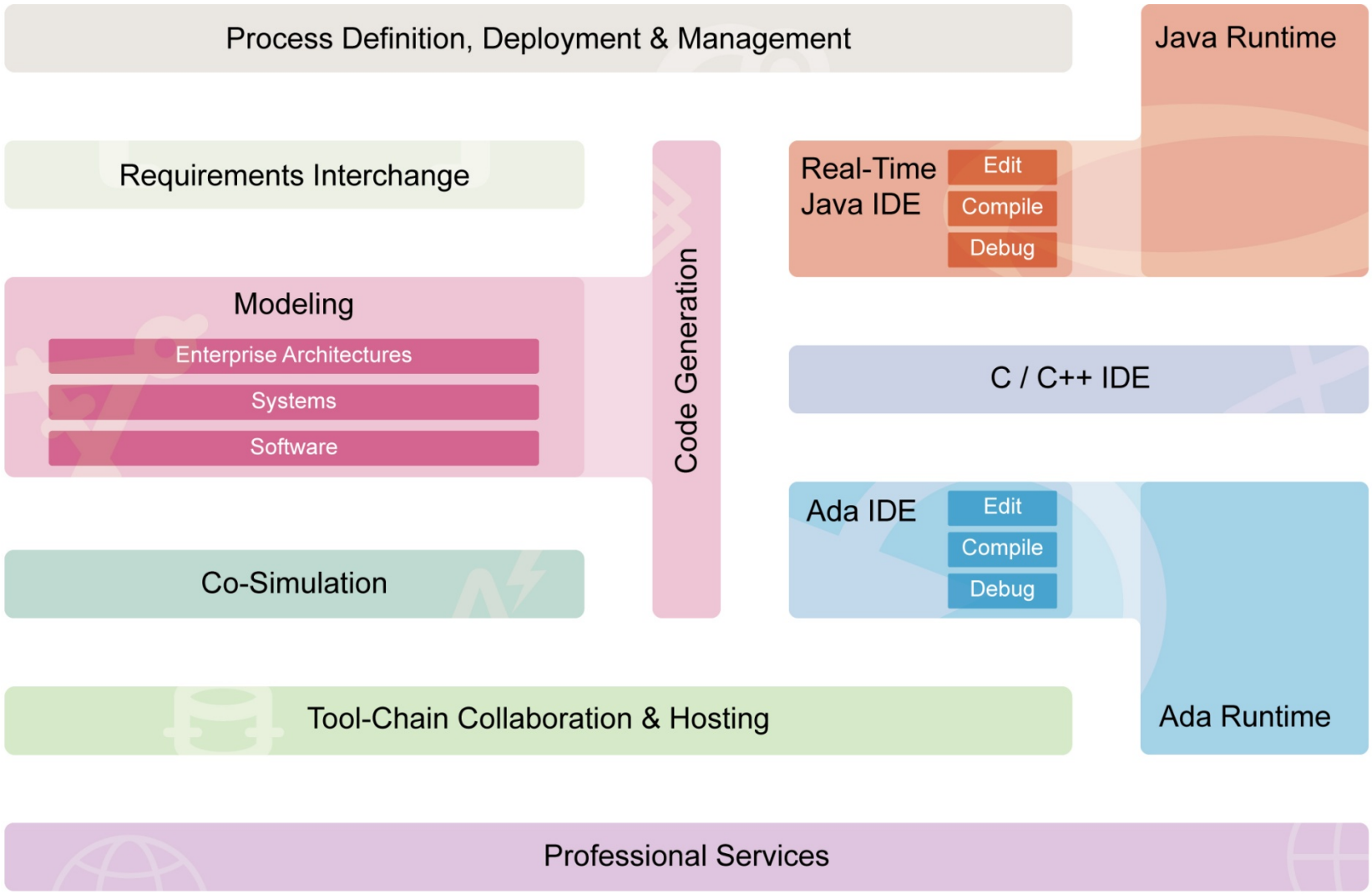
Direct offices : Paris, Milan, Wolfsburg
Satellite Offices: Munich(D), Tucson(AZ), Toulouse(F), Southampton(UK)
Distributors network, growing

Focus

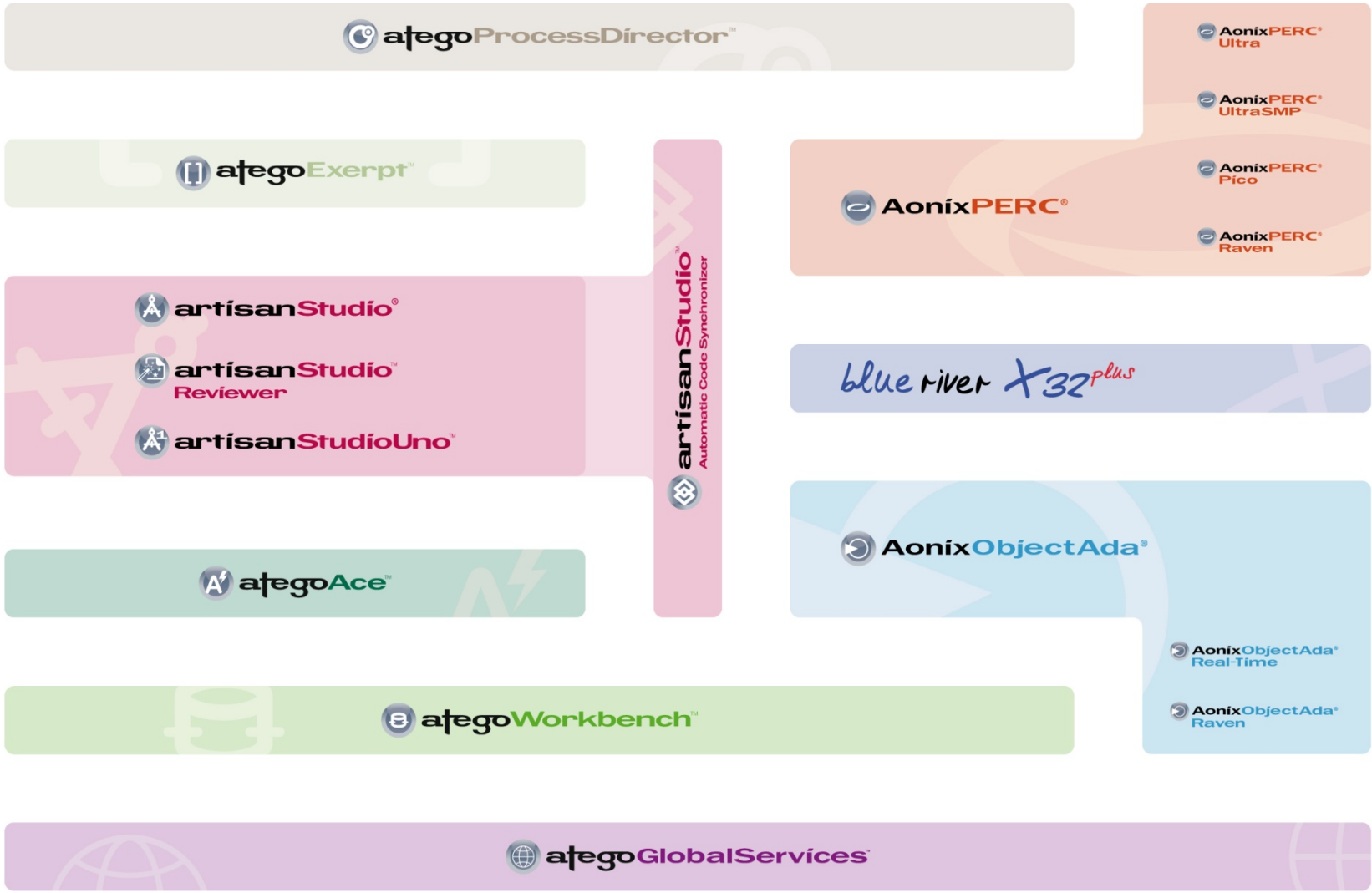


- People
  - Experienced Engineers and Business Professionals
- Process
  - Process Independence with optional Atego Best Practices
- Products
  - Ada development and deployment (real-time & critical)
  - Architecture, systems and software modeling
  - Co-simulation
  - Innovative & Patented Technologies
  - Java development and deployment (real-time & embedded)
  - Requirements interchange
  - Process authoring and deployment
  - Tool-chain integration and collaboration

Complimentary Products and Services



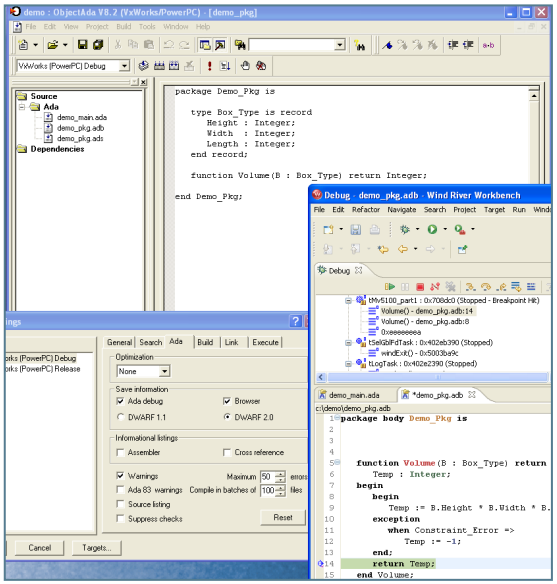
Atego Products



Ada Development and Runtime

AonixObjectAda®

- Complete Ada product family
  - Native
  - Embedded/Real-Time
    - RTOS-integrated Runtime
    - Bare Runtime (Ravenscar profile)
    - Zero Footprint (ZFP) profile
  - Safety Critical (DO-178B Level A)
- Complete Eclipse-based tool chain
  - Editor, browser, compiler, prelinker, builder, cross-referencer, debugger, cross tools



- Broad host/target coverage with production quality environments
- Open approach to tool integration and operating environment
- Long Term Investment Protection and Support

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Recent Atego Ada Product releases

- ObjectAda Real-Time for LynxOS/PPC
- ObjectAda Real-Time for VxWorks /PPC
- ObjectAda Real-Time Raven for VxWorks/653 x86
- ObjectAda Real-Time for VxWorks 653/x86 – Full Ada runtime x86
- ObjectAda Real-Time for VxWorks 653/PPC –Full Ada runtime PPC
- ObjectAda Real-Time for PikeOS/PPC- Support for PikeOS 3.0
- New Eclipse ADT plugins

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ObjectAda Environments

AonixObjectAda®

Host	RTOS	Runtime	Processor
Windows	**Native**	**Ada**	**x86**
Solaris	Native	Ada	SPARC
Solaris	Native	Ada	x86
Linux	Native	Ada	x86
Linux	**LynxOS**	**Ada**	**PPC**
Solaris	LynxOS	Ada	PPC
Windows	**PikeOS**	**Ada**	**PPC**
Windows (alpha release)	PikeOS	Raven	PPC
Linux	PikeOS	Raven	PPC
Windows	Bare	Raven	ERC32/LEON
Solaris	Bare	Raven	ERC32/LEON
Windows	**VxWorks**	**Ada**	**PPC**
Windows	**VxWorks 653**	**Raven**	**PPC**

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ObjectAda Environments (cont)

AonixObjectAda®

Host	RTOS	Runtime	Processor
Windows	**VxWorks 653**	**Ada**	**PPC**
Windows	**VxWorks 653**	**Ada**	**x86**
Solaris	Bare	Raven	PPC
Windows	Bare	Raven	PPC
Windows	Bare	Raven	x86
Windows	**Bare**	**Raven ZFP**	**PPC**
AIX	Native	Ada	RS6000
AIX	LynxOS	Ada	PPC
HPUX	*Native*	*Ada*	*HP-PA RISC*

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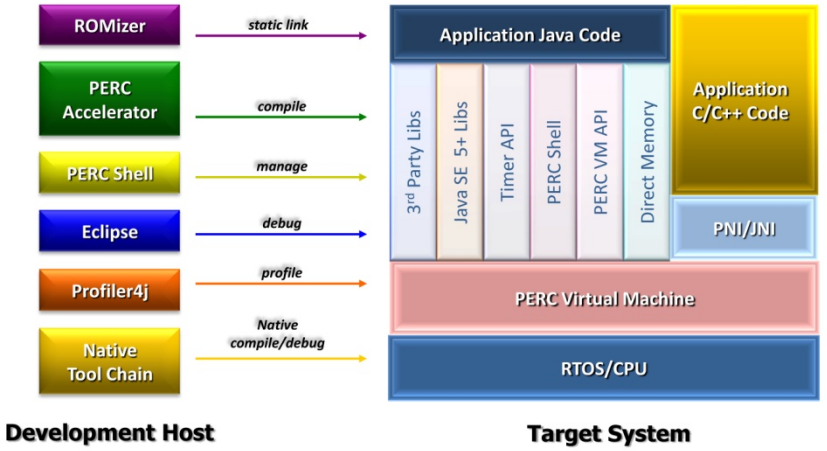
Java Development and Runtime

AonixPERC®

- Robust Solutions for Embedded, Soft or Hard Real-Time and Safety-Critical Java applications
- Patented, Deterministic Garbage Collection Technology
- J2SE Full Compliance, SMP Support
- AOT, JIT, Interpreted Compilation
- Complete Eclipse-based Tool Chain
- Broad Host/Target Coverage



- Most Widely Deployed Virtual Machine for Embedded/Real-Time
- Reduces Time and Cost of Development
- Guarantees System Availability

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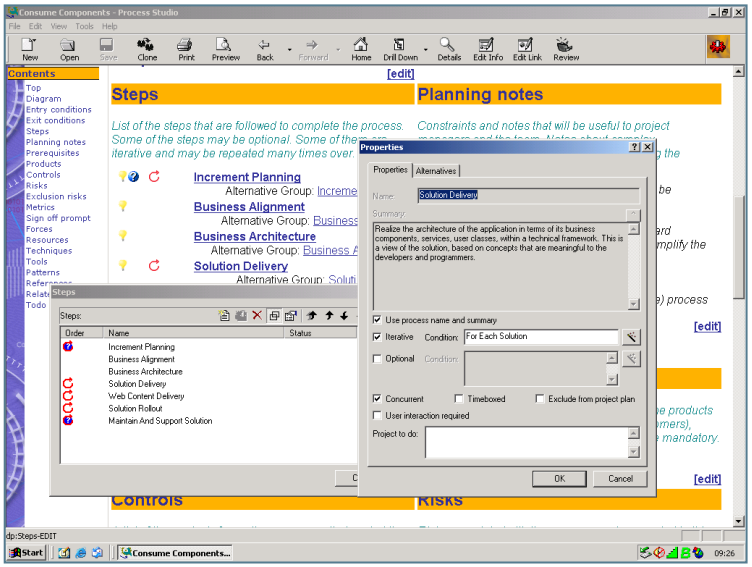
Process Authoring and Rollout

atego ProcessDirector™

- Process Inventory in the Box
  - Full Lifecycle; Architecture, Systems, Software, Project Management
- Process Authoring
- Agile Process Wizard
- Project Plan Generation/Sync
- Process Deployment
  - Browser & Heads Up Display



- Merge Industry Best Practices and your Experience to improve Quality
- Achieve the Promised Productivity Improvements from your Processes
- Reduce Costs of Process Definition and Rollout

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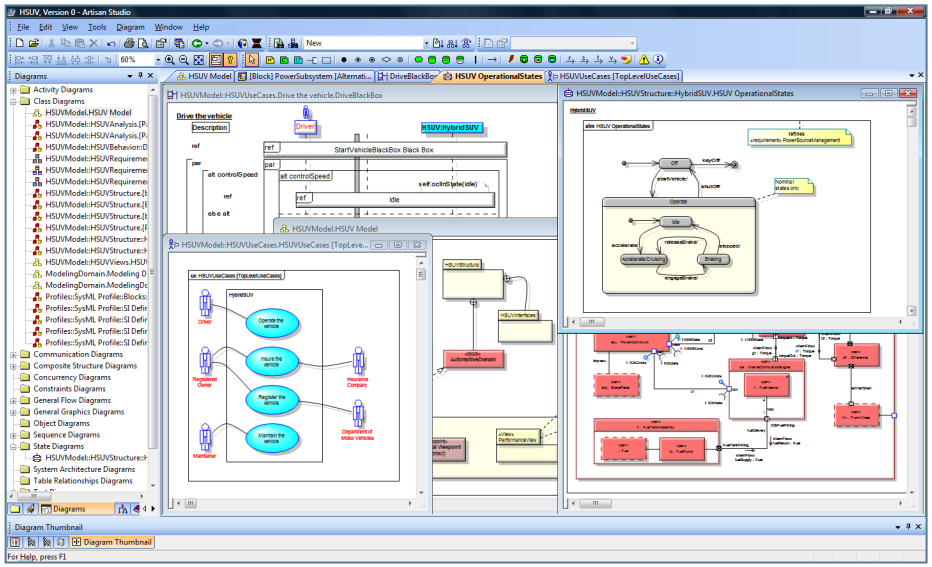
Modeling - Analysis and Design

artisanStudio®

- Scalable UML, SysML, UPDM (DoDAF/MODAF)
- Repository Collaboration
- Built-In Traceability
- Document Generation
- Automated Design Review
- Code Generation & Sync
  C, C++, C#, Java, Ada



- Improved Quality through Early Design Review and Consistency
- Bring Systems to Market Faster with Parallel Design Effort
- Cost Reductions from Design and Development Automation

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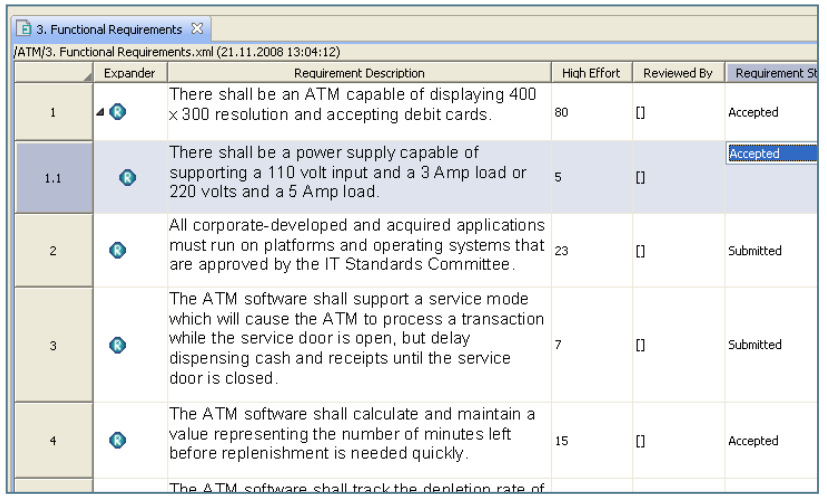
Requirements Interchange

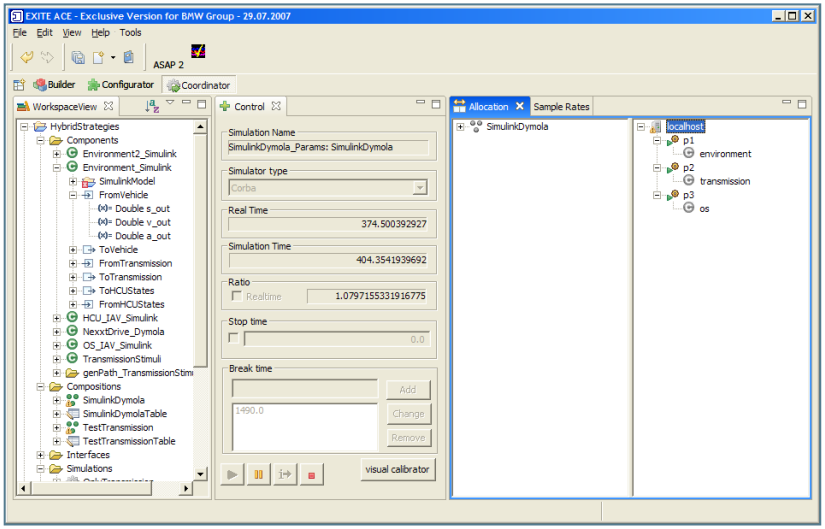
- ReqIF Synchronization of Requirements Across Business Boundaries
- Mobile Requirements Engineering
- Manage Authoring Permissions
- Simple Requirements Change Management
- Single, Simple UI - Reducing Errors



- Effective Requirements Communication and Negotiation Across Business Boundaries
- Bring Systems to Market Faster with Parallel Design Effort
- Meet Quality Assurance requirements

Co-Simulation

- Co-Simulate Best-in-Class 3rd Party Simulation Tools
- Simulation Platform for Time-Triggered Architectures
- Real-time Simulation
- Compatible with AUTOSAR
- X-in-the-loop Co-Simulation

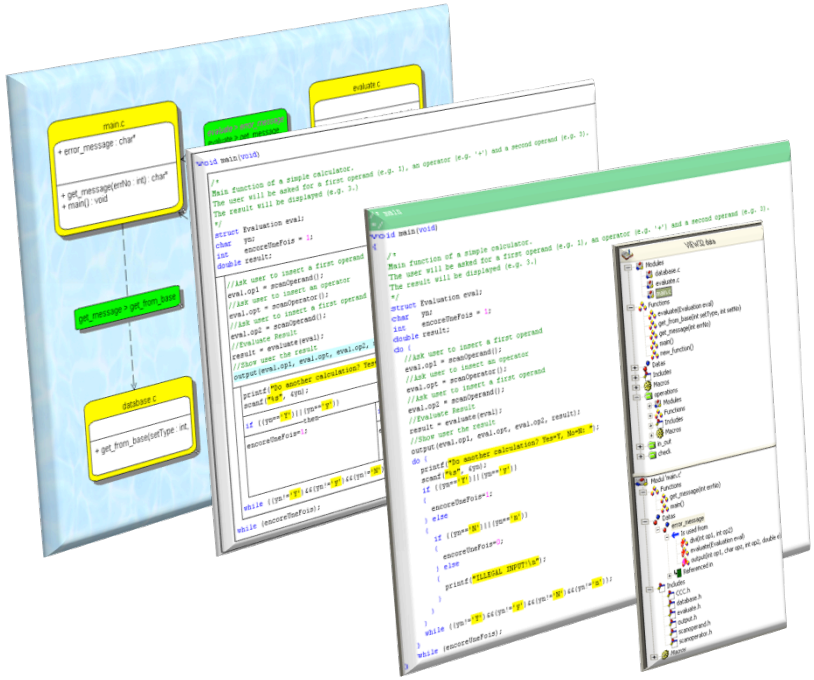


- Enables early Virtual Verification and Validation of TTA Systems
- Reduces Costs by Identifying Bugs Early in the Design Process
- Improves Collaborative Efforts Across Business Organizations

C / C++ Development

blue river x32plus

- 4 View Code Editor
  - Diagrams
  - Structograms
  - Source Views
  - Data Browser
- Debugger
- Static & Dynamic Testing
- Compiler Integration
- Automated Document Generator



- Improved communication = Building the right applications
- Improved quality = Building the applications right
- 45% reduction in programming time and effort

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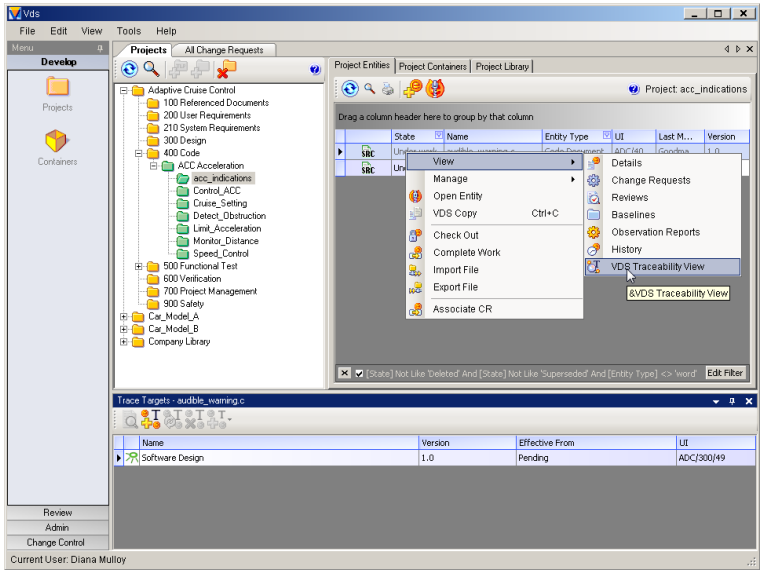
Tool Chain Collaboration

ategoWorkbench™

- Collaborative Tool-Chain Repository
- Centralized Multi-Tool Version Management & Remote Access
- Project Data Link and Trace

  Requirements, Modeling, Code, etc.
- Artifact CM & Review
- Consolidated Document Generation



- Tool Installation and Tool Administration Cost Reductions
- Faster Project Startup and Improved Staff Utilization
- Full Project Impact Analysis

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Professional Services

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- Expertise, Consulting and Training

  Processes/Methodologies, Enterprise Architecture, Requirements Management, Systems Engineering, Software Engineering, Simulation, Testing , V&V, Certification and Competency

- Development, Modernization & Support Staff
- Project Mentoring & Audit
- Tool Training & Customization
- Thought Leadership

- Accelerated Knowledge Transfer reduces Time to Market
- Quality Improvement through Mentoring and Project Review
- Risk and Cost Reduction from Highly Experienced Consultants

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Sample Customers (1)

… Sample Customers (2)

* - With the friendly permission of Volkswagen AG

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Partners

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Standards

Research Projects

ObjectAda Zero Footprint Raven

- The Zero Footprint Raven PowerPC add-on consists of a minimal ObjectAda Raven predefined Ada library, which allows binding and linking of an Ada application. The absence of any runtime code eases the certification process of the application. An ada module without runtime can also be linked with a C application.

AonixObjectAda®

No Runtime Raven Subset

The application contains no runtime, hence the following Ada features are not available :

- Memory Allocation
  - pragma Restrictions (No_Standard_Storage_Pools)
- Unchecked Deallocation
  - pragma Restrictions (No_Standard_Storage_Pools)
- Exception handling
  - pragma Restriction (No_Exception_Handlers)
- Tasking
  - pragma Restriction (Max_Tasks => 0)

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Additional functionality

- ***Hooks for user implemented functionality***
  - Power (exponentiation), etc …
- ***Switches for low impact functionality***
  - Import/Export
  - Runtime stack check
  - Uplevel references
- ***Platforms***
  - Currently in use for PowerPC
  - Available for x86 on demand

Standard Ada Units

The following predefined Ada units are available:

- Ada
- Ada.Exceptions
- Ada.Finalization
- Ada.Numerics
- Ada.Real_Time
- Ada.Tags
- Ada.Unchecked_Conversion
- Interfaces
- System
- System.Address_To_Access_Conversions
- System.Machine_Code
- System.Storage_Elements

Support for Ada 2005 in ObjectAda

AonixObjectAda®

- ObjectAda 8.5
  - Final non-2005 release to stabilize latest platform/tool versions (Q3 2010)
- ObjectAda 9.0
  - Introduction of Ada 2005 features
  - Windows host (1st platform released)
  - Availability Q4 2010

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ObjectAda 2005 supported features

- ***Prefixed notation (Object.Operation)***
  - AI-252 Object.Operation notation
  - AI-407 Terminology and semantics for prefix names
- ***Clocks and Timers (Annex D)***
  - AI-386 Further functions returning time-span values
- ***Exceptions***
  - AI-241 Testing for null occurrence
  - AI-361 Raise with message
  - AI-400 Wide and wide-wide images
  - AI-417 Lower bound of functions in Ada.Exceptions etc
- ***High integrity systems (Annex H- not applicable on Windows)***
  - AI-265 Partition elaboration policy for high-integrity systems
  - AI-421 Sequential activation and attachment
  - AI-347 Title of Annex H

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ObjectAda v9.0 supported features

- ***Pragmas and Restrictions***
  - AI-161 Preelaborable initialization
  - AI-216 Unchecked unions variants without discriminant
  - AI-224 pragma Unsuppress
  - AI-257 Restrictions for implementation defined entities
  - AI-286 Assert pragma
  - AI-329 pragma No_Return procedures that never return
  - AI-368 Restrictions for obsolescent features
  - AI-381 New Restrictions identifier No_Dependence
  - AI-394 Redundant Restrictions identifiers and Ravenscar
  - AI-414 pragma No_Return for overriding procedures

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ObjectAda v9.0 supported features

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- ***Character and string data***
  - AI-285 Support for 16-bit and 32-bit characters
  - AI-388 Add Greek pi to Ada.Numerics
  - AI-301 Operations on language-defined strings
  - AI-395 Clarifications concerning 16- and 32-bit characters
  - AI-400 Wide and wide-wide images
  - AI-428 Input-output for bounded strings
  - AI05-137 String encoding package
- ***Categorization of library units***
  - AI-161 Preelaborable initialization
  - AI-273 Use of PCS should not be normative
  - AI-362 Some predefined packages should be recategorized
  - AI-366 More liberal rules for Pure units

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ObjectAda v9.0 2005 supported features

- ***Containers***
  - AI-302 Container library
  - AI05-001 Bounded containers and other container issues
- ***Anonymous access to subprograms***
  - AI-254 (partial)

Possible v9.0 2005 features (to be determined)

- ***Overriding indicators***
  - AI-218 Accidental overloading when overriding
  - AI-391 Functions with controlling results on null extension
  - AI-310 Ignore abstract nondispatching ops during overloading
- ***Null procedures***
  - AI-348 Null procedures
- ***Limited withs***
  - AI-217 Mutually recursive types limited with
- ***Private withs***
  - AI-262 Access to private units in the private part
- ***Boxed notation for aggregates***
  - AI-287 Limited aggregates allowed

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ObjectAda v9.0 2005 features (tbd)

- ***Task termination routines***
  - AI-266 Task termination procedure
- ***Real vector and matrix operations***
  - AI-267 Fast float to integer conversion
  - AI-340 Mod attribute
  - AI-364 Fixed point multiply and divide
  - AI-420 Resolution of universal operations in Standard
- ***Completion of pragmas and restrictions***
  - Restrictions for implementation defined entities
  - Restrictions for obsolescent features
- ***Child packages for Ada.Calendar***
  - AI-351 Time operations
  - AI-427 Default parameters and Calendar operations

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ObjectAda v9.0 2005 features (tbd)

- ***Packages Ada.Directories and Ada.Environment_Variables***
  - AI-248 Directory operations
  - AI-370 Add standard interface for environment variables
- ***Streams***
  - AI-270 Stream item size control
  - AI-441 Null streams