



Modernizing Mission Critical Software

Synchronizing with Industry Trends

Software Technology Accelerated Modernization Program

mis·sion crit·i·cal adj.

Any operation that cannot tolerate intervention, compromise or shutdown during the performance of its critical function. Mission critical environments usually support health, safety, security and human welfare. These environments also monitor, store, support and communicate data that cannot be lost or corrupted without compromising their core function.

The STAMP program accelerates the modernization of your software technology in three ways:

- ◆ **Training** - We offer a broad range of education programs specifically designed to help your next project to take advantage of the most recent advances in mission critical software development.
- ◆ **Services** - Our professional services staff are trained to provide you with hands-on support in transitioning your organization, your staff, and your software to modern technology. We can customize our services to fit your special needs.
- ◆ **Tools** - As the leader in modern mission critical software development technologies, we have the off-the-shelf toolchain you need at all levels of your project from bare silicon all the way up to high functionality components.

Your Aonix account manager will work with the STAMP team to provide you with a customized STAMP portfolio designed specifically for your needs.



By definition, mission critical applications are those that are the most important to the functioning of an organization. Usually they must be running continuously for arbitrary lengths of time without failure or corruption, their integrity is crucial for success, and assets such as property, life, and business or military operations are at stake. Many such systems are embedded within computing devices, and often have strict real-time performance and predictability requirements.

Yet, **the nature of mission critical systems makes them the most susceptible to technical obsolescence.** Non-critical applications such as word processors or video games appeal to a broad commercial market and thrive in a commodity-based development approach. Unlike mission critical applications, such markets are driven by price and features rather than quality and reliability.

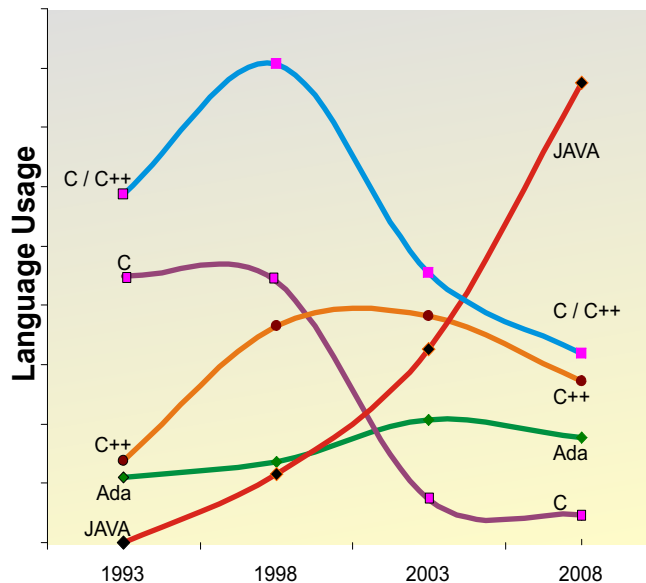
The rigor and control demanded in mission critical development is not affordable for commoditized non-critical software. In turn, this lack of discipline opens the door to easy

adoption of trendy methods, techniques, and tools, even if they are less than robust and not yet proven. Paradoxically, the result of this phenomenon is that low criticality developers become the engine driving technology trends and attracting new talent.

By contrast, mission critical developers often find technology passing them by, resulting in technical obsolescence and, along with it, higher cost of development and maintenance and a chronic difficulty in retaining core talent and attracting fresh talent.

To combat this problem, Aonix has developed the Software Technology Accelerated Modernization Program (STAMP). In working closely with clients for over two decades on the most challenging and rigorous programs in high integrity and safety critical software development, Aonix has demonstrated a unique ability to solve the mission critical software dilemma.

The key to the success of STAMP is a powerful combination of education, services, and tools specifically designed to help today's mission critical developers jumpstart their efforts with modern software technology.



Usage Trends of Ada, C, C++, and Java

Data Source: IEEE Software, May/June 2005, *An Empirical Study of Programming Language Trends*, Chen Dios, Mili, Wu, Wang.

Modernization begins with programming language selection. Because methodologies, the software toolchain, and even hardware choices may be driven by the characteristics and limitations of the chosen language, this decision is often the linchpin that will ultimately drive the success or failure of the project.

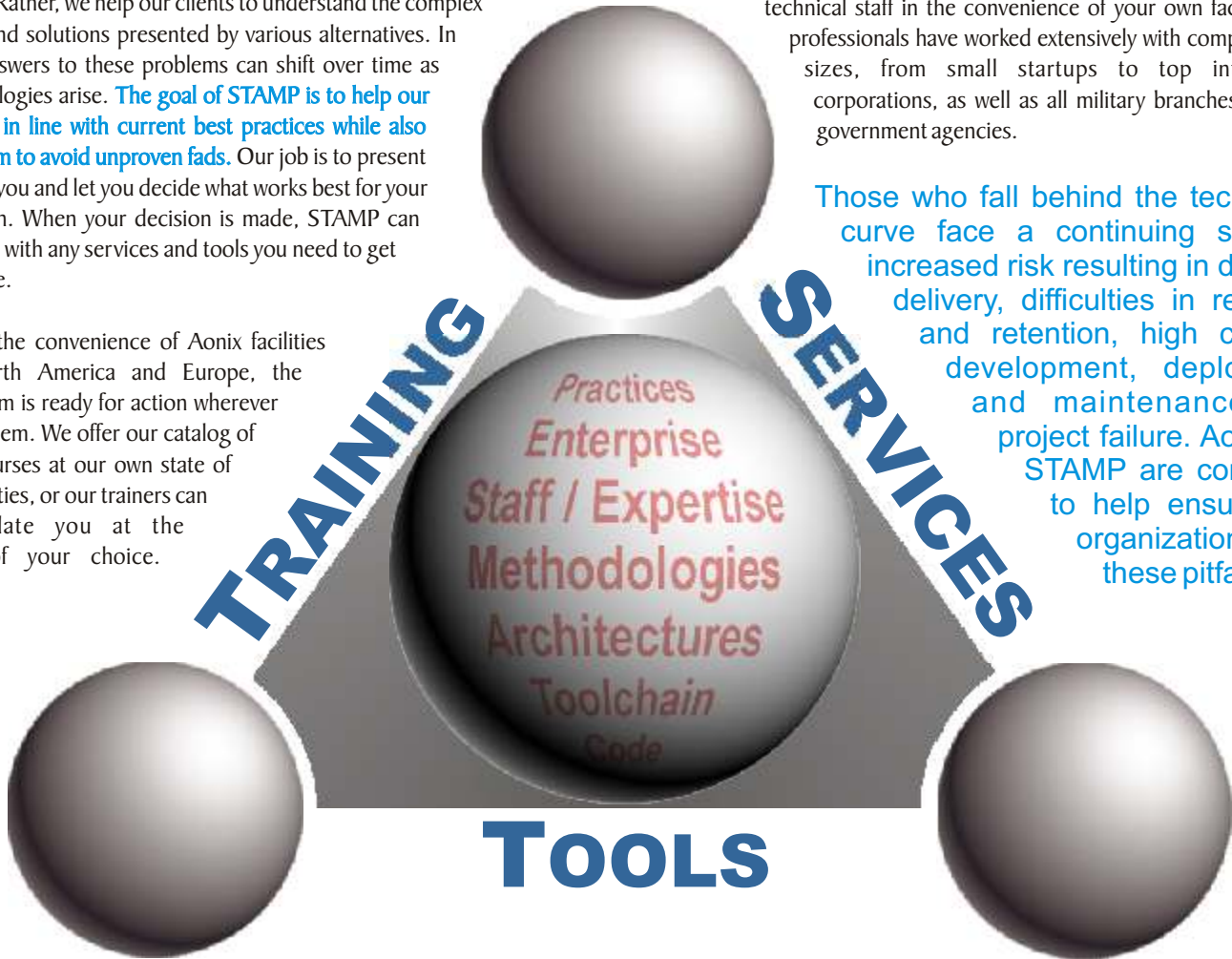
Many organizations fail because their language choice is not made for the right reasons. In the case of mission critical systems, often the decision is a matter of inertia, and does not take into consideration all of the technical, logistical, lifecycle, and pragmatic issues that come into play.

STAMP does not dogmatically advocate particular methodologies or languages. Rather, we help our clients to understand the complex problems and solutions presented by various alternatives. In fact, the answers to these problems can shift over time as new technologies arise. **The goal of STAMP is to help our clients stay in line with current best practices while also helping them to avoid unproven fads.** Our job is to present the facts to you and let you decide what works best for your organization. When your decision is made, STAMP can provide you with any services and tools you need to get the job done.

Thanks to the convenience of Aonix facilities across North America and Europe, the STAMP team is ready for action wherever you need them. We offer our catalog of training courses at our own state of the art facilities, or our trainers can accommodate you at the location of your choice.

Our professional services staff is available to work closely with your technical staff in the convenience of your own facilities. Our professionals have worked extensively with companies of all sizes, from small startups to top international corporations, as well as all military branches and many government agencies.

Those who fall behind the technology curve face a continuing spiral of increased risk resulting in delays in delivery, difficulties in recruiting and retention, high costs of development, deployment, and maintenance, and project failure. Aonix and STAMP are committed to help ensure your organization avoids these pitfalls.



A Sampling of Technologies Supporting Software Modernization

- ◆ Embedded Java
- ◆ Hard Real-time Java
- ◆ Safety Critical Java
- ◆ Object Oriented Ada
- ◆ User Interface Management
- ◆ Ravenscar Profile
- ◆ UML Modeling
- ◆ Eclipse Environment

A Sampling of STAMP Training and Services Topics

- ◆ Object Oriented Programming for C Programmers
- ◆ Migrating from Ada and C++ to Java
- ◆ Modern Architectures for Software Components
- ◆ Concurrent Programming with Java
- ◆ Real-Time Programming with Java
- ◆ Java Programming with the OSGi Framework
- ◆ Embedded Virtual Machines
- ◆ Safety Certification and DO-178B
- ◆ Reusable and Scalable Software Components
- ◆ Graphics for Embedded Applications

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To obtain more information, please contact Aonix at www.aonix.com or your local Aonix office.



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