

# SPARC<sup>®</sup>

International, Inc.



**The Open Technology Fostering Innovation**

## An Open Letter From The CEO Of SPARC® International

For nearly 15 years, one microprocessor architecture has epitomized openness. That architecture is the Scalable Processor Architecture – SPARC®, for short.

Today, as for most of those 15 years, SPARC International delivers on this promise of openness so that hardware designers, software developers and IT professionals can continue to revolutionize the world of computing.

SPARC International is as vital and relevant now as ever. We are the independent, non-profit organization that administers SPARC Instruction Set Licenses and provides compliance-testing, SPARC trademark branding and other services to our members. We continue to grow and to refresh the technology standard with new capabilities — all the while maintaining the truly open nature of the architecture.

So what does this openness mean to you?

If you're a hardware designer, it means fair and equal access to a core technology upon which to innovate in diverse fields, from digital photography to enterprise computing.

If you're a software designer, it means certified compatibility across systems from different manufacturers, and upwardly through generations of products.

If you're an IT professional, it means a stable processor architecture that protects your investments and provides a path to ever-higher performance.

Over the years, our membership has grown to more than 50 companies from around the world. We invite you to join SPARC International. In doing so, you are sending a clear message that you believe in the fairness of open standards. Even more important, your support through membership aids in helping SPARC International continue to define one of the core architectures in the entire computer industry and one of the world's only truly open microprocessor architectures.

**Morgan Slain**  
CEO  
SPARC International

## SPARC® Is Open For Business

Great innovation deserves to be shared. This was the founding premise behind the formation of SPARC International.

Based upon pioneering work into RISC (Reduced Instruction Set Computing) by David Patterson at the University of California at Berkeley, SPARC was developed by Bill Joy, chief scientist of Sun Microsystems Inc., and first debuted in a processor developed by Sun on Fujitsu gate arrays in 1986. Recognizing the critical role of open technologies in fostering innovation, Sun transferred ownership of the SPARC specifications in 1989 to SPARC International, an independent, non-profit governing body formed to administer and license the open standard.

While many proprietary architectures claim to be open, the truth is that adopters of a proprietary chip must accept the architecture "as is." This drawback prevents OEMs from differentiating their products architecturally and precludes them from optimizing the architecture for specific applications.

Conversely, the SPARC architecture fulfills essential elements of openness, including:

- SPARC specifications are available for licensing by any person or company.
- Competition is based on implementation, preserving fair and equal access to the core technology.
- The SPARC instruction set is the basis for the open IEEE Standard 1754-1994.
- Control of the SPARC architecture is in the hands of an independent, non-profit organization whose membership is open to everyone.

Beyond openness, the SPARC architecture offers advantages over competing processor architectures.

### Scalability in price and function

SPARC is the only open architecture with processors that power small devices such as uniprocessor-based digital cameras, as well as large, mainframe-class UNIX servers running over a hundred processors in a single system.

### Proven real-world performance

Devices based on the SPARC architecture rank among the most powerful in the networked world and are fully capable of meeting the coming challenges of multimedia, security and communication.

### Certified compatibility

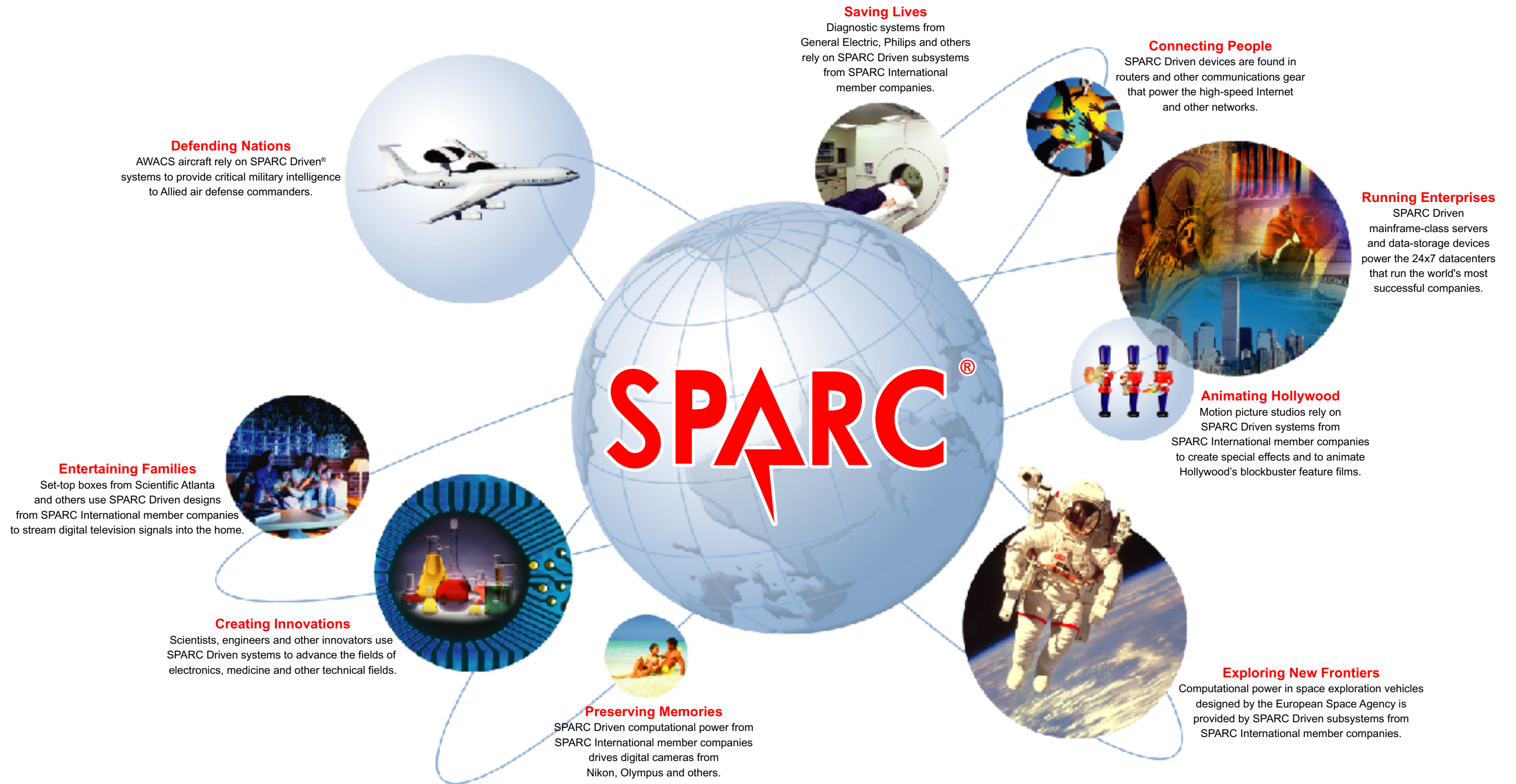
SPARC certification guarantees backward compatibility which means previous-generation applications will run seamlessly without recompilation.

### Developer community

With thousands of applications available to customers, the SPARC developer community ranks among the world's largest.

Today, SPARC International assures that these advantages remain fully accessible to the entire industry. Looking ahead, SPARC Driven® microprocessors, subsystems and systems are well-positioned to meet the anticipated workloads and challenges posed by advancing multimedia, security and communications requirements — thanks to the architecture's unique combination of openness, flexibility and scalability.

# The Open Technology Fostering Innovation



1984 • David Patterson of UC Berkeley and Bill Joy of Sun Microsystems begin developing SPARC

1986 • Sun/Fujitsu implement first SPARC® processor  
• SPARC Version 7™ published

1987 • Sun-4/260, first SPARC-based workstation

1989 • Birth of SPARC International

1990 • SPARC Version 8™ published

1991 • SPARCserver® 600MP, first SPARC-based multiprocessing system  
• SPARC LT®, first SPARC-based laptop

1992 • SuperSPARC® I, first superscalar SPARC processor  
• SPARClite® processor  
• SPARCbook® laptop  
• SPARCcard® upgrade for PCs

1993 • HyperSPARC® processor  
• SPARC Version 9™ published

1994 • SuperSPARC® II processor  
• IEEE Standard 1754-1994 published  
• ft SPARC® fault-tolerant computer

1995 • UltraSPARC® I processor  
• SPARC64® processor  
• SPARClet® processor

1996 • TurboSPARC® processor

1997 • UltraSPARC® II processor

2000 • SPARC STAR® server

2001 • UltraSPARC® III processor  
• Microprocessor Report's "Best Server/Workstation Processor" award  
• SPARC64® IV processor

2002 • SPARCblade™ single-board computer for high-availability telecommunications applications  
• GENIALstation laptop  
• SPARC64 V processor  
• SPARCbook 5000 laptop  
• SPARCbook 6500 laptop  
• UltraSPARC III processor upgrades

Future

# SPARC Products: Real Solutions for the Real World

Building successful businesses means having real products to sell to customers. The SPARC universe is filled with products that meet a variety of customer needs. In many cases, the products are made and sold directly by licensees, such as enterprise servers,

notebook servers and storage systems. In other cases, SPARC members provide the electronic building blocks — components and subsystems — that other leading companies require to power their devices, such as set-top boxes and cameras.

## Enterprise Servers

Sun Microsystems' UltraSPARC® III based Sun Fire™ 15K and Fujitsu's SPARC64™ based Primepower™ servers deliver the high levels of performance and availability required by demanding enterprise applications and databases.

## High-Availability Computers

Continuous Computing Corporation's SPARCblade™ processor board family provides the power and functionality for a range of high-availability features required in telecommunications.

## Mobile Computers

Based on UltraSPARC IIe-based processors, Tadpole's SPARCbook 5000 and NatureTech's S-Note® are compact, portable UNIX workstations that take high-end computing to the next level.

## Ruggedized Computers

UltraSPARC-based Themis RES-204 servers are used by the military and others where applications are subjected to rugged environmental conditions, including shock in excess of 20 G's, high vibration and temperature extremes.

## Workstations

Sun Microsystems' UltraSPARC III-based Sun Blade™ 2000 workstations are used by scientists and engineers to design tomorrow's innovations.

## Storage Systems

The SPARC-driven Hitachi DK32EJ hard drive provides a great enterprise storage option for SAN, data mining, audio-visual, database server and other high-end enterprise applications.

## Cable Set-top Boxes

Sun's microSPARC based technology is used in leading set-top boxes such as the Scientific Atlanta Explorer 8000 that deliver Cable TV into the home.

## Digital Cameras

Fujitsu's SPARClike chip provides the processing power for some of the world's most popular digital cameras, such as the Olympus D-300ZOOM.



Sun Fire™ 15K server



Continuous Computing SPARCblade™



NatureTech S-Note®



Themis RES-204



Sun Blade™ 2000



Hitachi DK32EJ



Scientific Atlanta Explorer 8000



Olympus C-300ZOOM



Fujitsu Primepower™

## Membership in SPARC® International

- Executive Membership attracts companies that have a strategic interest in the SPARC architecture. Executive members hold seats on the Board of Directors and the Architecture Committee, and are eligible to vote on changes to SPARC International specifications. The annual dues for Executive Membership are \$100,000.
- Associate Membership is open to original manufacturers of hardware and software systems. Associate members elect two representatives to the Board of Directors. The annual dues for Associate Membership are \$20,000.
- ISV/IHV/VAR/OEM Membership is for companies interested in promoting the continued growth of the architecture. The annual dues are \$1,000.
- Academic Membership is for colleges and universities that do not supply products or services. The annual dues are \$100.

To join SPARC International or for more information about membership, go to <http://www.sparc.org> or write to [member@sparc.org](mailto:member@sparc.org)

## The Benefits of Membership

- Your web page within our web site, which links to your home page.
- One product page of your choice with a link to your field sales organization for immediate purchasing (and the opportunity to place additional products for a fee).
- Royalty-free use of the SPARC Membership and SPARC-Driven logos.
- Continuous use of our on-line daily newsletter, *SPARC-Flash*, to submit articles as often as you wish.
- Exposure of your company to upward of a half million web hits per month.
- Public acknowledgement that your company is a member in support of SPARC International's Open Standards consortium.

## SPARC® International Members

ACARD Technology Corporation  
Advantec Computer Company  
ACME Portable Machines, Inc.  
ACSL  
Adtec Corporation  
Antares Microsystems, Inc.  
Aries Research, Inc.  
Auspex Systems  
Bridgepoint Technical Manufacturing  
C-Cube Microsystems  
Computer Connection of CNY, Inc.  
Concorde Group  
Continuous Computing Corporation  
Coudert Brothers  
Dataram Corporation  
Force Computers, Inc.  
Fujitsu, Ltd.  
Fujitsu Microelectronics, Inc.  
Fujitsu Technology Solutions  
Gaisler Research

GCS Holdings Pty. Ltd.  
Globespan Virata, Inc.  
Golden Chips Co., Ltd.  
Green House Co., Ltd.  
GSH Intelligent Integrated Systems  
Gulfcoast Workstations, Inc.  
Hitachi America, Ltd.  
Integrated Micro Products Ltd.  
Kanamoto Co., Ltd.  
Kingston Technology Corporation  
Lightwave Communications, Inc.  
LSI Logic  
MemoryX  
Minicomputer Exchange, Inc.  
Nature Worldwide Technology Corporation  
Network Technologies, Inc.  
PFU Limited  
Qes Tec, Inc.  
Rackmaster Systems, Inc.  
Rave Computer Association, Inc.

Rocky Mountain Ram  
SBS Technologies, Inc.  
Seagate Technology, Inc.  
Sheba Systems Co., Ltd.  
Sidus Systems, Inc.  
Sun Microsystems, Inc.  
Super PC Memory, Inc.  
Tadpole  
Tatung Science & Technology, Inc.  
Texas Instruments  
Themis Computer  
Toshiba Corporation  
Unigen Corporation  
Virtual Technology



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