

eXpressDSP™ Real-Time Software Technology

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eXpressDSP Platform Manager

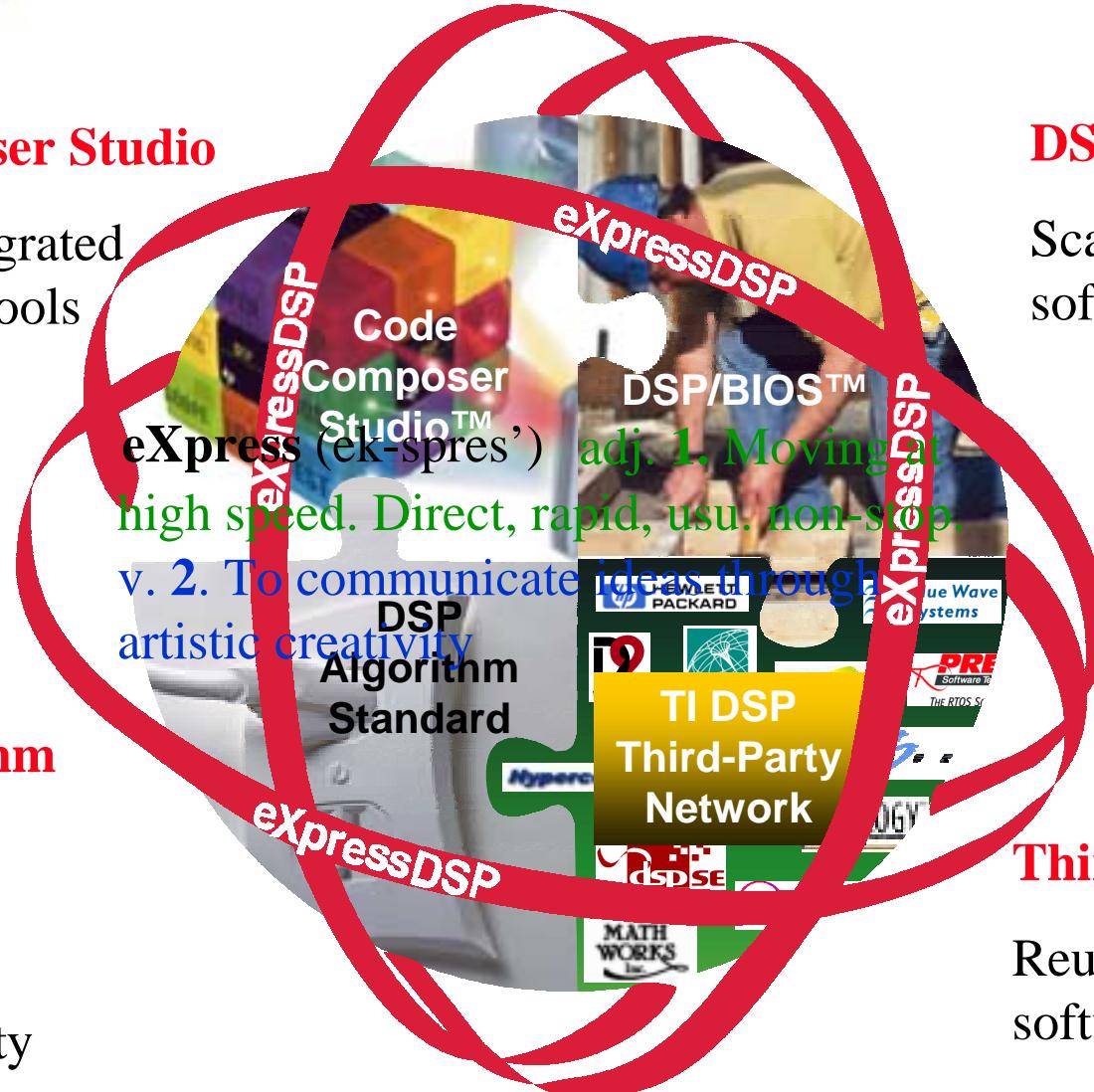
What is eXpressDSP™ ?

Code Composer Studio

Powerful, integrated
development tools

DSP Algorithm Standard

Standards for application interoperability



DSP/BIOS II

Scalable, real-time software foundation

Third-Party Network

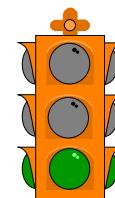
Reusable, modular
software and support

Why eXpressDSP ?

No Moore's Law !!

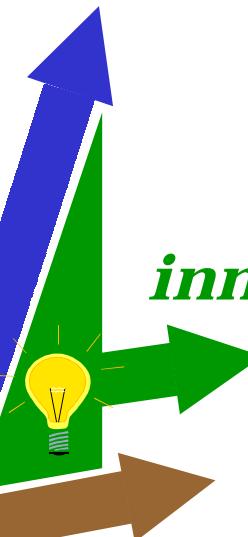


HARDWARE



innovation

SOFTWARE



1980

1990

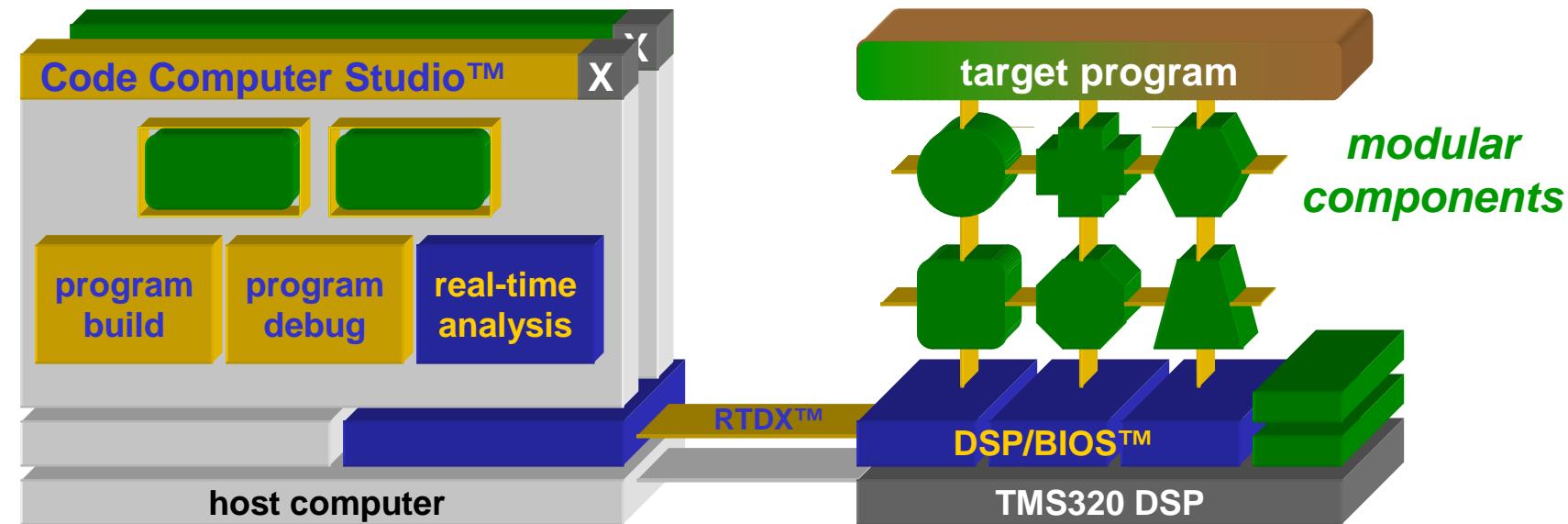
2000



The Real-Time Software Foundation



- ✓ integrated program development tools - CCS
- ✓ scalable, real-time software foundation - DSP/BIOS
- ✓ standards for application interoperability - XDAIS
- ✓ third-party & university partners network



Our Vision

eXpressDSP™,
our *premier open* software
environment,
will drive TI products
to be pervasive in every DSP
application

During 1999

DSPI Fest
2000

Code Composer Studio

Launched CCS 1.0/1.1
FIRST full integration
of acquisition strategy

DSP Algorithm Standard

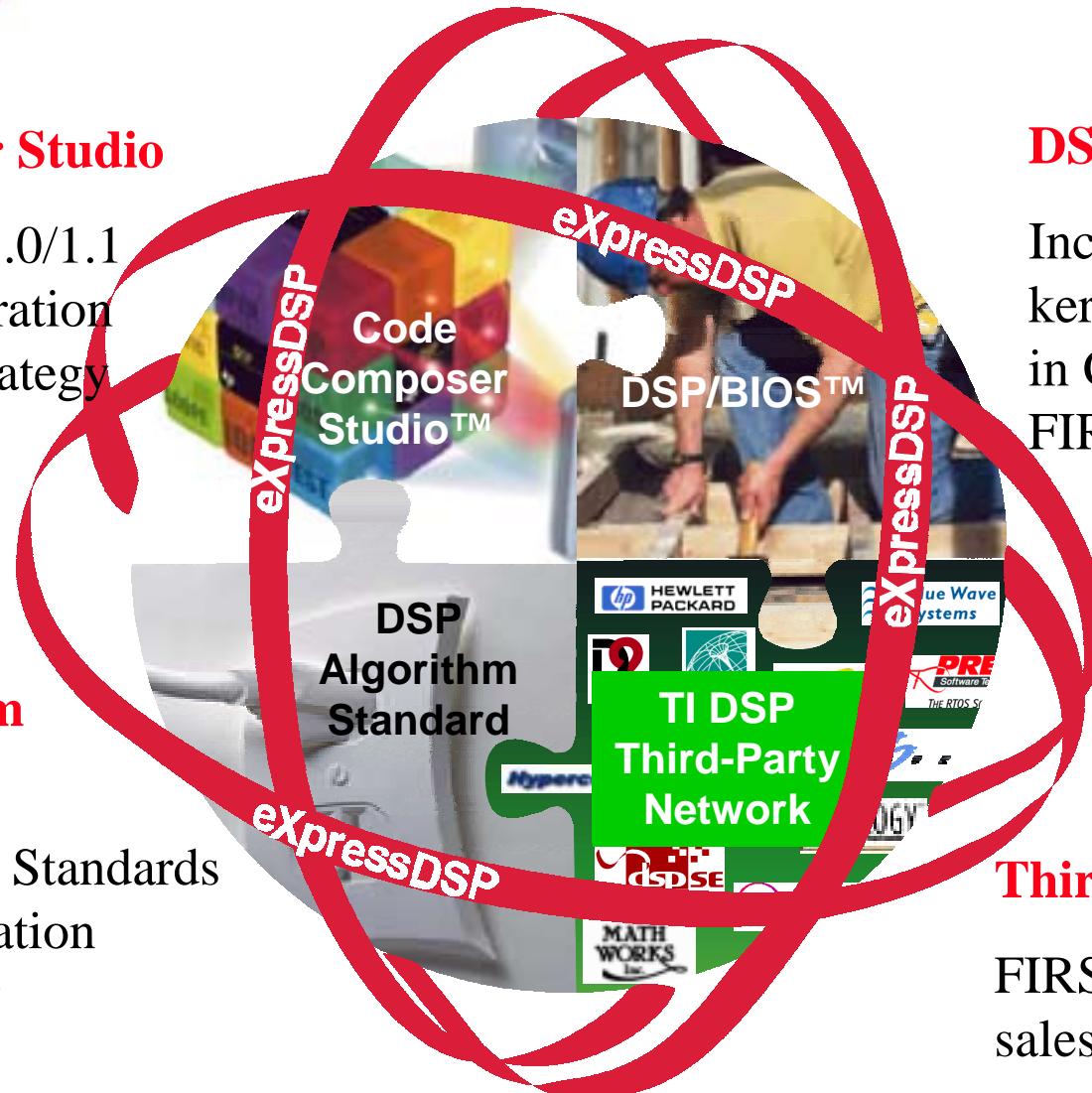
Created FIRST Standards
for DSP application
interoperability

DSP/BIOS II

Incorporated as DSP
kernel SW - included
in CCS - industry
FIRST

Third-Party Network

FIRST Dedicated
sales/FAE force



2000 Policy Deployment

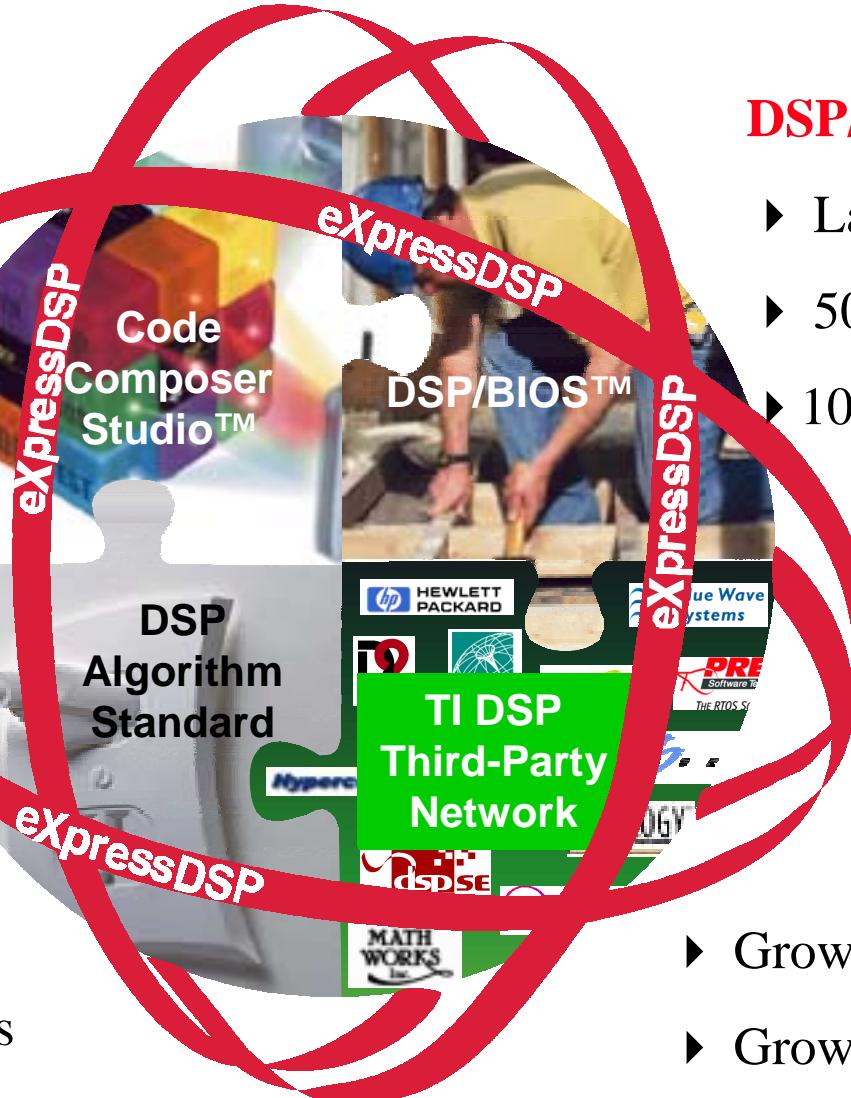
- » Drive eXpressDSP SW Adoption
- » Create Compelling New Products and Technology that delivers Time-To-Market advantage to our customers

Accelerating eXpressDSP™ Adoption 2000 Goals

DSPS Fest
2000

Code Composer Studio

- ▶ Double 320 developers
- ▶ Launch v1.2
- ▶ Develop v2.0
- ▶ Strategic Plug-ins



DSP/BIOS II

- ▶ Launch DSP/BIOS II
- ▶ 50% customer usage
- ▶ 1000s of customers

Third-Party Network

- ▶ Grow SW providers
- ▶ Grow eXpressDSP brand

DSP Algorithm Standard

- ▶ 250 compliant algorithms
- ▶ 100s winning new sockets

Industry leading real-time tools
reduce cost, risk and development time

Enhancements

In Code Composer Studio 1.2

DSP/BIOS II

Flexibility, scalability and ease of implementation

New Compiler Tools

Visualize and optimize for maximum productivity

New Cores

All customers can start today!

Slash product development time over 50%



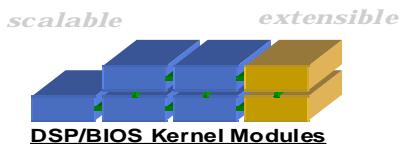
Code Composer Studio™ v1.2

Complete integrated DSP Kernel

Code Composer Studio™ v1.2

DSP/BIOS II — Managing Time, MIPS and Memory

Scalable, extensible real-time kernel optimized for TMS320™ DSPs



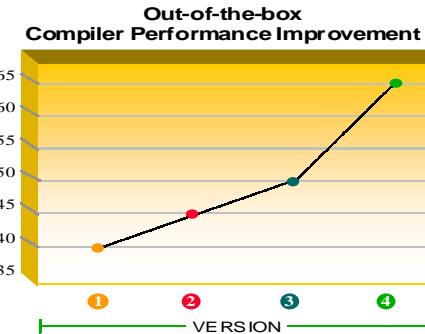
NEW AND ENHANCED SOLUTIONS IN DSP/BIOS II

- Increased level of scalability
 - Consumes minimal MIPS and memory
 - Individually selectable modules
- Extensibility with 3rd-party plug-ins such as communication stacks/protocols
- Dynamically reconfigure system priorities
- Visibility of kernel integrated into Code Composer Studio

Industry leading Compilers:

Compile Tools

#1 DSP Compiler Extends Performance Lead



- Achieves 80-90% performance vs. hand coded assembly
- Performance statistics backed up with real code examples downloadable today
- Out-of-the-box C code focus has produced more than 20% performance improvement
- Support for C++

Industry first Profile Based Compiler

Code Composer Studio™ v1.2

New C6000™ Compile Tools

Visualize and optimize code size and performance trade offs



SOLUTIONS FOR THE C6000™ DSP: A Unique Profile-Based Compiler

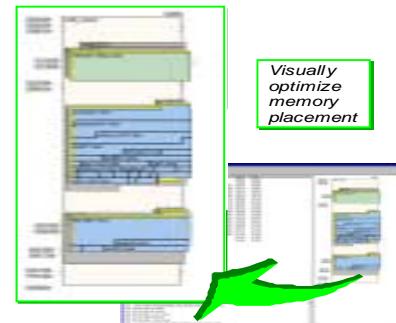
- Build and profile multiple build option sets
- Automatically plot a 2D graph of code size vs performance
- Graphically select the optimum combination of size and speed for your application
- Click to build desired performance and code size trade-offs in seconds

Industry first Visual Linker

Code Composer Studio™ v1.2

New C5000™ Compile Tools

Visualize and simplify system memory allocation



SOLUTIONS FOR THE C5000™ DSP: The Industry's First Visual Linker

- Drag-and-drop components into multiple memory types and areas
- Obtain immediate visual feedback on memory allocation
- Choose from a library of standard C5000™ device memory maps
- Use "Linker Wizards" to upgrade from existing text to a graphical environment

CCS / eXpressDSPTM WINS!

semiconductor **BUSINESS NEWS**

“TI offers new kernel, compiler tools to cut DSP development costs, time-to-market”



“Blue Wave’s FACT™ resource development kit benefits from Texas Instruments new DSP/BIOS II kernel”

EETIMES

“Tool sets shorten time from algorithm development to silicon --”

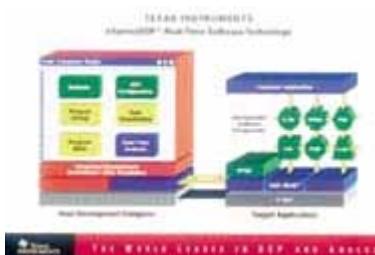


The Center of the Electronics Universe
ChipCenterSM

“New real-time DSP tools from TI increase developer productivity -- enhanced kernel gives DSP system developers greater flexibility, scalability and ease of implementation”

EDN's 1999 Innovation of the Year Award

EDN[®]



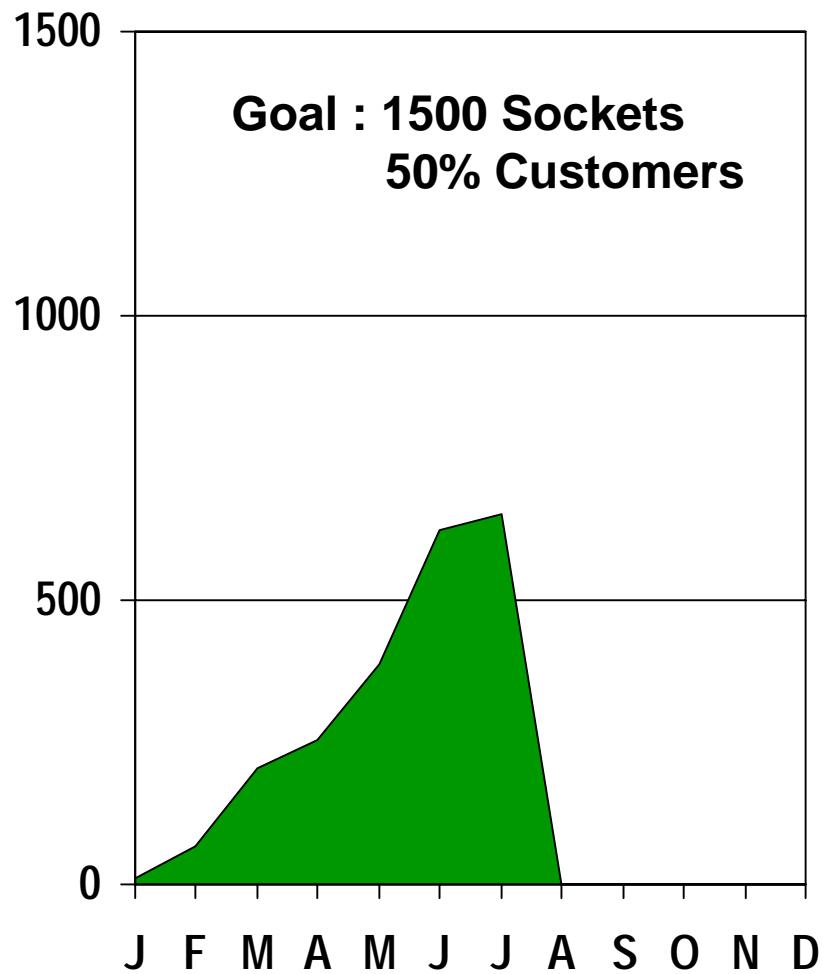
eXpressDSP, an open software-development environment for Texas Instruments DSPs, gives users a real-time make-versus-buy choice for DSP algorithms.



The Center of the Electronics Universe
ChipCenterSM

“Texas Instruments leading DSP technologies take home two EDN Innovation of the year awards”

Attaching to 50% of the new designs



- ▶ DSP/BIOS II launched on 4/3
- ▶ Boot-camps for TSRs/FAEs completed
- ▶ DSP/BIOS featured as FIRST DSPVillage discussion group
- ▶ Featured in WW seminar series reaching 3000+ customers
- ▶ Customer training available - 1 & 3 days classes, web
- ▶ Customers are using it TODAY!

DSP Developers Village - opened April 3

- ▶ For DSP developers to find the latest information about TI DSP tools, SW, and 3rd parties
- ▶ Improve quality and efficiency of the TI SW experience
- ▶ Create a community-like experience to address the needs of TI DSP designers
- ▶ Software content merged into Village
- ▶ Currently averaging 40,000 hits/wk

e-Store opened July 1, 2000

- ▶ Located “inside” DSPVillage
- ▶ TI and 3rd Party DSP product offerings
- ▶ Initially focus on Software solutions
- ▶ First for US, Canada and Europe
- ▶ eXpressDSP compliance required


TEXAS INSTRUMENTS

THE WORLD LEADER IN DSP AND ANALOG

▼

GO

Advanced Search
TI Home
TI&ME
TI Employment

Tech Support
Comments
Site Map
TI Global

DSP Developers' Village

GO

Where **DSP** software comes together

DSP Developer Resources

- [Discussion Groups](#)
- [Technical Support](#)
- [Application Notes](#)
- [User Manuals](#)
- [Datasheets](#)
- [General FAQs](#)
- [Application Software](#)
- [Device Drivers](#)
- [Errata](#)
- [Application Block Diagrams](#)
- [Tools Price/Availability](#)
- [Training](#)
- [TMS320 DSP Product Catalog](#)
- [Compatible Analog Products](#)
- [Feedback](#)

Featured Documentation

- [Application Notes](#)
- [Benchmarking DSP/BIOS III on the C54xx](#)

expressDSP™ Real-Time Software Technology

e**xpressDSP™** Real-Time Software Technology is a premier open DSP software environment that combines tools and algorithm development standards to simplify application development and enhance innovation.

[Purchase Tools](#)

[Getting Started](#)

- [Evaluation Bundles / DSP Starter Kits](#)
- [Free Evaluation Tools](#)

[TMS320 DSP Tools Catalog](#)

[Third Party Program](#)

- [Third Party Resource Catalog](#)

expressDSP™ Components

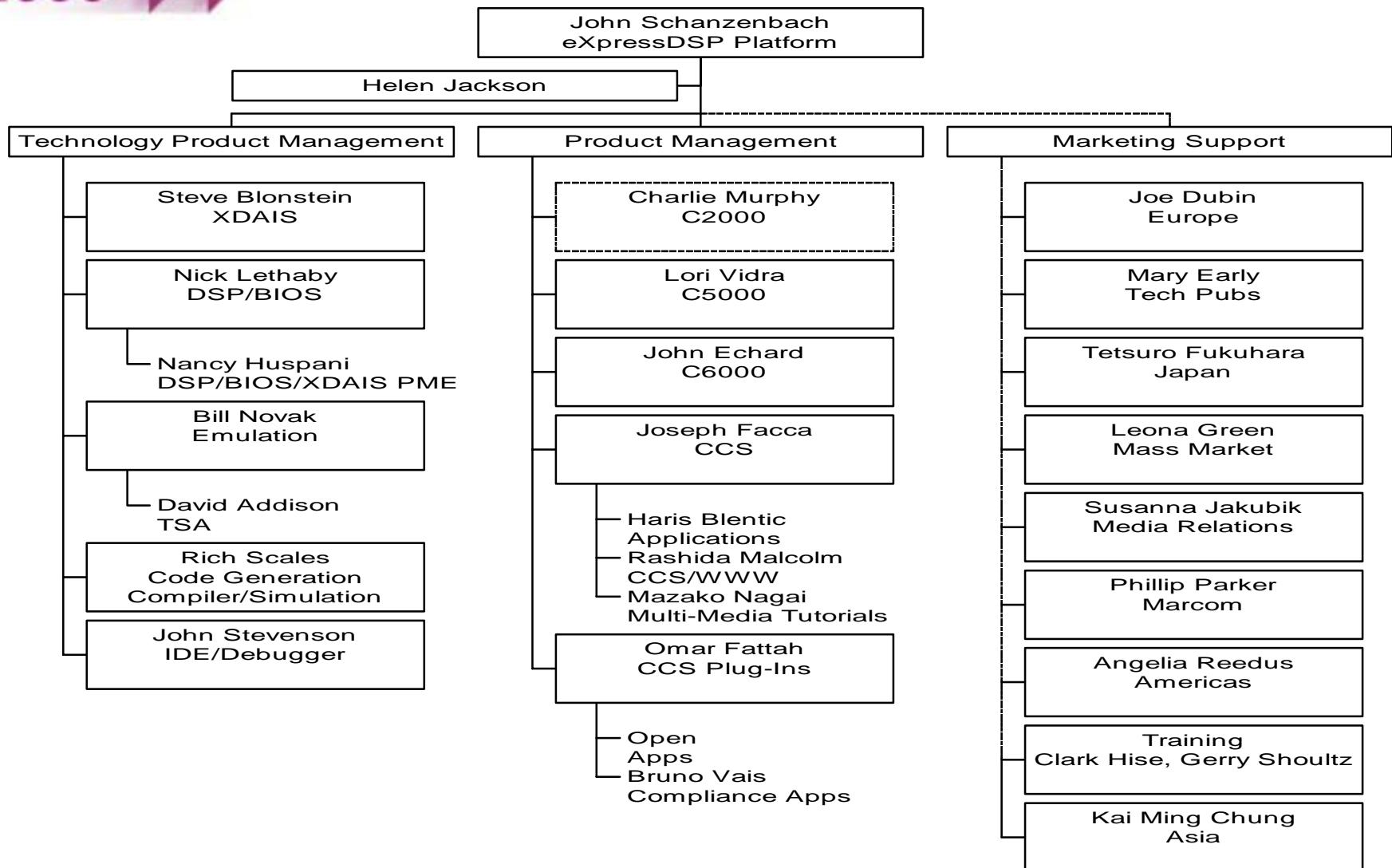
- [Overview](#)
- [Code Composer Studio](#)
- [DSP/BIOS](#)
- [TMS320 DSP Algorithm Standard](#)
- [Third Party Products](#)
- [e](#)lapsed**DSP** Compliance Program
- [e](#)xpressDSP demo CD-ROM
- [New Compliant Products](#)
- [New Digital Signal Processing Algorithms](#)
- [New Products in the e-Store](#)
- [New Digital Signal Processing](#)
- [High performance Multi-Channel Q.TMV receiver algorithm](#)
- [Mobile conferencing AAC](#)



TEXAS INSTRUMENTS
TECHNOLOGY

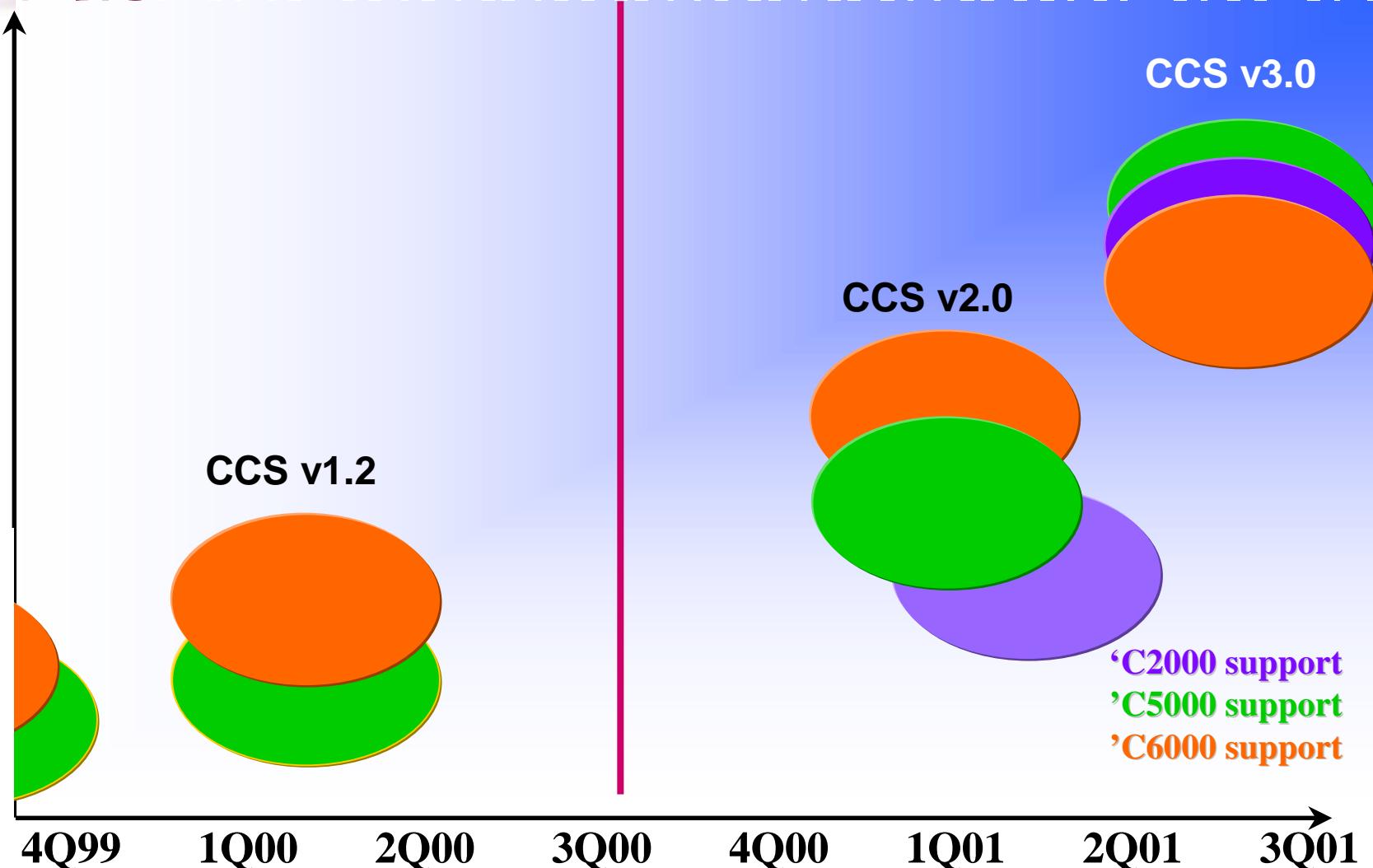
eXpressDSP Team

DSPS Fest
2000



What does the future hold?

DSPS Fest
2000



Code Composer studio



Code Composer StudioTM

- ▶ Premier, Open, Real-Time Integrated Development Environment
- ▶ Ease-of-Use : Dramatic Improvements in the things DSP developers do every day
- ▶ Creating compact and high speed code quickly
- ▶ Supporting the entire life cycle of DSP systems development
- ▶ Maturing the requirements gathering process
- ▶ Bringing Leadership Technology to DSP Developers

► **Compelling new capabilities**

- ▶ **IDE** : Large project, version control editor enhancements,.....
- ▶ **WWW** based Update Advisor
- ▶ Heterogeneous Multiprocessor debug support (RTDX/BIOS)
- ▶ **BIOS** supported in simulation - RTA
- ▶ **CSL** Integration into GConf
- ▶ **Compiler** performance improvements for C55x and C64x
- ▶ **Full C++** compile and debug support (C6000 / C5000)

► **Schedule**

- ▶ Beta Program begins in late 4Q
- ▶ Production shipments in 1Q01

► **Major Quality Focus**

- ▶ 95+% of known bugs to be fixed
- ▶ Focused 8 week customer Beta program - register via DSP Village
- ▶ Utilize new automatic regression test system

► **O.O.B.E. must be flawless**

- ▶ Improve Install sequence
- ▶ Flow usability improvements
- ▶ Solid Project Migration
- ▶ 100% customer conversion
- ▶ Host OS Support:: Win98, Win2000, WinNT (no Win 95)

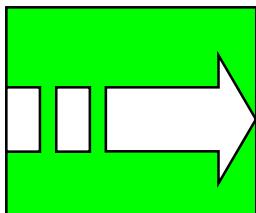
► Compelling new capabilities

- ▶ What are the 3 big capabilities that will make creating high performance/dense DSP systems easier to design??
- ▶ Give us your inputs this week

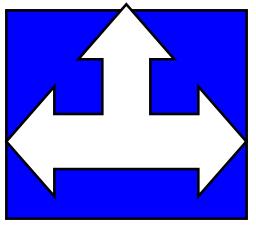
► Schedule

- ▶ Requirements closed 4Q00
- ▶ Beta Program 2H01
- ▶ Production shipments 1H02

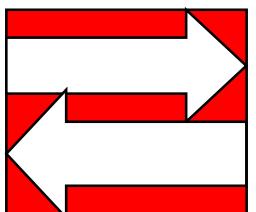
Emulation - Real-Time visibility into tomorrows applications



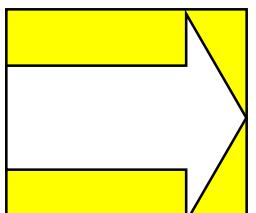
Real-Time
Emulation



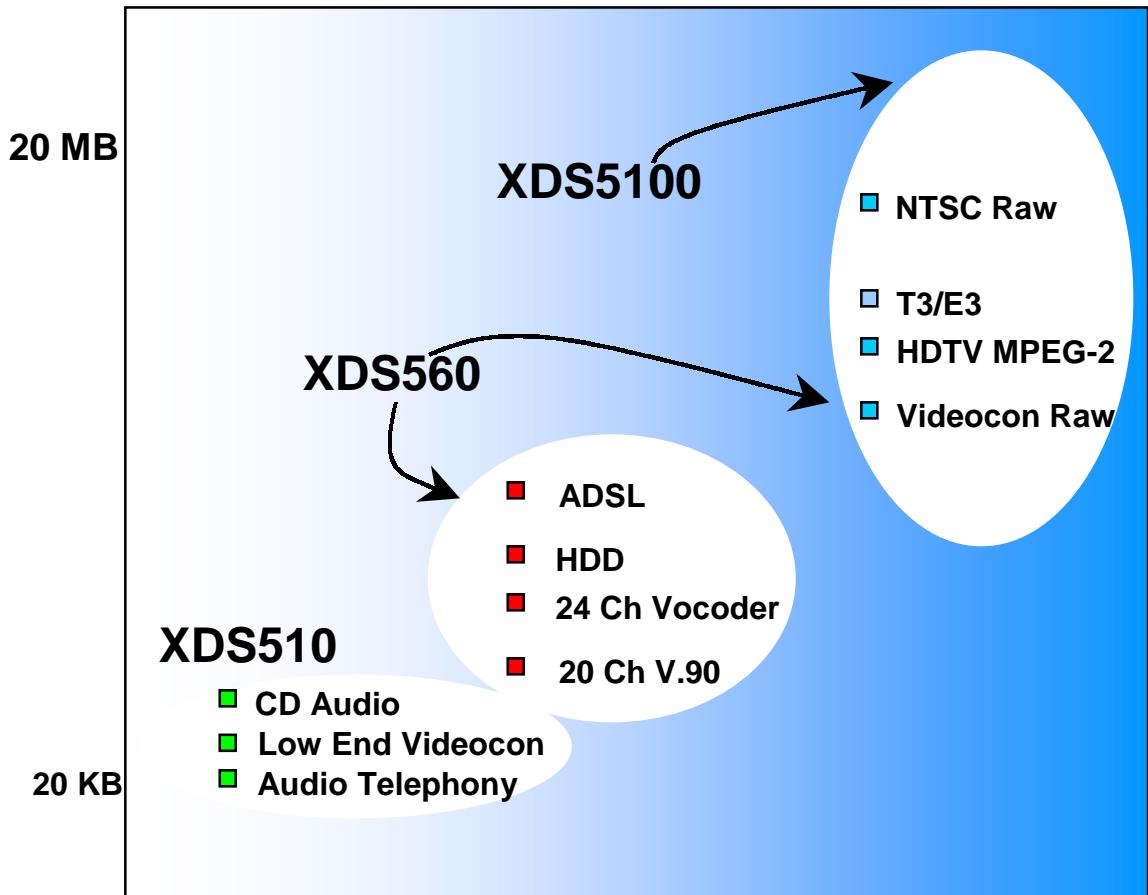
Advanced
Event
Triggering



RTDX



Real-Time
Trace



Strengthening the SW Foundation



► **DSP/BIOS II -**

- ▶ New target support across ISAs
- ▶ Start early in design with simulation
- ▶ Debug complex multi-processor systems
- ▶ Integration of System Support Libraries (SSL) into common configuration tool

► **DSP Algorithm Interoperability Standard**

- ▶ New target support across ISAs
- ▶ New XDAIS generation tools
- ▶ New configuration tools

eXpressDSP™ - Supporting all ISAs

	C2000™	C5000™	C6000™
CCS	1H01	NOW	NOW
DSP/BIOS	1H01	NOW	NOW
XDAIS	2H00	NOW	NOW
3P	NOW	NOW	NOW

Success is created with eXpressDSP™

- ▶ The TMS320 market is accelerating
 - ▶ 10,000s of CCS developers
 - ▶ 1,000s of DSP/BIOS projects
 - ▶ 100s of XDAIS compliant SW
 - ▶ 10s of exciting new plug-ins
- ▶ Attend the SW Strategy session
 - ▶ Demo of CCS v2 tonight
- ▶ Develop eXpressDSP Compliant algorithms and plug-ins
- ▶ Participate in our market creation and eStore activities
- ▶ Be a driver in the exploding TMS320 DSP market

