



VAB™

Graphical Component-oriented DSP Design Software
as it relates to eXpressDSP™

DSPS Fest - Houston, TX
4 August 2000

Overview

- ◆ Hyperception Company Background
- ◆ VAB Product Briefing
 - ◆ What is VAB?
 - ◆ How does VAB leverage eXpressDSP?
 - ◆ What problems does it solve?
- ◆ Schedule/Pricing
- ◆ Summary
- ◆ VAB Product Demonstration (time permitting)

Hyperception Company Background

- ◆ 1984 - Founded
- ◆ 1984 - Gambled on making DSP Development Software for PC using DOS through 1989
- ◆ 1989 - Early gamble on Windows (version 2.11)
- ◆ 1989 - charter was to develop new paradigm for DSP algorithm development using graphical component-oriented concepts (RIDE™ product development)
- ◆ 1999 - VAB™ Leveraged from 10 year RIDE Development work

VAB - What is it?

- ◆ A Component-based Graphical Design Technology for DSP Design
- ◆ All based on an Open Software Architecture
- ◆ Allows 'RAPID PRODUCTION' via direct graphical to DSP Object Code Generation

- ◆ Program Real-time DSP Applications using a graphical paradigm which is **DSP-centric** -

Block Diagram direct to real-time DSP

VAB History

- ◆ Hyperception worked closely with TI to develop VAB
- ◆ VAB concept leveraged Hyperception's RIDE product
- ◆ Chosen by TI University Program over various other ideas to make real-time DSP easier to teach/learn
- ◆ VAB University version delivered initially in 1999
 - ◆ direct support for 'C31 DSK, 'C5402 DSK, 'C6211 DSK, and 'C6711 DSK
- ◆ VAB for 'C6000
- ◆ VAB for 'C5000
- ◆ VAB for 'C2000

VAB History

- ♦ 2000 - VAB is the very first eXpressDSP Compliant Plug-in!



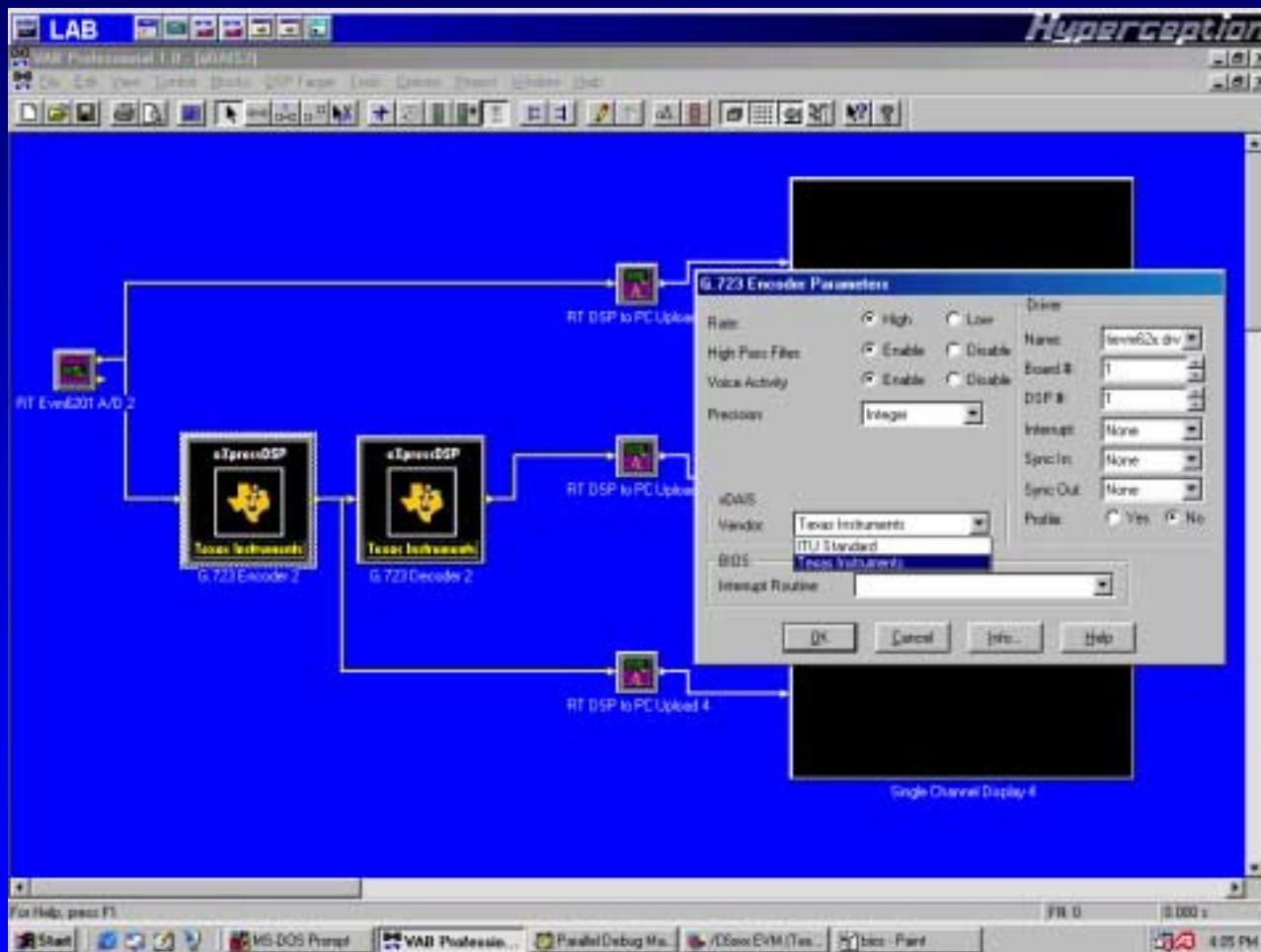
- ♦ Initial Block Diagram direct to CCS program link
- ♦ More integration already completed and additional work planned for VAB plug-in

How does VAB leverage eXpressDSP?

- ♦ Intended to embrace **eXpressDSP technology** directly using a graphical means
 - ♦ Allows for direct use, creation, and testing of **DSP Algorithm Standard** components graphically
 - ♦ Allows for alternate, easier method of utilizing **BIOS** within a DSP application
 - ♦ Utilizes **CCS plug-in** strategy to accomplish the above to TI-based target hardware in a device-independent manner (C6000, C5000, C2000, etc.)

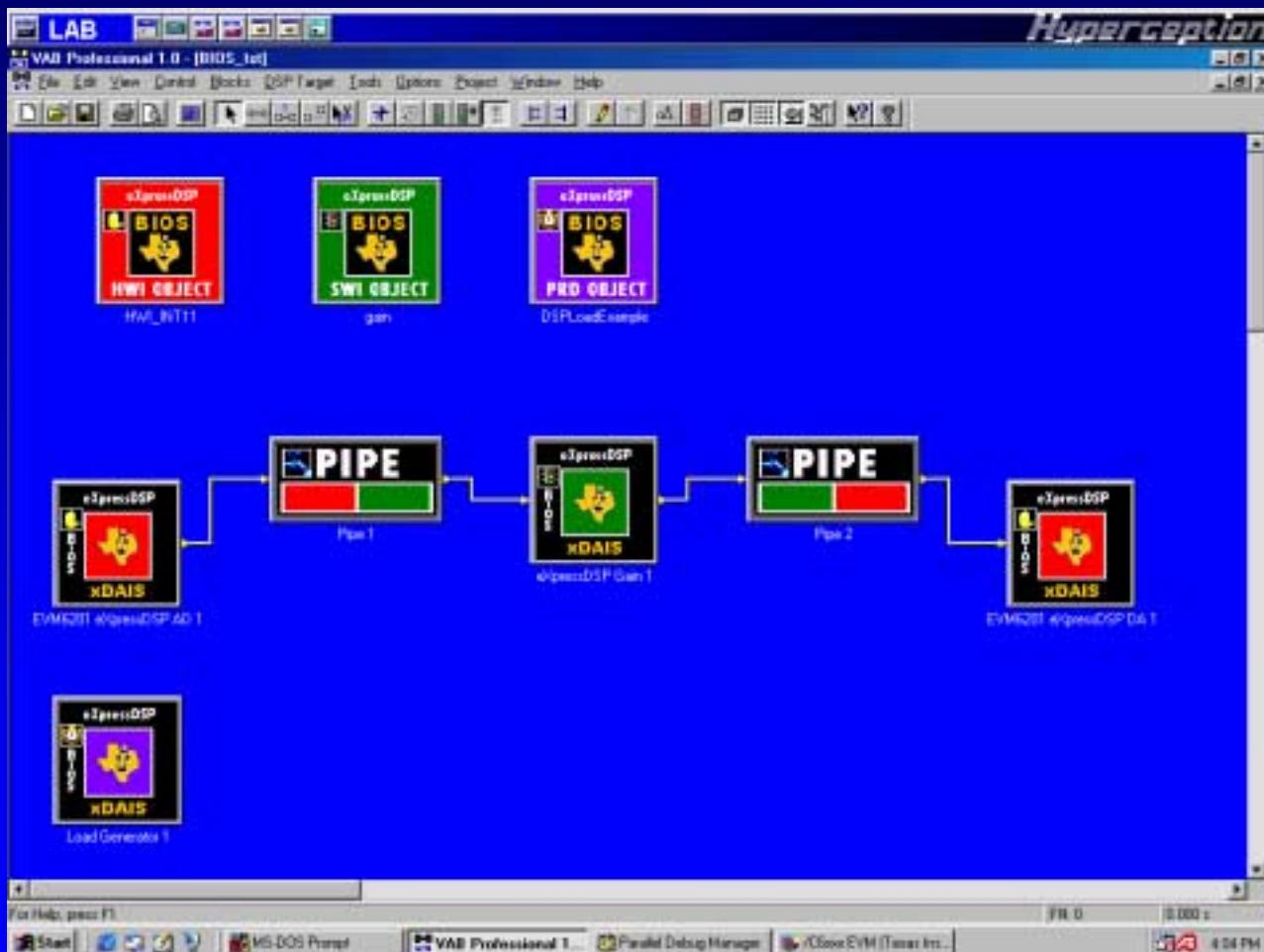
VAB - Component Delivery Vehicle

- ◆ A Component-based Graphical Design tool for directly creating DSP Object Code **using DSP Algorithm Standard components**
- ◆ eXpressDSP Component Wizard to automate **making DSP Algorithm Standard components**
 - ◆ Based on mature Block Wizard technology
 - ◆ Allows for much faster, more robust component development, with much lower learning curve
- ◆ A method for automating Algorithm Verification to allow **testing DSP Algorithm Standard components**



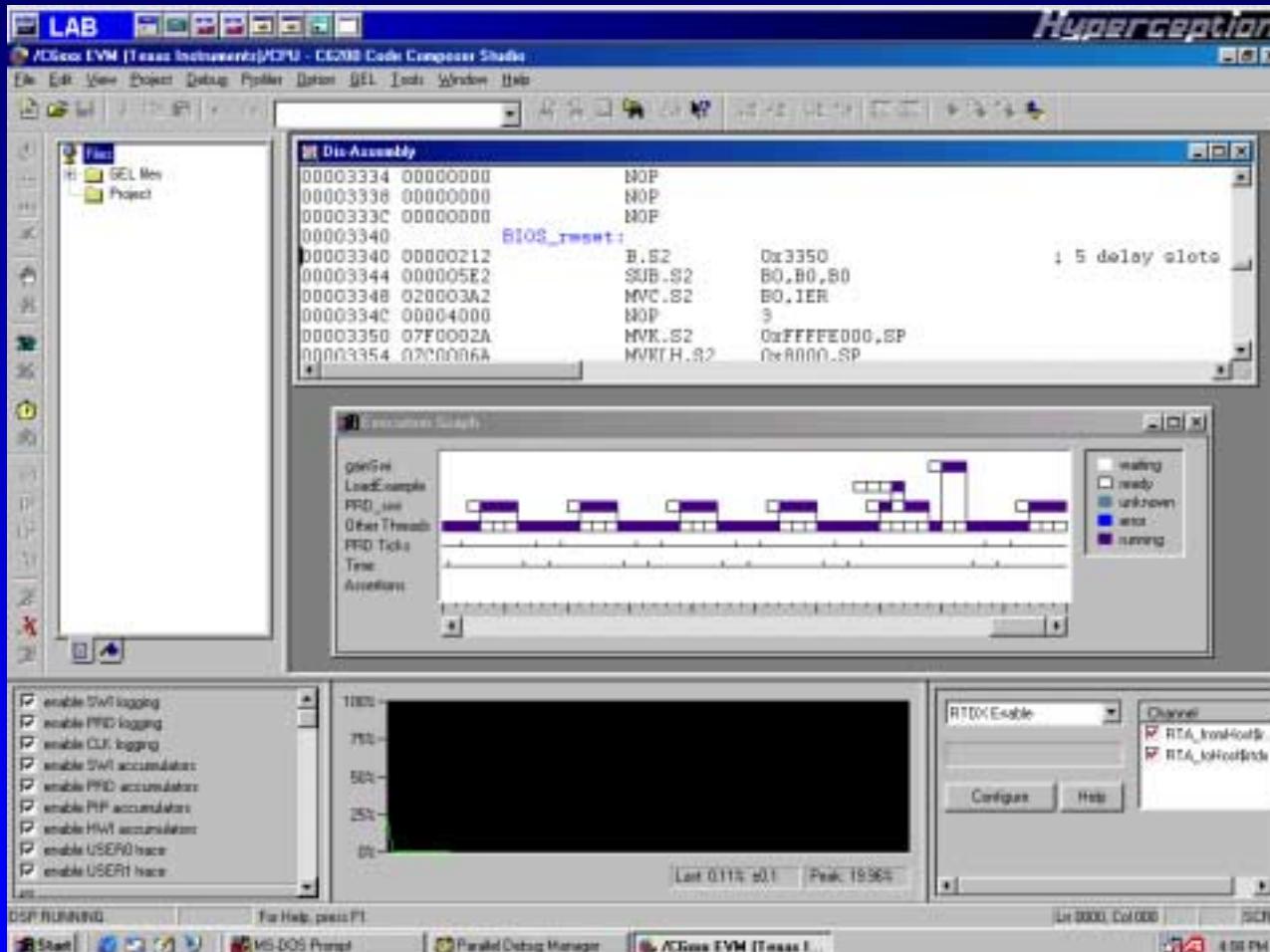
VAB - BIOS Facilitator

- ◆ **Make BIOS easier** for many people
- ◆ Allow for much lower learning curve on BIOS implementation
- ◆ Supports scaleable BIOS usage in applications
- ◆ Allow for possible **new audience of engineers** with less design experience to start exploiting BIOS
- ◆ Significant new approach to **using BIOS!**



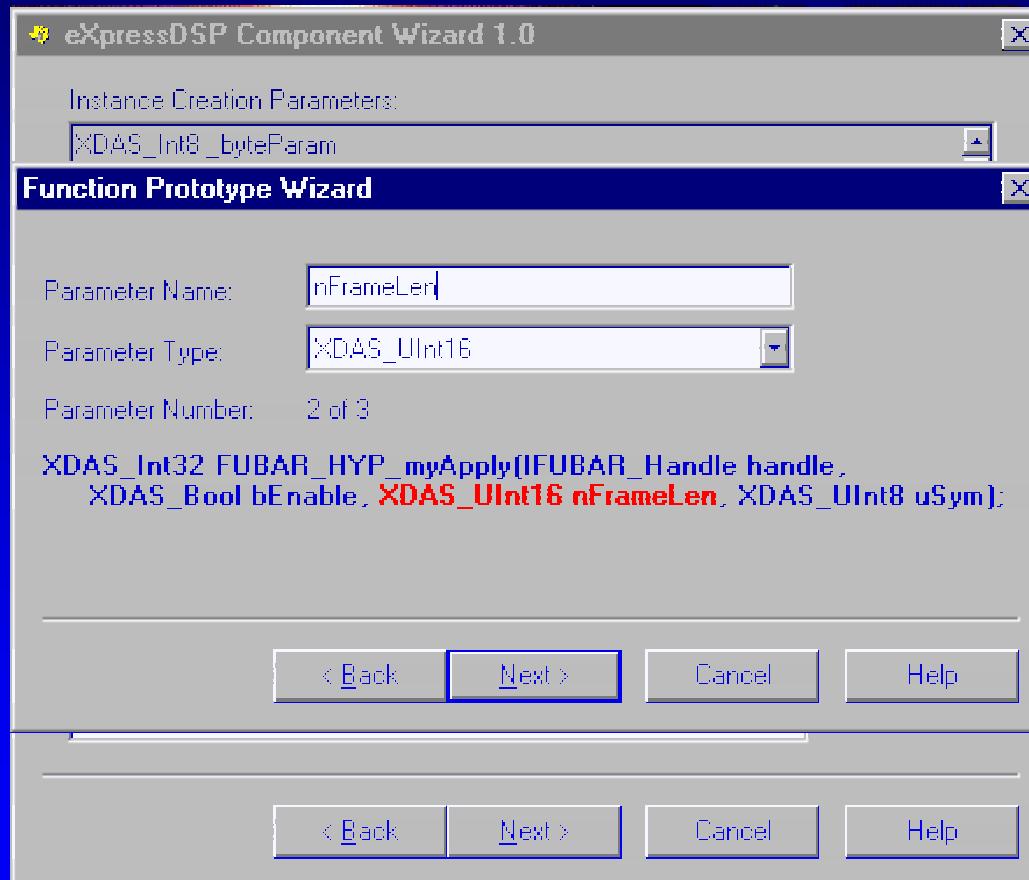
VAB - CCS Plug In

- ◆ VAB can utilize plug-in strategy of CCS
- ◆ Allows for direct support of all CCS targets
- ◆ Inter-operates with CCS to allow better overall DSP code development
- ◆ Positions TI for possible new areas of technology related to advanced DSP algorithm debug and development



VAB - the Component Wizard

- ◆ Allows new components to be created easily
- ◆ supports the DSP Application Standard for maximum interoperability
- ◆ Takes the guesswork out of developing a new component
- ◆ Standalone, may be used with or without VAB
- ◆ Supports development with CCS directly using plug-in strategy



VAB - What problems are solved?

- ◆ A visual product-oriented solution matched exceptionally well to the concept of eXpressDSP
- ◆ TECHNICAL
 - ◆ A solid mature product which leverages eXpressDSP to create DSP applications quickly
 - ◆ Allows easier use & better harmony of eXpressDSP
- ◆ MANAGEMENT
 - ◆ Faster project development
 - ◆ Reduced Learning Curve
 - ◆ Maintainability

Why is VAB important for current/future DSP Markets?

- ◆ Allows for target-independent DSP design using a variety of solutions from different vendors (HW/SW)
- ◆ VAB can reduce technical expertise barriers to entry, allowing larger pool of available DSP Engineering Labor to be utilized, thus widening market
- ◆ Allows for a much reduced learning curve for developing DSP Applications via eXpressDSP

How can this help in the DSP Market?

- ◆ This tool can be used to graphically demonstrate the ease at which DSP can be done today
- ◆ This tool can be used as a basis for creation, testing, delivery and usage of component software solutions
- ◆ This tool, when bundled/used with evaluation kits/boards, will increase the likelihood that a potential customer will make a decision to use DSP, as opposed to deciding DSP is too fraught with design difficulties and overwhelming in-house expertise requirements

How can this help TI in the DSP Market?

- ◆ This tool will demonstrate to potential new DSP customers that they, with proper tools, have the capability to use DSP in their application, thus increasing the total available market
- ◆ Preserves TI's Leadership in DSP and gives them another 'First'
- ◆ Hyperception has all of this in a mature product offering now

Schedule

- ◆ VAB for 'C6000
 - ◆ support for 62x, 67x now; support for 64x planned (awaiting hw)
 - ◆ Comp. Wizard, Alg. Standard now; BIOS support 4Q00
- ◆ VAB for 'C5000
 - ◆ support for 54xx now; support for 55xx planned (awaiting hw)
 - ◆ Comp. Wizard, Alg. Standard now; BIOS support 4Q00
- ◆ VAB for 'C2000
 - ◆ support for F240, 243 now; support for 2407 planned

Schedule

- ◆ VAB for 'others'
 - ◆ C3x is supported now
 - ◆ C4x could be supported easily (supported already in RIDE); not currently planned

COST

- ◆ VAB for 'C6000
 - ◆ \$1495 US, P/N HSWN1060
- ◆ VAB for 'C5000
 - ◆ \$1495 US, P/N HSWN1050
- ◆ VAB for 'C2000
 - ◆ \$1495 US, P/N HSWN1020

VAB Summary

- ◆ Demonstrations (time permitting)
- ◆ Additional Information:
 - ◆ Hyperception, Inc.
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