Windows CE 6.0 for DaVinci™ processor

The DaVinci processor by Texas Instruments is based on TMS320C64x+™ DSP core, an ARM926 processor, video accelerators, networking peripherals and external memory / storage interfaces all tuned for video performance.

Objective

DaVinci processors are gaining popularity for multimedia applications and network streaming. Hence, Aftek decided to be ready with the board support package for this processor.

The objective is to develop a board support package for the platform based on TMS320DM644x. It will enable faster application development, thereby reducing the time to market. The applications would make optimal usage of the processor capabilities with the help of abstraction provided by the BSP; thereby leading to faster application development.

Expected Feature Set

♦ Robust operating system port

♦ Efficient and user friendly application interface

♦ Optimal usage of capabilities of DM6446

♦ Multiple peripheral support

Solution

Aftek has selected the evaluation board for TMS320DM6446 (DVEVM) and ported Windows CE 6.0 onto it. It has provided a strong platform for application development.

We, at Aftek, were one of the first to develop a WinCE6.0 BSP for Davinci DM6446 in **2006**. A demonstration of "**DM6446 based network projector**" with Windows CE 6.0 was given at the Microsoft conference held in Japan.

Aftek BSP for Davinci TMS320DM6446 includes the following modules

♦ EBOOT with platform builder connectivity
♦ OAL porting
♦ Peripheral drivers for

- Display
- Ethernet
- USB host
- I2C
- ATA hard-disk
- Audio
- SD/MMC
- NAND and NOR flash
- EEPROM

♦ RTC
♦ KITL
♦ CETK
♦ ARM/DSP BIOS link (In process)

Technology

♦ Windows CE 6.0
♦ DaVinci

Set Top Box • **Car Infotainment**
Video Telephone
Network Projector
Network Video
Portable Media Player
Video Security
Digital Camera

Benefits to the client

♦ Ready to use BSP for application development

♦ Ease of application programming
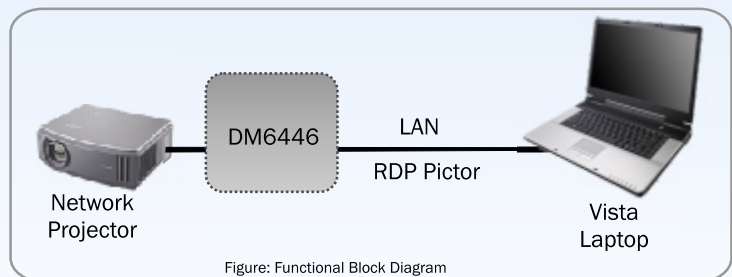
♦ Efficient client support

♦ Reduced time to market

Aftek's value-add

♦ Improved ethernet performance

♦ Optimized display performance

Application

DaVinci and Windows CE 6.0 based network projector

The DaVinci based network projector was based on DaVinci TMS320DM6446 TI processor and Windows CE 6.0

DM6446 — LAN — RDP Pictor
Network Projector — Vista Laptop

Figure: Functional Block Diagram

The network projector uses RDP and pictor protocol. Pictor is the codename for the collaborative functionality built into Windows Vista and Windows CE 6.0 to enable remote interface of the Vista PC to a network projector or display. Pictor utilizes **'Web Services for Devices (WSD)'** for device discovery and **'Remote Desktop Protocol (RDP)'** for display.

A PC streams the screen contents over the network and the network projector projects the screen contents on the local display module.