Overview
Do you want to design a product that requires vivid images and pictures, sharp video, music with clarity, detailed navigation information and maps that are precise and fast? Do you have a tight development schedule? Market demands are always increasing. To break through the clutter, your product must have the performance, simplicity and elegant design that sets new standards.

If this is your environment, you need a development platform with an integrated hardware engine and robust software.

Design engineers who want to focus on what makes their product unique in the market— and spend only the time necessary to develop the application’s features— need look no further than Freescale Semiconductor. Freescale’s comprehensive “form-factor” development kit is built on the powerful ARM 1136™ based i.MX31 applications processor with SmartSpeed™ technology. It delivers a high-performance, low-power, cost-effective solution for a variety of solutions, including devices that require robust 3-D graphics and excellent video performance.

The i.MX31 PDK is preconfigured with your choice of Linux® or Windows® CE 5.0 (Windows Embedded CE 6.0 is on an accompanying CD), making it suitable for a wider range of multimedia applications.

Design.
With the i.MX31 PDK, you can access more key features. Many core hardware and software elements are included, saving development time and expense. The Freescale i.MX31 PDK’s personality module provides the designer with key hardware functionality and connectivity required for many consumer, health care, and industrial applications, such as personal navigation devices (PNDs), personal media players (PMPs), medical/industrial monitoring systems and touch-screen devices, saving time in the design and debugging of the device.

With production-ready software components, an optimized OS, a system-validated board support package (BSP) and Freescale’s high-performance multimedia codecs, designers have the tools to test and maximize the performance of the applications they have developed.

Debug.
Software and hardware engineers are provided with the key resources to test their developed code. They can also download this code to the target PDK to test and validate their software and run and evaluate performance metrics where needed. The ability to have all communications ports working (serial, USB, Ethernet) and to debug over JTAG is essential for product development. For example, the USB and the SD card can be used to run video tests from USB and from SD, or designers can reformat the SD card and use it as a disk.

Demo.
Finish strong! Demonstrate the results of your development efforts in the small form factor provided, and evoke confidence that your product is ready to go into production. The competition is fierce, and this feature will give your management team confidence that your product is ready. Get your project approved and into production quickly. With Freescale’s i.MX31 PDK, key stakeholders can hold the product in their hands and evaluate the compelling features of your design.

Key Features
i.MX31 Processor Module
- CPU engine: ARM 1136, 532 MHz
- Core voltage: 1.2-1.47V Auto
- High-performance ARM11® platform with VPU and embedded L2 cache
- Excellent connectivity options
  - 3 x USB
  - ATA-6 interface for HDD and CD/DVD
  - 256 MB NAND Flash
  - 128 MB SDRAM
- Robust multimedia including MPEG-4 hardware encoder
- Low power <500 mW
- High-performance display
  - Embedded 3-D graphics
  - Hardware resizing, inversion, rotation
  - Hardware color space conversion
  - Video/graphics combining
Freescale Multimedia Codecs

Freescale’s high-performance multimedia codecs enable a series of popular audio, video and image applications for the i.MX31 applications processor. The multimedia codecs are provided as fully functional software packages to support various use cases, such as audio/video playback, audio/video record or image capture/display. There are two types of codec software packages available for the i.MX31 applications processor.

- Standard Codec Software Packages consist of software codecs and enabling software.
- VPU Codec Software Packages consist of enabling software to support the hardware-accelerated codecs that reside on the processor.

Learn More: For current information about Freescale products and documentation, please visit www.freescale.com.