Fujitsu SOC
Overview – Fujitsu SOC

• The Fujitsu Advantage
• Fujitsu Solution Platform
• IPWare™ Library
• Example of SOC Engagement Model
• Methodology and Tools
Best Full-service Company

1. Technology
2. Methodology & Tools
3. Solution Platform & IP Cores
4. Application Support
5. SoC Design implementation
6. Packaging

Providing the 6 SoC Success Factors
The Fujitsu Advantage – SOC

- Key Success Factors for System On Silicon
  - Strong systems development heritage
    - Proving grounds for key IP cores
  - Expertise and presence in growing vertical market segments
    - Leading worldwide provider of standard products
    - Well-equipped SOC LABs
    - System application organization
  - Dominance in key technology components
    - System LSI packaging
    - Semiconductor base technologies
    - Memory technologies
  - Leadership in SOC ASIC
    - IP core differentiation through digital and mixed-signal cores
    - Industry standard I/Os: LVTTL, SSTL, HSTL, LVDS, PCML
    - Gigabit and multi-gigabit serial I/Os
    - Design methodology & tools
    - Proven time to market success
Fujitsu Generic Solution Platform

• Provides efficient design-specific solutions for different products
  • Solution platform is an integrated general sub-system that consists of a processor core, primary and possibly secondary bus architectures and peripherals that are interfaced to the bus
  • IP feature customization
  • Design and interface new function blocks
  • Size and power optimization
  • IP core interface to a proprietary bus
  • Solution platforms are designed to be flexible and with clear methodology on how to change, configure and expand them quickly
Fujitsu Flexible Solution Platform

CPU
ARM7 / ARM9 / ARC 3/4

BUS Bridge
AMBA / ARC / Generic

DMA Engine

PCI

USB Host

USB Device

UART

IEEE 1394

IrDA

Memory Controller
SDRAM / EDRAM / FCRAM

VOIP DSP

Ethernet 10/100 MAC

MPEG A/V Decoder
MPEG2

Memory

Voice Platform
(i.e. appliance, gateway)

Network

Audio/ Video

Digital A/V Stream
ARM7 Solution Platform Example

ARM7 Processor Core

Cache (s) Controller

Unified I/D Cache

USB 1.1 LINK

802.11a/b

Bluetooh

ARC (DSP) Core

ARC-AHB Bridge

AHB Bus Bridge

AHB to PCI Bridge

Memory controller

USB2.0 Link & PHY

AHB-APB Bridge

VOIP

10/100MAG

1394 Link & PHY

FCRAM

EDRAM

SDRAM

SRAM

FLASH

DDR

APB BUS

APB Peripheral

UART

PCI BUS

PCI Peripheral

Fujitsu Microelectronics America, Inc.

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SOC ASIC Engagement Model

Development partnership

Technology Partner (FMA)
- Libraries
- IP cores
- SIM models
- IP development support
- SOC solution platform support
- Design application support
- Design implementation support (FE/BE)

System Partner (customer)
- System integration
- Chip specifications
- System integration

System LSI SOC... IP-ASIC...

Final Product

Technology Deliverables

Requirement Specifications
Methodology and Tools

- Methodology enables the integration and transformation of technologies into products
- System architecture and application expertise, portable & reusable IP cores and methodologies are the key cornerstones of system LSI differentiation

FMA puts the puzzle together!
System-centric Design Methodology
System-centric Design Methodology

• Top-down and integrated design methodology
• Ensures predictable design through close correlation between all levels of abstraction
• Achieves fast time to market by reducing the design cycle time
Fujitsu

The possibilities are infinite