OMG RTE Middleware versus ‘Traditional’ Solutions. Are we Winning?

Steve Jennis, SVP Corporate Development
Introduction to PrismTech

- Established, growing, profitable
  c. $10m business
- Telecom, Defense & Financial
  “Fortune 500” customer base
- Four product lines
  - OpenFusion Object Middleware
  - Spectra SDR Tools and Infrastructure
  - Splice Data Middleware
  - Xtradyne Security
- c. 70 staff; 50+ engineers

- Aiming for leadership position in the emerging high-growth market for tools and wireless infrastructure software for Software Defined Radio (SDR) applications, a segment of the overall SDR market which is set to grow from $700M in 2002 to over $30 Billion in 2008. 
  Source: Pioneer Consulting.
World-Class Customer Base
Use of Standards-based RTE Middleware

- Middleware used in tiny percentage of RTE projects
- ‘Standards-based’ middleware used in tinier percentage
- OMG Standards-based middleware used in even tinier percentage
- Opportunity beckons…
Over Five Years of Significant Progress
Standards for RTE Middleware

- Here today
  - minimumCORBA
  - DDS
  - Lightweight COS
  - RTSJ
  - J2ME
  - ETF
  - SCA

- Coming soon
  - CORBA/e profiles (minimumCORBA update to start)
  - SBC PIM/PSM (SCA standardization)
COTS GA Implementations

- Here today
  - minimumCORBA on GPP: PrismTech, OIS, ….
  - minimumCORBA on DSP: PrismTech, ….
  - DDS: PrismTech/TNN, RTI, ….
  - Lightweight COS: PrismTech, ….
  - RT Java ORB: PrismTech, OIS, ….
  - J2ME JacORB: PrismTech,….
  - ETF: PrismTech, JacORB….
  - SDR-optimized ORB: PrismTech

- Coming soon
  - CORBA/e profile implementations: ‘microORBs’
  - GIOP-enabled FPGA: PrismTech, ….
  - SCA OE (future PSM-compliance): PrismTech
But Much to be Done..
Our Customers’ Business Drivers

- Advanced features
- Cost reduction
- Faster-to-market
- Higher quality

How does Standards-based RTE middleware address these issues?
The ‘Killer’ Application?

Software component portability…
…disconnects the software and hardware lifecycles, enables business benefits…

- Advanced features
  - Adaptation, enhancement, addition, convergence
- Cost reduction
  - Lower development costs, reuse of IP, mass customization, hardware flexibility
- Faster-to-market
  - Reuse, outsourcing, reconfiguration, hardware flexibility
- Higher quality
  - Reuse, standardized platforms
The ISV Business Model

- Deliver technologies to enable component portability
  - Component APIs
  - Software development tools
  - Standards-based software platforms
  - Software components

- But not at the expense of
  - Performance, Size, Weight, Power
The Technologies
The Perceived Technology Gap?

- **Application APIs**
  - Component reuse
  - Hardware abstraction
  - Debug

- **Middleware**
  - Extremely low overhead
  - Hardware abstraction

- **Standard architectures**
  - XML component and h/w description

- **Application development tools**
  - Graphical modeling
  - Automatic infrastructure code generation
Architecture Vision

Waveform Application Components

Vendor API plug-in layer

Ericsson
Nokia
Siemens
Motorola

Spectra Operating Environment

Vendor API plug-in layer

FPGA-hosted component container

RTOS / BIOS / HAL

GPP/DSP

FPGA

Spectra Development Tools
Graphical Modeling Tools
Auto Code Generators
Test Suites

Low latency ubiquitous GIOP bus

PrismTech Phase-1
PrismTech Phase-2

Support layer for ADI, TI, Xilinx, Agere

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Distributed & Wireless Software Infrastructure
Spectra Launched June 21

- Graphical Modeling Tools
- Automatic Code Generators
- Unit Test Framework
- Run-time Operating Environment

www.prismtech.com

Spectra Launched June 21
The Credibility Gap?
A Culture of DIY?

- I don’t need middleware because
  - No distribution
  - No reuse
  - Lose control
  - Performance critical
    - *Throughput critical*
    - *Overhead (power) critical*
    - *Footprint (power and area) critical*

- Does this sound like enterprise systems in early 90s?
Valid Concerns

- Distributed embedded applications are relatively new
- Reuse is not so critical in short-lived, high-volume consumer products
- In-house development culture
- CORBA is not optimized for resources
  - ORB implementations are perceived as 10x to 100x too ‘fat’ (>2Mb historically)
  - Can’t afford GPP overhead
    - Use ASICs, FPGA, etc.
OMG Community Challenges

- Position CORBA as relevant to consumer products, get considered (marketing)
- Address ‘buy not build’ concerns (marketing)
- Complete CORBA/e (process)
  - minimumCORBA is anything but…..
  - Produce specs for ultra-low resources
- Vendors have to optimize implementations (validation)
- Prove CORBA supports battery powered computing devices (demos)
The Prize

- Consumer Electronics Market
- Wireless everything…
- Enterprise CORBA revenues peaked in 2000…
  ...when will RTE CORBA peak?
  
- We’re just getting started…. 
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Thank You……