How to Choose a Middleware ?

M.Vanden Eynden

☞Requirements & Key Issues to Consider

◆The PS/SL Middleware Selection Process

Requirements & Key Issues to Consider

◆ **Requirements**

   ◆ **Must be understood, reviewed and validated**

   ◆ **Serve as baseline for choosing a Middleware (and not vice versa)**

◆ **There are Key Technical Issues**

   ◆ **to be considered about Middleware technology**

Middleware Key Issues (1/2)

- **Platform Independence**

- **Communication Protocol**
  - **Connection oriented, connectionless**

- **Interaction Models**
  - **Remote Objects Invocations, simple push/pull, publish/subscribe**
  - **Synchronous, deferred synchronous**
  - **Asynchronous**

- **Errors Handling**
  - **Return status, throwing of exceptions, exception information**

- **Concurrency Model**
  - **Single/multi-threads, single/multi-processes, single/multi-nodes**

Middleware Key Issues (2/2)

- ◆ **Access to service**
  - ◆ Static (hard coded in the source code)
  - ◆ Dynamic (naming service, trading service)
- ◆ **Availability of service**
  - ◆ Automatic restart, Fault Tolerance
- ◆ **Reliability of service**
  - ◆ Transactions (2 phase commit), guaranteed message delivery
- ◆ **Service security**
  - ◆ Cross domains user identification
  - ◆ Reservation, Access Control
- ◆ **Other Services**
  - ◆ Interceptors, encryption, loggers, debuggers, etc

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◆**Requirements & Key Issues to Consider**

☞**The PS/SL Middleware Selection Process**

PS/SL Middleware Selection Process

PS/SL Convergence Project

PS/SL Java API Project

❶ **Launch**

❷ **Issue**

❸ **Produce**

Java API Functional Requirements

New Java CDEV API (CERN/TJNAF)

PS & SL Projects

LHC/IAE ST/MO

PS & SL Groups

❹ **Launch**

PS/SL Middleware Project

❺ **Issue**

Middleware URD

Functional Requirements	Constraint Requirements

❻ **Select & Evaluate**

Middleware Families/Products

Middleware Key Technical Issues