MDCF Overview

Collaborators
•FDA

Open Source Middleware
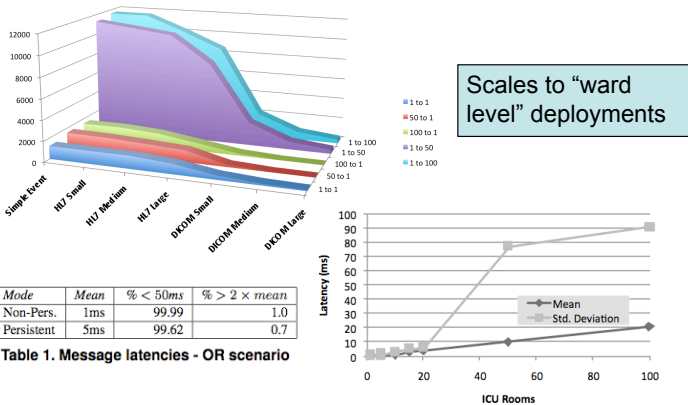
Abstracts JMS topics into virtual channels

Publish / Subscribe

Pluggable ESB providers
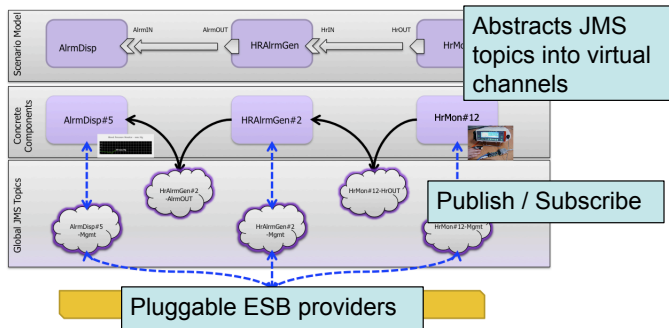
Built on top of the Java Message Service (JMS)

MDCF Development Environment

Component

Output ports

Input ports

Component based: interoperability modules are specified as components with typed ports.

Eclipse plugin facilitates component specification

ECG Machine

Ventilator

HMM IarmGen

Component library forms a palette of MDCF interoperability modules
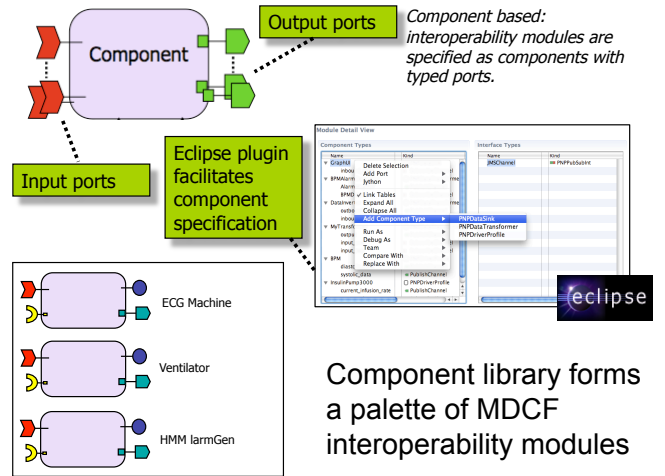
Exceeds Performance Requirements

Scales to "ward level" deployments

Mode	Mean	% < 50ms	% > 2 × mean
Non-Pers.	1ms	99.99	1.0
Persistent	5ms	99.62	0.7

Table 1. Message latencies - OR scenario

Mean
Std. Deviation

ICU Rooms

Middleware can reach the performance targets of throughput and latency required by different clinical deployments.

Inter-op Design and Modeling

Eclipse plugin provides scenario design and modeling capabilities:

•Inter-op scenarios are realized as a network of components
•Plugin provides active typing
  •Prevents developers from improperly connecting incompatible components
•Provides a graphical and table interface for scenario specification
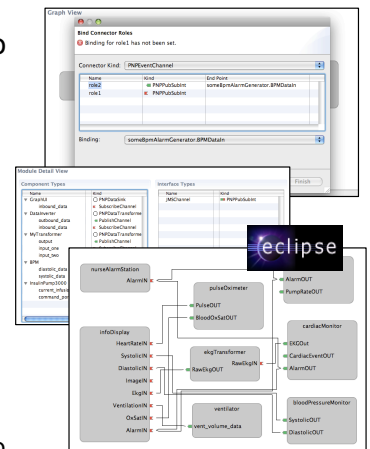
Administrative & Clinician Consoles
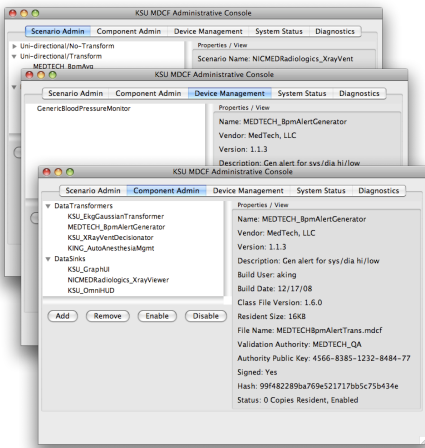
• Segregates system management between two primary stakeholders: Clinicians and IT Administrators
• Provides basic sanity checks for interoperability scenario deployments.

Autocoding and Spec Generation

Development Environment

Generate XML

Deployment descriptors for MDCF inter-op scenarios + properly typed component skeletons.

MDCF Deployment & Configuration XML

Java Component skeletons & component infrastructure code.

Core functional code written by component developer.