

A Tool for Testing Compliance with CIP4's Interoperability Conformance Specifications

DPP2005, Amsterdam
2005-05-11

Claes Buckwalter, Ph.D. Student
clabu@itn.liu.se



Linköpings universitet
INSTITUTE OF TECHNOLOGY



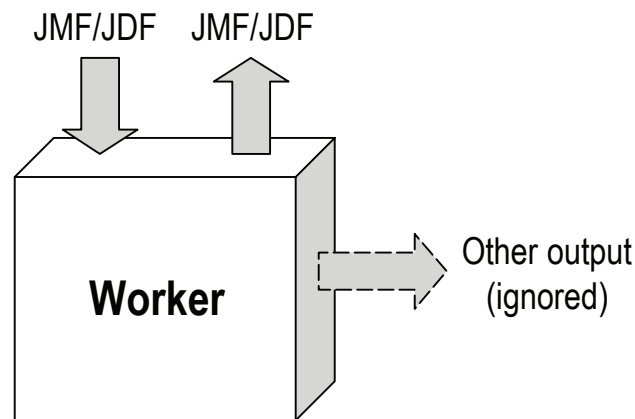
Tryckteknisk Forskning

Interoperability Conformance Specifications

- The JDF Specification defines the format and semantics of data exchanged between JDF-enabled systems
- The ICSs define requirements on the behavior of JDF-enabled systems — *Conformance Requirements*
- Conformance requirements depend on
 - » Product role: *Manager* or *Worker*
 - » Product sector: prepress, digital printing, postpress, etc
 - » Product complexity: three levels of complexity, *Conformance Levels 1–3*

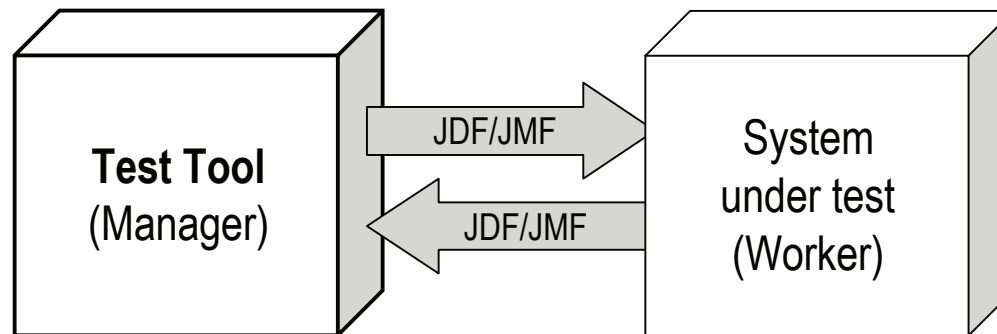
Testing a Worker

- Verify that JDF and JMF output are valid
- Verify that all functionality defined by the ICSs the Worker claims conformance with is supported



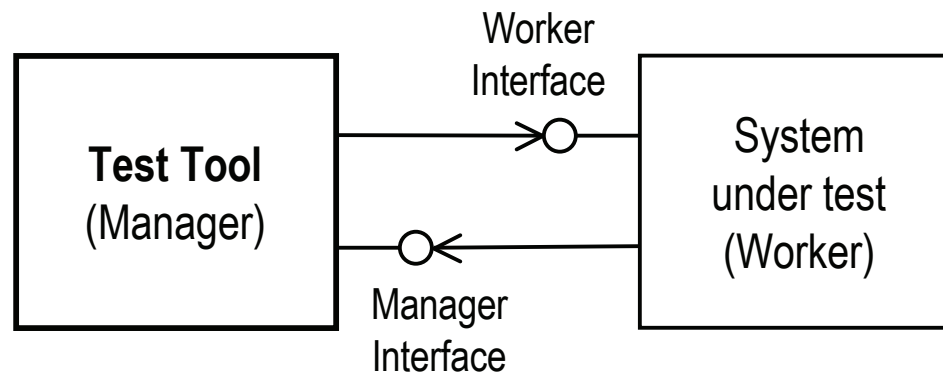
Manger/Worker

- The system under test is a *Worker*—it implements the *Worker Interface*
- The test tool is a *Manager*—it implements the *Manager Interface*



Manager/Worker (UML)

- The system under test is a *Worker*—it implements the *Worker Interface*
- The test tool is a *Manager*—it implements the *Manager Interface*

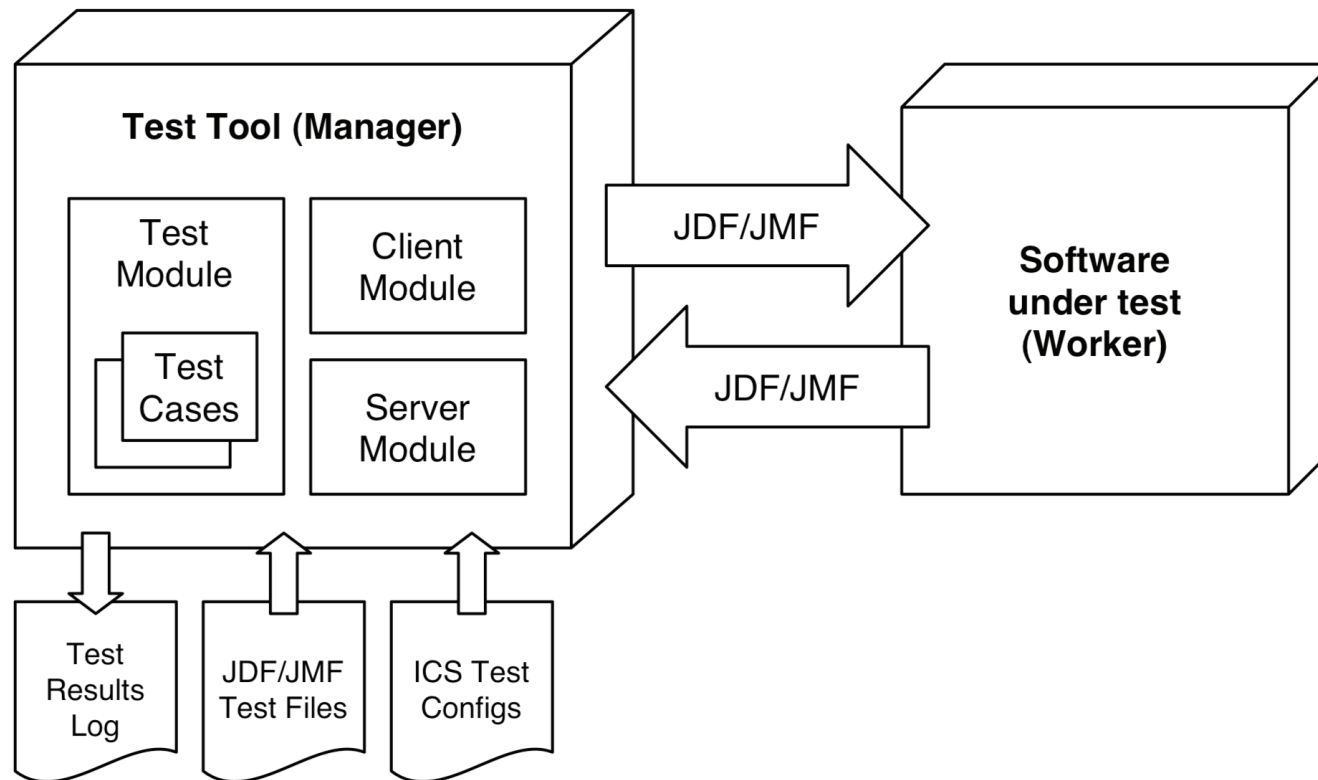


Test Tool Requirements

- Send and receive JMF/JDF synchronously over HTTP
- Send and receive JMF/JDF asynchronously over HTTP
- Log all transactions and test results in an XML format
- Graphical user interface
- Command-line user interface
- Manual testing and automated testing with test scripts
- Pluggable tests:
 - » Validation of JMF/JDF using CIP4's CheckJDF/JDFLib
 - » Validation of JMF/JDF using CIP4's JDF XML Schema
 - » Validation of HTTP protocol headers
 - » ICS-specific tests



Architecture



Address: <http://127.0.0.1:8080/elk/jmf> Connect

-Device Info
DeviceID: Elk
DeviceType: Elk
FriendlyName: Elk
Manufacturer: CIP4
ModelName: Elk
ModelNumber:

- Messages**
- Send File...
 - SubmissionMethods
 - KnownDevices
 - StopPersistentChannel
 - HoldQueue
 - SubmitQueueEntry
 - CloseQueue
 - RemoveQueueEntry
 - OpenQueue
 - Status
 - Events
 - QueueStatus
 - ResumeQueue
 - KnownMessages

- Tests**
- http://127.0.0.1:8080/elk/jmf
 - QueryStatus
 - http://127.0.0.1:8080/elk/jmf
 - QuerySubmissionMethods
 - JDF Validation - Tests that
 - ResponseSubmissionMetho
 - JDF Validation - Tests t
 - Content Test - Tests th
 - http://127.0.0.1:8080/elk/jmf
 - QueryQueueStatus
 - JDF Validation - Tests that
 - ResponseQueueStatus
 - SignalQueueStatus
 - SignalQueueStatus
 - SignalQueueStatus
 - SignalQueueStatus
 - JDF Validation - Tests t
 - Content Test - Tests th
 - http://127.0.0.1:8080/elk/jmf
 - CommandSubmitQueueEntry
 - JDF Validation - Tests that
 - ResponseSubmitQueueEntr
 - 127.0.0.1
 - CommandReturnQueueEntry
 - JDF Validation - Tests that
 - Content Test - Tests that a
 - http://127.0.0.1:8080/elk/jmf
 - QueryQueueStatus
 - http://127.0.0.1:8080/elk/jmf
 - QueryStatus

Missing attribute: /JMF/@SenderID
Validated JDF/JMF in 9 ms.

```
<?xml version="1.0" encoding="UTF-8"?>  
<JMF xmlns="http://www.CIP4.org/JDFSchema_1_1" SenderID="Elk" TimeStamp="2005-05-11T00:24:31+02:00" Version="1.2" xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance" xsi:schemaLocation="http://www.CIP4.org/JDFSchema_1_1 http://www.CIP4.org/JDFSchema_1_1/JDFSchema_1_1.xsd" >  
  <CostCenter CostCenterID="Elk Cost Center"/>  
</JMF>
```


Test Tool Summary

- JMF messaging
- Subscriptions
- JDF roundtrip (SubmitQueueEntry to ReturnQueueEntry)
- Pluggable tests
- Scriptable test sessions
- GUI and command-line



Future Work

- Use the test tool on more products
- Write test cases for the different ICSs
- Integrate the test tool with other tools, such as CIP4's JDFEditor and Eclipse
- CIP4 JDF Certification?



Alces

- The test tool has a name: **Alces**
- Released under CIP4's open source license
- Source and binary distributions will soon be available at: *<http://elk.itn.liu.se/alces>*
- See also: *the Elk Framework*, <http://elk.itn.liu.se>
 - » A device reference implementation
 - » A tool for testing Managers

Thank you! Questions?

Claes Buckwalter

clabu@itn.liu.se

<http://www.itn.liu.se/~clabu>



Linköpings universitet
INSTITUTE OF TECHNOLOGY

Claes Buckwalter (clabu@itn.liu.se) – ITN, Linköping University