How the Pennsylvania County Justice Information Exchange Pilot (CJIEP) Project Successfully Implemented the Administrative Office of Pennsylvania Courts GJXDM Compliant Court Case Event Message

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Topic Summary

- Case Management Systems used by Pennsylvania's Unified Judicial System.
- Pennsylvania's Justice Network (JNET) and XML History
- The Court Case Event Philosophy
- An XML Example
- The CJIEP Project
- Outcomes
- Future Efforts

The Court Case Event Event Driven, Multi Purpose Messaging

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The Unified Judicial System of Pennsylvania

- Magisterial District Judge System (MDJS)
 - Case Management for 549 offices and the Pittsburgh Municipal Court including summary, criminal and limited civil dockets.
 - Continues to operate on software initially developed over 15 years ago.
 - Currently based on an IBM iSeries 825.
 - Using Java, MQ Series and DB2 to move data.

The Unified Judicial System of Pennsylvania

- Common Pleas Criminal Court Case Management System (CPCMS)
 - Criminal case management system for 67 counties including Philadelphia.
 - Multi Tiered approach using VB.NET, Sybase, Citrix, Java and Sun technologies.
 - Deployment to be completed in September 18, 2006.
 - Event/Next Event Processing

DataHub

- Central facility for data interchange with trading partners.
- Uses replication and messaging to maintain data.
- Provides for consolidation of information access for AOPC based systems.

Pennsylvania's Justice Network (JNET) and XML History

- JNET is a consortium of criminal justice agencies focused on the collaboration and integration of criminal justice information. 1997 marked the initial installations of LiveScan devices, the development of an arrest message and the development of disposition message named LivePost.
- JNET established the "plumbing" through a hub and spoke messaging system using JMS, MQ Series and custom database adaptors.
- DTDs were defined for a variety of documents. The lack of a standardized approach created conflict at the element level.

Pennsylvania's Justice Network (JNET) and XML History

- JXDM and GJXDM
 - Initial work started in January 2003 to accomplish an eFiling initiative.
 - JNET and PennDOT establish the first pre release compliant message.
 - AOPC, JNET and Commission on Sentencing establish the first 3.0 IOC release. This message is the ground work for Court Case Event.
 - AOPC, JNET, PSP, CCAP continue to work toward eFiling and Court Case Event messaging.

Court Case Event

- Many documents, similar information.
 - The courts produce a number of documents or are asked to provide agencies with documents that contain like data. For example, disposition documentation is similar for corrections, criminal history and sentencing use.
 - Since 1985, courts commonly passed a docket transcript from initial arraignment to sentencing. The document was automated on the MDJS in 1991. With CPCMS, the data is immediately available from the lower courts through interconnected systems.

Court Case Event

- Many documents, similar information.
 - Web based docket sheets provide an easy to read outline of the court case as it stands at that point in time. Similar stored procedures are used to develop the Court Case Event.
 - MDJS and CPCMS are standardizing the data and documents statewide.
 - Court Case Event is a reusable message that will provide information to federal, state and local agencies.

Court Case Event – The Information Exchange Package

- Schemas All the necessary schemas needed to validate the exchange.
- Information Exchange Package Documentation (IEPD) – The purpose of the exchange
- Mapping Spreadsheet Common names mapped to the GJXDM or extension elements with descriptions
- Sample XML
- Other Information Documentation

Court Case Event – The Schemas

- The Envelope Schema Provides addressing and a document content description.
- The Document, Constraint and Extension Schema
 Provides the payload of data.
- Other Included Schema Subsets of code lists from GJXDM or local codes.



- Scope The purpose of the exchange.
- Artifacts An inventory of the exchange.
- XML Schemas A listing of the included.
 schemas and what they represent.
- Other Information relevant to the exchange.

Court Case Event – The Mapping Spreadsheet

- Field A common name of the represented data.
- Description Language that defines the field.
- XML Element Element name including complete namespace.
- Other Mapping Parameters Include system specific mapping and business logic.



- Sample XML Provide a valid sample(s) of relevant XML. The sample must pass validation!
- Model UML or other
- Documentation that includes business logic or other descriptions.

An Overview of the County Justice Information Exchange Pilot (CJIEP) Project

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Background and History

Pilot Exchange Project

2006 and beyond Next Steps

The Pennsylvania Commission on Crime and Delinquency (PCCD)

Coordination

 PCCD utilizes advisory committees and similar strategies to bring together knowledgeable individuals representing a broad range of state level, local government and private sector expertise to address problems and issues affecting the justice system.

Administration of State and Federal Monies

PCCD utilizes federal and state monies to assist units of government and private organizations to prevent and reduce crime; enhance the quality of justice for all Pennsylvanians; and help alleviate the financial burdens resulting from the commission of a crime. PCCD uses fourteen federal funding authorizations (is the DOJ State Administering Agency (SAA)) and eight state funding authorizations.

PCCD Strategy for Integrated Justice at the county and local levels

- The Pennsylvania Commission on Crime and Delinquency (PCCD), Office of Criminal Justice System Improvements' has defined a strategic goal to promote communication and information sharing through the implementation and effective use of technology.
- To further endorse achieving this goal, PCCD strongly believes that direct collaborative efforts between local, municipal, county, and state agencies are key to building secure integrated justice systems.
- The PCCD is committed to fostering technical innovation and ensuring the use of business and technical best practices by the Commonwealth's entire criminal justice community.

A Brief History of County Justice Integration in Pennsylvania

• 1998

 With PCCD's support, a County steering committee was formed by the County Commissioners' Association of PA (CCAP) to discuss sharing of criminal justice data within the county.

• 2001

 A pilot project started to test an approach (BizTalk based "Justice Hub") that would allow counties to query and receive notifications from county criminal justice systems.

• 2004

- There were implementation concern and discussions occurred around the Justice Hub based data exchange approach being designed.
- County stakeholder meeting facilitated by PCCD to help refocus the project.
- Integration effort re-focused on intra-county information exchanges.
- 3 pilot counties identified to participate in JIEM analysis, design, development and implementation of pilot intra-county information exchanges.

A Brief History of County Justice Integration in Pennsylvania

- Feb Mar 2005
 - PCCD led Justice Information Exchange Model (JIEM) analysis sessions conducted to identify key county level criminal justice information exchanges and thus the information exchange driven "business need" for information sharing.
- April 2005 Feb 2006
 - CCAP County Justice Information Exchange Pilot (CJIEP) project driven by JIEM results with new technology approach (serviceoriented architecture).
 - Five high priority document/information exchanges identified for pilot implementation in 2 of the 3 pilot counties.
 - All document exchanges originated from the statewide AOPC Court of Common Pleas CMS and end in county level DA, AP or Jail RMSs.
- March 2006 August 2006
 - Pilot exchanges implemented in the 3rd pilot county which went live on new AOPC Court of Common Pleas CMS during Feb 2006. (the 2 other pilot counties had already gone live pre-2006)



Goals

- Use the JIEM results to determine priority of data exchanges.
- Test the use of a service-oriented architecture approach.
- Test data exchanges using Web services.
- Create detailed documentation that can be reusable by counties regardless of their county department software application (vendor-independent).
- Engage county Subject Matter Experts to determine business needs.

- Objectives
 - Implement a project based on business needs, not technologies or technical requirements.
 - To use JIEM for analysis of a *small*, a *medium* and a large PA county for identification of key county criminal justice business needs.
 - To utilize industry standard technology approach
 Service Oriented Architecture (SOA) and GJXDM.

- Roles and Responsibilities
 - Business Need Direction: Comes from county subject matter experts.
 - Architectural Direction: Comes from Pennsylvania Commission on Crime and Delinquency (PCCD)
 - Oversight Direction: Comes from County Commissioners Association of Pennsylvania (CCAP)
 - Solution Development: Comes from an applicationindependent vendor for infrastructure and from an application-specific vendor for end-points.

- Cooperative effort:
 - Allegheny, Lancaster and Warren Counties
 - County Agency Participants
 - Adult Probation and Parole
 - Clerk of Courts
 - District Attorney
 - Jail
 - AOPC
 - JNET
 - PA District Attorneys Association
 - CCAP
 - PCCD

Exchanges

- The JIEM analysis identified more than 100 information exchanges in each county.
- The pilot scope focused on data exchanges within bind case over and sentencing through identified business needs.
 - 1. Bind Case Over
 - 2. Report Probation Sentence
 - 3. Non-Compliance Sentence Modification Service
 - 4. Sentence Modified Service
 - 5. Provide Parole Decision Service (on hold for future development)

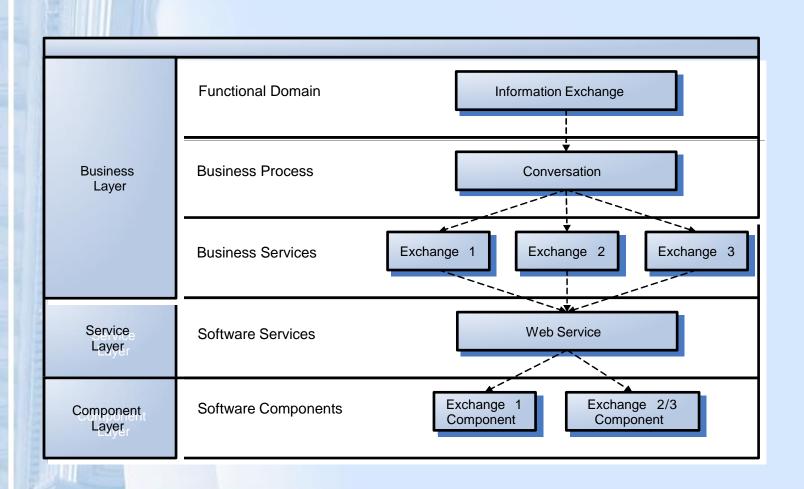
PA CJIEP Project Outputs

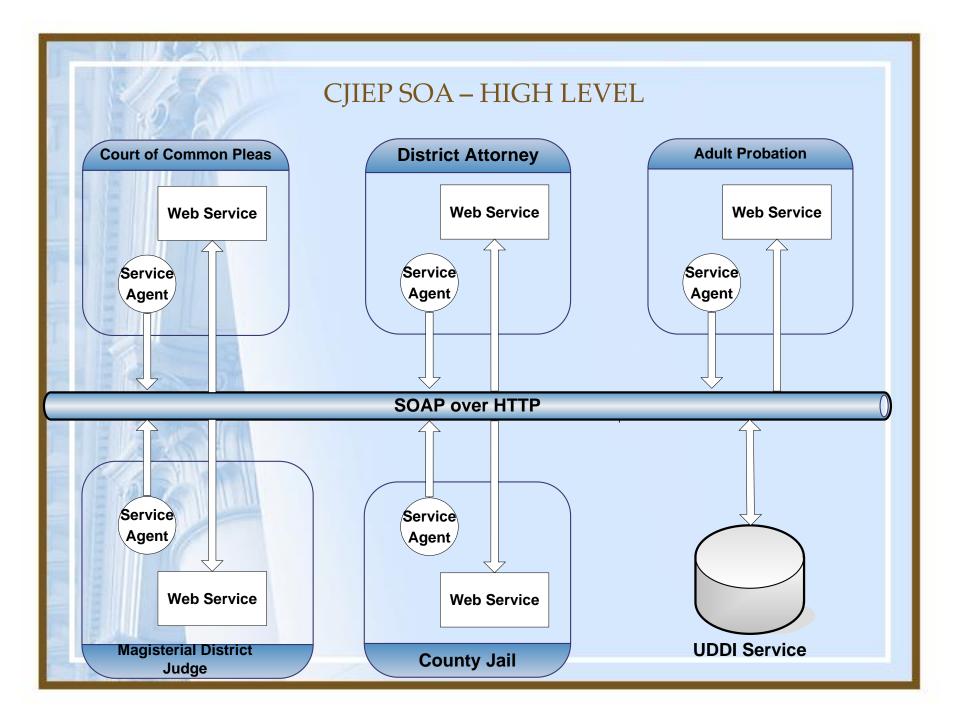
- JIEM Modeling Tool Output
 - -Standard Reports
 - -Excel Exports
- Unified Modeling Language (UML) Artifacts
 - -Use Case Diagrams and Descriptions
 - -Class Diagrams
 - -Sequence Diagrams
 - -State Diagrams
 - -Activity Diagrams
 - -Collaboration Diagrams

PA CJIEP Project Analysis and Design Documentation

- •Service Oriented Architecture (SOA) Solution and Technical Requirements Document
- UML & Service Semantics for Pilot Scope
- Pilot Detailed Design Document
- GUI Interface Design Prototypes
- All of these documents and more (including the Initial Business Impact Analysis Document) are available at:
- http://tinyurl.com/mcmpn

SERVICE ORIENTED ARCHITECTURE (SOA) LAYERS





Data Exchange Process (manual intervention)

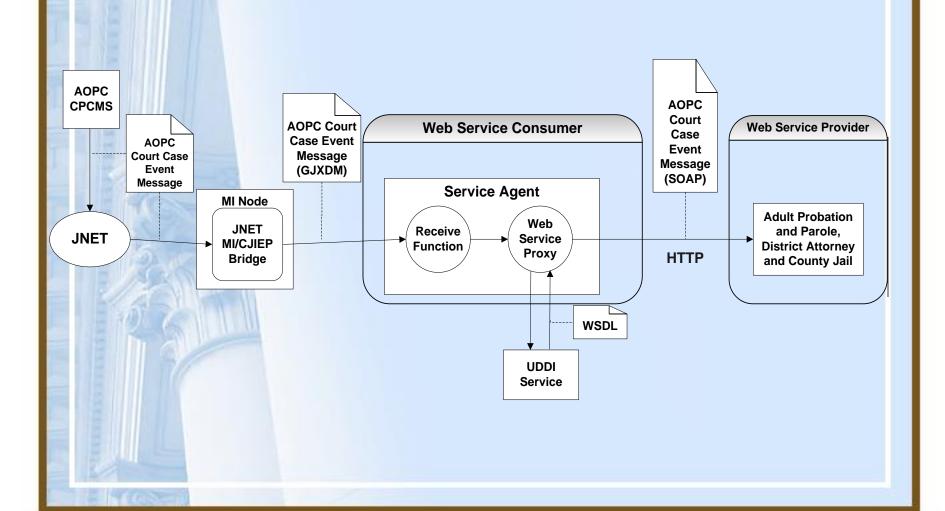
- AOPC, via the CPCMS system, sends county specific Court Case Event Message(s) to the county Court of Common Pleas service agent through the JNET MI.
- The service agent queries the county UDDI and calls the appropriate web services residing in the county and delivers/exchanges the message.
- Data validation occurs before being the message content can be displayed into an optional graphic user interface (GUI) for user acceptance / rejection.
- Once user acceptance / rejection occurs, the appropriate (based on JIEM identified documents and exchanges) data is inserted into the county RMS database(s).

Data Exchange Process (automated or as simple and easy as 1, 2, 3.....)

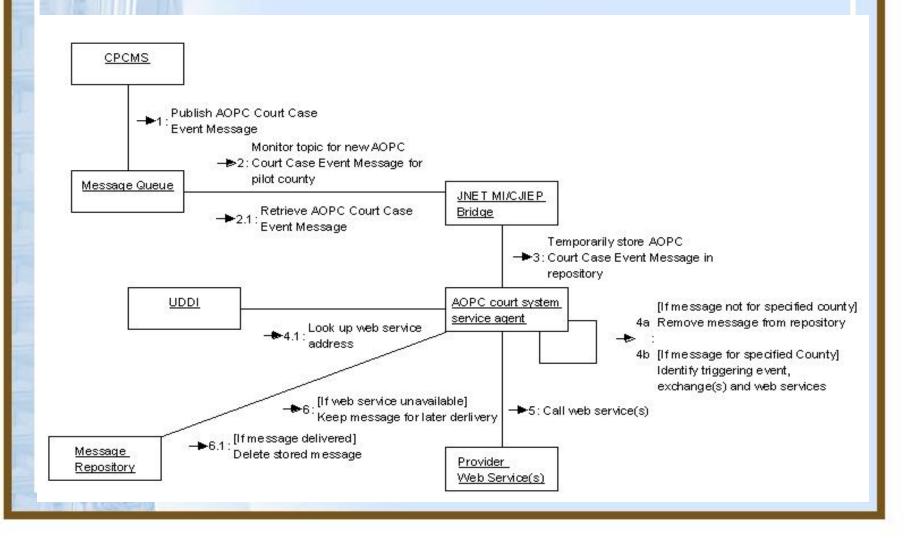
- 1. AOPC, via the CPCMS system, sends county specific Court Case Event Message(s) to the county Court of Common Pleas service agent through the JNET MI.
- 2. The service agent queries the county UDDI and calls the appropriate web services residing in the county and delivers/exchanges the message.
- 3. The web service executes and the appropriate (based on JIEM identified documents and exchanges) data is inserted into the county RMS database(s).

If needed, the GUI is used to manually handle rejects and unmatched messages.

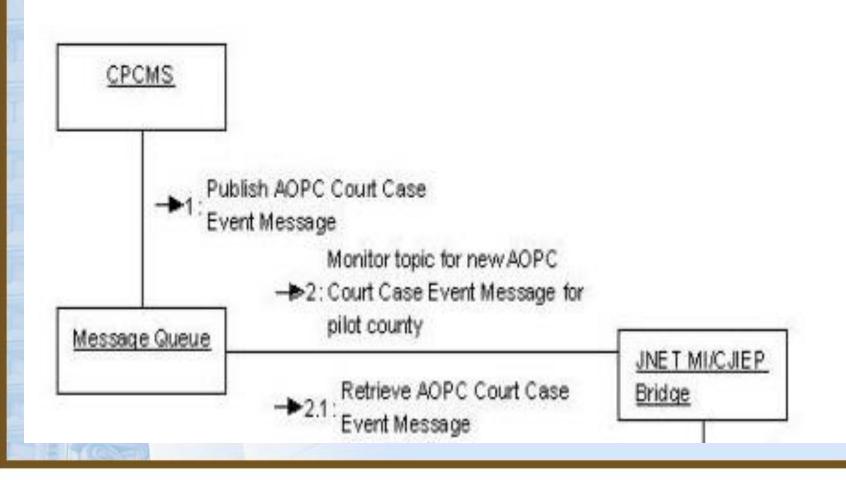
PROCESS OVERVIEW



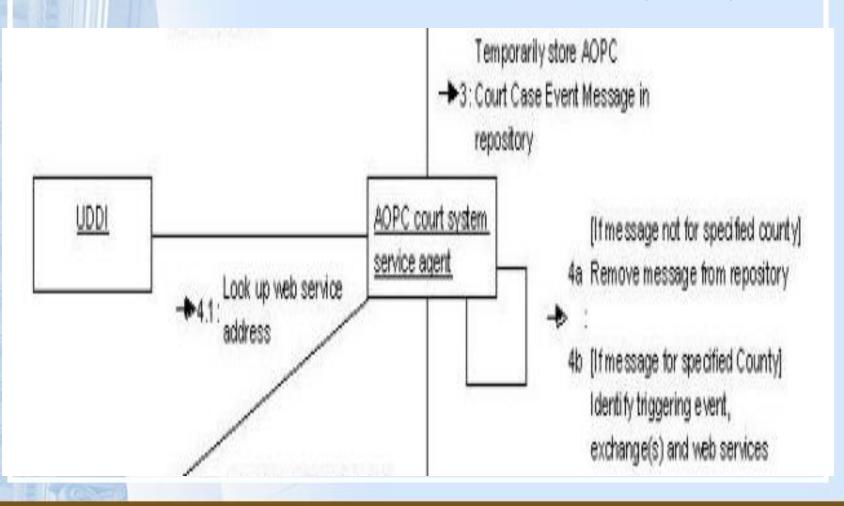
INFORMATION EXCHANGE COLLABORATION DIAGRAM



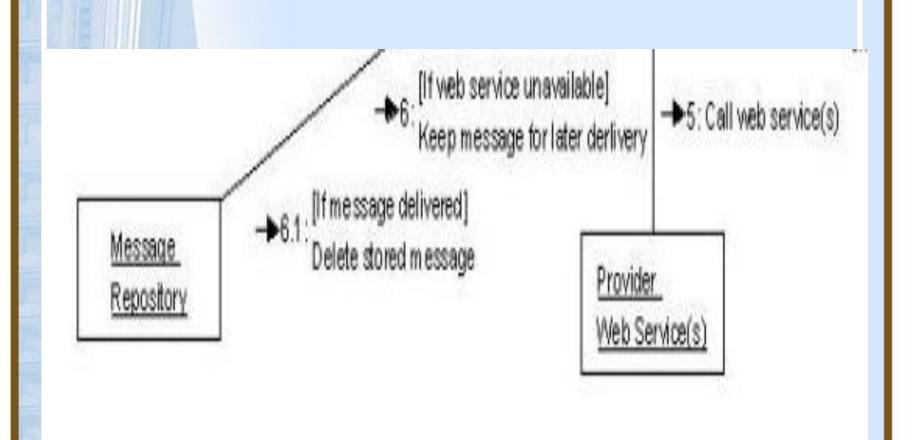
INFORMATION EXCHANGE COLLABORATION DIAGRAM (cont.)



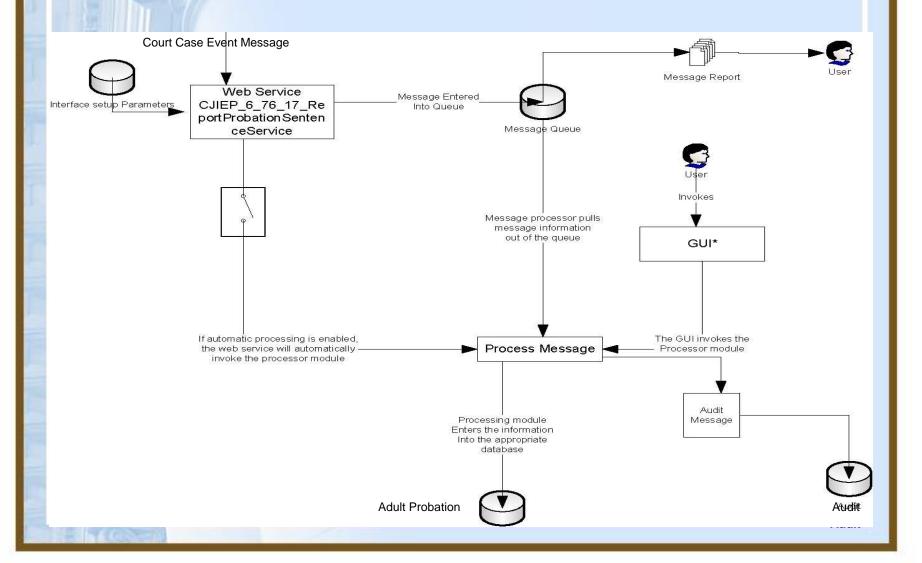
INFORMATION EXCHANGE COLLABORATION DIAGRAM (cont.)



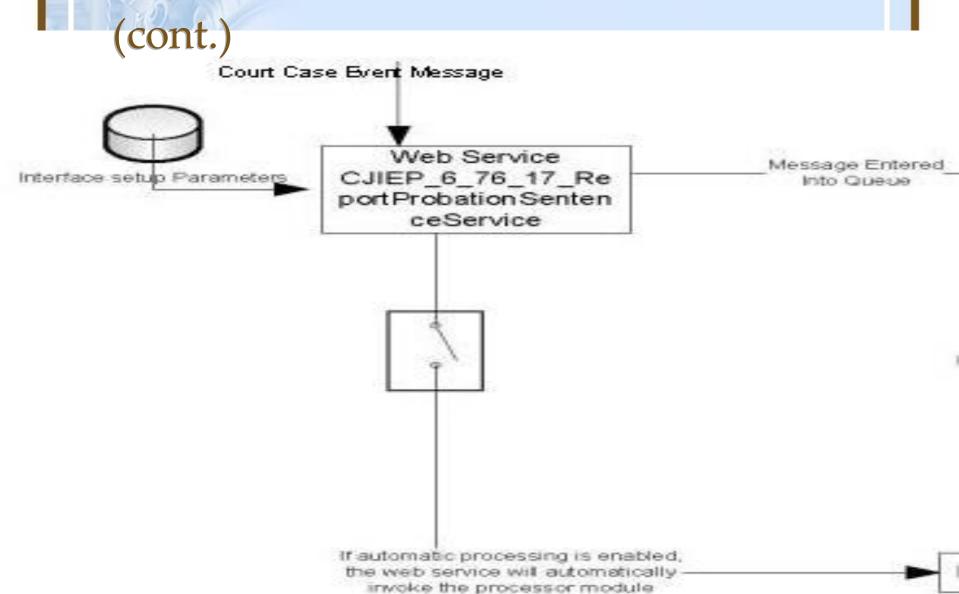
INFORMATION EXCHANGE COLLABORATION DIAGRAM (cont.)



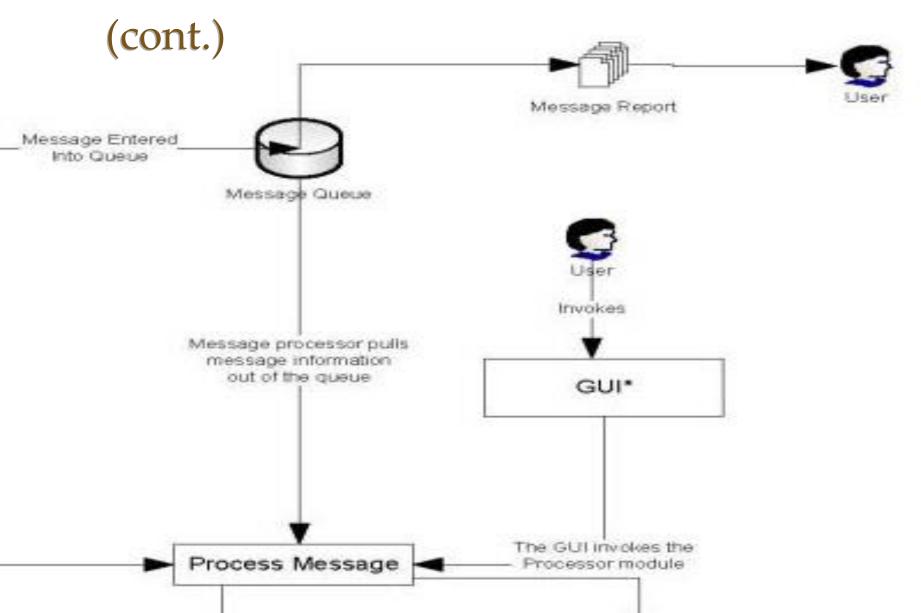
MESSAGE PROCESSING DETAIL



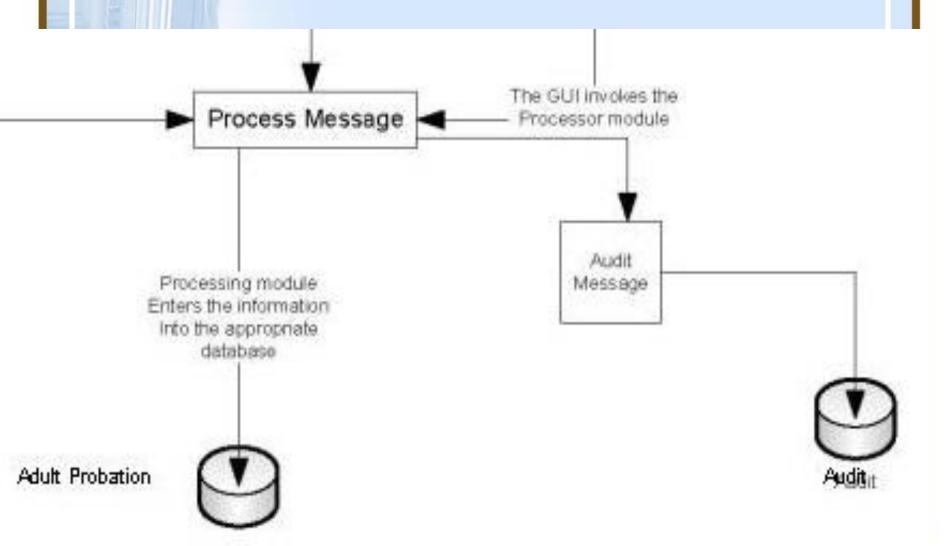
MESSAGE PROCESSING DETAIL



MESSAGE PROCESSING DETAIL



MESSAGE PROCESSING DETAIL (cont.)



DATA VALIDATION

- Adult Probation and Parole System
 - SID
 - Last Name + DOB
 - Last Name + SSN
 - Docket Number
- District Attorney System
 - Docket Number
 - SID
 - Last Name + SSN
 - Last Name + DOB
- Jail System
 - SID
 - Last Name + SSN
 - Last Name + DOB



COUNTY JUSTICE & PUBLIC SAFETY INFORMATIC SHARING (CJPSIS) PROGRAM

- The PCCD's Office of Criminal Justice Systems Improvement has been developing a County Justice and Public Safety Information Sharing (CJPSIS) program to build information sharing capabilities within and between county and local agencies for improved justice and public safety operations.
- The CJPSIS program is designed to identify common information exchanges that are universal among county justice agencies throughout Pennsylvania and build standards-based reusable components that enable real-time, secure information sharing.

COUNTY JUSTICE & PUBLIC SAFETY INFORMATION SHARING (CJPSIS) PROGRAM (cont)

- This program can be extended to communities throughout the Commonwealth to facilitate information sharing for justice and public safety in both horizontal (intra-county and inter-county) and vertical (local-to-state) dimensions, with linkage where appropriate to state resources and systems (e.g., JNET, AOPC), and federal/national systems (e.g., NCIC, IAFIS, NLETS).
- By building county-level justice integration capabilities, the CJPSIS program will improve operations among the key local and county agencies and, in doing so, will establish an operational foundation for improving justice and public safety throughout Pennsylvania.

COUNTY JUSTICE & PUBLIC SAFETY INFORMATION SHARING (CJPSIS) PROGRAM (cont)

- PCCD has identified the following four service areas that need to be implemented by the CJPSIS Subcommittee, during the coming year, in order to make this effort successful:
 - 1) Toolkit Development, Enhancement and Support Services,
 - 2) New Site Implementation Services,
 - 3) Infrastructure Services,
 - 4) Information Exchange Analysis and Support Services.

Outcomes - Lessons Learned

- Pennsylvania has established that GJXDM will be the standard. A standardized methodology has been developed.
- GJXDM is based on federal standards. Local standards and code sets differ significantly.
- Requirements analysis needs to be thorough from both the document and system perspective.
- An Envelope/Header is key to routing.

Outcomes - Lessons Learned

- Version control changes have minimal effect to the implementers.
- GJXDM provides a common language between government agencies and vendor assisted development.
- JIEM provides for the identification of document exchanges, an exchange may be one standard GJXDM compliant message containing data to satisfy multiple document exchanges.
- Availability of data may be constrained by current documents and systems. Implementers should move forward with current data with the expectation of full data availability as systems continue to evolve.

Outcomes - Return on Investment

Infrastructure Independence

- Using J2EE based technology, the Databroker software will run on any platform that supports Java.
- Web Services and Open Standards allow county pilot project to be successful.

Ease of Development/Deployment

The MDJS and CPCMS are event driven. Using event/next event processing allows triggers to be placed at a specific points in the case lifecycle.

Outcomes - Return on Investment

Reusable standard

 Court Case Event is a transcript of court information upto the event that is triggering its creation.

Pennsylvania's Justice Network

- Provides the messaging infrastructure linking AOPC to the 67 counties.
- Provides a secure infrastructure with guaranteed delivery to multiple subscribers using a variety of techniques.
- Provides technical oversight with respect to GJXDM conformance.

AOPC Future Enhancements

Warrants

 Using the Court Case Event, we are working toward automated CLEAN and NCIC warrant entry.

Court Filing

AOPC and PSP have created a separate eFiling citation schema. The PSP files over 500,000 citations annually. In addition, we are working with municipal law enforcement to establish the same citation through CNET.

Request/Reply

 Create the ability to receive a requested document in XML format based on the Court Case Event.

