Washington State Judicial Branch
2024 Supplemental Budget
Implement Small IT Projects

Agency: Administrative Office of the Courts

Decision Package Code/Title: C1 – Implement Small IT Projects

Agency Recommendation Summary Text:

The Administrative Office of the Courts (AOC) requests 4.5 FTE and $882,600 in ongoing funding and $886,600 in one-time contracts and software licensing funding to complete small information technology projects to: 1) analyze appellate case management and eFiling alternatives; 2) provide specialized, technical expertise to the Appellate Court Enterprise Content Management System; 3) address Washington courts' decentralized person record management; and 4) support cybersecurity investments. These investments are necessary to inform the continued modernization of AOC technology and to secure and support existing information technology investments. (General Fund-State)

Fiscal Summary:

	FY 2024	FY 2025	Biennial	FY 2026	FY 2027	Biennial
Staffing						
FTEs	0.00	4.50	**4.50**	4.50	4.50	**4.50**
Operating Expenditures						
Fund 001-1	$0	$1,769,200	**$1,769,200**	$882,600	$882,600	**$882,600**
Total Expenditures						
	$0	**$1,769,200**	**$1,769,200**	**$882,600**	**$882,600**	**$882,600**

Package Description:

This request would fund four small information technology projects aimed at filling gaps in service and right sizing staffing. With funding in the 2024 supplemental, project analysis and scoping can be completed to inform future budget requests and to ensure AOC systems are secure and functioning through the remainder of the 2023-25 biennium.

Analyze Appellate Case Management and eFiling Alternatives - $400,000

The Washington State Supreme Court (Supreme Court) and the Court of Appeals rely on an AOC supported case management system and other technology solutions to conduct their work. That work includes, but is not limited to:

- Reviewing and accepting filings received primarily via electronic filing (eFiling) applications (one for the public and one for Department of Corrections incarcerated individuals).
- Managing cases (adding case details, case participants, case events, etc.) in the case management system.
- Storing, creating, routing, and sending documents using a content and document management system.
- Creating and managing the court calendars which includes sending notifications to parties, displaying the calendars on a public facing website, and managing the confirmations resulting from the notifications.

Since 2003, the Supreme Court and Court of Appeals have used a case management system called the Appellate Court Record and Data System (ACORDS). ACORDS has reached the end of its supportable life. It is outdated, brittle, and underperforming. Due to limitations of the current case management system and its obsolete technology platform, the AOC is unable to enhance the system to meet the current court needs.

Additionally, the appellate courts and the public use an underperforming eFiling system. It is separate from other applications. This leads to duplication of effort by appellate court staff (i.e., redundant data entry) and significant integration and support by AOC. The eFiling system was built on a difficult to support platform. Now, the labor market lacks qualified developers.

In addition to these shortcomings, the appellate courts do not have acceptable reporting or scheduling capabilities. The appellate courts cannot create reports that meet court personnel and case participants needs. The appellate courts also do not have a suitable court calendaring solution to schedule, conduct, and report on court hearings. Today, the courts spend a great deal of time manually scheduling, maintaining, and reporting on all court hearings.

The AOC is requesting $400,000 to conduct requirements gathering, requirements analysis, and an options analysis to determine the best alternative for developing or procuring an integrated case management and eFiling application. Ideally, the system would connect to trial court case management systems provided by AOC.

Support Appellate Court Enterprise Content Management System (AC-EMS) - $215,000

The AC-EMS is a system that allows the appellate courts (the Supreme Court and Court of Appeals) to store and access digital content which supports both the courts and the public. AOC developed the system through a partnership with a vendor (ImageSoft) and relies on contracted expertise with the vendor to provide specialized skills. AOC's current level of in-house expertise is insufficient to meet the growing technology needs of the appellate courts.

A related 2023-25 biennial budget request was partially funded by the Legislature ($1.310 million of a $2.618 million request). Even with the enhanced funding, AOC's contract with the vendor will fall short on required support hours before the end of the biennium. This one-time request is for $215,000 to contract with the vendor for the entire 2023-25 biennium to:

- Secure content management services and expert OnBase development skills.
- Offer specialized training for AOC, in-house developers to reduce dependency on the vendor in the future.

Address Person Record Management - $915,500

Courts in Washington have always been concerned with accurately capturing key information about the people involved in court cases throughout the state. This information is captured as a person record in a court case management system which stores the information needed to identify an individual. Correctly matching person records from the court case management systems is necessary for compiling a complete case history for individuals, as well as for transmitting data to other state agencies.

Before 2015, nearly all courts in the state used the Judicial Information System (JIS) and the courts jointly managed statewide person records in that single system. Court staff in any court could update person records used by all of the courts to merge records that represented the same individual. Beginning in 2015, a different case management system was implemented by the AOC for most of the state's superior courts while the Courts of Limited Jurisdiction (CLJ) continued to use JIS. In addition, some jurisdictions have or are planning to implement their own case management systems. Now, person records are no longer matched by court staff across the state in a single, centralized way as they were when most courts were using JIS.

When more than one record exists for the same person statewide, court staff and AOC attempt to match and merge person records. However, variability in the data means that the person matching cannot be perfect. This results in person records that are matched in error or person records that are not matched. Duplicate person records that lead to unmatched or incorrectly merged person records, make it difficult to determine a person's full case history. Incomplete

case histories lead to challenges with sentencing and the application of justice in Washington. Issues with person records must be resolved in the various, underlying case management systems where the records are housed.

This request would:

- Fund a person records management consultant with $250,000 one-time to conduct a detailed analysis of the current person records management landscape within the Washington courts. The consultant would compare the current statewide person record management to best practices, offer recommendations to address current issues, and set the strategic direction to improve person record management for the entire judicial branch.

- Add ongoing, dedicated technical and business staff (3.5 FTE) to lead corrective maintenance to person records. They would correct known issues with person records management and plan for long-term improvements to person record management including the establishment of a person records workgroup with AOC and court staff to review person matching issues, diagnose their root causes, and develop policies and procedures to prevent similar issues from occurring in the future.

Support Cyber Security Investment - $238,700
AOC is responsible for designing, implementing, and maintaining an information security program to safeguard the confidentiality, integrity, and availability of AOC's information systems, including the JIS applications which support Washington's courts.

A 2023-25 biennial budget request was partially funded by the Legislature ($219,000 of a $1.7 million request) which will pay for software licenses to modernize the cyber security capabilities of the AOC. However, the enacted budget did not fund the staffing that will be required to configure cloud applications or provide cyber security expertise to ensure the AOC's and the courts' information and data are managed according to the best practices. The staff were a key part of the request; providing the connection between the use of new software (like the Monitoring, Detection, and Response service) and the AOC infrastructure and applications staff when an incident response is activated due to anomalous activities being detected.

Additionally, the enacted budget only paid for one year of licensing for the vulnerability management software. Vulnerability management is not a one-time activity. Vulnerability management software is critical is critical in maintaining the AOC'S security posture by proactively identifying, assessing, and addressing vulnerabilities in computer systems, networks, and applications. This request would extend the software licensing funding for another year (FY 2025) and ongoing thereafter, and adequately staff the cyber security modules funded by the Legislature.

Fully describe and quantify expected impacts on state residents.
These investments would positively impact state residents in a variety of ways:
- Modern technologies would be used by appellate court staff, case participants, and justice partners.
- There would be better access to quality case and person data and documents.
- More accurate data would be provided to other state agencies, including the Washington State Patrol, the Department of Licensing, and others.
- The AOC would fully utilize the funded, cyber security software to protect court systems and data.

Explain what alternatives were explored by the agency and why this was the best option chosen.
This would be the first time the AOC has completed a full analysis on replacing the current appellate case management system, on replacing the eFiling portal, and on addressing person records management. This request would provide the alternatives for future investments.

Regarding support for the AC-EMS environment and managing the agency's cyber security needs, existing AOC staff lack the capacity and expertise to complete the work. Investments are needed to train existing staff and to ensure that investments in new software are appropriately managed from a security standpoint.

What are the consequences of not funding this request?
The consequences of not funding this request include risk across the court system:

- Appellate courts, case participants, justice partners, and general public would continue to use the current case management system and eFiling portal. The current systems would continue to underperform and their health would continue to decline. This increases the risks of technologies breaking down potentially requiring long-term manual filings or case management until technologies are available. This would decrease customer satisfaction and trust for those who are impacted.

- The AOC would not have the resources necessary to support, maintain, operate, and enhance the AC-ECMS. This could jeopardize AOC's ability to support the appellate courts and hinder the ability of courts and justice partners to operate effectively.

- There is a not a single root cause or straightforward fix to reduce or eliminate the problem of improving person record management. Person matching issues have many causes and are a side effect of the current state systems landscape. Person matching issues will likely continue to exist as court staff have access to fewer and fewer person records created in case management systems other than their own. But if this request is not funded, the current state will continue to deteriorate as more issue are created on a daily basis than can be resolved with existing methods and resources.

- As AOC continues onboarding to the cloud, the risk of a breach due to misconfigurations increases. This request would help AOC detect, respond and recover from incidents to minimize the reputational and monetary risks of cyber-attacks.

Is this an expansion or alteration of a current program or service?
This request doesn't propose to alter current programs or services. The funding would plan for the future of existing programs and services (appellate case management, appellate eFiling, and person records management). Additionally, the request supports existing activities by offering adequate technical support to the AC-EMS and by keeping the AOC's technology environment secure.

Decision Package expenditure, FTE and revenue assumptions:
   Staffing Assumptions

   System Integrator. Beginning July 1, 2024 and ongoing, AOC requires salary, benefits, and associated standard costs for 2.5 FTE to determine root causes of person records issues and implement solutions to address issues between person records managed in multiple systems.

   Business Analyst. Beginning July 1, 2024 and ongoing, AOC requires salary, benefits, and associated standard costs for 1.0 FTE to analyze business processes relating to person management in multiple systems and propose common business processes to address known issues.

   Senior IT Security Analyst. Beginning July 1, 2024 and ongoing, AOC requires salary, benefits, and associated standard costs for 1.0 FTE to configure, monitor, and respond to cyber security threats detected against AOC systems.

Other Non-Standard Costs
Personal Services Contracts (Object C)
Appellate Case Management and eFiling. This request would fund professional services to conduct requirements gathering appellate case management and eFiling portal software and services. The consultants would also conduct a market survey, options analysis, and feasibility study to identify alternatives to provide the needed technologies.

AC-EMS. This one-time request would fund vendor services (ImageSoft) for content management services, additional development hours, and expert assistance, training, and support.

Person Record Management. This one-time request would fund a person records management consultant for analyzing the current state analysis, offering best practices, and setting the future direction for person record management improvement.

Goods and Services (Object E)
Cybersecurity. This request would fund an ongoing software license for Enterprise Vulnerability Management.

Expenditures by Object	FY 2024	FY 2025	FY 2026	FY 2027	FY 2028	FY 2029
A Salaries and Wages		498,400	498,400	498,400	498,400	498,400
B Employee Benefits		152,500	152,500	152,500	152,500	152,500
C Personal Services Contracts		865,000				
E Goods and Services		46,200	46,200	46,200	46,200	46,200
G Travel		9,000	9,000	9,000	9,000	9,000
J Capital Outlays		29,700	8,100	8,100	8,100	8,100
T Intra-Agency Reimbursements		168,400	168,400	168,400	168,400	168,400
Total Objects		**1,769,200**	**882,600**	**882,600**	**882,600**	**882,600**

Staffing

Job Class	Salary	FY 2024	FY 2025	FY 2026	FY 2027	FY 2028	FY 2029
SYSTEM INTEGRATOR	108,300	2.50	2.50	2.50	2.50	2.50	2.50
BUSINESS ANALYST	108,300	1.00	1.00	1.00	1.00	1.00	1.00
SENIOR IT SECURITY ANALYST	119,500	1.00	1.00	1.00	1.00	1.00	1.00
Total FTEs		**4.50**	**4.50**	**4.50**	**4.50**	**4.50**	**4.50**

Explanation of standard costs by object:
Salary estimates are current biennium actual rates at Step L.
Benefits are the agency average of 30.59% of salaries.
Goods and Services are the agency average of $3,600 per direct program FTE.
Travel is the agency average of $2,000 per direct program FTE.
Ongoing Equipment is the agency average of $1,800 per direct program FTE.
One-time IT Equipment is $4,800 for the first fiscal year per direct program FTE.
Agency Indirect is calculated at a rate of 25.86% of direct program salaries and benefits.

How does the package relate to the Judicial Branch principal policy objectives?
Fair and Effective Administration of Justice
This package supports the Fair and Effective Administration of Justice by providing resources to effectively and efficiently manage and display case documents and other resources for court personnel and the public. It would also examine the current state of person records across the judicial branch, provide recommendations to improve the management of those person records statewide, and staff the program sufficiently to achieve measurable improvement in person record management in the state.

Accessibility
The case management system and eFiling portal replacement would help make Washington court data available to all, either during a court hearing or by removing the need to physically travel to a court location for information or to file court documents. This request would inform AOC's modernization of legacy systems which would allow for faster access to core court information while ensuring that the system is easier to update. Specifically, the appellate courts, case participants, justice partners, and the general public would have more access to court information, reduced delays, and a better user experience.

Commitment to Effective Court Management
This package supports the objective of Commitment to Effective Court Management by making modern and reliable software applications available for the appellate courts. These applications would help streamline court management by reducing time spent doing double-data entry, using system workarounds, and decreasing integration dependencies. These applications would also make it easier for filers to file documents, increase court calendar management capabilities, and improve reporting capabilities. The current appellate court case management system was implemented in 2003 and is obsolete and brittle. While it still performs as intended and was considered state of the art at the time of implementation, court business and technology needs have evolved.

This package would also improve digital content and document management in the appellate courts. Accurate and reliable documents aid court management by providing easy and consistent access to both court personnel and the public.

Finally, accurate and reliable person records aid court management by allowing updates to a single person record to be viewed by all courts in the state where that individual may have cases. This makes court processes more effective for both the judicial branch and the public.

Sufficient Staffing and Support
This request would support courts that work to ensure guaranteed liberty, enhance social order, resolve disputes, maintain rule of law, provide equal protection, and to ensure due process of law for Washingtonians. Supporting these rights efficiently using modern technologies and investing in accurate and secure data ensures those rights and protections occur.

Are there impacts to other governmental entities?
This request would impact the appellate courts (appellate case and content management), state and federal agencies including the Washington State Patrol, Department of Licensing, Department of Corrections, Department of Fish and Wildlife, Washington's Secretary of State, and the Federal Bureau of Investigation (person records management), and any government entity sharing data with the AOC are interested in cyber security efforts to protect data and systems.

Stakeholder response:
Stakeholders from across the judicial branch would benefit from the investments outlined in this request.

- Appellate case and content management: The Supreme Court and Court of Appeals, attorneys, self-represented litigants, the media, and the general public. The appellate courts have identified this request as their top information technology priority.
- Person records management: Numerous stakeholders, including the Superior Court Judges Association and the District and Municipal Court Judges Association, have noted the increased prevalence of person records matching issues. These have impacted their decision making and ability to consider all factors in the cases before them. They support all efforts to improve the overall person record management process. In addition, some Prosecuting Attorneys have noted issues and have asked AOC to improve the overall system results.

Are there legal or administrative mandates that require this package to be funded?
No, there are no mandates that require this package be funded.

Does current law need to be changed to successfully implement this package?
No current law needs to be changed to successfully implement this package.

Are there impacts to state facilities?
No, there are no impacts to state facilities.

Are there other supporting materials that strengthen the case for this request?
Attached to this decision package is the high-level business requirements for replacing the appellate court case management system and an issue paper entitled *JABS Person Matching*. The paper describes AOC's analysis of the person records matching issues including the legal and policy framework relating to person record management. The paper concludes with recommendations to address the known issues, including the need to accomplish the work identified in this decision package.

Are there information technology impacts?
This decision package impacts information technology by:

- Developing alternatives to a new case management system and eFiling portal would replace the existing technology solutions. This would result in a potential change in infrastructure, architecture, security, vendor contract (if procurement is chosen path), and license and maintenance fees.

- Matching person records from different case management systems is accomplished primarily by software processing of the millions of person records existing in case management systems. This decision package will require updates to that software. In addition, AOC anticipates that new database and infrastructure needs may be identified as necessary to improve person record matching.

- As more AOC information technology services migrate to the cloud, new cyber security skills and tools are needed to ensure the security of systems and data against new risks. Specific staff expertise is required to address risks, implement secure configurations, and respond to and recover from incidents in order to minimize the operational, reputational, and monetary risks. The staff identified in this decision package would oversee cyber security efforts on cloud-based services by establishing more effective monitoring and preventative security measures.

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Administrative Office of the Courts

JABS Person Matching
Issue Paper

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Document Information

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Revision History

Doc. Version #	Revision Date	Summary of Changes
1.0	6/9/2022	Initial draft
2.0	8/26/2022	Incorporated legal analysis, feedback from Dexter.
3.0	2/5/2023	Incorporated feedback from CBO Supervisors

I. Executive Summary

The Problem:

When more than one record exists for the same person statewide, court staff and the Administrative Office of the Courts (AOC) attempt to match and merge these records together. When records are merged incorrectly, court staff and AOC must work together to correct the issues.

Duplicate person records that lead to un-matched or incorrectly merged person records, make it difficult to determine a person's full case history. Incomplete case histories lead to challenges with sentencing and the application of justice in Washington State.

Unmatched and incorrectly merged Person records appear in the Judicial Access Browser System (JABS), the only system in which all person records in the state are available for most court users and stakeholders to view. The Juvenile and Corrections System (JCS) also displays all person records. While issues with person records appear in JABS, they must be resolved in the disparate underlying systems where the records are housed.

Key Observations:

- **Statewide Person Database is Established in Legislation –** The need for maintaining a complete and accurate statewide JIS person database is firmly established in legislation, JISC Rules & Policies, and local court rules. Complete Individual Case History (ICH) is necessary for judicial officers to make informed decisions and must be accessible in the JIS. Correct person matching is essential.

- **Statewide Person Database Responsibility is Shared –** AOC has the responsibility to maintain the statewide JIS Person database. All courts in Washington have a duty to work with the AOC to ensure accurate person records and case history are sent to this JIS Person database.

- **Court Staff Can't Access All Person Records Statewide –** Historically, when most courts were using JIS and SCOMIS as their case management systems, court staff had access to all shared person records in the state and could merge them using JIS/SCOMIS user interface functionality. Now, no single case management system (CMS) in the state has access to all person records in the state. Court staff can only merge the subset of records available to them in their court's CMS.

- **No Longer Possible to Fully Implement Person Business Rules –** Court Staff can no longer fully implement the "Person Business Rules" during case initiation. These rules require existing person records created anywhere in the state to be reused, which is not possible given that no single CMS has access to all person records statewide. While all person records are viewable in JABS, it is not feasible for court staff to consult JABS during the case initiation process.

- **Poor Data Quality During Case Initiation –** Most person record matching errors occur when one or more records contain incomplete or inaccurate data entered during case initiation. Examples of poor data quality include missing name parts, typos in any manually entered field, and missing Driver's License Number.

- **Systems are in Transition –** At this moment in time, legacy JIS/SCOMIS systems are in the process of being replaced by modern CMSs. Superior Courts have finished the transition and Courts of Limited Jurisdiction (CLJ) have just begun. In the interim, legacy JIS/SCOMIS systems must continue to run and perform business critical functions until all CLJ CMSs have been modernized. During this transition, person and case data must flow between new systems and legacy systems to maintain business critical functions for legacy system users. A consequence of this overly complex systems landscape is a reduced capability to correctly match, merge, and share person records statewide.

- **Court Staff's Role in Person Matching Will Diminish –** In the "target systems architecture", when all CMS modernization projects are complete and courts that have decided to procure their own CMS have done so, court users will have access to fewer and fewer person records in their own CMS. Since they will no longer

see all of the person records in the state in their own CMS, they will be unable to reuse person records created by a court using a different CMS. The EDR person matching algorithm will likely improve over time and make fewer matching mistakes, but in the target systems architecture as it stands now, the ability for court staff to match person records will diminish.

- **Data Replication is Labor Intensive –** Keeping person and case records in synch between JIS and Odyssey requires a small staff dedicated to this task alone.

Key Recommendations for Consideration:

- **Complete the Person Matching Issue Analysis –** The analysis in this Issue Paper is incomplete and has not yet been vetted by key AOC staff. We recommend that this work continue.

- **Examine Person Business Rules and Policies for Updates –** The rules and polices establishing the authority that requires use of the PBR's should be evaluated for consistency and corrected, if necessary. Distinctions between JIS and non-JIS courts diminishes authority required for statewide implementation of the PBR's. The JISC policies have not been updated since 2015 and as a result of recent legislation, updates to citations and case types referenced in the PBR's is necessary.

- **Require CMSs to Retrieve Person Records from the EDR –** The EDR has a modern, programmer friendly API, or suite of interfaces, to interact with the person and case data housed in the EDR. Courts that have their own CMS and are sending their data to the EDR have only partially integrated with the EDR – they are sending data, but not retrieving it. For example, during case initiation, if a court CMS is capable of retrieving person records from the EDR, the court staff using that CMS would be able to retrieve statewide person records and select an existing record to reuse.

- **Enable More Court Staff to Match Person Records –** In the target systems architecture, Court staff will be less and less involved in person matching given their access to fewer and fewer person records. We think this is potentially problematic. We recommend exploring options to ensure that Court staff can access all statewide person records and can continue to match statewide person records. This could be implemented by requiring their CMS to retrieve person records from the EDR, or by creating a different software solution.

The remainder of this report includes an analysis of the systems and data flows underlying JABS, additional observations, and more recommendations for consideration.

II.   Introduction

Courts in Washington have always been concerned with accurately capturing information about people involved in court cases throughout the state. A particular challenge is when multiple records are created for the same person. When this occurs, court staff must merge these records together to preserve a complete individual case history. Often the Administrative Office of the Courts (AOC) must become involved to facilitate updating person records in systems that are used by courts in different jurisdictions in the state.

Recently, court users of the Judicial Access Browser System (JABS) have logged a larger number of Customer Support tickets regarding mismatched person records. Common issues include person records that were matched in error and person records that were not matched when they should have been.

In response to this increase in person record matching issues, judges and court users have asked AOC leadership for further analysis and a resolution. AOC's Court Business Office assigned internal staff to study the issue and identify a root cause. This issue paper is the result of that analysis.

III.   Problem Statement

The problem of mismatched and unmatched person records affects Judges, Clerks, AOC Staff, and members of the public who are involved in court cases across Washington. Person record matching issues can result in inaccurate and incomplete case history information which impacts the following:

- **Sentencing –** When deciding a case, judges rely on complete case history information to determine the appropriate sentence. Incomplete or erroneous case history information can result in an inaccurate sentence, which jeopardizes justice and public safety in the state.

- **Additional Work and Expense –** Researching and correcting person record issues involves court staff, and several groups from the AOC, including Customer Support, various business teams, and technical teams who support software systems at AOC. Often technical teams at various courts are also involved. Troubleshooting and resolving person matching issues can be difficult and time consuming.

A successful solution to the problem of mismatched and unmatched person records that are viewable in JABS would include one or more of the following:

- **Reduce or Eliminate Issues –** An obvious solution to the problem of increased person matching issues would be their significant reduction, or ideally, their elimination entirely if that is possible, in the immediate short term, e.g. to find the root cause and fix it.

- **Expedite Issue Resolution –** When a person matching issue does occur, developing new processes or enhancing existing processes to resolve the issue quickly would benefit those impacted by the issue.

- **Prevent Issues –** Implementing software fixes or business process improvements to prevent person matching issues from occurring in the first place is an optimal long term solution.

IV.   Objective

While the person matching problem appears to be in JABS, since that's where it is seen by court users, we know at the outset that the problem is not isolated to JABS, because JABS is only a browser. JABS presents data housed in other systems and does not house data of its own. The objective of this analysis is to find out where the problems are occurring – in which underlying systems – and how the data flows into and out of those systems before it is presented to JABS end users.

Additionally, we will examine the laws, rules, and policies that govern person matching and the business processes that implement them.

As this objective is achieved, the increased understanding will lead to concrete observations about the current state of information systems involved with person record matching. These observations will then inform recommendations for proper issue resolution in the near and long term.

V.   Approach

To gain a thorough understanding of the person matching issues, we relied primarily on the expertise of in-house business and technical Subject Matter Experts (SMEs) at AOC who have experience resolving person records issues in various systems. Court Business Office leadership identified SMEs to participate in this effort. We scheduled interviews with these SMEs and documented our findings. Additionally, we reviewed related statutes and policies, as well as existing system documentation.

The following components comprise the foundation of our analysis approach. When eliciting information from SMEs, we looked into the following general areas in roughly the following order.

1. Policy and Statute Analysis

We surveyed laws, policies, and rules that deal with AOC's role in statewide data stewardship and person records. The intent of this analysis is to understand the roles and responsibilities the AOC and courts have to maintain complete person records for use by all courts statewide. Our findings are detailed in the "Legal and Policy Analysis" section of this document.

2. Systems Analysis

With the legal foundation in place, we then sought to understand the major systems involved in supporting court business processes. Our specific focus was systems that house person records and that are involved with person matching. Given the major systems modernization efforts currently underway, we detail the legacy systems historically involved with person matching, the current "transition" state of systems in the court business domain, and the "target" systems landscape once systems modernization efforts complete. Our findings are detailed in the "Systems Overview – Past, Present, Future" section of this document.

3. Data Flow Analysis

With the legal framework and systems landscape understood, especially those currently involved in person matching, we then sought to understand the flow of data into and out of each system. We wanted to know what systems house person records and how person records created in different systems would eventually be matched before being available to view in JABS. Our findings are detailed in the "Statewide Data Flow of Person Records" section of this document.

4. Person Matching Analysis

With data flows understood, we investigated person matching processes to understand where the act of matching person records takes place. We also looked into un-merging person records to understand the systems involved when records are matched incorrectly and need to be separated. Our findings are detailed in the "Person Matching Overview" section of this document.

5. **Observations**

   With our analysis complete, we then examine our findings more closely to make observations about this problem domain. These observations are detailed in the "Person Matching Observations" section of this document.

6. **Recommendations**

   Observations lead to recommendations. Given the state of person matching and our understanding of the problem, we make recommendations that we think will lead to the resolution of person matching issues in the short term and as the target systems landscape is achieved. Recommendations are detailed in the "Person Matching Recommendations" section of this document.

VI.   Legal and Policy Analysis

The Person Business Rules (PBR's) were adopted in June of 1997 by the JIS Person Database Advisory Committee to provide rules and procedures for all court staff when creating and matching persons in a case management system. The Judicial Information System Committee (JISC) adopted 18 rules and several policy statements to provide additional context and authority. The Administrative Office of the Courts (AOC) is responsible for developing and managing a statewide JIS that provides a communication link between different case management systems and ensures correct person matching and complete case history is recorded. Correctly identifying and matching persons recorded in the JIS is necessary for displaying complete Individual Case History (ICH). All JIS courts are required to follow the PBR's and the rules and policies formulated by the JISC. All non-JIS courts are encouraged to follow the rules and policies. All courts in Washington are required to cooperate to ensure a complete and accurate statewide case history for individuals is recorded in the JIS.

1. **Authority**

Pursuant to the Supreme Court of Washington, the Judicial Information System Committee (JISC) authorized creation of a statewide Judicial Information System (JIS) to serve the courts of Washington. The Administrator for the Courts (AOC) is to design and operate the JIS. JISCR 1. The JISC operates under the authority of the Washington state Supreme Court and the Judicial Information System Committee Rules (JISCR). The Supreme Court authorizes the JISC to "determine all matters pertaining to the delivery of services available from the judicial information system." RCW 2.68.010. To maintain accurate person records and individual case history, JISCR 18 requires all courts adding records to the JIS to follow the rules and procedures adopted by the JISC.

"The purpose of the JIS Person Business Rules (PBR's) is to maintain the accuracy and integrity of the JIS Person Database and to ensure a complete case history for each person recorded on the database. Accurate person and complete case history information serves the interest of the judicial community, law and justice agency information sharing, and public safety." Person Business Rules (wa.gov).

JISC Rules, Washington state statutes, and local court rules all support the need for statewide implementation of the Person Business Rules.

- Judicial Information System Committee Rule (JISCR) 18 states that: "In all courts adding records to the Judicial Information System, for all persons on whom a juvenile or adult criminal offense, infractions, or a juvenile non-offender case is filed, a record will be created in the person database according to the rules and procedures adopted by the Judicial Information System Committee." Person Business Rules (wa.gov)
- Statutory authority for the PBR's is found in RCW 7.105.555.
    - (1) To prevent the issuance of competing protection orders in different courts and to give courts needed information for the issuance of orders, the judicial information system or alternative databases must

be available in each district, municipal, and superior court, and must include a database containing the following information:
a) The names of the parties and the cause number for every order of protection issued under this chapter, protection orders provided by military and tribal courts, every criminal no-contact order issued under chapters 9A.46 and 10.99 RCW, every dissolution action under chapter 26.09 RCW, every parentage action under chapter 26.26A or 26.26B RCW, every restraining order issued on behalf of an abused child or adult dependent person under chapter 26.44 RCW, every foreign protection order filed under chapter 26.52 RCW, and every Canadian domestic violence protection order filed under chapter 26.55 RCW.
b) A complete criminal history of the parties; and
c) Other relevant information necessary to assist courts in issuing orders under this chapter as determined by the judicial information system committee.

- RCW 7.105.230 – Judicial Information System consultation
  (1) Before ruling on an order under this chapter, the court shall consult the judicial information system to determine the criminal history, history of criminal victimization, history of being a respondent or petitioner in a protection order proceeding, or pendency of other proceedings involving the parties.
  (2) Before granting an order under this chapter directing residential placement of a child or restraining or limiting a party's contact with his or her child, the court shall consult the judicial information system, if available, to determine the pendency of other proceedings involving the residential placement of any child of the parties for whom residential placement has been requested.
- RCW 2.28.010 directs the court to consult the JIS to determine criminal history of the parties or pendency of other proceedings involving the parties when granting orders involving protection, children, juveniles, vulnerable adults, or alleged incapacitated persons.

These statutes all make it very clear that complete and accurate case history for individuals recorded in the JIS is necessary. Local court rules clarify the identifying information that is needed to accurately record persons in the JIS.

- CrRLJ2.1(b)(3)(ii) requires criminal complaints filed in Courts of Limited Jurisdiction (CLJ's) to contain: the name, address, date of birth and sex of the defendant; as well as, all known personal identification numbers, including the Washington DOL number (DL#), the state criminal identification (SID) number, the state criminal process control number (PCN), the JUVIS control number and the Washington Department of Corrections (DOC) number.
- CrR2.1(a)(2) requires the same person identifying information to be contained in criminal Indictment and juvenile Information documents filed in superior courts and juvenile courts.
- Civil Protection order cases require that a petition be accompanied by a confidential document to be used by courts and law enforcement to fully identify the parties. RCW 7.105.105(2). This Law Enforcement Confidential Information Form (LECIF) is to contain: name, address, date of birth, sex and other demographic data that could be used for identification (e.g. hair, eye color, height, weight, skin tone, build).
- To ensure domestic cases involving children contain this person identifying information, Superior Courts require that a Confidential Information Form (CIF) is completed. This form is to be completed with names, addresses, dates of birth and driver's license numbers for all parties listed as case participants.

This person identifying information is necessary to ensure the correct individual is entered on a case and any future cases requiring that same person identifying information will be correctly associated to that individual. The PBR's specify what case types must contain court documents with person identifying information and describe in detail how this person identifying information is to be used when creating, matching, consolidating, or updating party records in these case types. If employed properly, the results will produce a complete and accurate Individual Case History (ICH) for parties entered into the JIS.

There are 7 policy statements that accompany the PBR's and have been approved by the JISC for application in all JIS courts in the state of Washington. These policy statements provide further context and authority for employing the PBR's and highlight the need for a single JIS Person Database.

1. All JIS courts are responsible for maintaining the integrity of the JIS Person Database as the primary, statewide repository for all person information and as the primary judicial source of complete case history.
2. All JIS courts are required to initiate person records creation for legal cases and juvenile referrals on the JIS Person Database for the case and referral types and related causes of action specified in these business rules.
3. All JIS courts adding records to the JIS Person Database shall collect person identifying information and numbers (PINs) to the extent required by RCW 26.50.160 (repealed and replaced by 7.105.555), CrRLJ 2.1, and CrR 2.1 for the purpose of creating accurate and complete legal case and juvenile referral histories linked to a unique person record.
4. All Person Identifying Numbers (PINs) will be entered and updated only on the JIS Person Database by participating courts. PINs include: Date of Birth (DOB), Department of Corrections Number (DOC#), Driver's License Number (DL#), FBI Number, and Washington State ID Number (SID#). (Exception: Juvenile Number (JUV #), which is generated by JIS {effective December, 1999}.)
5. The Department of Licensing (DOL) driver's license record shall be the statewide source for JIS Person data.
6. Where feasible the Judicial Information System shall enforce these policies with system edits and mitigate the workload involved with searching and matching person records and case filing processes.
7. These policies and the following business rules adopted by the JIS Committee shall be followed by all participating JIS courts and encouraged for use by non-JIS courts.

These policy statements were last updated on 3-11-2021 and are currently out of date. On July 1, 2022, E2SHB 1320 and SHB 1901 repealed certain RCW's cited in the PBR's. As a result, the PBR's require immediate review to update with the new RCW's.

The authority and responsibility of the AOC is found in several Washington state statutes and JISC Rules. As stated earlier, JISCR 1 directs the AOC to design and operate a JIS that serves all courts in Washington. Developing and managing this system is to be done under the direction of the JISC. Additional powers and duties assigned to the AOC are promulgated in RCW 2.56. One of these powers and duties is to examine the systems employed in the courts and make recommendations for improvement. RCW 2.56.030(1). Recommendations for improving person matching is needed. Additionally, the AOC has a duty to reconcile duplicate or conflicting criminal no-contact orders or protection orders and develop procedures for data sharing among the state courts. RCW 2.56.240(2)(b). Statewide data sharing requires proper administration of the Person Business Rules so that person records entered in different case management systems can be accurately linked.

Chapter 2.68 RCW regards the JIS, electronic access to judicial information and duties of the AOC. It is clear from these sections that development of a statewide uniform information technology strategy is desired. The AOC, under the direction of the JISC, is to develop this strategy and clearly indicate participation. RCW 2.68.060.

Observation: Despite this statutory language, JISC and AOC authority over requiring every court in Washington to follow the same rules and procedures is questionable. King County District and King County Superior courts send person and case records to the Enterprise Data repository (EDR), housed at AOC. Is the EDR considered a JIS person database? Distinctions between JIS and non-JIS courts leaves room for debating authority. Rules and policies conflict. JISCR 18 states that all courts that add records into the JIS must follow

the rules and procedures created by the JISC. JIS and non-JIS courts both add records to the JIS. However, PBR policy #7 states that non-JIS courts are merely encouraged to follow these rules and policies. Additionally, there is no mandate for courts to utilize the AOC operated JIS databases for maintaining person records. Recent legislation has introduced the concept of "alternative databases" that courts may use for storing and displaying statewide data. RCW 7.105.555. Moving further away from a statewide JIS person database to be used by all courts.

2.   Distinctions between JIS Courts and Non-JIS Courts

JISCR 1 provides for AOC to operate the Judicial Information System (JIS) under the direction of the JISC and with the approval of the Supreme Court pursuant to RCW 2.56. While AOC has the authority to manage and operate the JIS, not all courts are considered part of the JIS. The JISC Policy 1.1.1 describes the JIS as the network of systems owned and maintained by the Administrative Office of the Courts (AOC). This policy explains that a JIS court is a court that uses the JIS (AOC maintained systems) to process its cases from filing to closure. A non-JIS court is a court that utilizes a locally maintained case management system and contributes information electronically to the statewide JIS database. The JIS Policies were last updated in June, 2015.

Most of the courts in Washington are considered JIS courts. Meaning, the majority of courts in Washington operate using case management systems developed and operated by the AOC. The JIS applications managed by AOC for case management purposes are Superior Court Odyssey, JIS(DISCIS), and JCS. Superior Court Odyssey is the case management application used by most Superior Courts. JIS(DISCIS) is the case management system currently used by Courts of Limited Jurisdiction (CLJ's). JCS is the case management system used by juvenile courts. As explained elsewhere in this paper, this landscape is not static and more changes are coming. These case management systems are managed by AOC and part of the JIS, but none contain statewide Individual Case Histories (ICH's) and cannot be considered a statewide JIS Person Database.

The handful of courts that use "non-JIS" case processing systems (systems not managed by AOC) are: King County Superior Court (KCCO), Pierce County Superior Court, King County District Court (KCDC), Seattle Municipal, Spokane Municipal, and Kitsap District. Although these systems are not managed by AOC, RCW 2.68.050 requires all courts in Washington to work with the JISC "to implement processes for making judicial information available electronically". In this context, judicial information refers to statewide data, or a complete ICH on select causes of action, per RCW 7.105.555 and RCW 2.28.210. This statewide data is to be available in the JIS or alternative databases used by the court.

JISCR 9 states that: "It is the responsibility of the JIS to serve as the communications link for the courts with all local, regional, statewide, and national non-court systems". In order to comply with the statutory requirements that the JIS contain certain statewide case and person data, AOC has developed other application systems that can be used to store and view statewide data. Those other AOC systems are the Enterprise Data Repository (EDR) and the Judicial Access Browser (JABS). Although the EDR and JABS are not case processing systems, they are still AOC operated systems and have taken responsibility for providing access to statewide Individual Case History. Both JIS and non-JIS courts send data to the AOC managed EDR. As explained more in the business analysis sections of this paper, JABS is able to view the data sent to the EDR. All courts in Washington have access to JABS and therefore, all judicial officers are able to use JABS to view statewide person and case data stored in the EDR.

Observation: JISC rules and policies attempt to provide a clear distinction between a JIS court and a non-JIS court, but the defined "scope" of the PBR's casts doubt on this distinction. The "scope" of the PBR's states that these rules apply to all courts using the JIS. That sentence goes on to define, "JIS courts as those organizations authorized to create and update JIS person information". Person Business Rules (wa.gov). By creating and sending person data to the EDR, "non-JIS" courts appear to meet this definition of a "JIS court". Non-JIS courts are sending their person records and case histories into JIS and thus, updating the AOC

managed JIS that provides the statewide data. However, JISC policy describes non-JIS courts as those courts using a local case management system (not developed or managed by AOC). This inconsistency in defining what courts are to be considered JIS courts impacts the authority behind all courts following the PBR's. As mentioned previously, the PBR policy #7 clearly states that non-JIS courts are only encouraged to follow the Person Business Rules and policies. That policy statement diminishes the authority for all courts to follow the PBR's, even though the documented "scope" of the PBR's encompasses all courts, since all courts are creating person records.

3. Implementing the Person Business Rules (PBR's)

The documented "purpose" of the Person Business Rules is to "maintain the accuracy and integrity of the JIS Person Database and to ensure a complete case history for each person recorded on the database". Person Business Rules (wa.gov). Maintaining a complete and accurate "JIS Person Database" is a phrase used often throughout the PBR's. However, as this paper makes clear, there is no single JIS Person Database for courts to reference when creating party records. Person records are created in several different systems. Regardless of the system used by a court, the PBR's provide clear direction to courts for when and how to enter person data into a case management system. If all courts follow these rules, before sending their person and case data to AOC, then it becomes much easier to match persons correctly with their entire case history.

The Person Business Rules list the case types that require persons with unique identifiers and provide the criteria that is an allowable unique identifier. They also provide the procedures to follow when creating a new party record and matching existing party records. How to update party records, when to notify state agencies if a court record demonstrates inconsistencies in data, and how to correct JIS person records are all covered by these rules.

4. Well-Identified Parties vs Non Well-Identified Parties

The first question to ask is "who" must be recorded into the "JIS Person Database". There are two types of persons that can be entered into a JIS database, a "civil" person or a "well-identified individual". A civil person is defined as a human being with a name and/or address and is considered "non-identified" because it has insufficient identifying data for matching to other records and compiling case history. Whereas, a "well-identified individual" is a human being with a name, an address, and some type of third personal identifier. PBR 1.10 lists the types of personal identifiers that may be used:

> Date of Birth (DOB),
> Dept. of Corrections number (DOC#),
> State Criminal ID number (SID#),
> Drivers License (DL#),
> FBI number,
> Juvenile number (JUV#),
> or other specific identifier assigned by a court such as Seattle Municipal Court Defendant Number.

The Superior Court Odyssey manual further explains the difference between well-identified and non well-identified parties. A well-identified party, or WIP, is a party that follows the Person Business Rules of requiring three identifiers, of which one must be a name and the second an address. The third identifier must come from the list in PBR 1.10. Odyssey has a visual cue (WIP) that appears on cases that require a WIP on the Parties tab at the time of filing. Another visual cue that a party is well-identified is on the Party Search Results window in Odyssey. Well-Identified parties are assigned a Person ID that displays on the party search results screen. If a party is well-identified, then that party will also be found in the JIS person database. ODYSSEY Online Manual (wa.gov)

A non well-identified party, or non-WIP, is a party that does not follow the Person Business Rules of requiring three identifiers. These are usually civil-type cases where statutes and court rules do not require the parties be well-identified. For these parties, only a name is required. ODYSSEY Online Manual (wa.gov). The Odyssey

manuals definition of a non-WIP, or civil person, is slightly different than the PBR definition of a "civil person". In the PBR's, a "civil person" may be defined by a "name and/or address".

To maintain accuracy, only one unique person record is allowed to be created in the JIS Person Database for each individual named as a case litigant or order participant. PBR 1.40. When a WIP is first created, the name used is referred to as a True Name. PBR 1.20. Multiple Alias Names or AKA's may be associated with one True Name. A name is considered AKA or Alias if the first five characters of the last name, the first letter of the first name and the first letter of the middle name is not identical. This allows the courts to track multiple names that may be used by the same individual. An Alias Name may have different non-unique personal identifiers, like DOB, then the True Name. However, an Alias Name may not have a DOC# or SID#. PBR 1.30.

PBR 1.40 lists the case types and causes/charges that require well-identified parties (WIP's). All criminal cases, protection order cases and cases involving children require WIP's. This includes all juvenile cases. The table below demonstrates key parts of the table from PBR 1.40.

Case Type	Cause/Charge	Litigant/Participant Type
Criminal (CT,CN,CF,S1)	Non-DV Charges	Defendant (DEF)
Criminal (CT,CN,CF,S1)	DV-Related Charges	Defendant (DEF) Victim (VCT)
Civil (CV,S2)	Civil Protection Orders (CPO* - includes DVP,SXP,STK,HAR and VAP orders) Foreign Protection Orders (FPO) Extreme Risk Protection Order (XRP) Extreme Risk Protection – Under 18 (XRU)	Petitioner (PET) Respondent (RSP) Parent (PAR) Minor (MNR) Family/Household Member (FHM)
Domestic (S3)	Child Custody (CUS) Dissolution with Children (DIC) Out-of-State Child Custody (OSC) Parenting Plan/Child Support (PPS)	Petitioner (PET) Respondent (RSP) Parent (PAR) Minor (MNR) Family/Household Member (FHM)
Parentage (S5)	Modification (MOD) Parentage/Parental Determination (PAT) Parentage/URESA (PUR)	Petitioner (PET) Respondent (RSP) Parent (PAR) Minor (MNR) Family/Household Member (FHM)
Juvenile Dependency (7, S7)	Guardianship for Foster Children (GFC) At Risk Youth (ARY) Child in Need of Services (CNS) Dependency (DEP) Termination of Parental Rights (TER) Truancy (TRU) Relative Visitation (RVS)	Dependent (DEP) Parent (PAR) Guardian (GDN) Petitioner (PET) Involved Party (INV) Family/Household Member (FHM)
Juvenile Offender (S8)	Non-DV Charges	Defendant (DEF)
Juvenile Offender (S8)	DV-Related Charges	Defendant (DEF) Parent (PAR) Victim (VCT)

*CPO is a new cause of action (eff. July 1, 2022). The current table used in the PBR's does not include CPO and needs to be updated.

**Washington State Pattern forms list Respondent/RSP, whereas Odyssey application systems list Defendant/DEF. Consistency between pattern forms and case management systems should always be considered.

Parentage case types must be converted to JIS (by changing the parties to WIP's) when the order establishing parentage is issued. PBR 1.60. The case types listed in PBR 1.40 that require WIP's are consistent with the case types referenced in RCW 7.105.555, RCW 2.28.010, JISCR 18, and the local court rules that require personal identifiers be documented for certain causes of action.

5. Matching Persons

JIS court staff must consult the JIS Person Database source to validate person information for each litigant and order participant, named in a cause of action requiring well-identified parties, before adding a name to the JIS Person Database. PBR 3.01. As discussed previously, JIS is the network of systems managed by AOC. There is no longer a single source database to consult. Clerks will consult the case management system they are using. For JIS superior courts, they will be consulting Odyssey. For CLJ's that are part of the JIS, they will consult JIS(DISCIS). For non-JIS courts, they will consult the case management system used by their court.

JIS courts will use the unique identifiers provided on the charging document or confidential information form, to search their database for a source name. If a source name is found that meets the matching criteria in rule 3.30, then the existing JIS person record shall be used. If a matching person record is not found in that courts case management system for a case litigant or order participant, then clerks are to consult the DOL for a source name that meets the criteria in rule 3.30.

PBR 3.30: Criteria for Matching a Person
The following criteria shall be used to identify a match between a name on the charging document, Police Report, Citation, Petition, Court Order or Diversion Agreement and a source name from JIS or DOL.
      Matching Criteria:
      When the same human being is represented by different name records, a match is established if research indicates sameness (not necessarily exact) between at least three of the following personal identifiers in each record:
            Name
            Date of Birth (DOB)
            Physical Description
            Address History
            Driver's License Number (includes previous driver's license number returned from DOL search)
            Other identifiers (SID#, DOC#, FBI Number)

If there is still no matching name found, then courts following these procedures will create a new WIP, using the criteria in PBR 1.10. PBR 3.60 provides the criteria for when a court must create a new person record in JIS:
      Add a new person record on JIS when no match can be established for the name on a court document, Police Report, Citation, Information, Petition, Court Order, or Diversion Agreement and the person records available in the JIS or DOL Person Databases.

In an ideal scenario, a clerk or court administrator would use the information provided to them on the source document, to perform a party search in that court's case management system, and a result for that party will be returned. If the clerk verifies that three identifiers are the same, then the clerk will select that person as the party participant. Correctly matching an individual to an existing person in the JIS database will maintain the single party record for this individual and keep an accurate case history. If a party search or DOL look up does not

return a match, then the clerk must create a new party record. If the clerk incorrectly creates a new party record when one already existed, then that person's case history cannot be properly linked under one party record. In that case, there will now be two party records for the same individual. The one that already existed in JIS, with all its associated cases, and the new party record, with only the new case associated.

Creating party records in non-JIS courts is unknown. Adherence to the PBR's is presumed, but historical data in the EDR indicates gaps. AOC does not have access to non-JIS courts case management systems. It is up to those non-JIS courts to send data to AOC, so that AOC may attempt to link any non-JIS party records to JIS party records. The process for matching these JIS and non-JIS person records is performed in the Enterprise Data Repository (EDR).

Non-JIS courts, like KCDC and KCCO will send their courts' party and case information to the EDR in what is called an "umbrella ID". What the EDR "sees" in this "umbrella ID" is the non-JIS person and however many cases that court associated to that person. EDR runs a "person matching routine", using the personal identifiers associated with that person in their "umbrella ID", to try and match the non-JIS person with an existing JIS person. If the EDR does not find a match, then a new party record will be created in the EDR, with the information provided by the non-JIS court. It is this scenario where non-JIS courts are creating party records. If the EDR person matching routine does find a match to an existing JIS person, then that non-JIS person record will be combined with the EDR person record and all the cases associated will display in EDR as one result.

The EDR person matching routine attempts to follow the PBR's, but in order to account for under matching and over matching issues, programmatic compromises are necessary. Differences between EDR person matching and PBR person matching processes should be documented and incorporated into the PBR's.

6. Updating Person Records, Correctly Linking PIN's and Notifying Other Agencies of Person Changes

JIS Courts have a duty to conform JIS True Names to DOL records. If DOL updates names and driver's license numbers and notifies the court, then the court must update the JIS True Name to match the updated DOL record. "When DOL changes the source name and the Driver's License Number on its system, and notifies courts, the courts shall always conform the JIS True Name to the DOL name, move the PINs to the JIS True Name record, and establish AKA relationships for all pre-existing and matching JIS name records." PBR 6.10.

"Unique personal identification numbers (PINs), including DOC and SID numbers, shall only be associated with the JIS True Name person record and not an AKA person record on the JIS Person Database." PBR 7.10. Only one DOC number and one SID number shall be linked with a JIS True Name and AKA Name record. PBR 7.20. However, a different DL# may be associated to the same person if an AKA person is recorded. In that instance, "a Driver's License number (DL#) shall be recorded with a JIS True Name INDIVIDUAL or an Alias Name INDIVIDUAL (AKA) only when the dates of birth match and when the first seven (7) characters of the DL# match the first five characters of the last name, the first character of the first name, and the first character of the middle name". PBR 7.30. This practice of linking multiple DL#'s to the same individual is deemed appropriate when those multiple name records are linked in an AKA relationship and (1) DOL has notified the court that the person's name has changed and that DOL has assigned that person a new DL# (Refer to Rule 6.10); or (2) The court establishes sameness between two separate JIS person records in accordance with Rules 3.30 and 9.20. PBR 7.40.

Courts have a duty to notify various state agencies when court records have uncovered inconsistencies in person records. These notification requirements are specified in PBR 9:
> PBR 9.10 - Notify DOL when there is evidence that one person uses different names and/or Driver's License numbers; evidence a person is using another person's Driver's License; or when there has been an address change.

PBR 9.20 – Notify DOL when court documents indicate the same person has other DOL numbers that are associated with a different name.

PBR 9.30 – Notify the Department of Corrections (DOC) of the existence of any new AKAs added to existing SCOMIS cases.

PBR 9.40 – Notify WSP when court documents indicate the same person has other SID numbers that are associated with a different name.

7. Correcting JIS Person Records

PBR 10.10 describes the responsibility courts have for JIS Person Record Consolidation. The responsibility for statewide JIS Person Record consolidation is placed on JIS Court Administrators and County Clerks. Each JIS court is to allow access to its case/person links, referred to as "statewide NPC access" for the purposes of correcting JIS person records and properly consolidating cases. "Any court that disallows access to this NPC screen shall advise all other JIS courts of its NPC access restriction by notifying the AOC Customer Services." PBR 10.10. If a JIS court restricts this access, then that JIS court "shall be responsible for consolidating all duplicate person records connected to its cases when so requested in writing by any other JIS court". PBR 10.10.

This section specifically addresses the responsibility of non-JIS courts in regards to correcting JIS person records. "Non-JIS Court Administrators who regularly upload person information to JIS with court identifiers shall cooperate with JIS courts in the statewide administration of person record consolidation. Non-JIS courts shall accept and complete where possible all JIS court requests to modify local person records to assure person record conformity between JIS and the local system." PBR 10.10.

PBR 10.20 makes it clear that duplicate JIS person records shall be consolidated "to maintain the integrity of the JIS Person Database". The criteria to be used for consolidating any such records must meet the matching criteria in Rule 3.30.

If a change is required to a person record associated with any one court's case(s), the change "shall be made only by that court when the purpose of the change is to correct an incorrect link between a case and a person record." PBR 10.30. "Only by that court" is emphasized in this section. Rule 10.31 provides the criteria for unlinking person records. "A case and person record may be unlinked when that link was made in error, when the error can be demonstrated by case documentation, and provided the case is re-linked to another and different JIS person record." PBR 10.31.

These rules demonstrate the need for cooperation among courts and various state agencies to maintain an accurate JIS Person database. Court procedures for updating person records may not be consistent with these rules. For instance, Odyssey and enterprise Justice courts no longer have authority to unlink person records. Requests to AOC for merging/unmerging are necessary. The processes to employ for correcting person records should be clearly defined in the PBR's and consistent with court procedures.

8. Conclusion

The need for maintaining a complete and accurate statewide JIS person database is firmly established in legislation, JISC Rules & Policies, and local court rules. Complete Individual Case History (ICH) is necessary for judicial officers to make informed decisions and must be accessible in the JIS. Correct person matching is essential.

AOC has the responsibility to maintain the statewide JIS Person database. All courts in Washington have a duty to work with the AOC to ensure accurate person records and case history are sent to this JIS Person database. The processes necessary for achieving accurate person matching and complete case history are promulgated in the Person Business Rules and polices. If employed properly by all courts, person matching could be greatly

improved. However, the rules and polices establishing the authority that requires use of the PBR's should be evaluated for consistency, and corrected, if necessary. Distinctions between JIS and non-JIS courts diminishes authority required for statewide implementation of the PBR's. The JISC policies have not been updated since 2015 and as a result of recent legislation, updating the PBR's is necessary.

There is no clear direction from the legislature as to how courts are to achieve complete and accurate case history for well-identified individuals. There is only the Person Business Rules and Policies created by the JISC. Importantly, the lack of a single JIS Person database accessible to all courts when creating, matching, or consolidating person records makes consistency and accuracy near impossible. Legislation mandating all courts to follow the Person Business Rules and if created, use a single JIS Person database, could significantly improve person matching. Education and training around this issue is vital.

VII. Systems Overview – Past, Present, Future

In this section we highlight the major systems involved in supporting Washington courts over time. This overview is important to provide context for the following sections in which we explore the flow of data between systems in greater detail. We assume these systems and their acronyms are known. Please consult the Glossary at the end of this document for some definitions.

1. Past State – 1990s to 2015

Historically, most courts in the same court level across the state used the same CMS. Superior Courts used SCOMIS. Courts of Limited Jurisdiction used DISCIS. Both court levels used JIS to manage and share person records. JIS also became the general name for all of these systems, which were modified to communicate with each other and share person data.

AOC's legislative mandate to maintain statewide court data was met by default since all court level data resided in the same systems. As the statewide viewer, JABS needed only to look in one place to access all statewide information.
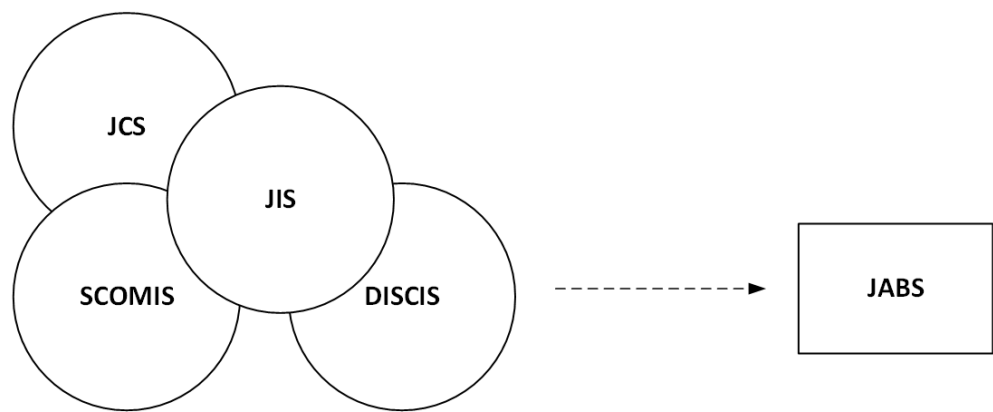

2. Current State – 2015 to 2025

In 2015, Odyssey, the new CMS for Superior Courts went live. This ushered in an era of transition for systems supporting courts across the state. We are still in this transition phase today and will remain in this phase until all legacy systems are retired. This is currently anticipated to happen in the mid to late 2020's.

In 2018, King County Superior Court went live with its own CMS, followed by King County District Court in 2019. Presently, the CLJ-CMS project is underway, with the goal of providing a new CMS for the Courts of Limited Jurisdiction. During this period, legacy systems must remain operational to support courts that have not yet made the transition to a new CMS.

Now, to view all data statewide, JABS must look in the legacy systems and the new systems that have come online. AOC introduced the Enterprise Data Repository (EDR) to meet its legislative mandate to provide statewide court data and to house relevant statewide data from courts using their own CMSs. In this transition phase, more court CMSs will begin sending their data directly to the EDR.

Legend

— ▶ Data Flow

--- ▶ View Only
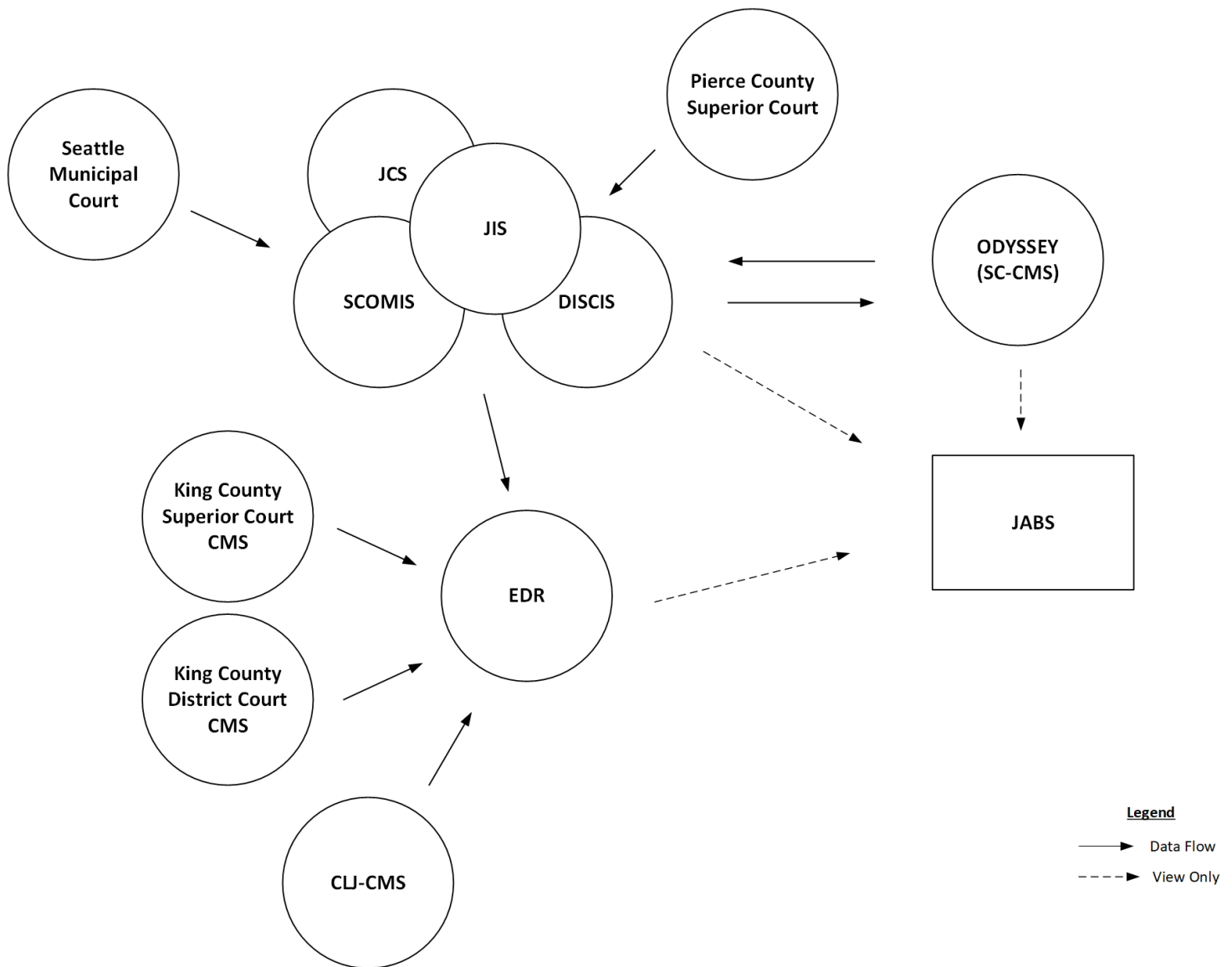
3. Future State – Conclusion of CMS Modernization Projects

The future state target architecture calls for "on boarding" all courts to the EDR, including Odyssey and the new CLJ-CMS systems and any CMS a court chooses for itself. Legacy systems can be retired only when all business critical dependent processes have been accommodated in new systems. EDR will become the single repository of statewide data. In this simplified architecture, JABS will once again receive information from a single source, the EDR.
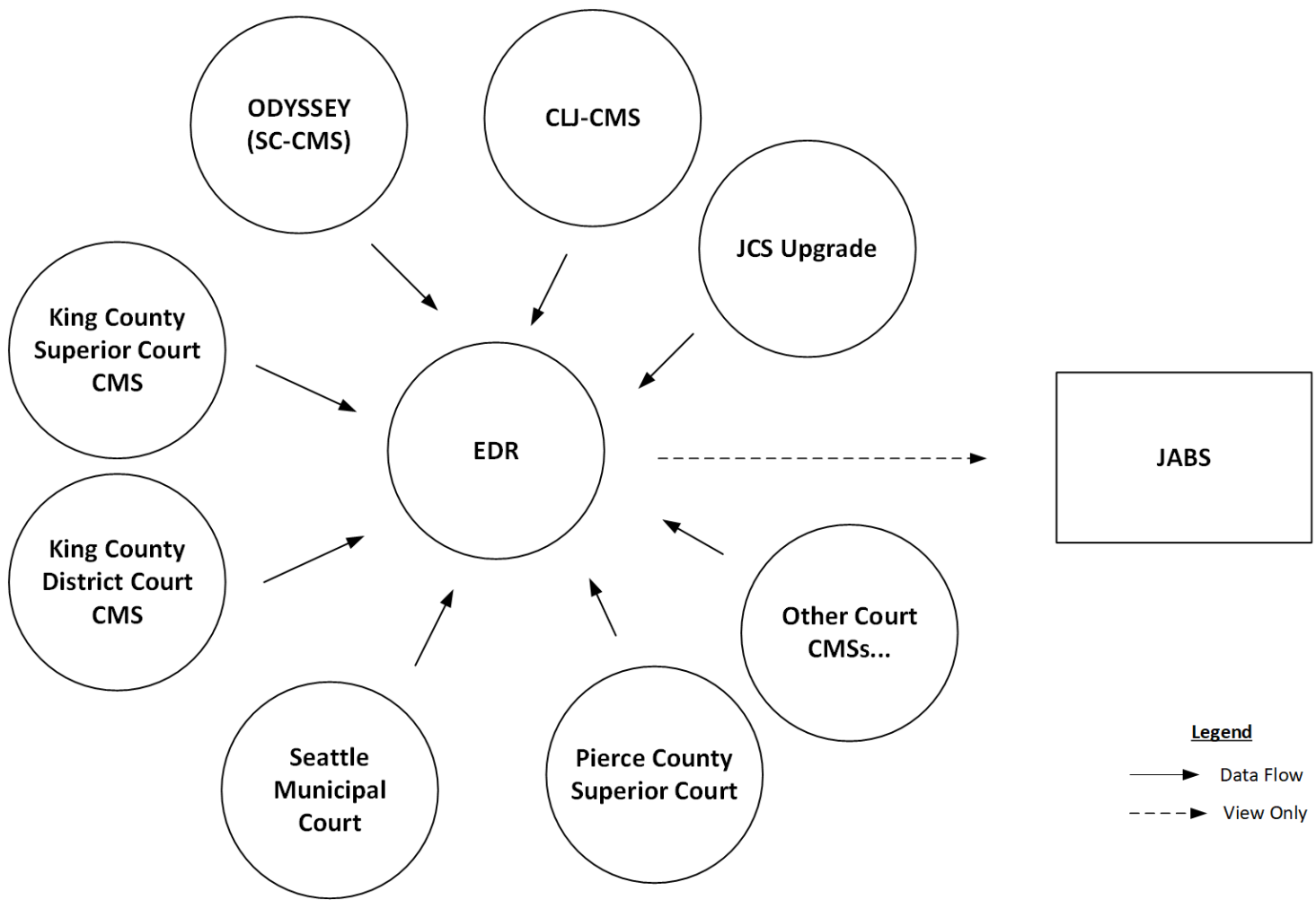
VIII. JABS Overview

JABS started as a user friendly way to navigate JIS/SCOMIS data. As a "browser based" system, no client software was necessary to install. It was built for judges in particular, who could see all relevant case information on a single page. This was far more convenient than accessing the same information using multiple JIS/SCOMIS commands to navigate one "blue screen" after another.

JABS is the Only Statewide Viewer

As new systems appeared on the application landscape, AOC modified JABS to view data found in these systems. Over time JABS has grown in importance and is currently the only system court users have that is capable of presenting all of the person and case records statewide. Outside of JCS, no other CMS, not even JIS, has access to all of the statewide data.

In the future state systems landscape, all court data of statewide significance will be housed in the EDR, a system without a user interface. JABS will continue to be the only system end users will have to view all statewide data no matter where it was originally created.

It's possible that JABS will only need to point to the EDR in the future. With legacy systems turned off, there will no longer be data replication between Odyssey and JIS, so there will no longer be "replication errors" preventing data from being sent to the EDR.

IX. Statewide Data Flow of Person and Case Records

Now that we know the major systems involved in supporting courts across the state, and we know the importance of JABS and where JABS is looking to retrieve statewide data to display, we need to examine the detailed flow of data between these major systems to understand how person matching issues arise and ultimately appear in JABS.

1. Statewide Data Flow Diagram

The following diagram represents a comprehensive depiction of the data flowing between major court systems at a sufficient level of detail for our purposes. Each section of the diagram is discussed in greater detail below. There are more systems, such as the data warehouses, that are not included here as they are not involved directly in person matching, or the display of person matching issues in JABS. Additionally, the new CLJ-CMS system is not represented here since no court is using it yet (as of Summer 2022). When the new CLJ-CMS system comes online, it will integrate directly with the EDR and not replicate data to JIS.

**Statewide Data Flow Diagram**
Current State (Spring 2022)
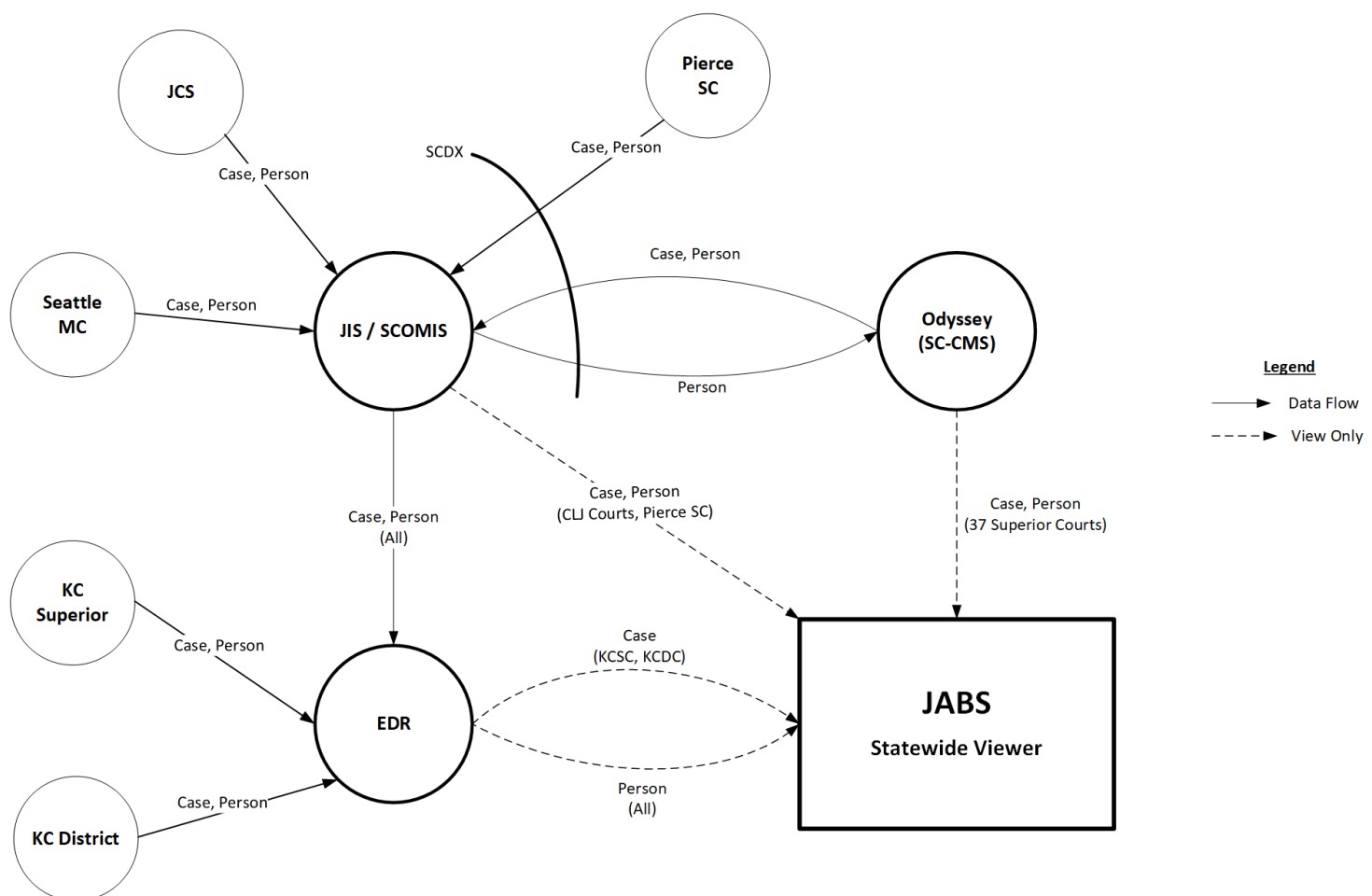
2. Replication between JIS and Odyssey

When Odyssey went live in 2015, the EDR was still under development and not yet viable as a statewide data repository. To keep Odyssey data in sync with JIS data, AOC decided to "replicate" Odyssey person and case records into JIS using the SCDX web services. Person records created in JIS are also sent to Odyssey. Case records created in JIS are not replicated to Odyssey.

AOC established two teams of staff to maintain data replication between JIS and Odyssey. The Person Maintenance Team (PMT) is comprised of CSD division business staff who maintain person records in both systems and keep them in synch. The Integration Manager Monitoring Tool (IMMT) team in the ISD division maintains case data replication from Odyssey to JIS. Additional technical staff support both teams and maintain the software tools involved in moving the data between the two systems. Many of these tools are not represented in this data flow diagram, including BizTalk, Integration Manager, and the Help Desk App.

A key system involved is this work is the Superior Court Data Exchange (SCDX), a suite of web services that take in a data request and programmatically launch an instance of a mainframe "blue screen" user interface and populate it with data from the request. In this way, data is added through the legacy systems' user interface and subject to validation rules found there.
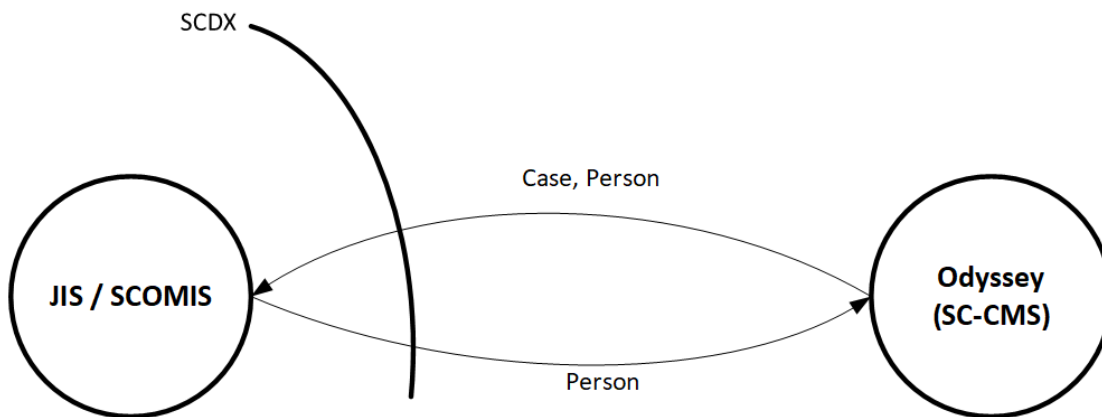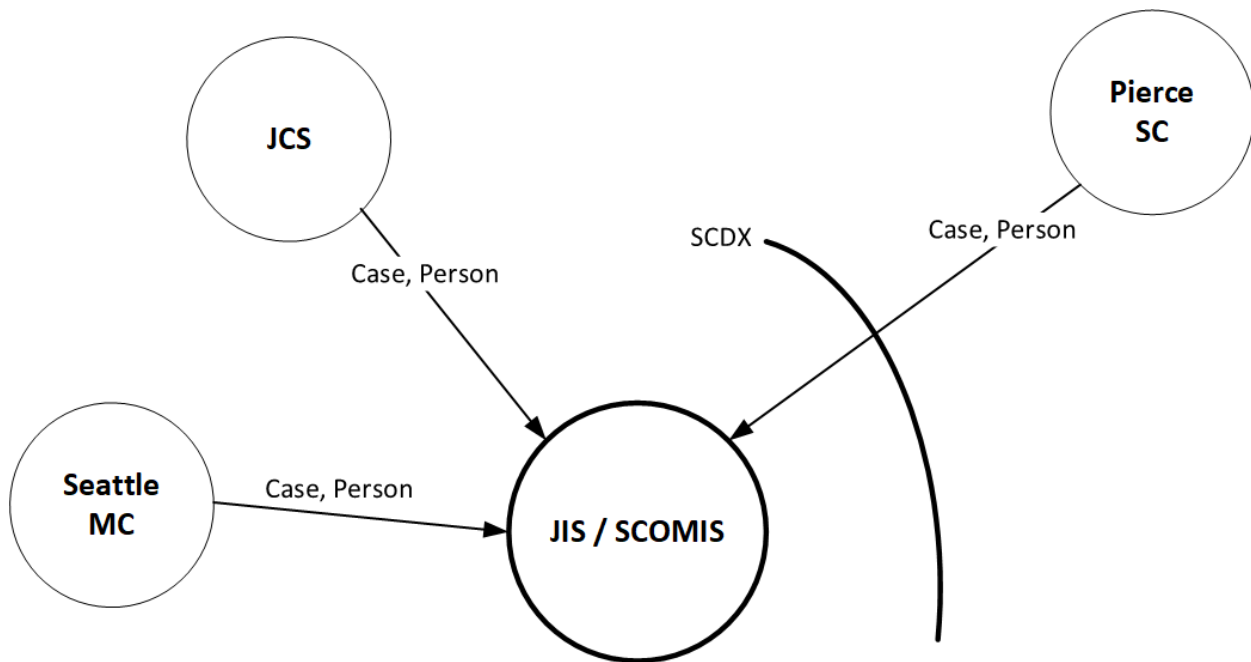

3. Legacy Integrations with JIS/SCOMIS

Integrations with the Legacy JIS/SCOMIS systems must still be maintained in the current state until all systems modernization projects have completed and dependent processes have been accommodated.

Pierce County Superior Court is using the SCDX web services to contribute their data to JIS/SCOMIS. Seattle Municipal Court uses a batch process to import its data into JIS. JCS is tightly integrated with SCOMIS and JIS.

In the future, modern replacements or upgrades for JCS and SMC will send their data directly to the EDR. Pierce Superior Court's system will also integrate directly with the EDR.

4. Migration from JIS/SCOMIS to EDR

Person and case records housed in JIS/SCOMIS are sent to the EDR on a regular schedule. In this way, all of the statewide data in JIS, including case records generated in Odyssey and via the legacy integrations with Pierce County, Seattle Municipal Court and JCS, are made available in the EDR. The EDR is currently the only system that houses all person records statewide.
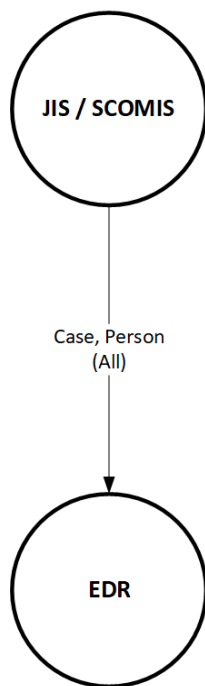
5. EDR On-Boarded Courts

Courts that send their data solely to the EDR are known as "on-boarded" courts. Currently, King County Superior Court and King County District Court are the only on-boarded courts.

In the future, the new CLJ-CMS system, Seattle Municipal Court, Pierce County Superior Court, the upgraded JCS system, and any other court that decides to acquire their own CMS will send their data directly to the EDR.
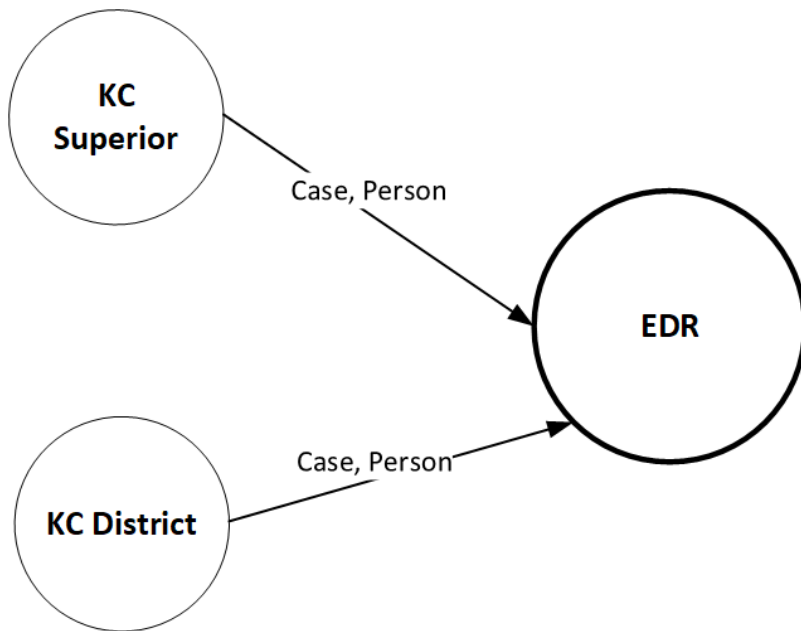

6. JABS View of Statewide Data

Finally we get to JABS. As a "viewer", JABS does not house data itself, it only views data housed in other systems, namely: EDR, JIS/SCOMIS, and Odyssey.

Since the EDR is the only data store where all person records in the state reside, JABS queries EDR for person records first, then uses that information to query the EDR again for case records associated with the person of interest. It looks for King County Superior and District case records from the EDR. JABS then looks for the person's case information housed in JIS/SCOMIS and in Odyssey and then combines the information retrieved from these three sources into a consolidated view for the JABS end user.

Even though all of the person and case records in JIS/SCOMIS and Odyssey will eventually be in the EDR, due to errors with data replication between Odyssey and JIS, there is a chance that the records in error have been held up and not sent to the EDR yet. This is why JABS looks at the EDR as well as JIS/SCOMIS and Odyssey – to see all records in each system, including any that are caught up in data replication errors that haven't been sent to the EDR.

The EDR is currently the only system available to JABS that contains records from King County Superior Court and King County District Court.
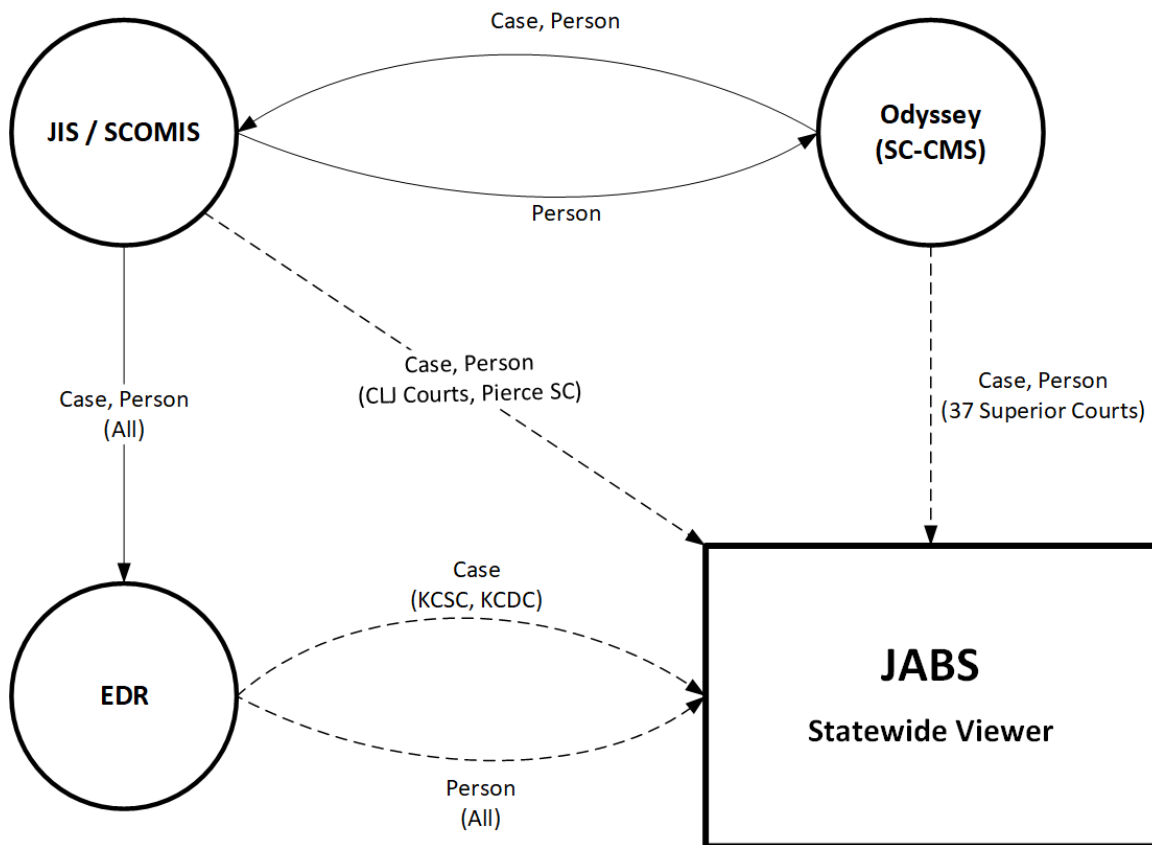
X. Person Matching Overview

Person records are no longer matched in a single, centralized way as they were in the past when most courts were using JIS/SCOMIS as their CMS. Currently, person records are matched at multiple places in the systems landscape by various system processes and business processes.

1. CLJ Court Staff

Historically, when most courts were using JIS/SCOMIS, court staff interacted with the JIS user interface to search for existing person records and to validate driver's license information with the Department of Licensing when creating a new person record. Now, CLJ courts are still using JIS. The JIS person matching functionality to link or "AKA" records is being used by CLJ court staff. Juvenile Court staff create, update and AKA JIS person records.

2. Odyssey Court Staff

Odyssey Court staff have access to create and update person records created by courts using Odyssey and are able to view JIS person records. Odyssey users do not have access in Odyssey or JIS for Well Identified Persons (WIP) to complete person actions such as merge, unmerge, or AKA link or unlink. Only AOC staff in the Person Maintenance Team (PMT) can take merge and unmerge actions in Odyssey and JIS. Therefore, authorized Odyssey Court Staff must submit a person action request to the PMT. The PMT acts based on the information provided by authorized Odyssey Court staff and ensures WIP person actions done in Odyssey are also completed in JIS person records to synchronize person data for replication between Odyssey and JIS.

3. Person Maintenance Team

The Person Maintenance Team (PMT) is responsible for actions in Odyssey and JIS that synchronize person records for replication between those case management systems. The PMT receives person action requests from authorized Odyssey Court users and ensures the requested action is completed in Odyssey and JIS to synchronize person information between JIS and Odyssey. Additionally, the PMT is notified when a JIS person record has been "AKA" (merged) by a JIS court and will then make the same merge in Odyssey. The PMT also receives notice of errors for duplicate party information occurring during replication and will make merge or unmerges in order to synchronize the person information between JIS and Odyssey.

4. IMMT Team

The Integration Manager Monitoring Tool (IMMT) team is primarily responsible for addressing data replication errors with case records, some of these errors are related to person records that are out of synch between JIS and Odyssey. For these person records, IMMT coordinates with PMT and the originating court to update records and resolve these issues IMMT is not directly involved in matching person records, but is instrumental in ensuring that some person records are error free and can replicate cleanly. IMMT submits requests to the PMT to merge person records to resolve case replication errors between Odyssey and JIS.

5. JIS Automated Process (Turned off in 2008)

For historical reference, JIS has a system process to match duplicate records. It was discontinued in 2008 after it caused some conflicts with records created by juvenile departments using JCS.

JIS also has an automated process, Batch Person Delete, to delete person records not linked to a case. This process has been turned off and is turned on intermittently. When Batch Person Delete is turned on the Person Maintenance Team receives notice of person record errors and acts to synchronize person records for replication.

6. King County Clerks

We've learned that the CMSs for both King County Superior Court and King County District Court are "case based" systems, as opposed to the "person based" systems that JIS and Odyssey are. This distinction is important during the case initiation process. For both King County courts, during case initiation, their CMS systems don't provide the ability to reuse person records. Court staff simply add new person records for every case, regardless of whether person records already exist for the parties to the case.

As "on-boarded" courts, both King County courts send all of their person records to the EDR. This causes the EDR to then have to make sense of these records and combine like records together in groups identified by "umbrella IDs". King County staff at both courts facilitate this grouping by manually grouping like person records together under an "umbrella id" after the case initiation process completes. This manual grouping of records is a form of person matching. The grouping is then sent to the EDR.

Duplicate person records sent from either King County court to the EDR will remain unmatched until the EDR person matching routine runs or until the EDR receives grouped records from either King County court.
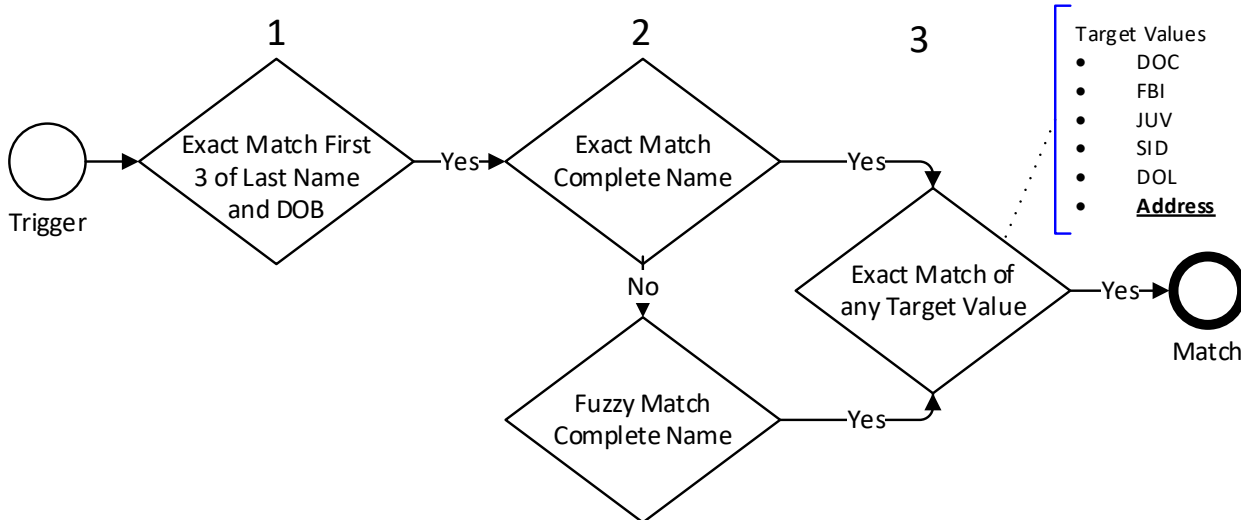
7. The EDR

The Enterprise Data Repository (EDR), as the only system that houses all person records statewide, must match person records it receives from the King County courts with the person records it receives from JIS (and by extension, all of the systems that still integrate with JIS, including: Odyssey, Seattle Municipal Court, Pierce County Superior Court, and JCS).

To accomplish person matching in the EDR, the EDR Technical team has developed a system process that uses the following matching criteria:

1) Exact match on the first 3 characters of last name.
2) Exact match on DOB
3) Exact Matching Personal Identifier (PID) or Address
4) Longest Common Substring computed value of 80% or greater.

The matching algorithm looks for the above criteria in order as depicted in this diagram:

The output of the EDR matching process is a grouping of matched records. Subsequent person records that come in to the EDR un-matched will join existing matched groups when the matching process runs next and the matching criteria are met.

Note: This section has not yet been vetted by the EDR Technical Team.

8. Person Matching in JABS

As a "viewer" of data, JABS doesn't physically match records in any single system. It merely displays the records it has found from different systems (EDR, Odyssey, and JIS) in the way that JABS users are accustomed to seeing them. If the records have been matched by the EDR, or by staff using any system that feeds the EDR, JABS will display the information together in a consolidated view.

The following table is an extreme example of how multiple person records could be created for the same human being in Odyssey, JIS, and an EDR on-boarded court. In this example, the EDR's automated person matching process would match and group these records together as long as the matching criteria are met. JABS would present these records in a consolidated view, meaning a search in JABS for one of these records would return all of them.

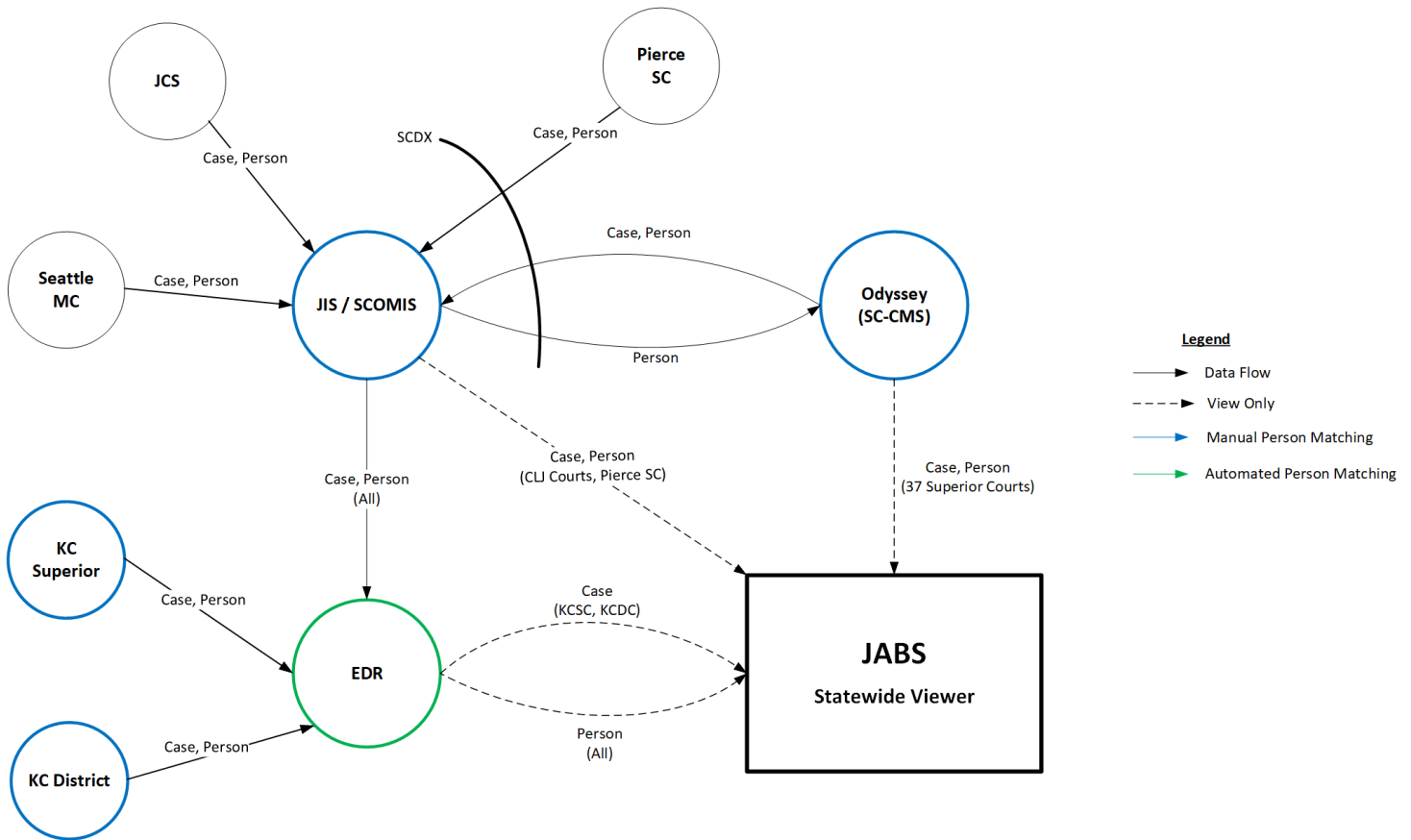| Source	Association Type	Name	Case Number	JABS ICH	NOTES
Odyssey	Merge	Jennette Thurman	1, 4, 5	1, 2, 3, 4, 5, 6	Odyssey created cases
Odyssey	Merge	Jenne Thurman	2, 3, 6	1, 2, 3, 4, 5, 6	Odyssey created cases
JIS	AKA	Jennette Thurman	1, 4, 5	1, 2, 3, 4, 5, 6, 7, 8	Odyssey replicated cases + JIS CLJ cases
JIS	AKA	Jenne Thurman	2, 6, 7, 8	1, 2, 3, 4, 5, 6, 7, 8	Odyssey replicated cases + JIS CLJ cases
eCourt (KCCO, KCD)	Umbrella ID	Jennette Thurman	9	9, 10, 11, 12	Cases created in eCourt
eCourt (KCCO, KCD)	Umbrella ID	Jenne Thurman	10	9, 10, 11, 12	Cases created in eCourt
eCourt (KCCO, KCD)	Umbrella ID	Jenne Thurman	11	9, 10, 11, 12	Cases created in eCourt
eCourt (KCCO, KCD)	Umbrella ID	Jenne Thurman	12	9, 10, 11, 12	Cases created in eCourt

When the records don't contain enough information, or have conflicting information such that the EDR's person matching algorithm can't match one or more records, the unmatched records will appear separately in JABS. In this scenario, the JABS end user must perform multiple searches to piece together the individual's complete case history.

9. Statewide Data Flow Diagram with Person Matching Hi-lighted

The Statewide Data Flow Diagram introduced earlier in this document is repeated here with one difference – the systems involved in manual and automated person matching are highlighted in blue and green respectively.

Statewide Data Flow Diagram
Current State (Spring 2022)

JCS

Pierce SC

Seattle MC

Case, Person

Case, Person

SCDX

JIS / SCOMIS

Case, Person

Case, Person

Person

Odyssey (SC-CMS)

Case, Person (CLJ Courts, Pierce SC)

Case, Person (All)

Case, Person (37 Superior Courts)

KC Superior

Case, Person

EDR

Case (KCSC, KCDC)

Person (All)

JABS
Statewide Viewer

KC District

Case, Person

Legend
Data Flow
View Only
Manual Person Matching
Automated Person Matching

XI.   How Person Matching Issues Arise – Known Issues

Our analysis of Customer Service Support requests is incomplete, as is our analysis of person records in each CMS and the EDR. As time allows, we will attempt to gain insights from looking at these sources of data.

In the meantime, key staff at AOC have made us aware of some of the more common ways that person matching issues occur. Using the Statewide Data Flow Diagram introduced earlier in this document, we can trace the flow of person records through the data flow diagram to better understand how each of the following common scenarios arise.

1. Old vs New Driver License Number

The Department of Licensing (DOL) changed its Driver's License Number (DLN) format in 2018. When a person record exists for someone from before 2018 it will have the old DLN for that person. When a new record for the same person is created, likely in a system other than JIS or Odyssey, it will have the person's new DLN. When these two records arrive in the EDR, the EDR's automated person matching process will not match these records because the DLNs are different.

2. Poor Data Quality in Person Records

Incorrect and incomplete data entry is another leading cause of person matching issues. With poor data quality, such as missing name parts, misspelled names, and other missing information like person identifiers and addresses, it becomes impossible for court staff and the EDR's person matching process to match records. When poor data quality is identified as the source of a person matching problem, AOC staff must reach out to the court staff who created the records and ask them to correct the issue. This process can be cumbersome and time consuming. Often the court who needs the issue resolved is not the court that created the original records and is involved in fixing them.

Some of the incomplete data entry is due to the lack of information provided on case petitions and Informations. That data is provided by the person who is filling out the petition or the prosecutor who is drafting the Information. Inconsistent pattern forms have been tweaked or adjusted locally to speed up the filing process but may be inconsistent with the needs of person matching.

3. Address as Person Identifier

In the fall of 2021, the EDR team at AOC enhanced the EDR's automated person matching algorithm to include address as a matching criteria and to treat it as a person identifier. So, when two records don't have a person identifier in common, but do have an address in common, as well as a matching name and date of birth, the algorithm will match these two records. This enhancement does improve the algorithm overall, in that it does make more correct matches than were made before the enhancement was in place. However, in some scenarios, it causes an incorrect match to be made. Many of the incorrect matches that this enhancement has caused have been resolved on a case by case basis.

4. King County Superior and District Courts Case-Based CMSs

The new CMS that both King County Superior Court and King County District Court have implemented is a "case-based" system, meaning that the central organizing construct in the system is a case, not a person. The system is optimized to manage a case from initiation to completion. During case initiation, there is no functionality to re-use existing person records if one exists, court staff simply create new person records every time. This results in both courts sending a large volume of person records to the EDR. Often, court staff have not yet had the opportunity to manually group like person records under the same umbrella id. If ungrouped person records don't contain enough information or otherwise have poor data quality, the EDR's

automated person matching process will not be able to properly match these records. In these scenarios, JABS will display the information it found in the EDR, which will not be a consolidated view of the person's complete case history.

XII. Person Matching Observations

With the understanding of person matching issues, the flow of data, and the rest of the information presented in this issue paper, we make the following observations. As the list of observations grows and becomes vetted by key staff people, these observations will inform recommendations to consider and next steps to prioritize.

1. Overly Complex Systems Landscape

This is a difficult moment in time for statewide person and case data management. Legacy systems and new systems are operating concurrently and will need to for many years to come. It is clear that the current systems landscape is overly complex and one of the fundamental causes of person matching issues.

2. Reliance on EDR Automated Person Matching Will Increase

As more courts on-board to EDR, court staff will become less involved in matching person records. The EDR's automated person matching process will become more important and may increase the number of person matches it makes over time.

3. No "System of Record" for Person Records

A system of record is an authoritative source for a piece of information. Person records are created and managed in multiple case management systems. All records ultimately end up in the EDR. No functionality exists for end users to manage person records in the EDR by design, as the EDR is a data repository. There is no single authoritative source for person records in the current or target systems landscape.

4. No "Owner" for Person Records

A court may create a Person record. If a different court uses the record and updates it, who then "owns" the record? Courts still own the case records they create. When edits need to be made, AOC staff reach out to the court staff person who last updated the person record. Often this person is averse to making edits that vary from their court's case record. Establishing clear ownership of person records could help facilitate edits that need to be made to correct person matching issues.

5. Statewide Data Only Viewable in JABS

Outside of JCS, JABS is the only system where a complete statewide view of person and case data is possible. The EDR is the repository for statewide data, but JABS is the only system court users can use to view all statewide data.

6. AOC May Not Edit Person Records

AOC staff, including the teams involved in data replication between JIS and Odyssey, do not have the authority to edit fields such as name parts, birth date, or DLN of person records.

7. Fixing Person Matching Issues is Overly Complex

The current work to fix many person matches is overly complex and time consuming. Resolving a single issue involves work and coordination between multiple teams at AOC who must track down a court staff person to request a person record edit. The record must then flow to the EDR to be matched by the automated process and ultimately display correctly in JABS.

8. King County Data is not Available to Courts using Odyssey or JIS

KC Superior and District person records are not available to courts using JIS or Odyssey as their case management systems. They will also be unavailable to users of the new CLJ-CMS.

9. Most Person Matching Issues Involve King County

Most Person Matching issues involve person records created in King County Superior Court or King County District Court. This is because JIS person records do not go into the King County case management systems

10. Many Person Matching Issues are Likely Undiscovered

Mismatches and under-matches are an unavoidable consequence of EDR's automated person matching process. Some issues are caused by human error. Person matching issues will only be discovered by court users, given there are no authoritative quality assurance checks AOC can put in place. For example, there is no source to check to confirm that two or more person records do indeed represent the same human being. Many person matching issues likely exist in the EDR that haven't been discovered yet, or haven't yet been brought to AOC's attention.

11. Person Records in JIS and Odyssey have been Validated by DOL

Both JIS and Odyssey have a dynamic interface to verify information entered during person record creation. Well identified person records with Driver's License Numbers that were created in JIS or Odyssey should have been validated by the interface with the Department of Licensing (DOL). These records should have a higher quality of data than records that haven't been validated by DOL.

12. Replication between JIS and Odyssey May No Longer Be Necessary

Data replication between JIS and Odyssey began before the EDR was a viable data repository. We've learned that data replication is still necessary to support approximately 70 key system processes. We have not looked into these processes yet. With a functioning EDR, it may be time to revisit these processes and develop a plan to address each one and wind down data replication efforts.

13. All Clerks Do Not Have Access to Complete Statewide Person Records

Each implementation of PBRs by clerks is incomplete, or is in a system with incomplete statewide person data. Clerks using Odyssey and JIS don't have person records created by King County Superior Court or King County District Court. Clerks in either King County court don't have access to person records created in JIS and Odyssey. To fully implement Person Business Rules, clerks must use JABS to perform a person lookup on complete statewide person data.

14. Replication Errors May Result in Person Matching Errors in JABS

JABS looks at the source systems which may be out of synch due to outstanding Party and Case matching errors occurring from Odyssey to JIS that have prevented the records from migrating to the EDR. Errors on these records may result in person matching issues visible in JABS.

15. Person Matching Errors May Exist Until KC Clerks Can Group Like Records

After King County staff (at Superior and District courts) complete the case initiation process, they group person records together under the same "Umbrella ID" to resolve duplicates in the EDR. Records sent to the EDR before clerks group them together will remain duplicate until the EDR person matching routine runs or the KC clerk has completed the grouping. The EDR Person matching routine will honor the umbrella id.

16. Enterprise System Updates are Increasingly Complex

Historically, when all courts were using AOC case management systems, making enterprise updates to "reference codes" such as Docket Codes, was completed by AOC and relatively straightforward. Now, when

the JIS Codes Committee, for example, approves a new Docket Code, AOC manages entering that new code in each separate CMS under AOC's stewardship; however, every other CMS managed by courts outside of the AOC must ensure that new code is added in their own CMS. AOC manages the entering of new codes into the EDR.

17. JABS Ignores Replication

It is too risky to rely solely on the EDR. There could be replication errors in criminal cases that prevent these cases from migrating to the EDR. To avoid the risk of missing cases, JABS points to each data source independently.

18. Person Records are Transformed when Replicated and Migrated

When a person record is created in a CMS, certain data elements are captured about the person and various validation rules are enforced. When that record is replicated to another system, the data elements from the original system are mapped to the data elements of the new system. It is rare that all systems have all data elements in common. Mapping data elements causes unmapped data elements to be dropped. Depending on where the person record was originally created, it is possible that it will have been transformed up to four times. In the target systems landscape when all systems are on-boarded to the EDR, person records should only have to be transformed once, from the originating CMS to the EDR.

19. Link vs Merge

Matching records in JIS results in a linking of two independent records, while matching in Odyssey merges records into a single record without preserving the original records independently. Performing an un-merge in JIS is as simple as un-linking the records. Un-merging records in Odyssey requires AOC staff intervention and analysis to determine which data belongs to which original record and then using that analysis to manually rebuild the original records.

20. Manual vs Automated Person Matching

Court staff may be better equipped at matching like person records than the EDR automated person matching process because court staff can research the records in question and follow up with other court staff to confirm their findings. The EDR person matching algorithm is limited to the data available in the records sent to the EDR. This algorithm has the potential to improve over time. Ultimately, the act of matching person records may best be done by a combination of people and software.

XIII.   Person Matching Recommendations

In the problem statement at the beginning of this issue paper, we established that a resolution to the existence of person matching issues would be the following:

1. **Reduce or eliminate** person matching issues entirely in the short term (if possible),
2. **Expedite** issue resolution, and
3. **Prevent** issues from occurring in the first place

The recommendations we have are organized by these resolution categories.

A. Recommendations to Reduce or Eliminate Person Matching Issues

In our analysis, we did not discover a single root cause or straightforward fix to reduce or eliminate the problem of mismatched or under-matched person records in the immediate short term. We know person matching issues have many causes and are a side effect of the current state systems landscape. In fact, person matching issues will likely continue to exist in the future state "target" systems landscape as court staff have access to fewer and fewer person records created in case management systems other than their own.

However, our analysis is incomplete and a simple solution may exist that we just haven't found yet. It could be, for instance, that a minor change to the EDR person matching algorithm could dramatically reduce the person matching issues we are now experiencing. There also might be an obvious business process or workflow change at one or more court that could greatly impact or resolve the number of person matching issues statewide.

As the work of investigating person matching issues continues, and we have the opportunity to engage more fully with technical resources involved in person matching at various systems and with court staff at key courts, ideas to reduce or eliminate person matching issues altogether may surface.

B. Recommendations to Expedite Issue Resolution

The following recommendations are directed at speeding up the resolution of person matching issues when they occur. This list is incomplete. As more analysis work occurs, we expect these recommendations to be vetted and new recommendations to come about. AOC is already implementing some of these recommendations.

1. Give AOC Staff the Ability to Edit Person Records in Court CMSs They Can Access

When AOC becomes aware of person matching issues that are visible in JABS, and the fix is to update one or more person records in a court's CMS, the AOC must rely on court staff to make the fix because AOC is not authorized to update court records.

Coordinating with court staff to fix records causes an immediate delay, AOC must reach out to the court staff who created the record and ask them to fix it. The court staff person may have questions for AOC, or may need to consult their own court's technical support staff for assistance. The court staff person can also deny AOC's request to update the record. If they do respond and fix the record, often a significant amount of time has elapsed. Once the court staff person does fix the record, AOC must wait for the fixed record to be picked up by the data flow processes in place to send the fixed person record to the EDR. The person matching issue will resolve when the EDR's automated person matching process runs next. Only then will the person matching issue be resolved in JABS.

As an alternative, AOC staff could be given authority to edit person records directly in source CMSs that AOC manages to resolve person matching issues. Safeguards can be established to make sure AOC staff can only make certain updates, for example, and must notify courts of the edits they made so that courts can request any corrections as needed.

2. Manually Update JIS Person Records with New DLN (In Progress)

Recently, the Court Services Director gave the EDR Business Owner permission to update the Driver License Number (DLN) on person records in EDR with current information retrieved from the Department of Licensing. This will help resolve person matching issues where a person record in JIS has the person's old DLN and a newer person record in the EDR for the same person has their new DLN, which causes the EDR person matching process to fail. When the EDR Business Owner updates the person record in EDR, the person's new DLN will be added to that record. As a result, the EDR's person matching process will succeed and match the two person records together.

C. Recommendations to Prevent Person Matching Issues

The following recommendations, if implemented, would help prevent person matching issues from occurring in the first place. Some of these recommendations are already being considered for implementation.

1. Programmatically Update EDR Person Records with New DLNs (In Progress)

There is currently an effort underway at the AOC to update person records in EDR with new Driver's License Numbers (DLN). The EDR Technical team is exploring ways to query the Department of Licensing (DOL) web service to retrieve new DLNs for person records that have old DLNs or missing DLNs in the EDR.

2. Implement DOL Driver's License Bridge (In Progress)

The Department of Licensing (DOL) is the system of record for Driver License Numbers in the state. When DOL changed the number format in 2019, they anticipated the need for their data exchange partners to have a way to retrieve a licensee's prior Driver's License Number. This Driver's License "bridge" is available as a data extract. AOC can make this data extract available to the EDR as a periodic data load to make both numbers available to the person matching algorithm. Currently, the EDR Technical team is evaluating this option and AOC's Data Dissemination team is working with DOL to sign a Data Sharing Agreement.

3. Verify Every Person Record in the EDR with DOL

Another idea that is currently under consideration at AOC, but not yet being worked, is to programmatically query the DOL web service to retrieve missing information about person records in the EDR. The EDR Technical team could establish a new system process to query the DOL web service and retrieve complete information for every person record in the EDR. This information could be stored in the EDR and used to enhance person matching and data quality. Both JIS and Odyssey have implemented a similar data exchange with DOL. This effort would establish a data exchange between the EDR and DOL.

4. Require CMSs to Dynamically Retrieve Person Records from the EDR

As the data repository for all statewide person and case records, the EDR will have a copy of every person and case record created in every court across the state. Additionally, the EDR has a programmer friendly Application Programmer Interface (API) that enables any approved system to send their data to the EDR.

EDR's API also has the ability for approved systems to query the EDR for person and case records of interest.

As of now, no court or on-boarded CMS, is retrieving data from the EDR, they are only sending data to it. If there was a requirement to force on-boarded CMSs to retrieve person records from the EDR either dynamically during key business processes such as case initiation, or in some other way, on-boarded courts would have the ability to interact with all person records statewide and would be able to fully implement the Person Business Rules as they are currently written. In this way, more staff would be empowered to reuse person records and independently correct person record mismatches when they occur without involving AOC or other courts.

Here is an example data flow diagram of this recommendation for one on-boarded court. The court is already required to send the EDR their case and person records. This recommendation would require them to retrieve statewide person records from the EDR to reuse in key business processes.
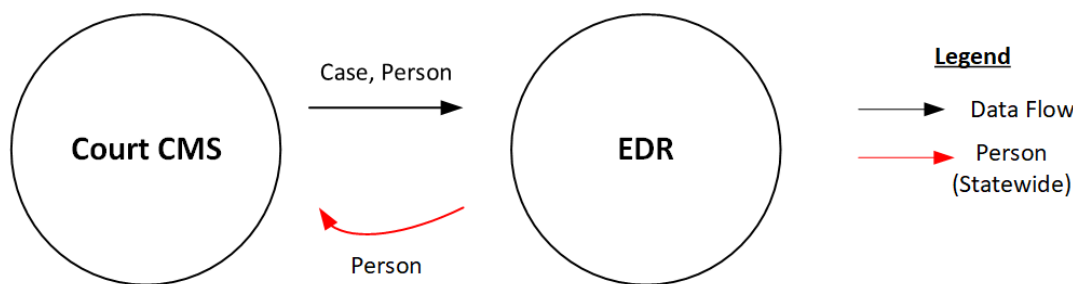
The following data flow diagram depicts all on-boarded courts implementing this recommendation in the future state systems landscape, when all major systems are on-boarded to the EDR.

Legend

→	Data Flow
‑ ‑ ►	View Only
→ (red)	Person (Statewide)
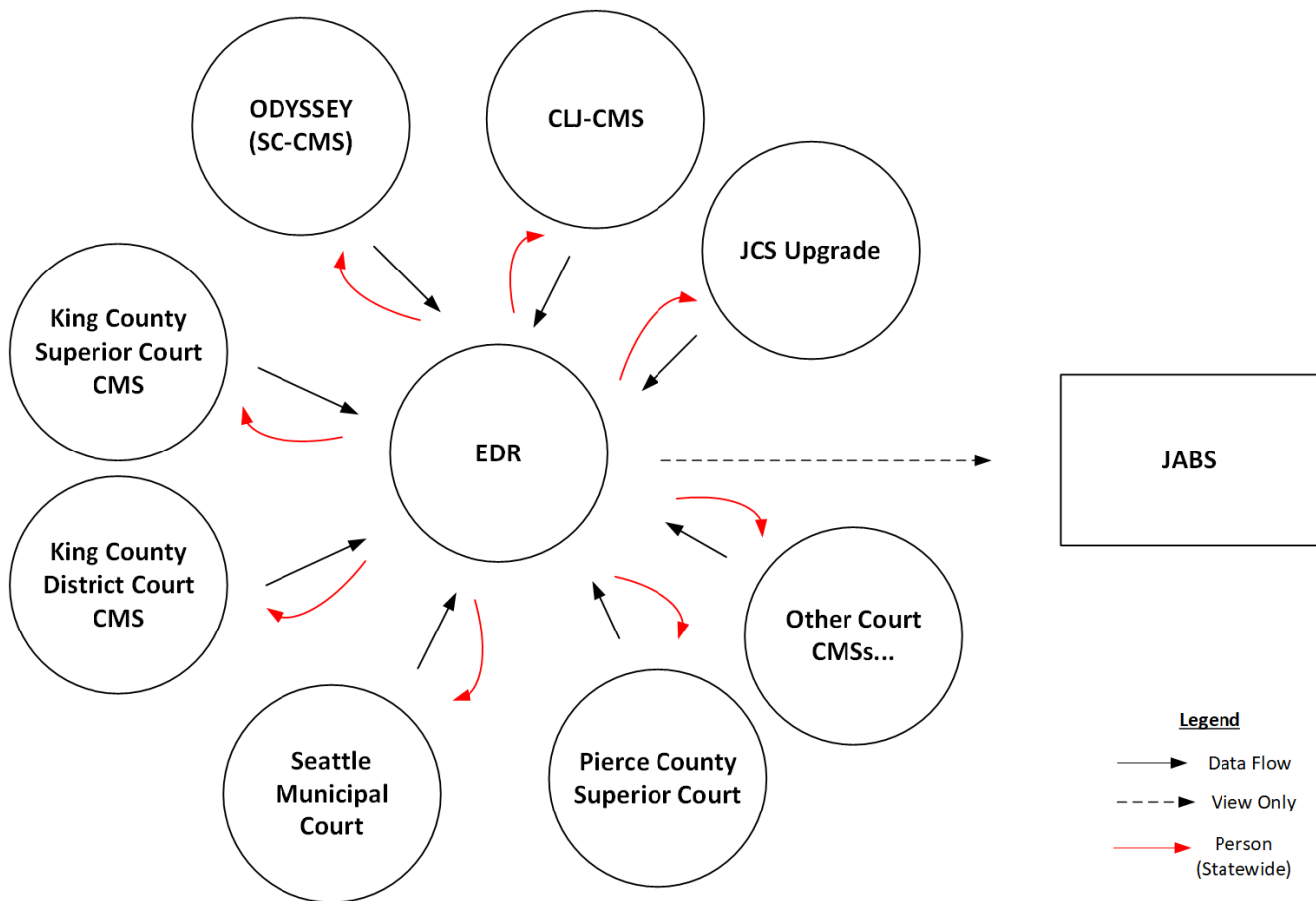
5. Develop a Plan to Accelerate Transition to the Future State

While the future state "target" systems landscape is not risk free, it does have the potential to better manage person records statewide. In the future state, more courts will directly on-board to the EDR. During the on-boarding process, AOC will partner with the courts involved to make sure that the court's data appears in the EDR as expected. Once an integration between a CMS and the EDR is built, both parties will be invested in maintaining the integration to address issues as they arise. JABS will need only look at the EDR for statewide data, reducing complexity and risk. Resolving person matching in the future state will potentially be more streamlined with fewer "moving parts" when data replication between JIS and Odyssey is retired. While there may be a plan to transition to the future state systems landscape, it may make sense to revisit this plan and identify ways to accelerate the transition where possible and adequately account for person matching issues in the future state before we get there.

6. Establish a Person Records Workgroup

Person matching issues have existed for a long time and, unfortunately, will exist into the foreseeable future. Given the technical complexity and the amount of effort involved with resolving person matching issues, it may make sense to form a dedicated, multi-disciplinary person matching workgroup. The workgroup would be charged with meeting regularly to review recent person matching issues, diagnose their root causes and

come up with policies and procedures to prevent similar issues from occurring in the future. Workgroup membership could include business and technical representatives from the courts as well as AOC.

Currently, person matching issues are treated like any other customer service support request. The challenge with current requests is that they sometimes bounce around to the wrong groups at AOC during the triage phase. If instead these issues were funneled to a dedicated group, that group could build expertise and champion education and policy efforts to improve the situation for all involved. This workgroup could also serve as a collective stakeholder group for the EDR's automated person matching process. As the algorithm evolves, the workgroup could provide feedback and possibly make recommendations for future enhancements.

7. Empower Court Staff to Correct Statewide Person Matching Records

As the systems landscape transitions to the future "target" state, court staff will have access to fewer and fewer statewide person records in their court's case management system. One remedy, as discussed above, is to force modernized CMSs to retrieve statewide person records from the EDR so that court staff can reuse these records during key business processes. If that is not possible, this recommendation is to develop some other way for court staff to have access to all person records in the EDR and to use this access to correct person matching issues when they arise. This could look like an enhancement to an existing system, such as JABS, or it could mean something else like the creation of a new system dedicated to the management of statewide person records. If this idea were to be pursued, more analysis would be required to understand how such a solution would need to function.

Incorrect person records would ultimately need to be fixed in their source CMS as well as the EDR. In general, though, the ability for court staff to remain empowered to resolve statewide person matching issues on their own would potentially help resolve issues more quickly when they occur. The ability for staff to reuse existing person records would prevent person matching issues from occurring.

8. Improve Data Quality

Work with courts to ensure that court staff enter personal identifiers on every person record they create and reduce manual data entry errors. Ensure that each record contains enough information for the EDR matching criteria to be successful.

9. Pursue legislative mandates that require statewide implementation of identified solutions for improving person matching

Mandate the creation and statewide use of a single person database. Require all courts to review existing EDR person records and perform the PBR matching processes at case initiation, prior to sending person data to the EDR.

10. Review and update the Person Business Rules and Policies

The distinction between JIS and non-JIS courts should be removed, or clarified, when it comes to which courts must follow the PBR's. Citations used in the PBR's must be updated. The substitution of CPO as the cause code for civil protection order cases must be added to the PBR's, and older cause codes removed. The JISC Rules and Policies should be reviewed and updated, to account for this dynamic systems landscape. New policies, rules and recommendations should be considered by the JISC for improving person matching.

XIV. Glossary

Application Programing Interface (API)	API is the acronym for Application Programming Interface, which is a software intermediary that allows two applications to talk to each other. Each time you use an app like Facebook, send an instant message, or check the weather on your phone, you're using an API. (https://www.mulesoft.com/resources/api/what-is-an-api) The EDR has implemented an API to add and retrieve data housed there. The Superior Court Data Exchange (SCDX) is another example of an API and allows systems to add data to JIS/SCOMIS and retrieve data from these legacy systems.
BizTalk	BizTalk Server is an enterprise service bus (ESB) developed by Microsoft that can connect to various business servers that might otherwise be unable to interconnect or communicate.(https://www.techopedia.com/definition/1414/biztalk-server)
Case Management System (CMS)	Case management solutions are applications designed to support a complex process that requires a combination of human tasks and electronic workflow, such as an incoming application, a submitted claim, a complaint, or a claim that is moving to litigation. These solutions support the workflow, management collaboration, storage of images and content, decisioning, and processing of electronic files or cases. (https://www.gartner.com/en/information-technology/glossary/case-management-solutions). Examples of CMSs include the legacy SCOMIS system, Odyssey, and eCourt in use at King County.
Enterprise Data Repository (EDR)	The Enterprise Data Repository (EDR) project was established to help make information sharing among the courts easier. The EDR core project provides a set of exposed web services and other transaction interfaces for exchanging data. The EDR Database is scalable and capable of receiving, storing and sharing statewide court data as defined in the JIS Standards.
Judicial Access Browser System (JABS)	The Judicial Access Browser System (JABS) uses a Web browser to display information stored on the Judicial Information System (JIS) mainframe computer and in the Odyssey case management system. JABS also displays information from the Electronic Data Repository (EDR).
Odyssey	The Superior Court case management system. Odyssey is a Web based application that displays data entry screens and allows the use of point-and-click navigation. Integrated with the statewide JIS Person Database, Odyssey provides the ability for Superior Courts to, file cases, update, report on, and share case information. These functions were previously provided by SCOMIS. Also known as "SC-CMS".
Person Matching	The process of combining two or more Person Records that identify the same human being. Person Matching can be done manually or by an automated process.
Person Record	A collection of data elements that represent a human being. Data elements include: First Name, Last Name, Date of Birth, Residential Address, Mailing Address, and identifiers such as Driver's License Number and State Identification Number.