State of Florida
Department of Children and Families
Child Protection Transformation
and SACWIS Compliance Projects

Technical Specification Document
Component Model – *Department of Juvenile Justice (DJJ) Interface*

Version 1.3

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Document History

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Summary of Changes

Revision Number	Revision Date	Revision Applied By	Summary of Change
1.0	1/20/2014	Scott Popovic	Initial submission
1.1	2/3/2014	Scott Popovic	Remove real-time components to match requirements.
1.3	3/5/2014	David Blaszak	Changed definition of data table and match file to meet functional requirements
1.4	4/30/2014	Jagadeesh Katari	Added technical details for the feedback comments from technical design review document.
1.5	5/9/2014	Jagadeesh Katari	Added Reference Data details for matching scores.Ok

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Section 1. Introduction

1.1 Purpose

This document describes the technical specifications for an interface between the Department of Juvenile Justice (DJJ) and the Florida Safe Families Network (FSFN) system. A batch will be developed to match DJJ children with FSFN children. An extract file containing DJJ children will be received by FSFN. Children matched in FSFN will be transmitted to DJJ with pertinent FSFN information specified in the requirements. The files will be exchanged with DJJ through a common FTP server. The data received from DJJ and matched in FSFN will be stored directly to the data warehouse for use in Ad-hoc reporting.

1.2 Scope

This technical design supports four new processes that are being proposed:

- FSFN pulls an extract file crated by DJJ from a FTP server. Demographic information within this file is matched to existing children in FSFN and stored in the FSFN data warehouse.
- FSFN creates a match file for all children that matched criteria sent by DJJ in the extract. The file is transmitted to a common FTP server to be picked up by DJJ.
- Match table data is stored directly in the Data Warehouse and not in the FSFN Online Transaction Processing (OLTP) database.

1.3 Assumptions

- Interface runs monthly and processes children through the previous month.
- DJJ and FSFN have a data sharing agreement in place.
- The Florida Department of Children and Families (DCF) have an FTP server available to send and receive files for this interface.
- File exchange uses File Transfer Protocol (FTP) over the DCF intranet.
- DJJ provides the input file that is used for processing.
- FSFN scores each match and transmits the file to the FTP server. DJJ is responsible for pulling the file down from the FTP server.
- Requirement 6.3 is being met by change in practice for user's to enter the information in FSFN. Once child record is in FSFN, it will be picked up by the existing AFCARS process. No AFCARS batch changes are required or are included in this design.

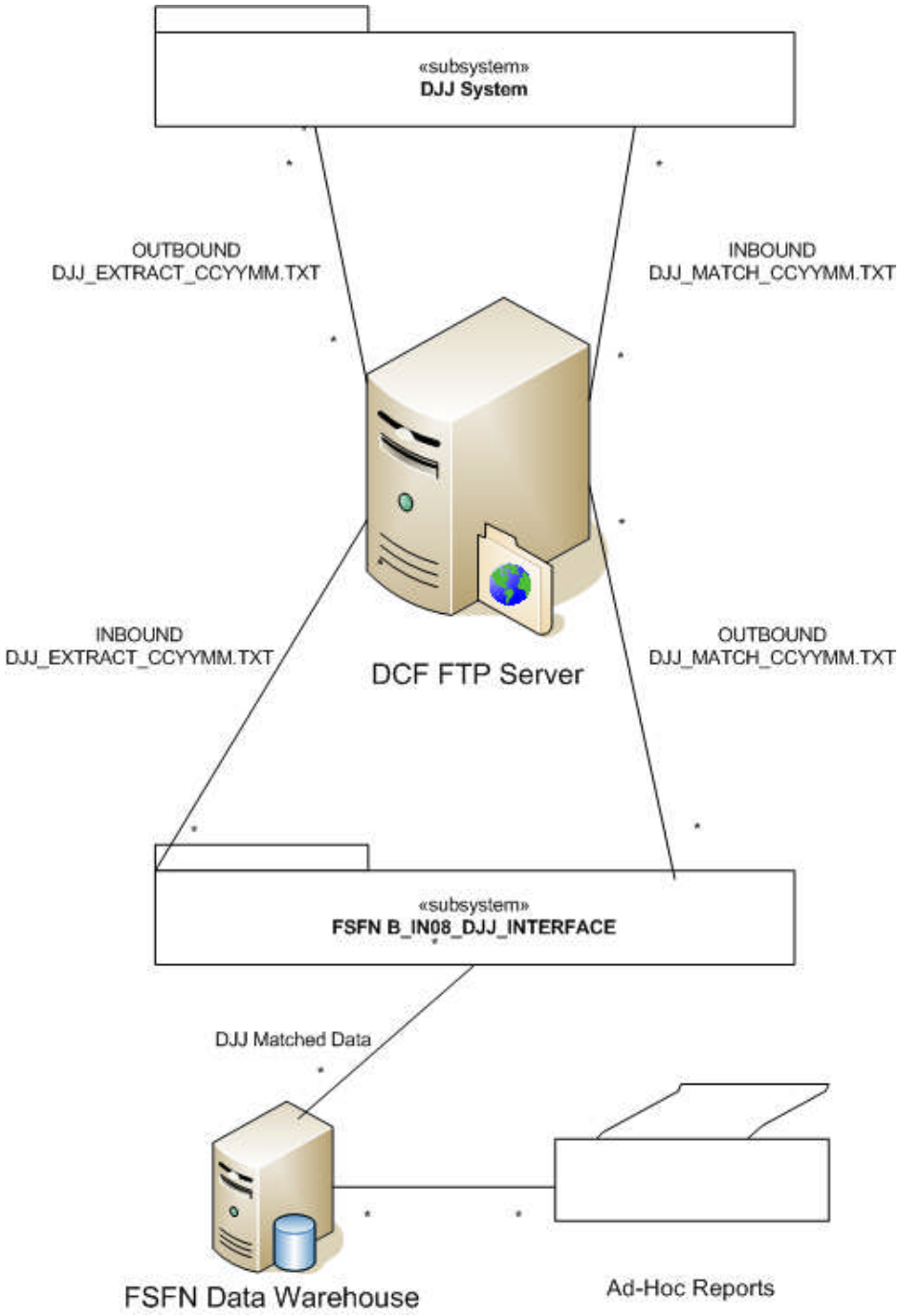
Section 2. Component Architecture

The purpose of this section is to describe the overall architecture for the specific in-scope systems engineering effort. This section documents the proposed components to implement the Department of Juvenile Justice (DJJ) interface.

2.1 Context Model

This section provides a high-level overview of the DJJ interface components and identifies the component-parts that will be updated during this design change. The figure below shows the technical component-parts for the incoming and outgoing DJJ interface process.

Figure 2-1 DJJ FSFN Interface



2.2 Component Objects

This section provides a high level overview of the technical components for the DJJ interface. The items that are added or modified as a result of this change are listed in the table below.

Table 2-1 DJJ Component Description and Enhancements/Changes

No	File Name	Type	Action	Brief Description of Enhancement/Change
FSFN DJJ Interface Batch				
1	B_IN08_DJJ_Interface	Java – Batch Program	Add	This batch processes a file received from DJJ and attempts to match with FSFN children based on match rules. The DJJ matches are scored and stored in the FSFN system. The batch creates an extract file for matches found in FSFN and transmits to an FTP server for DJJ to download.

Section 3. Component Design

This section describes the component model for the DJJ interface module. Detailed implementation information for each component as it relates to the following topics is included in the subsequent subsections for each page that were created and/or modified.

- User Interface components includes JSP pages and Java script pages.
- Controller components include Actions classes, Form beans, and Configurations files, and changes to the struts-config.xml file.
- Data Access components includes all DA classes that deals with database-related transactions.
- Physical Data design includes changes and additions to database tables, views, stored procedures, and custom functions.

3.1 User Interface Design

This is a batch interface process. There are no changes to the User Interface (UI).

3.2 Controller Component

This is a batch interface process. There are no Struts controller components.

3.3 Business Component

This is a Java batch. Business logic components are incorporated into the batch class.

3.4 Data Access Component

There are no separate data access components or classes. Data Access is handled through the Java batch program.

3.4.1.1 Physical Data Model Changes

The Physical Database Design work product maps the logical data model to the target database management system (DBMS) in a manner that meets the system's performance requirements.

3.4.2 DDL/DML Changes

The following changes should be made to the data warehouse.

3.4.2.1 DJJ_FSFN_MATCH Table

This table stores information about DJJ children received by the interface and matched in FSFN. Some of the demographic columns were prefixed with DJJ to distinguish the information from FSFN only children. Demographic information about children in FSFN can be obtained by linking the ID_PRSN column with the PERSON table. This table should also include standard audit create and update timestamps.

Table 3-1 DJJ_FSFN_MATCH Table

Field	Data Type	Length	Null (Y/N)	Primary Key (Y/N)	Description
ID_DJJ_PRSN	INTEGER	N/A	N	Y	Primary Key for the table.
ID_PRSN	INTEGER	N/A	N	N	The FSFN person ID. Foreign Key to PERSON.ID_PRSN.
ID_DJJ	BIGINT	N/A	Y	N	The DJJ person ID. Identifies a DJJ person uniquely.
NUM_MATCH_SCORE	INTEGER	N/A	N	N	Designates the demographic criteria used to return a match to DJJ. Match Score 1 = DJJ Person ID Match Score 2 = FSFN Person ID Match Score 3 = SSN, Name, and Date of Birth Match Score 4 = SSN, Name Match Score 5 = SSN, Date of Birth Match Score 6 = SSN Match Score 7 = Name and Date of Birth
ID_DJJ_SSN	VARCHAR	9	Y	N	Child's Social Security Number that is returned from DJJ.
ID_FSFN_SSN	VARCHAR	9	Y	N	Child's Social Security number that is recorded in FSFN.
TX_DJJ_LST_NM	VARCHAR	60	Y	N	DJJ Youth's last name.
TX_DJJ_FRST_NM	VARCHAR	60	Y	N	DJJ Youth's first name.
TX_DJJ_MDL_INTL	VARCHAR	60	Y	N	DJJ Youth's middle initial. Field is given additional length in case interface returns full middle name or more than one middle initial.
DJJ_DT_BRTH	TIMESTAMP	N/A	Y	N	DJJ Youth's birth day.
DJJ_AGE	INTEGER	N/A	Y	N	DJJ Youth's age calculated from DJJ birth date.
CD_SRVC_CTGRY	INTEGER	N/A	Y	N	Current service category for the child's active placement.
CD_SRVC	INTEGER	N/A	Y	N	Current service type for the child's active placement.
ID_PRVD_ORG	INTEGER	N/A	Y	N	Provider Id for the child's active placement. Foreign Key to PROVIDER_ORG.ID_PRVD_ORG.

3.4.3 CRUD Matrix

Table 3-2: CRUD Matrix

Table Name	Create	Read	Update	Delete
DJJ_FSFN_MATCH	X	X	X	
PERSON		X		
CASE_MASTER		X		
CASE_PART		X		
ADDRESS		X		
CODE_DESC		X		
EPISODE		X		

3.5 Reference Data

The following reference data for matching scores will be added to CODE_DESC table. The ID_GRP_I value is the matching score for the matching criteria. Ad-hoc queries and reports can use this reference data to obtain the matching criteria for the matching score stored in the DJJ_FSFN_MATCH table.

ID_GRP	ID_GRP_I	TX_DESC_LRG
DJJMATCH	1	DJJ Person ID
DJJMATCH	2	FSFN Person ID
DJJMATCH	3	SSN, Name, and Date of Birth
DJJMATCH	4	SSN, Name
DJJMATCH	5	SSN, Date of Birth
DJJMATCH	6	SSN
DJJMATCH	7	Name and Date of Birth

3.6 Constants

N/A

3.7 Documents and Templates

N/A

3.8 Tasks Due & Reminders

N/A

3.9 Automated Message

N/A

3.10 Batch Processes

A new batch will be developed to match DJJ children with FSFN children that meet specified criteria and are currently in active placement. The DJJ children that are matched successfully are stored in a data warehouse table containing DJJ that will be used for ad-hoc reporting. The batch program will also create and send a file to DJJ that contains FSFN children that were matched. The table below summarizes the components that make up the new interface batch.

Table 3-3 DJJ Batch Interface Summary

Item	Description
Description	Receives a file from DJJ containing demographic information, attempts to match this file with children in active placement. The batch always looks at placements through the last day of the previous month.
Frequency	Monthly.
Technology	Java batch program.
File Format	Pipe delimited text file.
Inbound Transmission	File Transfer Protocol (FTP) over Florida Department of Children and Families (DCF) intranet to DCF server. DJJ posts file to common FTP Server. FSFN pulls DJJ match file from server.
Inbound File Format	DJJ_EXTRACT_CCYYMM.txt which represents the previous month. A file received in April 2014 would be named DJJ_EXTRACT_201403.txt.
Outbound Transmission	FTP over DCF intranet to DCF server. FSFN posts to common FTP server. DJJ pulls FSFN match file.
Outbound File Format	FSFN_MATCH_CCYYMM.txt which represents matches for children through the previous month. This date should match the DJJ extract file year and month

- In the FSFN Batch project, default package, create a class called B_IN08_DJJ_Interface.
- Create an init() method to initialize database connections, logging, and validation of any parameter arguments.
- Create a main() method which is the batch entry point. All logic should not go in the main method. The main() method should instantiate the class and call a process method() where the logic is implemented.
- The following parameters should be passed into the batch program

  - Argument 1 – operating environment
  - Argument 2 – Batch Root
  - Argument 3 – (optional) OLTP Database number
  - Argument 4 – (optional) Data Warehouse database number

- Determine the processing month and year by subtracting 1 from the current month. For example, if the program is run on April 5, 2014, the processing month year would be March 2014
- Retrieve the file from the FTP server by the processing month. Using the example above, the file being retrieved would be DJJ_EXTRACT_201303.txt. If no file is found for the month, generate an error for the log file but do not return a failure code.
- Create a function that selects the latest service and placement information. This should be queried by person ID and is called to retrieve FSFN information for the matched data.
  - As per the functional specification only Placement Service Category, Placement Service Type Description, Placement Provider ID, and Placement Provider Name should be retrieved from EPISODE table by joining APPROVAL, PROVIDER_ORG, SERVICE_TYPE, and CODE_DESC tables.
  - Join Conditions
    - Join APPROVAL table with EPISODE table on EPISODE.ID_EPSD and APPROVAL.ID_WRK_TYPE
    - Join PROVIDER_ORG table with EPISODE table on ID_PRVD_ORG column value from both tables.
    - Join SERVICE_TYPE table with EPISODE table on CD_SRVC column value from both tables.
    - Join CODE_DESC table with SERVICE_TYPE table on SERVICE_TYPE.CD_SRVC_CTGRY and CODE_DESC.ID_GRPI.
  - Other Conditions
    - APPROVAL.CD_WRK_TYPE should be 13. Value 13 is the reference value for EPISODE work type. EPISODE record can be an out-of-home placement or in-home placement.
    - APPROVAL.CD_STAT should be equal to ‘A’.
    - APPROVAL.CD_ACTN should be equal to ‘A’.
    - EPISODE.DT_END should be null. It means the out-of-placement or in-home placement is not end dated.
    - EPISODE.ID_PRSN should be equal to the person ID set as the query parameter.

- Create a new file named DJJ_MATCH_CCYYMM.txt. The century, year, and month would be the same as the file retrieved from DJJ. Leave a pointer open to this file. The program will be reading from one file and writing to another simultaneously.
- Process the file through standard Java I/O file reader processes.
- For each line in the file:
    - If an exception is caught during the processing of any line, handle the exception gracefully. The program should write an error to the log and move on to the next record. Do not terminate the entire program. Set a flag that an error occurred. The final output of the log should be BATCH COMPLETED WITH ERRORS.
    - Increment record count and match count variables.
    - Parse the line into inner class form variables.
    - Run a query against the existing DJJ match table. If the person is found, update the DJJ match table with the latest DJJ information. Record a match score of 1. Retrieve FSFN demographic and service information. Write content to DJJ_MATCH_CCYYMM.txt file. Commit the record and continue to the next record.
    - Query the FSFN database using person ID. If a match is found, update or insert into the DJJ_FSFN_MATCH table with a match score of 2. Retrieve FSFN demographic and service information. Write content to DJJ_MATCH_CCYYMM.txt file. Commit the record and continue to the next record.
    - Query the FSFN database with remaining criteria using OR statements. This could bring back multiple rows. For each row, compare the FSFN data with the data received from DJJ. Record the person ID of the highest scored entry.
        - Match Score 3 = SSN, Name (Last Name, First Name, and Middle Initial), and Date of Birth
        - Match Score 4 = SSN, Name (Last Name, First Name, and Middle Initial),
        - Match Score 5 = SSN, Date of Birth
        - Match Score 6 = SSN
        - Match Score 7 = Name (Last Name, First Name, and Middle Initial), and Date of Birth
    - For the highest matched person ID, retrieve the current placement and service information and write to the DJJ_MATCH_CCYYMM.txt file. ID. If a match is found, update or insert into the DJJ_FSFN_MATCH table with the calculated match score. Commit the record and continue to the next record.
    - If the match score is 1, then the DJJ_FSFN_MATCH table record having the matched ID_DJJ will be updated with the latest person information retrieved from FSFN data tables. If the match score is greater than 1, before writing the data to the DJJ_FSFN_MATCH table, check if a record exists for the same person ID from the matched FSFN data. If found, update the DJJ_FSFN_MATCH table record, otherwise insert a new record. This would eliminate duplicate person records.
- After all records are processed, do the following:
    - Close the DJJ

- Close the newly written match file
- Record two log entries using program counters
  - Number of Records processed: XX
  - Number of Records matched: XX
- FTP the file to the DCF FTP server

- Create an executable bat file name B_IN08_DJJInterface.bat. This bat file is invoked by Autosys to initiate the batch job.
- Implementation Note: Create an NSRC request to add an Autosys job to run the .bat file created in the previous step. This should be done in UAT and higher environments.

3.10.1 Incoming DJJ File Format (DJJ to FSFN)

The file received from DJJ will be a text file in pipe delimited format with the fields below. The first row of the file should be a header entry that will be skipped when processing. Fields without values should be left blank.

3.10.1.1 Header Entry

ID_DJJ | ID_FSFN | ID_SSN | DT_BIRTH | LAST_NAME | FIRST_NAME | MI

3.10.1.2 Record Entry

The table below explains each field element and the format required.

Table 3-4 DJJ Incoming File Elements

Field	Description	Format Rules
ID_DJJ	Unique DJJ identifier.	Numeric
ID_FSFN	Unique FSFN Person ID if available on DJJ system.	Numeric
ID_SSN	DJJ Child's Social Security Number.	9 digit number, no formatting hyphens. e.g. 123456789
DT_BRTH	DJJ Child's Date of Birth	CCYYMMDD format 20140314
LAST_NAME	DJJ Child's Last Name	Character
FIRST_NAME	DJJ Child's First Name	Character
MI	DJJ Child's Middle Initial	Character

3.10.2 Outgoing FSFN File Format (FSFN to DJJ)

The file created by FSFN will be a text file in pipe delimited format. The first row of the file should be a header entry that will be skipped when processing. Fields without values should be left blank.

3.10.2.1 Header Entry

ID_FSFN | ID_DJJ | |MATCH_SCORE | ID_SSN_FSFN | ID_SSN_DJJ|DT_BIRTH | AGE | LAST_NAME | FIRST_NAME | MI | RACE | GENDER | CD_SERVICE_CATEGORY | TX_SERVICE_CATEGORY | CD_SERVICE_TYPE | TX_SERVICE_TYPE | ID_PROVIDER_ORG | TX_PROVIDER_NAME | CD_COUNTY | COUNTY_NAME

3.10.2.2 Record Entry

The table below explains each field element and the format required for the outbound DJJ_MATCH_CCYYMM.txt file.

Table 3-5 FSFN Match File Elements

Field	Description	Format Rules
ID_FSFN	Unique FSFN Person ID.	Numeric
ID_DJJ	Unique DJJ identifier.	Numeric
MATCH_SCORE	The calculated match score	Numeric. Calculated based on rules below • Match Score 1 = DJJ Person ID • Match Score 2 = FSFN Person ID • Match Score 3 = SSN, Name, and Date of Birth • Match Score 4 = SSN, Name • Match Score 5 = SSN, Date of Birth • Match Score 6 = SSN • Match Score 7 = Name and Date of Birth
ID_SSN	Child's Social Security Number as recorded in FSFN	9 digit number, no formatting hyphens. e.g. 123456789
ID_DJJ_SSN	Child's Social Security Number as recorded in DJJ	9 digit number, no formatting hyphens. e.g. 123456789
DT_BRTH	Child's Date of Birth in FSFN	CCYYMMDD format. 20140314.
AGE	Child's calculated age from birth date in FSFN	Numeric. Calculated from FSFN date of birth.
LAST_NAME	Child's Last Name in FSFN	Character.
FIRST_NAME	Child's First Name in FSFN	Character.
MI	Child's Middle Initial in FSFN	Character.
RACE	Child race obtained from FSFN. This will be the text value and not the FSFN code value. If multiple race values exist, they will be concatenated with a comma separator.	Character.
GENDER	Child's gender in FSFN	Single character. M=Male F=Female U=Unknown.
CD_SERVICE_CATEGORY	Service category stored in FSFN for most recent active placement.	Numeric.
TX_SERVICE_CATEGORY	Text representation of service category code	Character.

Field	Description	Format Rules
CD_SERVICE_TYPE	Service type stored in FSFN for most recent active placement.	Numeric.
TX_SERVICE_TYPE	Text representation of service type code	Character.
ID_PROVIDER_ORG	Unique identifier for the placement provider	Numeric.
TX_PROVIDER_NAME	Name of the provider	Character.
CD_COUNTY	Florida county code for youth's last known address	Numeric.
TX_COUNTY	Florida county for youth's last known address	Character.

3.11 ETL

N/A

3.12 Interfaces

There are two interfaces that will be built. One interface receives a file from DJJ by connecting to a common FTP server. The other sends a file to an FTP server where DJJ will pick up the file. The files sent and received will be processed by the batch program covered in a previous section.

3.13 Warehouse & Data Marts

Add the table DJJ_FSFN_MATCH will be added to the data warehouse (DW) database.

3.14 Reports

N/A – Reports per design are Ad-Hoc.

3.15 System Management

The DJJ interface batch program will need to be added to Autosys to run on a monthly schedule. The exact run date is to be determined.

Section 4. Non Functional Requirements Design

4.1 Performance Budgets & Considerations

N/A

4.2 Security and Privacy

A common SFTP server will be used to exchange file extracts.

The password for connecting to this server will be encrypted within a FSFN property file. This is standard practice for connecting to database resources from the batch environment.

The following are the security requirements for DJJ for placing and retrieving files from this secure FTP server:

- DJJ should be provided with credentials to make a secure connection.
- Only secure FTP connections should be allowed from DJJ.
- The credentials provided to DJJ should be allowed to access only DJJ_FSFN_PROD folder on the secure FTP server.

Section 5. References

Table 5-1 External Document References

Document Number / Location / URL	Reference Description/Name
	SACWIS Assessment Review Report for Financials (SARR)
	CR 310-SARR - FSFN-DJJ Interface
	DJJ interface Functional Specification