

Section 4 Bidder's Products, Methodology, and Approach to the Project	4.1 FACTS II Requirements Summary	4.11 Interfaces
	4.2 Functional Requirements	4.12 System Development
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	4.5 Project Initiation and Management	4.15 Conversion
	4.6 System Hardware	4.16 System Implementation
	4.7 System Planning and Analysis	4.17 Post Implementation Support
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4.9 System Design

RFP reference: 6.9 System Design, Page 46

Deloitte recognizes that the design phase is critical to project success and effective detailed design sets the foundation for satisfied end-users. We bring together the validated DSCYF requirements, experience from previous SACWIS implementations, and our knowledge of the DSCYF business processes to create detailed designs.

The design phase is a critical part of any systems implementation project. A missed requirement or false assumption in this phase has serious impacts later in the life cycle. The Deloitte team brings a proven track record of developing system designs that fit the needs of our social services clients.

Our success stems from our business based approach and from our proven systems development methodology FACTS II Playbook.

Following are the features of our approach to System Design and the benefits our approach provides to DSCYF.

section HIGHLIGHTS

- Getting it right the first time avoids the need for re-work and saves the State time and resources.
- Collaborative JAD sessions to fully elaborate how FACTS II achieves your requirements.
- Detailed document walkthroughs with DSCYF prior to submitting documentation to aid in DSCYF understanding and buy-in.

Features of Deloitte' System Design Approach.	Benefits to DSCYF
Participation from key stakeholders, including representatives from various user categories and DSCYF offices	<ul style="list-style-type: none"> • Determines stakeholder needs early in the requirements definition process • Reduces number of iterations since stakeholders are convened earlier • Facilitates buy-in early in the process
Use of screen mockups, where needed, to foster design reviews and approvals	<ul style="list-style-type: none"> • Provides users with visual representation of requirements and functional design
Leverages business processes, requirements, screen designs, systems flows and design specifications from efforts similar to FACES.NET	<ul style="list-style-type: none"> • Supports the DSCYF's need to accelerate the releases of deliverables into production • Maximizes the time provided by the DSCYF and other stakeholder organizations

Table 4.9-1. Features and Benefits of our approach to System Design.

We acknowledge that throughout the life of the project, some agreed upon requirements and draft designs require changes or enhancements for the following reasons.

- DSCYF needs continue to evolve and growing understanding by DSCYF staff gained through participation in design processes and use of the current system lead to requests for reconsideration of designs that has previously been published;
- Additional opportunities for business re-engineering may impact business flow, organization and needed system processes;
- DSCYF processes are continuously impacted by changes necessitated from periodic issuance of new and clarifying federal and state regulations, rules, orders and laws; and
- A limited number of forms and reports have been conceived. DSCYF requires additional forms, notices and reports be developed. We understand that DSCYF encourages Deloitte to consolidate and streamline forms, notices and reports where warranted.

Should this situation occur, we work together through the approved Change Control Process to decide on the most appropriate way of addressing each change.

During system design phase, with the Conceptual Design created in the Requirements Verification phase as our starting point, the Deloitte team designs artifacts (such as design documents, interface mocks, data model etc) which serve as a "blueprint" for Joint Application Design (JAD) Sessions with DSCYF staff to produce the final Detailed Design Document.

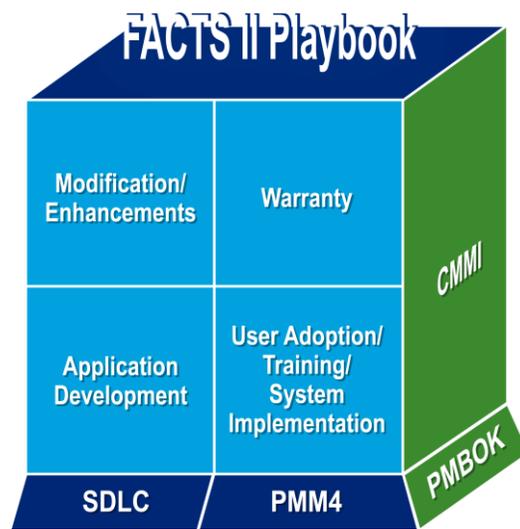


Figure 4.9-1. The FACTS II Playbook.

Also, during this phase, Deloitte conducts various Joint Application Design sessions (JAD sessions) to present and review the detailed design artifacts jointly with DSCYF staff. These include all business rules, warnings/edits, exception processing, interfaces and key process flows to present DSCYF with a clear picture of the solution functionality. Feedback received from DSCYF staff is incorporated and the artifacts are presented again for final submission. This design approach helps Deloitte and DSCYF to come up with a comprehensive and user-friendly design solution for Delaware FACTS II.

In addition, we develop the system architecture, data model and data dictionary needed to implement the Delaware FACTS II solution. We use industry best practices and our experience from social service application implementations to design an optimized and robust data model for FACTS II.

Our Approach to System Design

RFP reference: 6.9 System Design, Page 46

Proposals should describe, in detail, successful design practices used by Bidders in previous implementations and proposed for use for the FACTS II project. These practices should include descriptions of the JAD process as well as approaches to ensuring that the design is accurately and thoroughly documented. Inclusion to brief samples of the Detailed Design Documents is encouraged.

The Deloitte team brings the FACTS II Playbook for System Design phase of the Delaware FACTS II project. Detailed design artifacts are produced, reviewed with stakeholders, and mapped to the appropriate business and technical requirements, establishing a solid foundation for the subsequent development phase. Deloitte holds a walkthrough session to review the various design artifacts/deliverables with DSCYF staff and incorporate appropriate feedback before the final submission. Using our deep understanding of the underlying technical architecture, we design high-quality software for end users to perform critical integrated children services business processes. The following table summarizes the benefits of our approach.

Features	Benefits
Disciplined and mature CMMI processes	<ul style="list-style-type: none">• Produces stable and predictable software components while helping to meet business requirements and objectives.• Adherence to DTI's Project Management methodologies, standards and guidelines.• Lowers transition, effort, schedule and performance risks.• Provides a framework for continuous improvement.
Continuous stakeholder involvement during the design process	<ul style="list-style-type: none">• Validates business and technical requirements are met by the proposed design, reducing later rework during the testing phase.• Facilitates end-user familiarity with system components and adoption of the system during training.

Features	Benefits
Federal compliance checks are built into our methodology	<ul style="list-style-type: none"> The performance of Delaware FACTS II at the time of the first federal review is greatly improved.

Table 4.9-2. Features and Benefits of Our Approach to Design Delaware SACWIS using proven techniques and assets.

The Deloitte team recognizes the important role a solid Conceptual Design plays in achieving implementation success. Across our national portfolio of Health and Human Services engagements, our project teams focus on creating innovative, balanced, and, most importantly, complete system designs. The methodologies, frameworks, lessons learned, and leading practices that the Deloitte Team employs for DSCYF are the products of our experience in successfully delivering solutions for clients across State Government, Health and Human Services, and specifically, our Integrated Children Services practice.

We base our approach to requirements gathering on our established FACTS II Playbook methodology. Our approach includes focused collaboration with stakeholders through detailed Joint Application Design (JAD) sessions, as well as additional smaller sessions as required. The purpose of these sessions is to use the subject matter expertise of all involved, including DSCYF, end users, and other stakeholders, to elicit in depth details of the business requirements to be met, so that an application design that most effectively meets those requirements is created. We fully understand the importance of engaging these individuals as soon as possible to create a solution that best meets the business needs of those involved. The outputs of these sessions include thoroughly detailed meeting minutes, elaborated requirements, and the detailed design deliverables for review and approval by the DSCYF.

Deloitte bases its approach to thoroughly elaborating the DSCYF requirements on a demonstrated methodology tailored to the business and organizational needs of the DSCYF. Our key differentiators include the following:



Ajit Kulkarni,
Functional Manager



“I’m excited to transfer DC FACES.NET to Delaware FACTS II using our methods, tools and processes. With my years of experience on DC FACES, I bring first hand SACWIS functional and system knowledge to Delaware.”

- **Demonstrated FACTS II Playbook Methodology.** Our demonstrated FACTS II methodology includes requirements gathering/elaboration efforts that deploy tools and approaches, such as JAD sessions. Having already performed requirements elaboration and design phases for numerous systems similar to Delaware FACTS II, we use lessons learned, such as the importance of including key stakeholders as early as possible, to accelerate and improve our detailed requirements gathering processes. We understand that in order to validate DSCYF requirements, workflows and procedures, the JAD sessions for Delaware FACTS II includes multiple key DSCYF stakeholders, including representatives from various user categories, selected DSCYF offices, and other State agencies for interface discussions.
- **Depth of Tools – SACWISmate.** Our tool SACWISmate aids in the development of system design requirements. We do not start with a blank slate. These tools and accelerators have demonstrated success and buy-in with stakeholders based on our previous experience with Alabama, Maryland and District of Columbia SACWIS implementations. Our tools, such as screen mockups and process modeling, provide a starting point for the requirements verification process, and are continuously updated as decisions are made from our requirements and design sessions. We use this tool throughout our systems development life cycle approach.
- **Enforced Traceability.** This helps assess the correct definition and design of requirements and aids in the effective testing and delivery of requirements. A detailed requirements traceability matrix is used to help track requirements through the requirements elaboration, design, development, and testing phases of our SDLC approach.

Deloitte and State Responsibilities: Activity List

The following table outlines the tasks, activities and deliverables that are included as part of this task:

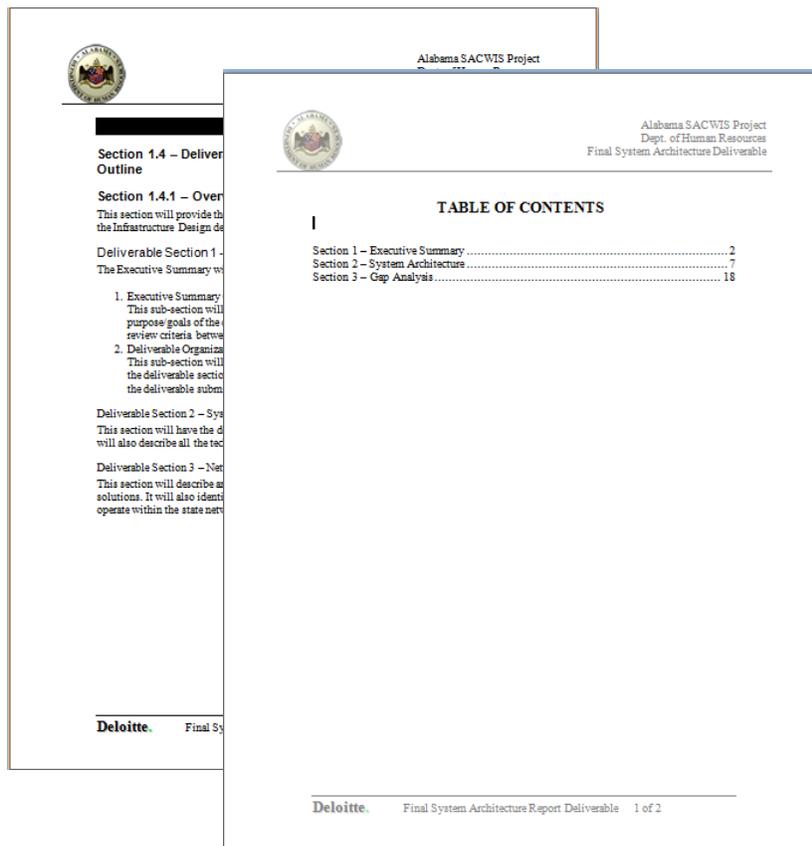
Task 2.1 Activities	Deloitte Responsibilities	DSCYF Responsibilities	Deliverable
Review Requirements that have been finalized from the Requirements verification phase	Review Requirements that have been finalized from the Requirements verification phase	Provide clarifications of programs, policies, and current information systems with respect to the finalized requirements	No
Conduct Joint Application Design sessions	Facilitate JAD sessions	Participate in JAD. Confirm required participants attend the sessions	No
Prepare Detailed Design Document	Prepare and submit Detailed Design Document for review	Review and approve Detailed Design Document	Yes
Prepare Physical Data Model	Prepare and submit Physical Data Model for review	Review and approve Physical Data Model	Yes

Task 2.1 Activities	Deloitte Responsibilities	DSCYF Responsibilities	Deliverable
Prepare System Architecture Document	Prepare and submit System Architecture Document for review	Review and approve System Architecture Document	Yes
Prepare Data Dictionary	Prepare and submit Data Dictionary for review	Review and approve Data Dictionary	Yes
Prepare Document Management Design Specifications	Prepare and submit Document Management Design Specifications for review	Review and approve Document Management Design Specifications	Yes

Table 4.9-3. System Design Activities.

The chart above lists the activities for System Design for the FACES II Project.

A sample system architecture document is shown in the figure below.



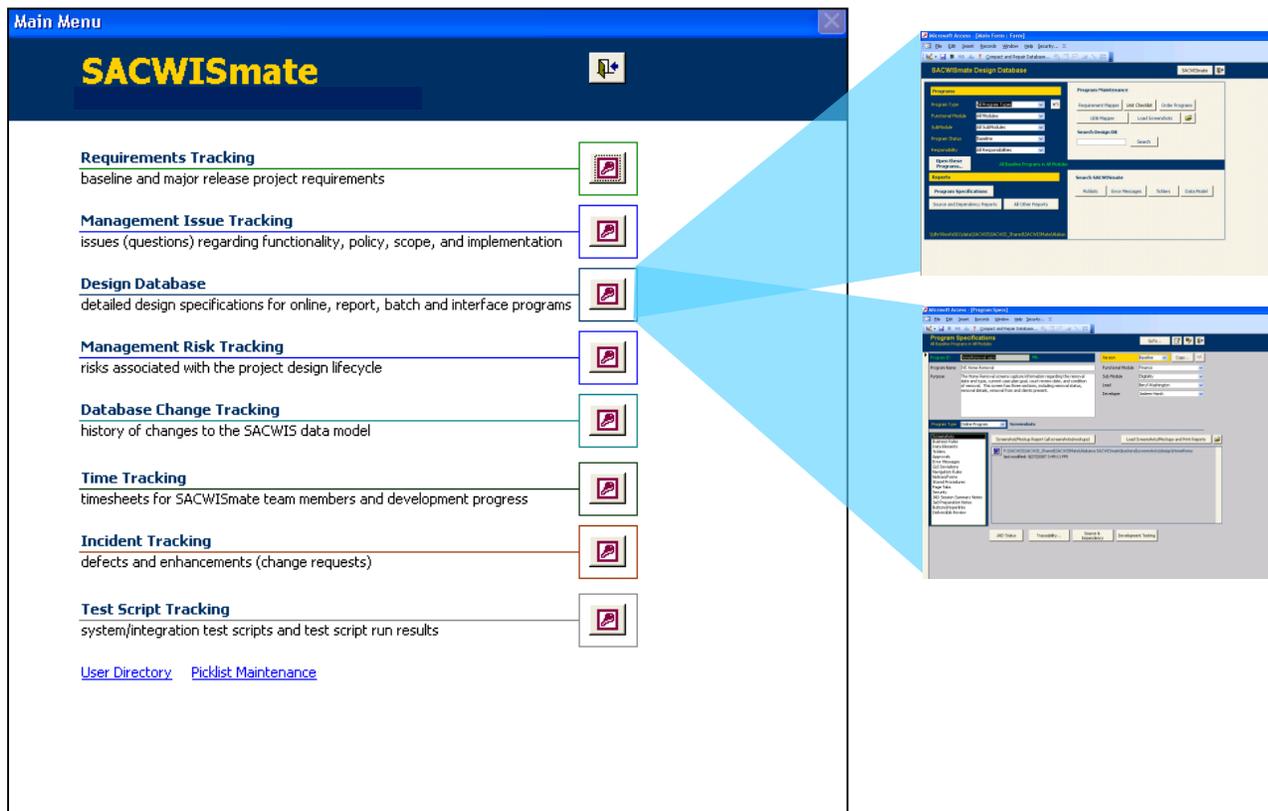
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Figure 4.9-2. Deloitte’s Detailed Design Approach is aided by efficient documentation tools.

Creating a Detailed System Design that Promotes Knowledge Sharing and Ease of Maintenance

With every SACWIS project, the Deloitte team gains efficiencies that are carried forward to ease the process of creating, reviewing and maintaining documentation. To apply a best practice from our Alabama, Maryland and District of Columbia SACWIS implementations, we bring Deloitte's detailed design module that aids the entire project team in creating, updating, maintaining and enforcing traceability to back to requirements and forward to development components. The detailed design tool is part of our larger SDLC management tool – SACWISmate. We train your staff on how use the SACWISmate Detailed Design tool. The user-friendly interface makes it an intuitive tool to use. Navigating through business rules, data elements, alert definitions, approval workflow rules, to name a few, is easy and compartmentalized in logical groupings to allow users to go directly to the information they need instead of searching and scrolling through a single Microsoft Word detailed design document. The tool is pre-loaded with SACWIS-compliant rules, data fields, reference values, error messages and federal rules to accelerate the design documentation activities for Delaware FACTS II.

Since the Detailed Design tool is available to all project team members the sharing of design information is fluid and DSCYF develops a repository of critical project documentation and manages the evolution of the documentation effectively.



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Figure 4.9-3. Deloitte's Detailed Design Approach is aided by efficient documentation tools.

Our SACWISmate Detailed Design tool standardizes and automates the generation of Delaware FACTS II design specifications with ease.

The Detailed Design tool is an integral part of the day to day project activities and supports all phases of the project. For example, SACWISmate aids in the timely resolution of test inquiries during UAT and help desk incidents; as UAT testers and Help Desk operators are provided a read-only version of the tool to look up business rules to help troubleshoot an identified or reported issue. Our structured SDLC processes include milestone documentation update activities to support current design documentation reflective of the current version of Delaware FACTS II. The Deloitte functional leads are trained to hold documentation as a high priority and understand the importance and invaluable benefits of up-to-date system documentation. We work diligently with you to maintain current documentation throughout the SDLC.

Detailed Design Program Specification

The SACWISmate Detailed Design tool generates complete and comprehensive detailed design program specifications that document the individual design components of the Delaware FACTS II system including design specifications for online screens, reports, forms/correspondence, batch programs, and interfaces. From a design documentation perspective, each specification captures detailed design components including screen mockups, business rules, error messages, data element mapping, alerts, approvals, navigation flow.

From a design management perspective the tool captures milestone decision points and collaborative discussions between the Deloitte team and DSCYF. Joint Application Design (JAD) documentation is capture to maintain a history of decision making – pre-JAD, JAD and post-JAD – information is entered directly into the tool and linked to the individual design specifications for traceability. It has been our experience that clients review the design deliverable online or choose to review a PDF version of the design specifications – it is your choice. Upon review of the design specifications, DSCYF is able to directly enter review comments against the specification to keep an audit trail of documentation and QA reviews. After formal review of the design specification, the Deloitte team is also able to respond to each review comment and provide a resolution. Below is a screenshot of the JAD Preparation and DSCYF Approval Review documentation.

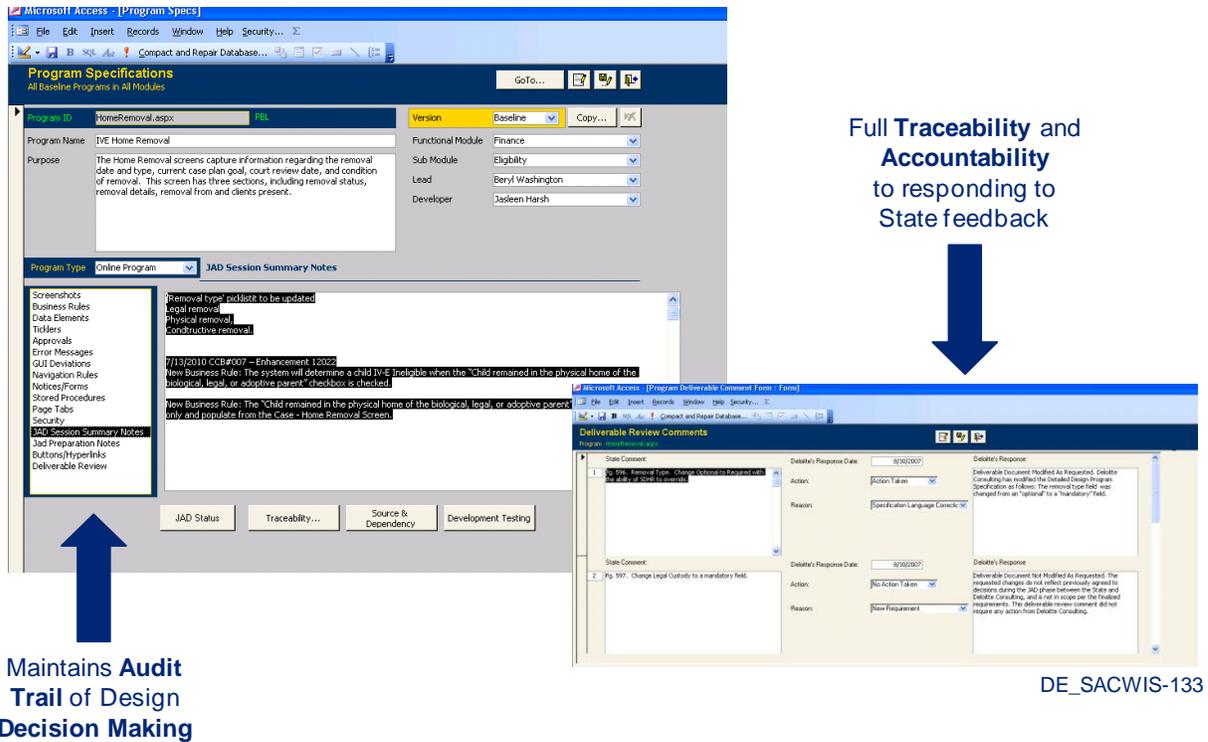
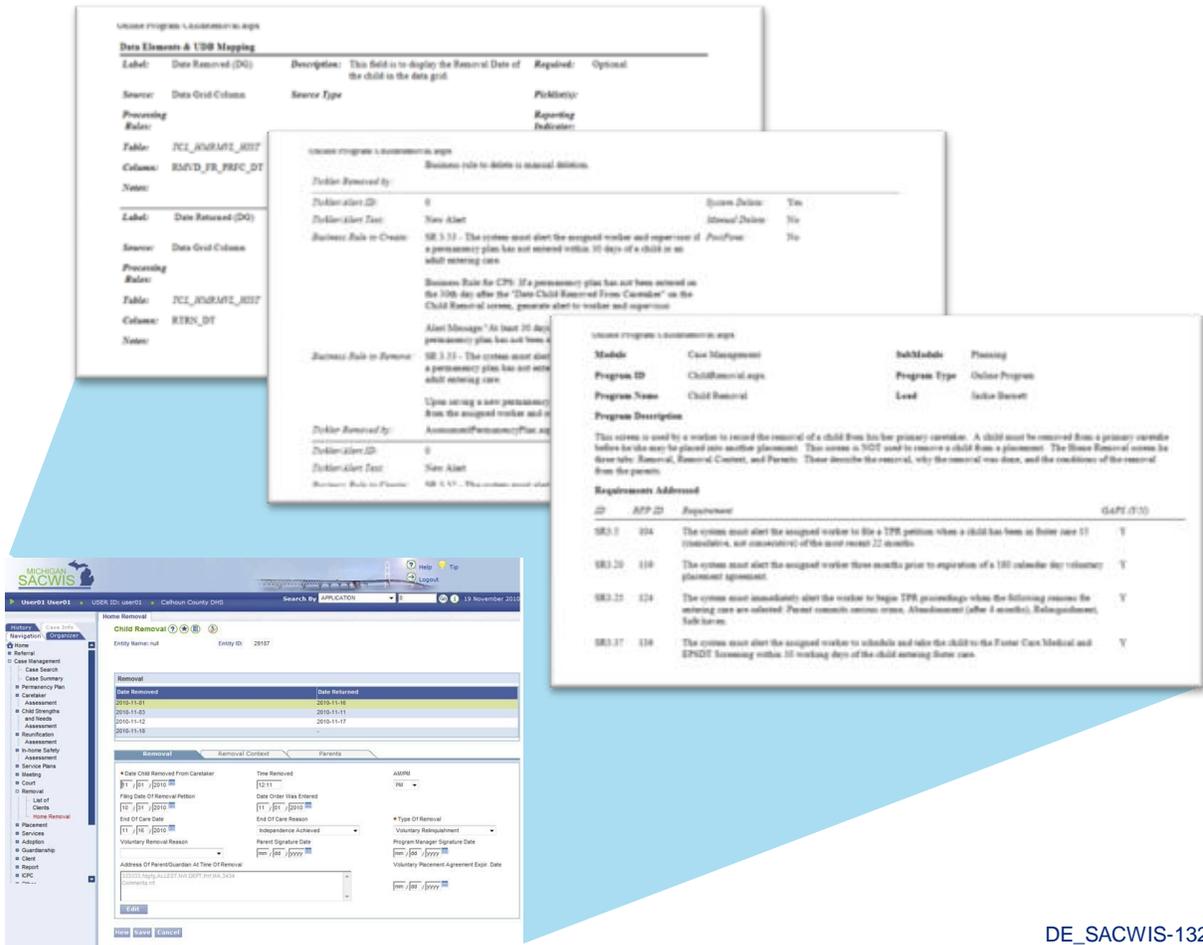


Figure 4.9-4. Deloitte’s Detailed Design Tool.

Our Detailed Design Tool captures key design decisions and produces a traceable audit trail of decision making history.

The following illustration is a snapshot of the generated detailed design specification for the Child Home Removal online screen. Please see the Detailed Design Program Specification sample immediately following this section.



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Figure 4.9-5. Sample Automated Detailed Design Specification.

The central storage of design information makes for each finding of functional and system answers and promotes knowledge sharing across the project.

Roles, Responsibilities and Acceptance

We recognize that the development of a strong detailed design for Delaware FACTS II relies on coordinated collaboration between the Deloitte Team and DSCYF. The table below shows the roles and responsibilities for the stakeholders involved in the Detailed System Design Session Plan task of the Detailed Design process.

Detailed Design Task	DSCYF Role	The Deloitte Team's Role	Acceptance Criteria
Detailed Design Document	<ul style="list-style-type: none"> • Validate that the design supports the State Vision and supports each program • Validate the design is comprehensive and contains the necessary detail for development • Review and approve the Detailed Design Document • Co-facilitate presentation for committee approval to move to the development phase of the project • Provide input and clarifications to the Bidder as needed • Fully participate in final logical and physical data modeling sessions 	<ul style="list-style-type: none"> • Develop the final version of the detailed design specifications • Conduct walkthroughs and demonstrations during the detailed design to enhance State understanding and to facilitate the approval process • Conduct ongoing presentation of screen/window, and other layouts and obtaining State approval during the detailed design to facilitate overall State approval • Co-facilitate presentation for committee approval to move to the development phase of the project 	<ul style="list-style-type: none"> • Documentation of the detailed design specifications according to the requirements of this RFP and added through the change control process • Documentation of a complete, comprehensive design that is ready for development • Resolution of all outstanding issues related to the design • Inclusion of steps that allow for review and approval of redesign specifications by a committee

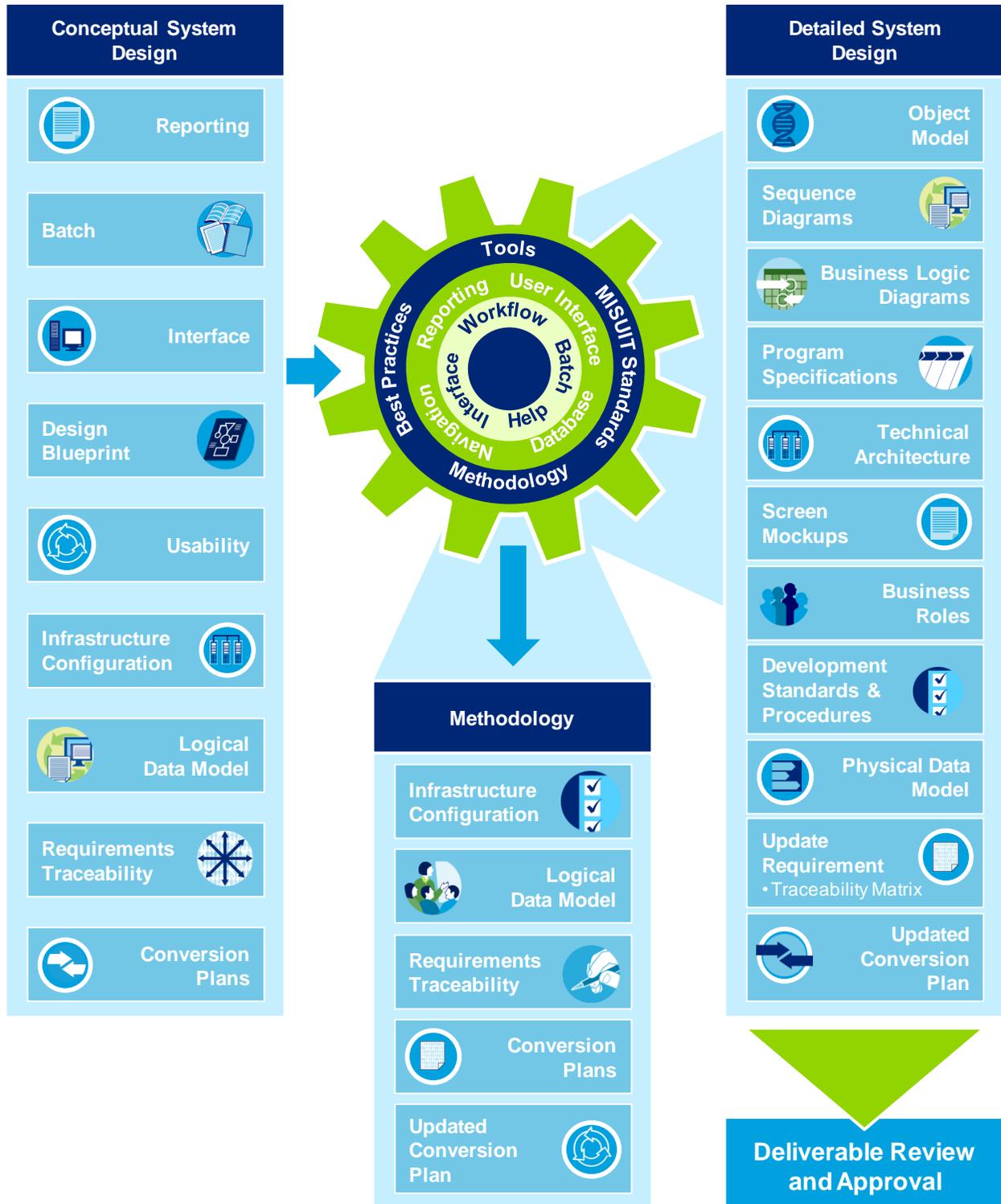
Table 4.9-4. Roles and Responsibilities of Detailed System Design.

How we facilitate the transition from Conceptual to Detailed Design

We are sufficiently flexible in our approach to understand that multiple Detailed Design sessions are needed to suffice to all circumstances and stakeholders with which we engage. We work with you to best determine how to define and schedule the detail design sessions using the following criteria as guidance:

- The size of the group with whom the JAD session is to be conducted
- The relative experience of the group with respect to systems development practices
- The complexity of the requirements to be discussed
- The nature of the requirements and how closely they are aligned to current practices
 Entirely new requirements typically demand a different approach than requirements that closely resemble current business practices
- The degree of continuity that we achieve with DSCYF participants from Conceptual Design

The Deloitte team's approach to the progression from Conceptual Design to Detailed Design is illustrated in the following figure.



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Figure 4.9-6. Conceptual to Detailed System Design Progression.

Using the conceptual system design as an input, we apply our leading practices, tools, and methodology to develop a detailed design that meets your requirements.

During the design session, we address business processes and the potential for change. We know from our experience how the early identification of business processes enables accurate design and development and also helps with training.

After every design session, Deloitte conducts design debriefs. These are the venues in which DSCYF and Deloitte leads come together to understand the primary decisions that have been made during the day and look for potential conflicts and overlaps that are reviewed in the next session. Once all sessions have been completed, Deloitte conducts integration sessions as a final check that the individual detailed design components come together to form a comprehensive and cohesive whole. We also employ a robust strategy to validate design results.

Approach to Develop and Validate the Detailed System Design

RFP reference: 6.9 System Design, Page 46

The Detailed Design Document will include final specifications for the database as well as for the application. The Detailed Design Document should identify all business rules, warnings/edits, exception processing, field input criteria, access permissions, and expected functionality. Data conversion testing should also begin at this point. Proposals should describe, in detail, successful design practices used by Bidders in previous implementations and proposed for use for the Delaware FACTS II project. These practices should include descriptions of the JAD process as well as approaches to ensuring that the design is accurately and thoroughly documented. Inclusion of brief samples of Detailed Design Documents is encouraged.

If the Bidder proposes a phased or iterative design methodology, the State will consider alternative deliverable schedules; however, the Bidder must describe how the complete Detailed Design Document and other deliverables will be compiled. The Detailed Design Document must include diagrams and associated descriptions showing relationships of business processes to the detailed system architecture specification. As an example, for major business processes (e.g. IV-E eligibility determination) the diagram will depict the user interaction with the solution, the route of data movement, major COTS components involved, applications executed, any triggers/stored procedures invoked, and related server hardware involved in the interaction. Code reuse is highly desired and the Detailed Design Document must take code reuse into account, where applicable.

The Detailed Design Document must include database schemas for all databases. The Detailed Design Document must also identify all interfaces (internal to the Department and external), and any impact or usage by the overall solution. The details of interfaces (e.g. types of transmission, frequency) will be identified in the Interfaces Design Document.

The Deloitte team collaborates with DSCYF to transform the Conceptual Design (augmented by pre-existing, federally reviewed Deloitte SACWIS assets), the “what to do”, into a Detailed System Design, the “how to do it,” that moves forward into the Development activity.

The major components of the Detailed System Design are summarized in the following table. For the most part, these are elaborations and extensions of the preliminary artifacts produced within the Conceptual Design activity.

Component	Description
Prepare Delaware FACTS II Detailed Design Document	<p>Create and submit a detailed design document from JAD sessions.</p> <p>The detailed design document include: Database design documentation— archiving and purging strategies, traceability to requirements, entity-relationship diagrams, object models, data models, data flow diagrams, and data dictionaries</p> <p>Detailed design document include details of business rules, screen layouts, warnings/edits, exception processing and field input criteria, access permissions, and expected functionality. Additionally the detailed design document identifies all interfaces (internal and external to DSCYF) and any impact or usage by the solution.</p>
Final Detailed System Architecture	<p>Our SACWIS solution is based upon the FACES.NET system architecture. We do not anticipate that this architecture materially changes as a result of Conceptual or Detailed design. Nevertheless, we provide a final detailed system architecture that addresses:</p> <ul style="list-style-type: none"> • Application tiering • Application components residing within tier • Narrative of functionality residing within each tier • Messaging and containers for data transport between tiers • Integration of the core application with external systems (interfaces) • Integration of the core application with COTS components
Final Physical Data Models	<p>Starting from the federally compliant FACES.Net data model, we refine and extend to cover the requirements embodied within the Conceptual Design. In additions to the table, column and relationship definitions, or models also include:</p> <ul style="list-style-type: none"> • Referential integrity rules • Indexing • Views • Triggers • Look up tables and values
Data Dictionary	<p>Starting from the federally compliant FACES.Net data dictionary, we refine and extend to cover the changes made to the data model to support Delaware requirements. The data dictionary is stored in a manner that allows extraction and sorting in multiple formats to suit the varied needs of the project during development. This includes:</p> <ul style="list-style-type: none"> • Narrative description of all tables • Narrative description of all data elements within tables • Unique number and standard name for each data element • Narrative description and definition of data element • Range constraints for data elements • Look up table of values for elements used to populate a screen drop down list, with definitions of those values • Source of the data element (screen ID, batch program ID, interface ID) • Valid values with definitions

Component	Description
Document Management Design Specifications	<p>Create and submit a detailed design document from JAD sessions for the document management functionality – File Cabinet</p> <p>The detailed design document include: Database design documentation— archiving and purging strategies, traceability to requirements, entity-relationship diagrams, object models, data models, data flow diagrams, and data dictionaries</p> <p>Detailed design document include details of business rules, screen layouts, warnings/edits, exception processing and field input criteria, access permissions, and expected functionality. Additionally the detailed design document identifies all interfaces (internal and external to DSCYF) and any impact or usage by the solution.</p>

Table 4.9-7. Components of the Detailed Design Documentation.

A sample data dictionary format is shown below.



AL SACWIS Project
Dept. of Human Resources
Data Dictionary

Table	Table Description						
Column	Column Name	Column Description	Data type	Length	Null?	PK	FK
CL_SEQ	This entity stores client ID and a system generated number.						
CL_ID	ClientID	This data element stores client ID information.	BIGINT	8	N		
SEQ_NBR	Sequence number	This data element stores sequence number information.	INTEGER	4	N		
ERRORLOG	This entity stores an error log created during user sessions.						
ERROR_DATE_TIME	Error data time	This data element stores error date and time information.	TIMESTAMP	10	N		
ERROR_ID	ErrorID	This data element stores error ID information created by an error event.	INTEGER	4	N		P
ERROR_MESSAGE	Error message	This data element stores error message information.	VARCHAR	2500	N		
ERROR_TYPE	Error type	This data element stores error type information	VARCHAR	50	N		
REQUEST_URL	Request url	This data element stores request url information.	VARCHAR	250	N		
SESSION_INFO	Session info	This data element stores session information in event of an error.	VARCHAR	250	N		
USER_ID	UserID	This data element stores user ID information.	VARCHAR	10	N		
EXCEPTIONS	This entity stores exceptions generated on due to table constraints.						
CONSTRAINT	Constraint name	This data element stores name of the constraint that raised exception.	VARCHAR	30	Y		

Figure 4.9-7. Sample Data Dictionary.

We are confident that our existing SACWIS solution artifacts, in combination with our proposed experienced staff generate a Detailed System Design to your specifications within a time frame that supports implementation according to the proposed schedule.

4.9.1 Associated Deliverables

RFP reference: 6.9.1 Associated Deliverables, Page 47

The following deliverables are required during the System Design Phase:

- Physical Data Model;
- System Architecture;
- Data Dictionary;
- Detailed Design Document; and
- Document Management Design Specifications.

The outcome of the System Design phase is the creation and submission for DSCYF approval the following deliverables:

- Physical Data Model
- System Architecture
- Data Dictionary
- Detailed Design Document
- Document Management Design Specifications