IRWIN HODSON GROUP

PROJECT MANAGEMENT PLAN

iPRIME
(INDIANA PLATE REGISTRATION INVENTORY MANAGEMENT E-SUITE)

4/16/2020
   v1.2

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<u>Definitions, Acronyms, Abbreviations</u>

Name	Definition
API	Application Programming Interface
BIS	Business Information Systems
Boolean	Boolean Data type for a true or false value. Values represented by a non-zero (1 or -1) for true, and a zero (0) for false.
Flag	Refers to a data type used to hold a value for a Yes/No or True/False or on/off question. Also referred to as a boolean data type depending on the database in use.
Functional Requirement	Relates directly to a process the system has to perform or information it needs to contain.
IHG	Irwin Hodson Group
Non-Functional Requirement	Refers to behavioral properties that the system must have, such as performance and usability.
Requirement	Simply a statement of what the system must do or what characteristic it must have.
System	For this document, System refers to iPRIME

Introduction

The Irwin Hodson Group (IHG) and Business Information Systems (BIS) have over 140 years of combined experience in providing services and creating technology solutions for government entities and commercial customers that include the States of Tennessee, North Carolina, South Carolina, Georgia, Kentucky, Arkansas, Nevada, Mississippi, New Mexico, Hawaii, Delaware, Oregon, Alaska, Virginia, and all Provinces and Territories of Canada BIS has developed a complete motor vehicle solution that can be used out of the box or customized to meet and fit each jurisdiction's and state's specific needs. BIS's motor vehicle solution (VTRS – Vehicle Title and Registration System) offers fully integrated web-based software solutions that include: Vehicle Titling and Print-on-Demand Registrations, Motor Vehicle Mobile App (Auto Assistant), Inventory Management System, Personalized License Plate Ordering Web Portal, Electronic Insurance Verification System, and Print-on-Demand Temporary License Plates. IHG provides license plate manufacturing and related fulfillment services.

BIS and IHG saw a business strategy and a customer value-add to incorporate license plate production and direct fulfillment of license plates and vehicle registrations to the current, existing motor vehicle solution offered by BIS. BIS and IHG mutually agreed to join into a business relationship to better provide complete services to jurisdictions in the United States. IHG Indiana, and its sister companies comprise the Waldale Irwin Hodson Group (WIHG), the largest private manufacturer of license plates in North America, with 23 Provincial and State DMV's purchasing 100% of their plates and related fulfillment services under contract.

IHG along with sub-contractor BIS will provide the complete inventory management, production, manufacturing and direct fulfillment to motorists of license plates, vehicle registrations and decals for the Indiana BMV in the State of Indiana. The Indiana Plate and Registration Inventory Management E-Suite (iPRIME) product encompasses the replacement of the current infrastructure, software and hardware for managing data, and handling the production and manufacturing of printing, sorting and shipping of vehicle license plates, and vehicle, boat and off-road vehicle registrations and decals. The iPRIME product provides the infrastructure, data management tools and reporting required for seamless integration with the existing IHG Fort Wayne license plate printing production and manufacturing applications, equipment and processes currently being provided by IHG and the addition of registration only printing, and mail sorting equipment.

This Project Plan defines the following:
- Project Purpose
- Business and Project Goals and Objectives
- Project Management Approach
- Scope and Expectations

- Roles and Responsibilities
- Risk Management Plan
- Ground Rules for the Project
- Project Schedule Baseline
- Work Breakdown Structure and Activity List

Project Management Approach

Reporting to the Program Manager, the Project Manager has the overall responsibility for managing and executing this project according to this Project Management Plan. By following a systematic approach to the design, development and implementation of the iPRIME system, the Project Manager shall ensure that a comprehensive and expandable system is delivered. The project management methodology that will be used is based on principles set forth by the Project Management Institute (PMI) and on industry best practices. The Project Manager will utilize the PMI model including its templates or a comparable methodology and templates similar to PMI.

The Project Management Office (PMO) focuses on being agile and utilizes an iterative, team-based approach to project management. The PMO uses tools like Kanban boards to help visualize work, limit work-in-progress, and maximize efficiency. The PMO also uses tools like MS Project for help with scheduling, timelines and defining resources. The PMO also takes advantage of the widely industry used and accepted project management tool Asana to aid in collaboration and organization within the project team.

The project team will consist of a Program Manager, Assistant Project Manager, Account Management Team and required production personnel from IHG and the Project Manager from BIS, the BIS PMO, BIS Software Development departments, Network Services department, Database Administration team, and the BIS Operations divisions, which consists of project managers, business and requirements analysts, software engineers and developers, database engineers, network engineers, quality control/assurance team, technical writers, testers, installers, and trainers. There will be a Technical Lead that will be responsible for managing and performing the technical analysis, design, and implementation. There will also be a Project Lead that will be responsible for managing and performing the business/requirements analysis and documentation.

The Project Manager will work with all resources to perform project planning. All project management plans will be reviewed and approved by the Program Manager, Project Sponsors, Project Steering Committee, and Key Project Stakeholders. All funding decisions and approvals will be made by the Project Sponsors. Any delegation of approval authority to the Project Manager should be done in writing and be signed by the Project Sponsors, Program Manager and Project Manager.

All personnel, hardware, and software resources will be managed by the project team. All project work will be independent of daily and ongoing operations and all initial testing will be done by the project team.

The iPRIME system will undergo both automated and manual system, unit, integration, and load testing prior to the production phase. The iPRIME project will also provide time for user acceptance testing and the system must receive approval before continuing to production.

The iPRIME project team will provide testing, QA, training, system implementation, and support. The development and implementation of the iPRIME system will allow all BMV and State level systems and processes to continue without interruption throughout the life cycle of the project.

The iPRIME project team will work in conjunction with the BMV to determine a final deployment strategy and transition plan. The transition from the current processes shall be seamless for the BMV given that the data exchange can be ported over--requiring no changes from the BMV--and the plate manufacturing will remain the same using the proven IHG capabilities for manufacturing license plates and delivery. The iPRIME project team will provide user manuals and system documentation before the system implementation and will provide on-site training during the transition and deployment of the live system. Once the system has been fully implemented, all personnel have been trained, and after all technical documentation is complete and distributed to the appropriate personnel, this project will be led by the Operations teams for ongoing support and maintenance.

Completed/Closed status shall be obtained after the solution is deployed, post implementation review is complete, and once the final project approval and acceptance is given by the appropriate key stakeholders.

All iPRIME software development work will be performed internally and no portion of the project development will be outsourced. The scope of this project does not include any changes in requirements to standard operating systems in order to run the software, any software updates, or revisions.

Project Scope

The Indiana Plate and Registration Inventory Management E-suite (iPRIME) project encompasses the replacement of the current infrastructure, applications and hardware for receiving data from the BMV and sending orders to the license plate printing and manufacturing system. The iPRIME solution will also provide all hardware and services required to receive data from the BMV to fulfill the printing and direct fulfillment shipping to motorists of all vehicle registrations and decals, including boat and off-road vehicles.

The iPRIME project will provide sorting and shipping efficiencies by "householding" orders together during the packing process. The iPRIME project will also consist of providing a highly available cloud hosted solution and an off-site disaster recovery backup system. A system environment will be provided containing production server(s) for "live" applications and databases that will be separate from the development server, QA/testing and UAT server. The iPRIME project is to be deployed within a timeframe, beginning on 08/17/2020 and implemented on 01/25/2021.

The iPRIME project will also include, but not be limited to, comprehensive project management, business process and system analysis, and provision of packaged software. The iPRIME project team shall provide all infrastructure, data management, printing hardware and equipment, applications, services and a full suite of reporting to meet the requirements of the contract. The services are including, but not limited to, the following:

- Web Services (API) or file transfer via SFTP for receiving vehicle license plate and registration data.
- Applications for scheduling orders, designing license plates, managing current inventory and sending data to printing equipment
- Manufacturing and printing license plates
- Web Portal to obtain current status and real-time updates on orders
- Applications and hardware for printing registrations and decals
- Barcode scanning app for matching registrations with license plates
- Sorting, shipping and direct fulfillment of vehicle license plates, registrations and decals
- House-holding: Combining shipping based on name and address
- Support Helpdesk
- Maintenance Updates

The process will begin with the iPRIME system retrieving the data file provided by the BMV via web services. The plate and registration data will be parsed and inserted into the iPRIME database. From there, processes will perform household sorting and separate registrations and plates. Throughout the process, employees from BMV and IHG will be able to track each plate and printing run via the iPRIME web portal. IHG will be able to view orders, schedule and manage print jobs/runs. Data will then be sent to the printing applications.

Householding

The iPRIME system house-holding algorithm will first compare the address 1 and address 2 fields, city, state, and the five-digit zip code. Once that process is complete, the first and last name fields will be compared. Each record that has an exact household match, shall be assigned a grouping ID. The grouping IDs will be used to ensure they are sent to the mail sorting and inserting machine in the same batch. This helps to reduce overall cost of mailing.

Non-householded license plates will also be sorted along with householded mailings via CASS certified software into groupings for efficient mailing. Householding is a subset of this sort.

Registration print jobs are created and sent to either Print-on-Demand (POD) registration only, or license with registration printers. All registrations are printed with the 3 required barcodes used for registration, validation, and matching. Additionally, a 4th barcode will be used, representing the address for postage. All registrations that have been printed, will be marked as printed in the status indicator, ensuring a real-time view of the registration for the BMV and customers.

License plate manufacturing files with associated grouping information will be sorted by size, material and color thermal transfer ribbon set for efficient manufacturing and will have the grouping information printed on them as it is today.

License plates will then be blanked, and after passing through QC will be stored in custom made racking according to their groupings, with plates for householding going into their own rack. Racks have labelled locations that can accommodate up to 100,000 license plates, more than 10 times daily throughput.

Barcode Scanning

Each piece of inventory, registrations, decals and plates will have barcodes printed on them.

The iPRIME barcode scanning application will allow updates from every step of the manufacturing process. When a barcode is scanned, the system will automatically track and update the status. These statuses are available directly from the web portal and IMS. For example, if a plate is rejected from QA, an employee will scan the barcode of the plate to update its status in the system. This new status will show the plate was rejected along with the date and time of rejection.

The iPRIME system barcode scanning application will allow users to scan the barcodes to match plates and registrations so they can be packaged together for shipping and delivery. This also provides an additional verification step to ensure the proper plates are paired with their registrations and they are all accounted for.

Shipping and Sorting

Registration only mailings pass through automatic printing and inserting equipment which is programmed to include up to 5 mailings in one envelope for household mailings and these continue in the same stream as the single registration only mailings for maximum postal sort efficiency.

Registrations where more than 5 are going to one address are printed for packaging in a separate run, and packaging is used that is appropriate for the number of registrations.

Any registration only mailings that are part of a household grouping that includes plates with registrations are printed separately to coincide with any plate registration pairs they are to be mailed with.

Householded plates are taken from their locations in the custom racking in batches and matching registrations are printed according to the householding/sorting ID. Each plate bar code is scanned followed by each registration to ensure a match with the operator receiving visible and audible clues as to success or failure of the match. Once plate and registration matching has occurred any registration only mailings destined for a particular address are included with the plate registration mailings in packaging appropriate for that mailing.

Web Portal

The web portal provides BMV users with access to real-time status updates for all license plates and registration document orders. The iPRIME system will track items from order of receipt to order of completion and shipment. By using our one field search technology, users can quickly find items by order number, registration or plate number. BMV users will be able to access real-time status of inventory and receive updates for when an order is received, in progress, manufacturing, packaging and shipped. BMV users can access the web portal to check status and the system can be configured to send update files to another system. The iPRIME web portal also provides the ability to generate daily production reports and management summary reports and KPIs on performance, including but not limited to volumes, quality, and turn-around time.

At the point a mistake or customer issue is discovered on any submitted orders, the BMV shall have the ability to log into the IMS web portal and search for the inventory in question. If something needs to be stopped, BMV will have the ability to issue a real-time stop to the production. A software alert is sent out through the IMS system. The BMV will be able to make the correction to the data and retransmit to IMS. IHG will support emails and telephone calls as well.

Once notified through the software, the IHG team has complete control to stop the production or mailing of a license plates and/or registration before being mailed. Even if the product has been created and printed, during the mail validation process of scanning license plates and registrations, the system will notify the processor of the need to stop mailing of the product. The product will be set aside and await further instructions (recreate or cancel completely).

The registrations only that are printed will be scanned in the sorting machine, and if flagged for a stop production the machine will pull the registration before being stuffed into an envelope.

The iPRIME project team will document and participate in reviewing current business processes and workflows and provide design suggestions for improvement. Upon approval of current business

functions, the iPRIME project team will work along with subject matter experts to obtain any new system requirements and work to design and re-engineer processes to improve efficiencies. The user interfaces of the iPRIME system shall be intuitive and user friendly for all users. Goals and objectives of the new system include, but are not limited to:

- Sleek and efficient new web browser-based user interface
- Intuitive design requiring minimal training
- Modern technologies and API driven
- Highly available and redundant
- Web accessible, real-time updates and reports
- One field search capability
- Improvements in data transfer
- Data to and from BMV
- Data to and from iPRIME to the print applications
- Increase efficiency and process cost reduction by optimizing current processes
- Relational database design

The iPRIME system can provide interfaces and functionality to help manage the business of providing Motor Vehicle Registration information to numerous external agencies. And the iPRIME system will manage, monitor, and securely control access to all of the required stakeholders, including (*where applicable):

- State
- BMV
- Law Enforcement
- Vehicle Dealers
- Insurance Companies
- Public
- Other external agencies, such as, NCIC (National Crime Information Center)

The interface design will include methods to import/export data to and from the system, as well as support bulk data transfers to and from other systems. Bulk data transfers shall support .csv, .txt, and other industry supported file types as needed.

The iPRIME system will provide a user management interface that can be used to control security level access and credentials for all users. The iPRIME system will limit access rights via the use of defined Groups, Roles and Users so that only the required functions are accessible.

Customer service is not limited to just the BMV. Self-service capabilities can be expanded to include a portal created for Motor Vehicle Dealers to allow print on demand capabilities for temporary license
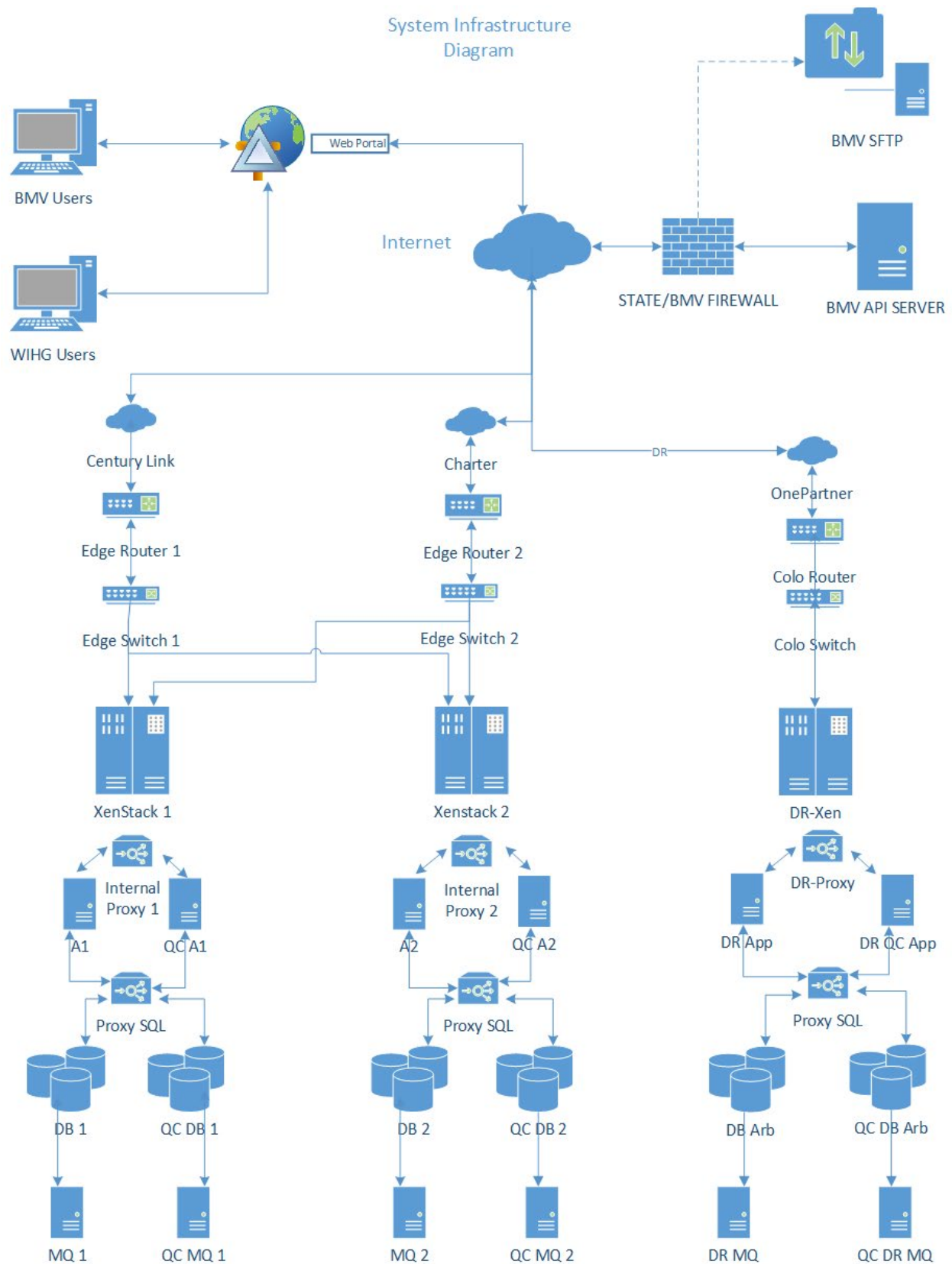
plates. Other self-service capabilities can include a web portal for the public to order specialty plates online and also a native mobile app for storing vehicle information. From the 'Auto Assistant' app users can view their registration electronically and store for offline viewing, renew their tags, view vehicle recalls and also verify and show proof of their motor vehicle insurance. For this project, the team will be providing the iPRIME system, and not any additional services other than what is listed in the contract.

The scope of the iPRIME project encompasses the analysis, design, testing, training, and delivery of an improved inventory management, production and fulfillment system, which includes:
- Server infrastructure
- Databases
- Data centers (Production and Disaster Recovery)
- Cloud Hosting
- Web software applications
- On-site training
- User manuals and documentation
- Training aids to be used in conjunction with the software
- Maintenance updates

The system will provide for high-availability and access responsiveness. Development will take advantage of numerous technologies that will be used throughout the system to achieve these requirements. Some examples of technology that will be used are as follows:
- Redundant Storage (RAID)
- Storage Area Network (SAN)
- Fiber Channel (redundant pathing)
- Solid-State Disk subsystems
- Server Virtualization (multiple host servers with fail-over)
- Virtual Server live migration
- Virtual Server snapshots and snapshot assisted backups

System Infrastructure Diagram

System and data integrity will be vital components throughout all aspects of the system design. By utilizing a Web Services API as the primary form of interaction between the application layer and data layer, iPRIME will circumvent and protect against allowing end-users to have direct access/communication to databases. Other elements include:

- Encryption of sensitive data at rest
- Encryption of all data in motion
- Certificate based authentication
- Network segregation

All iPRIME project team members having access to the iPRIME system will be required to sign security and confidentiality agreements. Strict standards of confidentiality of records and information shall be maintained in accordance with applicable state and federal law. All system access shall be logged and efforts will be made to proactively monitor and warn/notify of any suspicious activity.

Software developed or integrated will be configured with data protection and resiliency as key goals. Here are some examples of the types of technology/methods that will be used to ensure data resiliency:

- Multi-master database clustering
- Synchronous replication
- Geographically distributed database clusters

The iPRIME system does not include any other hardware, computers, or equipment that is not otherwise listed in this project plan.

By design, the iPRIME system is structured in such a way that it will easily allow for increased automation, flexibility, and future growth in the upcoming years. The iPRIME software will meet or exceed organizational software standards.

The iPRIME was built using proven and modern technologies. The iPRIME Web applications utilize JavaScript, HTML5, and CSS3. All Web services (APIs) are built using 'Go' (aka. Golang), it is a statically typed, compiled programming language designed at Google following the RESTful architectural style and providing JSON formatted responses. A SSRS (Microsoft SQL Server Reporting Services) report server is utilized to provide system reports without adding load to the production iPRIME system and applications and helps ensure optimum performance for the daily operations.

Milestone List

The chart below lists the major milestones for the iPRIME Project. This chart is comprised only of major project milestones such as completion of a project phase or gate review. There may be smaller milestones which are not included on this chart but are included in the Project Schedule and Work Breakdown Structure (WBS). If there are any scheduling delays which may impact a milestone or delivery date, the Project Manager must be notified immediately so proactive measures may be taken to mitigate slips in dates. Any approved changes to these milestones or dates will be communicated to the project team by the Project Manager.

Indiana RFP 21-873 Milestones			
PHASE	**Indiana RFP 21-873 License Plates and Registration Documents**	**START**	**COMPLETE**
1	Project Kick-off	8/17/2020	8/21/2020
2	Initiation Actions	8/24/2020	10/2/2020
3	Design	9/7/2020	10/16/2020
4	Procurement	9/7/2020	10/16/2020
5	Infrastructure Setup	9/7/2020	10/16/2020
6	Final Development	10/5/2020	11/20/2020
7	Documentation - Testing and System	11/9/2020	12/11/2020
8	Testing	11/16/2020	12/18/2020
9	Training	1/5/2021	1/11/2021
10	Transition and Deployment	1/11/2021	1/15/2021
11	Go-live	1/25/2021	1/25/2021
12	Post Implementation Review	1/26/2021	4/20/2021

<u>Schedule Baseline and Work Breakdown Structure</u>

The WBS for the iPRIME Project is comprised of work packages which were developed through close collaboration among project team members and stakeholders with input from functional managers and research from past projects.

The WBS Dictionary defines all work packages for the iPRIME Project. These definitions include all tasks, resources, and deliverables. Every work package in the WBS is defined in the WBS Dictionary and will aid in resource planning, task completion, and ensuring deliverables meet project requirements.

The iPRIME Project schedule was derived from the WBS and Project Scope with input from all project team members. The Project Schedule was completed, reviewed by the Project Sponsor, and approved and base-lined. The Project Schedule will be maintained as a Microsoft Project Gantt chart by the iPRIME Project Manager and will be available on request.

Any proposed changes to the schedule will follow the change control process. If established boundary controls may be exceeded, a Change Request will be submitted to the Project Manager. The Project Manager and team will determine the impact of the change on the schedule, cost, resources, scope, and risks. If it is determined that the impacts will exceed the boundary conditions, then the change will be forwarded to the Project Sponsor for review and approval. The iPRIME boundary conditions are:

- Cost Performance Index (CPI) less than 0.8 or greater than 1.2
  a) Earned Value / Actual Cost
- Schedule Performance Index (SPI) less than 0.8 or greater than 1.2
  a) Earner Value / Planned Value

If the CPI is less than one, earnings are less than the amount spent, (over budget). If the CPI is greater than one, earnings are more than the amount spent(under budget). If the CPI is equal to one, this means earning and spending are equal.

If the SPI is greater than one, this means more work has been completed than the planned work. In other words, the project is ahead of schedule. If the SPI is less than one, this means less work has been completed than the planned work. In other words, the project is behind schedule. If the SPI is equal to one, this means work is being completed at about the same rate as planned.

If the change is approved by the Project Sponsor then it will be implemented by the Project Manager who will update the schedule and all documentation and communicate the change to all stakeholders in accordance with the Change Control Process.

Change Control Process

The following steps comprise the organization change control process for all projects and will be utilized on the iPRIME project:

Identify and Submit Change Request

This process provides the ability for any member of the project team to submit a request for a change to the project.

The Change Requester:

- Identifies a requirement for change to any aspect of the project (e.g. scope, deliverables, timescales, and organization)
- Completes a Change Request form (CR) and distributes the form to the Project Manager. The CR summarizes the change:
  - Description
  - Reasons/Goals for changes
  - Recommendations
  - Impacts (Cost, Scope, Schedule, and/or Quality)
  - Solution
  - Disposition (Approve, Reject, Defer)

Review Change Request

The Project Manager/Change Control Gate Keeper reviews the CR and determines whether or not additional information is required for the Change Control Board to assess the full impact of the change to the project time, scope and cost. The decision will be based on factors, such as:

- Number of change options presented
- Feasibility and benefits of the change
- Complexity and/or difficulty of the change options requested
- Scale of the change solutions proposed

The Project Manager/Change Control Gate Keeper will record the CR details in the Change Log to track the status of the change request.

Managing Change Request

The Project Manager/Change Control Gate Keeper will forward the Change Request Form and any supporting documentation to the Change Control Board (CCB) for review and final approval. The CCB will determine the feasibility of this change by examining factors, such as:

- Risk to the project in implementing/not implementing the change
- Impact on the project in implementing the change (time, resources, finance, quality).

After a formal review, the CCB may:
- Approve the change as requested
- Reject the change
- Defer the change:
    - Request more information related to the change
    - Postpone to a later phase

Any team member or stakeholder may submit a Change Request for the iPRIME Project. The iPRIME Project Sponsor will chair the CCB and any changes to project scope, cost, or schedule must receive approval. All change requests will be logged in the Change Log by the Project Manager and tracked through to completion whether approved or not.

Communication Management Plan

This Communication Management Plan sets the communications framework for the iPRIME project. It serves as a guide for communications throughout the life of the project. This is a working plan and will be updated as communication needs change. This plan identifies and defines the stakeholders of iPRIME with whom it is critical to communicate. It also contains the Communication Matrix which maps communication requirements to stakeholders or stakeholder groups and provides conduct guidelines for meetings and other forms of communication for the project. A Project Team Directory is also included to provide contact information for all stakeholders directly involved in the project.

The purpose of all iPRIME communication is to:
- Promote the awareness of and promote excitement for the iPRIME project
- Ensure adoption of the responsibilities and actions assigned to each stakeholder
- Encourage two-way communication about the iPRIME project between the project team and stakeholder groups

Communications Management Approach

The Project Manager will take the lead role in ensuring effective communications on this project. Communication activities will occur in accordance with the frequencies detailed in the Communication Matrix in order to ensure the project adheres to schedule constraints. Any deviation of these timelines may result in excessive costs or schedule delays and must be approved by the project sponsor. The communications requirements are documented in the Communications Matrix.

The Communications Matrix will be used as the guide for what information to communicate, who is to do the communicating, when to communicate, and to whom to communicate.

<u>Roles</u>

Project Sponsor

The Project Sponsor is the champion of the project and has authorized the project by signing the project charter. This person is responsible for the funding of the project and is ultimately responsible for its success. Since the Project Sponsor is at the executive level, communications should be presented in summary format unless the Project Sponsor requests more detailed communications.

Program Manager

The Program Manager oversees the project at the portfolio level and owns most of the resources assigned to the project. The Program Manager is responsible for overall program costs and profitability as such they require more detailed communications than the Project Sponsor.

Key Stakeholders

Normally Stakeholders includes all individuals and organizations that are impacted by the project. For this project, we are defining a subset of the Stakeholders as Key Stakeholders. These are the Stakeholders with whom we need to communicate with and are not included in the other roles defined in this section. The Key Stakeholders includes executive management with an interest in the project and key users identified for participation in the project.

Change Control Board

The Change Control Board is a designated group which reviews technical specifications and authorizes changes within the organization's infrastructure. Technical design documents, user impact analysis, and implementation strategies are typical of the types of communication this group requires.

Customer

The customer for this project is State of Indiana BMV. As the customer who will be accepting the final deliverable of this project, they will be informed of the project status including potential impacts to the schedule for the final deliverable or the product itself.

Project Manager

The Project Manager has overall responsibility for the execution of the project. The Project Manager manages day to day resources, provides project guidance, and monitors and reports on the projects' metrics as defined in the Project Management Plan. As the person responsible for the execution of the project, the Project Manager is the primary communicator for the project and is responsible for distributing information according to this Communications Management Plan.

Functional Manager

The functional manager is the person who has management authority within a business unit/department with direct supervision over one or more resources on the project/program team, and/or direct responsibility for the functions affected by or that affect the project/program deliverable(s).

Project Team

The Project Team is comprised of all persons who have a role performing work on the project. The project team needs to have a clear understanding of the work to be completed and the framework in which the project is to be executed. Since the Project Team is responsible for completing the work for the project, they play a key role in creating the Project Plan, including defining its schedule and work packages. The Project Team requires a detailed level of communications which is achieved through day to day interactions with the Project Manager and other team members along with weekly team meetings.

Steering Committee

The Steering Committee includes management representing the departments which make up the organization. The Steering Committee provides strategic oversight for changes which impact the overall organization. The purpose of the Steering Committee is to ensure that changes within the organization are accomplished in such a way that it benefits the organization as a whole. The Steering Committee requires communication on matters which will change the scope of the project and its deliverables.

Technical Lead

The Technical Lead is a person on the Project Team who is designated to be responsible for ensuring that all technical aspects of the project are addressed and that the project is implemented in a technically sound manner. The Technical Lead is responsible for all technical designs, overseeing the implementation of the designs, and developing as-build documentation. The Technical Lead requires close communications with the Project Manager and the Project Team.

<u>Project Team Directory</u>

The following table presents contact information for all persons identified in this communications management plan. The email addresses and phone numbers in this table will be used to communicate with the following:

Project Team Directory				
Name	Title	E mail	Office Phone	Mobile Phone
██████████	CEO / Business Sponsor	██████████	████████	████████
██████████	CFO / Business Sponsor	██████████	████████	████████
██████████	CIO / Steering Committee	██████████	████████	████████
██████	COO / Steering Committee	██████████	████████	████████
██████	Project Director	██████████	████████	████████
██████████	Executive Consultant / Steering Committee	██████████	████████	████████
██████████	Vice President of Sales and Marketing	████████████	████████	██████
██████████	Software Development Manager	████████████	████████	██████
██████	Project Manager	██████████	████████	██████
██████	Project Lead	██████████	████████	██████
██████████	QC Team Lead	████████	████████	██████
██████████	Customer Support Manager	████████████	████████	██████
██████████	Network Services Manager	██████████	████████	██████
██████████	Assistant Network Manager	████████████	████████	██████
██████	Database Engineer	████████████	████████	██████
██████	Database Engineer	██████████	████████	██████
██████████	Support Team Lead	████████████	████████	██████
██████████	Support Analyst	██████████	████████	██████
██████████	QC Team / Analyst	████████████	████████	██████
██████	Server-side Development Assistant Team Lead	████████	████████	██████

Project Team Directory				
██████████	Server-side Development Team Lead	████████████████	████████	████████
█████	Server-side Developer	████████████████ ██	████████	████████
████████	Web Development Team Lead	███████████████	████████	████████
███████████	Web Development Assistant Team Lead	███████████████	████████	████████
████████	Web Developer	███████████████	████████	
████████	Web Developer	███████████████	████████	

Communication Methods and Technologies

The project team will determine, in accordance with organizational policy, the communication methods and technologies based on several factors which include:

- Stakeholder Communication Requirements
- Available Technologies (internal and external)
- Organizational Policies and Standards

BIS maintains software licenses for MS Project software. All project teams are responsible for developing, maintaining, and communicating schedules using this software. Gantt Charts or PERT charts are the preferred format for communicating schedules to stakeholders. The project schedule will be maintained in the project directory and controlled through proper file versioning.

All project communication and documentation will be archived on an internal shared drive which resides in the iPRIME project directory on \\OPSERVER\e. Security to the project folder and directory is managed by Active Directory permissions and ensure that only the proper project team members have access to what they should. Organizational naming conventions for files and folders will be applied to all archived work.

Communications Matrix

Communications Matrix						
Communication Type	Description	Frequency	Format	Participants/ Distribution	Deliverable	Owner
Project Status Report	Summary of project status	Weekly	Online	Project Sponsor, Team and Stakeholders	Status Report	Project Manager

Task Summary Report	Email summary of project task status	Weekly	Email	Project Manager	Summary Report	Analyst, Developers, Database
Project Team Meeting	Meeting to review action register and status	Bi-Weekly / Weekly	Web Conference	Project Team	Updated Action Register	Project Manager
Project Meeting Agenda	Meeting to discuss action and status	As Needed	Email / Website	Project Sponsor, Team and Stakeholders	Meeting Agenda	Chairperson
Project Meeting Minutes	Notes from meeting	As Needed	Email / Website	Project Sponsor, Team and Stakeholders	Meeting Minutes	Chairperson
Project Monthly Review (PMR)	Present metrics and status to team and sponsor	Monthly	Email / Website/ In Person	Project Sponsor, Team, and Stakeholders	Status and Metric Presentation	Project Manager
Project Gate Reviews	Present closeout of project phases and kickoff next phase	As Needed	In Person / Email	Project Sponsor, Team and Stakeholders	Phase completion report and phase kickoff	Project Manager
Project Document Approvals	Present project documents for approval	As Needed	Email / Website	Project Sponsor, Team and Stakeholders	Phase completion report and phase kickoff	Project Manager
Technical Design Review	Review of any technical designs or work associated with the project	As Needed	In Person / Email	Project Team	Technical Design Package	Project Manager

<u>Communications Conduct</u>

Guidelines for Meetings

Meeting Agenda
A Meeting Agenda will be distributed by the meeting Chairperson at least 2 business days in advance of the meeting. The Agenda should identify the presenter for each topic along with a time limit for that topic. The first item in the Agenda should be a review of action items from the previous meeting.

Meeting Minutes
The Meeting Minutes/notes will be distributed by the meeting Chairperson within 2 business days following the meeting. Meeting Minutes/notes will include the status of all items from the agenda along with new action items and the Parking Lot list.

Action Items
The Action Items are recorded in both the Meeting Agenda and Minutes. Action items will include both the action item along with the owner of the action item. Meetings will start with a review of the status of all action items from previous meetings and end with a review of all new action items resulting from the current meeting. The review of the new action items will include identifying the owner for each action item.

Meeting Chairperson
The Chairperson is responsible for distributing the meeting agenda, facilitating the meeting, and distributing the meeting minutes. The Chairperson will ensure that the meeting starts and ends on time and that all presenters adhere to their allocated time frames.

Note Taker
The Note Taker is responsible for documenting the status of all meeting items, maintaining a Parking Lot item list, and taking notes of anything else of importance during the meeting. The Note Taker will give a copy of their notes to the Chairperson at the end of the meeting as the Chairperson will use the notes to create the Meeting Minutes.

Time Keeper
The Timekeeper is responsible for helping the facilitator adhere to the time limits set in the meeting agenda. The Time Keeper will let the presenter know when they are approaching the end of their allocated time. Typically, a quick hand signal to the presenter indicating how many minutes remain for the topic is sufficient.

Parking Lot

The Parking Lot is a method used by the facilitator to record and defer items which are not on the meeting agenda; however, merit further discussion at a later time or through another forum. This method is generally used in meetings to prevent digressing from the primary agenda.

Guidelines for Email

All Emails pertaining to the iPRIME Project should be brief, professional, and free of errors. Emails should be distributed to the correct project participants in accordance with the communication matrix above. All attachments should be in one of the organization's standard software suite programs and adhere to established company formats. If the purpose of the Email is to bring an issue forward for discussion, the Email should provide background information, a description, and a recommendation to correct the issue. The Project Manager should be included on any Email pertaining to the iPRIME Project.

Guidelines for Informal Communications

While informal communication is a part of every project and is necessary for successful project completion, any issues, concerns, or updates that arise from informal discussion between team members must be communicated to the Project Manager so the appropriate action may be taken.

Communication Escalation Process

As issues or complications arise with regards to project communications, it may become necessary to escalate the issue if a resolution cannot be achieved within the project team. Project stakeholders may have many different conflicting interests in a given project. While escalations are a normal part of project management, there must be a documented process that defines how those escalations will take place.

Efficient and timely communication is the key to successful project completion. As such, it is imperative that any disputes, conflicts, or discrepancies regarding project communications are resolved in a way that is conducive to maintaining the project schedule, ensuring the correct communications are distributed, and preventing any ongoing difficulties. In order to ensure projects stay on schedule and issues are resolved, the standard escalation model will be used to provide a framework for escalating communication issues. The table below defines the priority levels, decision authorities, and timeframes for resolution.

Priority	Definition	Decision Authority	Timeframe for Resolution
Priority 1	Major impact to project or business operations. If not resolved quickly there will be a significant adverse impact to revenue and/or schedule.	CEO	Within 4 hours
Priority 2	Medium impact to project or business operations which may result in some adverse impact to revenue and/or schedule.	CEO / Project Sponsor	Within 1 business day
Priority 3	Slight impact which may cause some minor scheduling difficulties with the project but no impact to business operations or revenue.	Project Manager	Within 2 business days
Priority 4	Insignificant impact to project but there may be a better solution.	Project Manager	Work continues and any recommendations are submitted via the project change control process

*** NOTE: Any communication including sensitive and/or confidential information will require escalation to Executive level or higher for approval prior to external distribution.*

Procurement Management Plan

The Project Manager will provide oversight and management for all procurement activities under this project. The Project Manager must obtain authorization to approve procurement actions. All procurement actions must be approved by the Project Sponsor.

The Project Manager will work with the project team to identify all items or services to be procured for the successful completion of the project. The Project Manager will then ensure these procurements are reviewed by the Program Management Office (PMO) and presented to the contracts and purchasing groups. The contracts and purchasing groups will review the procurement actions, determine whether it is advantageous to make or buy the items and begin the vendor selection, purchasing and the contracting process.

For all procurements, the Project Manager will be responsible for managing any selected vendor or external resource. The Project Manager will also measure performance as it relates to the vendor providing necessary goods and/or services and communicate this to the purchasing and contracts groups.

Project Scope Management Plan

The Project Manager and Functional Manager are ultimately responsible for scope management for the iPRIME. The scope for this project is defined by the WBS.

Proposed scope changes may be initiated by the Project Manager, Stakeholders or any member of the project team. All change requests will be submitted to the Project Manager for review and evaluation. Upon acceptance of the scope change request, the Project Manager will submit the request to the Change Control Board and Project Sponsor for acceptance. Upon approval of scope changes by the Change Control Board and Project Sponsor, the Project Manager will update all project documents and communicate the scope change to all stakeholders. Based on feedback and input from the Project Manager and Stakeholders, the Project Sponsor is responsible for the acceptance of the final project deliverables and project scope.

The Project Manager and the project team will work together to control the scope of iPRIME. The project team will leverage the WBS by using it as a statement of work for each WBS element. The project team will ensure that they perform only the work described in the WBS and generate the defined deliverables for each WBS element. The Project Manager and Functional Manager will oversee the project team and the progression of the project to ensure that this scope control process is followed and progress is reported through Project Scope measurements tools.

As iPRIME progresses, the Project Manager and Functional Manager will verify interim project deliverables against the original scope as defined in the scope statement and. Once the Project Manager verifies that the scope meets the requirements defined in the project plan, the Project Manager, Functional Manager and Sponsor will meet for formal acceptance of the deliverable. During this meeting, the Project Manager and Functional Manager will present the deliverable to the Project Sponsor for formal acceptance. The Project Sponsor will accept the deliverable by signing a project deliverable acceptance document. This will ensure that project work remains within the scope of the project on a consistent basis throughout the life of the project.

The Project Sponsor is responsible for formally accepting the project's final deliverable. This acceptance will be based on a review of all project documentation, testing results, beta trial results, and completion of all tasks/work packages and product functionality.

Schedule Management Plan

Project schedules for the iPRIME Project will be created using Microsoft Project 2013 starting with the deliverables identified in the project's Work Breakdown Structure (WBS). Activity definition will identify the specific work packages which must be performed to complete each deliverable. Activity

sequencing was used to determine the order of work packages and assign relationships between project activities. Activity duration estimating was used to calculate the number of work periods required to complete work packages. Resource estimating was used to assign resources to work packages in order to complete schedule development.

A preliminary schedule has been developed and it has been reviewed by the project team and any resources tentatively assigned to project tasks. The project team and resources have agreed to the proposed work package assignments, durations, and schedule. The Project Sponsor has reviewed, approved, and the schedule has been baselined.

In accordance with company organizational standards, the following items will be designated as milestones for all project schedules:
- Completion of scope statement and WBS/WBS Dictionary
- Base lined project schedule
- Approval of final project budget
- Project kick-off
- Approval of roles and responsibilities
- Requirements definition approval
- Completion of data mapping/inventory
- Project implementation
- Acceptance of final deliverables

Roles and responsibilities for schedule development are as follows:

The Project Manager is responsible for facilitating work package definition, sequencing, and estimating duration and resources with the project team. The Project Manager will also create the project schedule using MS Project 2013 and validate the schedule with the project team, stakeholders, and the Project Sponsor. The Project Manager will obtain schedule approval from the Project Sponsor and baseline the schedule.

The project team is responsible for participating in work package definition, sequencing, duration, and resource estimating. The project team will also review and validate the proposed schedule and perform assigned activities once the schedule is approved.

The Project Sponsor will participate in reviews of the proposed schedule and approve the final schedule before it is base lined.

The project stakeholders will participate in reviews of the proposed schedule and assist in its validation.

Quality Management Plan

All members of the iPRIME project team will play a role in quality management. It is imperative that the team ensures that work is completed at an adequate level of quality from individual work packages to the final project deliverable. The following are the quality roles and responsibilities for the iPRIME Project:

The Project Sponsor is responsible for approving all quality standards for the iPRIME Project. The Project Sponsor will review all project tasks and deliverables to ensure compliance with established and approved quality standards. Additionally, the Project Sponsor will sign off on the final acceptance of the project deliverable.

The Project Manager is responsible for quality management throughout the duration of the project. The Project Manager is responsible for implementing the Quality Management Plan and ensuring all tasks, processes, and documentation are compliant with the plan. The Project Manager will work with the project's quality specialists to establish acceptable quality standards. The Project Manager is also responsible for communicating and tracking all quality standards to the project team and stakeholders.

The Quality Specialists are responsible for working with the Project Manager to develop and implement the Quality Management Plan. Quality Specialists will recommend tools and methodologies for tracking quality and standards to establish acceptable quality levels. The Quality Specialists will create and maintain Quality Control and Assurance Logs throughout the project.

The remaining members of the project team, as well as the stakeholders, will be responsible for assisting the Project Manager and Quality Specialists in the establishment of acceptable quality standards. They will also work to ensure that all quality standards are met and that any concerns regarding quality are communicated to the Project Manager.

Quality control for the iPRIME Project will utilize tools and methodologies for ensuring that all project deliverables comply with approved quality standards. To meet deliverable requirements and expectations, a formal process in which quality standards are measured and accepted should be implemented. The Project Manager will ensure all quality standards and quality control activities are met throughout the project. The Quality Specialists will assist the Project Manager in verifying that all quality standards are met for each deliverable. If any changes are proposed and approved by the Project Sponsor and CCB, the Project Manager is responsible for communicating the changes to the project team and updating all project plans and documentation.

Quality assurance for the iPRIME Project will ensure that all processes used in the completion of the project meet acceptable quality standards. These process standards are in place to maximize project

efficiency and minimize waste. For each process used throughout the project, the Project Manager, with the assistance of the Quality Specialists, will track and measure qualities against the approved standards to ensure all standards are met. If any changes are proposed and approved by the Project Sponsor and CCB, the Project Manager is responsible for communicating the changes to the project team and updating all project plans and documentation.

Risk Management Plan

The approach for managing risks for the iPRIME Project includes a methodical process by which the project team identifies, scores, and ranks the various risks. Every effort will be made to proactively identify risks ahead of time in order to implement a mitigation strategy from the project's onset. The most likely and highest impact risks were added to the project schedule to ensure that the assigned risk managers take the necessary steps to implement the mitigation response at the appropriate time during the schedule. Risk managers will provide status updates on their assigned risks in the bi-weekly project team meetings, but only when the meetings include their risk's planned timeframe.

Upon the completion of the project, during the closing process, the Project Manager will analyze each risk as well as the risk management process. Based on this analysis, the Project Manager will identify any improvements that can be made to the risk management process for future projects. These improvements will be captured as part of the lessons learned knowledge base.

See
Appendix C: Risk Management Plan

See
Appendix D: Risk Register

Human Resource Plan

The iPRIME Project will consist of a strong matrix structure with support from various internal organizations. All work will be performed internally. The iPRIME project team members will be required to sign employment contracts for the duration of the term of the project. Staffing requirements for the iPRIME Project include the following:

Program Manager (1 position) – Paul Fussner

Project Manager (2 positions) – Responsible for all management for the iPRIME Project. The Project Manager is responsible for planning, creating, and/or managing all work activities, variances, tracking,

reporting, communication, performance evaluations, staffing, and internal coordination with functional managers.

Technical Lead (1 position) – Responsible for managing the conceptual and detailed design and implementation of all technical architecture. In close cooperation with the Project Manager and Network Manager, the Technical Lead will orchestrate and control the technical aspects of the implementation effort. Responsibilities also include technical leadership for design, development and testing of the implementation. The Technical Lead will be managed by the Program Manager.

Project Lead (2 positions) – Responsible for gathering, analyzing, documenting, and validating the needs of the project stakeholders. Also responsible for change management, planning and conducting initial training, and quality testing of applications. Responsibilities also include being a liaison among stakeholders in order to elicit, analyze, communicate and validate requirements for changes to business processes, policies, and information systems. They are also responsible for project planning and estimating, status reporting, development process and contribution to strategic direction. The Project Lead will be managed by the Project Manager.

Senior Software Developer (4 positions) – Responsible for oversight of all coding and programming tasks for the iPRIME Project as well as ensuring functionality is compliant with quality standards. Responsible for working with the Project Manager to create work packages, manage risks, manage schedules, identify requirements, and create reports. The Senior Programmers will be managed by the Software Development Manager and Project Manager.

Software Developer (4 positions) – Responsible for coding and programming for the iPRIME Project. All coding and programming tasks will be reviewed by the Senior Programmer prior to implementation. Responsibilities also include assisting with risk identification, determining impacts of change requests, and status reporting. The Software Developers will be managed by their respective Team Lead and feedback will be provided to the Project Manager for performance evaluations.

Requirements Analyst (2 positions) – Responsible for gathering, analyzing, documenting, and validating the needs of the project stakeholders. Also responsible for change management, planning and conducting initial training and quality testing of applications. Responsibilities also include being a liaison among stakeholders in order to elicit, analyze, communicate and validate requirements for changes to business processes, policies and information systems. The Requirements Analysts will be managed by the Project Manager and Project Lead.

Financials Analyst (2 positions) – Responsible for gathering, analyzing, documenting, and validating the financials needs of the project stakeholders. Also responsible for change management, planning

and conducting initial training and quality testing of financial applications. Responsibilities also include being a liaison among stakeholders in order to elicit, analyze, communicate and validate financial requirements for changes to business processes, policies and information systems. The Financials Analyst will be managed by the Project Manager and Project Lead.

Database Engineers (3 positions) – Responsible for analyzing, designing and maintaining the data and database(s) for the iPRIME Project. All database tasks will be reviewed by the Technical Lead prior to implementation. Responsibilities also include assisting with risk identification, determining impacts of change requests, and status reporting. The Database Engineers will be managed by the Project Manager and Technical Lead.

Network Manager (1 position) – Responsible for analyzing, designing and maintaining the network and hardware for the iPRIME Project. All network tasks will be reviewed by the Network Manager prior to implementation. Responsibilities also include assisting with risk identification, determining impacts of change requests, and status reporting. Also responsible for working with the Project Manager and Technical Lead to create work packages, manage risks, manage schedules, and identify requirements. The Network Manager will be managed by the CIO.

Network Engineers (3 positions) – Responsible for analyzing, designing and maintaining the network and hardware for the iPRIME Project. All network tasks will be reviewed by the Network Manager prior to implementation. Responsibilities also include assisting with risk identification, determining impacts of change requests, and status reporting. The Network Engineers will be managed by the Network Manager.

Senior Quality Specialist (2 position) – Responsible for assisting the Project Manager in creating quality control and assurance standards. The Senior Quality Specialist is also responsible for maintaining quality control and assurance logs throughout the project. The Senior Quality Specialist will be managed by the Project Manager and the appropriate agency team member who will also provide feedback to the functional manager for performance evaluations.

Quality Specialist (2 position) – Responsible for assisting the Project Manager and Senior Quality Specialist in creating and tracking quality control and assurance standards. The Quality Specialist will have primary responsibility for compiling quality reporting and metrics for the Project Manager to communicate. The Quality Specialist will be managed by the Project Manager and the appropriate agency team member who will provide feedback, along with the Senior Quality Specialist to the functional manager for performance evaluations.

Testing Specialist (4 positions) – Responsible for helping establish testing specifications for the iPRIME Project with the assistance of the Project Manager and Programmers. The Testing Specialists

are responsible for ensuring all testing is complete and documented in accordance with standards, and for ensuring all testing resources are coordinated. The Testing Specialists will be managed by the Project Manager and the appropriate agency team member who will also provide feedback to the functional manager for performance evaluations.

Training Specialist (5 positions) – Responsible for helping establish training specifications for the iPRIME Project with the assistance of the Project Manager and Analysts. The Training Specialists are responsible for ensuring all training is complete and all documentation is in accordance with BIS standards, and for ensuring all training resources are coordinated. The Training Specialists will be managed by the appropriate agency team member who will also provide feedback to the functional manager for performance evaluations.

The Project Manager will negotiate with all necessary functional managers in order to identify and assign resources for the iPRIME Project. All resources must be approved by the appropriate functional manager before the resource may begin any project work.

Cost Baseline

The cost baseline for the iPRIME project includes all budgeted costs for the successful completion of the project.

Project Phase	Budgeted Total	Comments
Planning		Includes work hours for all project team members for gathering requirements and planning the project
Design		Includes work hours for all project team members for work on iPRIME conceptual design
Coding		Includes all work hours for coding of iPRIME
Testing		Includes all work hours for testing (including beta testing) of iPRIME software
Transition and Closeout		Includes all work hours for transition to operations and project closeout

Quality Baseline

The iPRIME Project must meet the quality standards established in the quality baseline. The quality baseline provides the acceptable quality levels of the iPRIME Project. The software must meet or exceed the quality baseline values in order to achieve success.

Item	Acceptable Level	Comments
Functionality	99.99% accurate (6 Sigma) End user does not experience errors or crashes	Accuracy and Suitability
Availability	The applications and components will be available at least 98% of the time	Less than 1 hr. total per year
Recovery Time Objective (RTO)	The system can be recovered within 4 hours at the secondary data center	Maintainability and Stability
Recovery Point Objective (RPO)	Data synchronously replicated resulting in no data loss. RPO = 0	
Usability	No more than 40 hours of training required	Understandability, learnability, operability and attractiveness
Efficiency	No more than 10 seconds for processes	Time behavior, resource utilization
Portability	Installer shall contain everything necessary so that the system applications are not machine dependent	Adaptability, install ability
Compatibility	No errors associated with running software with compatible applications	
Security	Detect and prevent 99.99% intrusion attempts	
Data Conversion	95.44% Conversion Success (2 Sigma)	
Supporting Documentation	Less than 1% failure rate in beta testing for new users to execute software functionality	

Appendices

Appendix A: Technology Architecture

Product Lifecycle Phases
The phases below describe the different statuses a technology may be in for current services and systems.

Emerging

Technologies that are possibly already accepted throughout the industry, but are new to production usage. Emerging technologies must be carefully considered before implementing and it is therefore policy that, for initial implementation, emerging technologies be limited in use until it is proven that they can be integrated successfully into the existing architecture. Use of emerging technology products requires an approval.

Current

Technologies that are the current standard for use These technologies have been tested and generally accepted as standard within the industry.

Phasing Out

Technologies that may still be in use in some products, but are being phased out.

Deprecated

Technologies that have been completely phased out and are no longer used within BIS.

Technology Architecture
Domain: Data

Discipline: Database Storage

Technology Area: Database Management System

Percona XtraDB Cluster (5.6)	Current
MySQL (5.6)	Current
Microsoft SQL Server 2016	Current
Microsoft SQL Server 2012	Phasing Out
Microsoft SQL Server 2008 R2	Deprecated

Domain: Platform

Discipline: Hardware

Technology Area: Server Hardware

Dell PowerEdge	Current
SuperMicro	Phasing Out
Sun Microsystems	Deprecated

Discipline: Operating Systems

Technology Area: Application/Database Server Operating System

Red Hat Enterprise Linux (7)	Current
Windows Server 2016	Current
Windows Server 2012	Phasing Out
Windows 2008 Server R2	Deprecated

Domain: Security

Discipline: Data Confidentiality and Integrity

Technology Area: Encryption Controls

SSL/TLS1.3 (for web)	Emerging
AES (Advanced Encryption Standard)	Current
SSL/TLS1.2 (for web)	Phasing Out
SSL/TLS1.1 (for web)	Deprecated

Discipline: Authentication

Technology Area: Certificates

Microsoft Certificate Server	Current
GeoCerts Certificate Authority (for web)	Current

Discipline: Authorization

Technology Area: Directory

Microsoft Active Directory 2012	Current
Microsoft Active Directory 2008	Phasing Out

Discipline: Compliance Policies

Technology Area: Firewall

Ubiquiti Networks UniFi Security Gateway	Emerging
Ubiquiti Networks EdgeRouter Series	Current
Brocade Vyatta	Current
Cisco	Phasing Out

Technology Area: Intrusion Detection

Cisco Snort	Current

Technology Area: Virus Protection

McAfee	Current

Domain: Information

Discipline: Business Intelligence

Technology Area: Reporting Services

Microsoft SQL Server Reporting Services 2016	Current
Microsoft SQL Server Reporting Services 2012	Phasing Out
Microsoft SQL Server Reporting Services 2008	Deprecated

Domain: Application

Discipline: Application Access

Technology Area: Application Server

Go (1.12)	Emerging
Go (1.11)	Current
Go (1.10)	Phasing Out

Technology Area: Web Browser (Supported)

Chrome (58 or higher)	Current
Edge (14)	Current
Internet Explorer (9)	Phasing Out
Internet Explorer (8)	Deprecated
Firefox (54)	Current
Firefox (35)	Phasing Out
Safari (10)	Current

Safari (6)	Phasing Out

Technology Area: Web Server

Apache Web Server (2.4)	Current

Discipline: Application Configuration Management

Technology Area: Application Version Control

Git (10.4 or higher)	Current
SVN (Apache Subversion)	Phasing Out

Discipline: Application Development

Technology Area: Languages

Go (1.12)	Emerging
Go (1.11)	Current
Go (1.10)	Phasing Out
C# (7.0)	Emerging
C# (5.0)	Current
Visual Basic (6)	Phasing Out
VBScript	Current
Python	Current
Bash	Current
Perl	Current
PHP (7)	Current
PHP (5.1)	Phasing Out
JavaScript (ES6)	Current

Technology Area: Frameworks and Platforms

.NET Framework (4.7)	Current
Microsoft VB .NET (2017 15.8)	Emerging
Microsoft VB .NET (2012)	Current
Vue.js	Current
Node.js	Current
Bootstrap	Current
Ionic (Mobile Apps Framework)	Current
Frappe (Charts)	Current
Dynamsoft (Web Scanning SDK)	Current

Technology Area: External APIs

SmartyStreets (Address Verification)	Current

NHTSA (VIN Decoding / Vehicle Recall)	Emerging
CarFax (Vehicle Recall)	Current
Fair Market Value	Current
VinPower (VIN Decoding)	Current

Appendix B: Project Schedule Baseline

ID	Task Name	Duration	Start	Finish
1	**Indiana RFP 21-873 License Plates and Registration Documents**	**116 days**	**Mon 8/17/20**	**Mon 1/25/21**
2	Submit RFP	0 days	Fri 4/17/20	Fri 4/17/20
3	Contract Award	0 days	Fri 8/14/20	Fri 8/14/20
4	Project Kick-off	5 days	Mon 8/17/20	Fri 8/21/20
5	**Initiation Actions**	**30 days**	**Mon 8/24/20**	**Fri 10/2/20**
6	Registration Print Center Setup	30 days	Mon 8/24/20	Fri 10/2/20
7	Sorting & Mailing Center Setup	30 days	Mon 8/24/20	Fri 10/2/20
8	**Design**	**30 days**	**Mon 9/7/20**	**Fri 10/16/20**
9	Design Phase	30 days	Mon 9/7/20	Fri 10/16/20
10	**Procurement**	**30 days**	**Mon 9/7/20**	**Fri 10/16/20**
11	Registration Printers (Datamax)	30 days	Mon 9/7/20	Fri 10/16/20
12	Registration Supplies	30 days	Mon 9/7/20	Fri 10/16/20
13	Decal Supplies	30 days	Mon 9/7/20	Fri 10/16/20
14	Envelopes and Shipping Supplies	30 days	Mon 9/7/20	Fri 10/16/20
15	Sorting Equipment (Pitney Bowes)	30 days	Mon 9/7/20	Fri 10/16/20
16	**Infrastructure Setup**	**30 days**	**Mon 9/7/20**	**Fri 10/16/20**
17	Hardware	10 days	Mon 9/7/20	Fri 9/18/20
18	Dev, Test and Production Environments	10 days	Mon 9/21/20	Fri 10/2/20
19	Deployments and High Availability	10 days	Mon 10/5/20	Fri 10/16/20
20	**Development**	**35 days**	**Mon 10/5/20**	**Fri 11/20/20**
21	Develop Database and Conversions	10 days	Mon 10/5/20	Fri 10/16/20
22	Develop Application Functions	20 days	Mon 10/19/20	Fri 11/13/20
23	Develop API	25 days	Mon 10/19/20	Fri 11/20/20
24	**Documentation - Testing and System**	**25 days**	**Mon 11/9/20**	**Fri 12/11/20**
25	Testing Plans and Scenarios	15 days	Mon 11/9/20	Fri 11/27/20
26	System Documentation	10 days	Mon 11/30/20	Fri 12/11/20
27	**Testing**	**35 days**	**Mon 11/16/20**	**Fri 12/18/20**
28	System Testing	35 days	Mon 11/16/20	Fri 12/18/20
29	Disaster Recovery Testing	10 days	Mon 12/21/20	Wed 12/23/20
30	**Training**	**5 days**	**Mon 1/5/21**	**Fri 1/09/21**
31	On-site Training	5 days	Mon 1/5/21	Fri 1/09/21
32	**Deployment**	**5 days**	**Mon1/11/21**	**Fri 1/15/21**
33	Determine Final Deployment Strategy and Schedule	1 day	Mon 1/11/21	Mon 1/11/21
34	Secure Deployment Resources	1 day	Tue 1/12/21	Tue 1/12/21
35	Deployment to Production	3 days	Wed 1/13/21	Fri 1/15/21
36	**Go-live**	**1 day**	**Mon 1/25/21**	**Mon 1/25/21**

37	Launch	1 day	Mon 1/25/21	Mon 1/25/21
38	**Post Implementation Review**	**61 days**	**Tue 1/26/21**	**Tue 4/20/21**
39	Monitor Performance and Assess Satisfaction	60 days	Tue 1/26/21	Mon 4/19/21
40	Document Lessons Learned	3 days	Tue 1/26/21	Thu 1/28/21
41	Distribute and Review with Team Members	1 day	Fri 1/29/21	Fri 1/29/21
42	Review Maintenance Plan	5 days	Mon 2/1/21	Fri 2/5/21
43	Acceptance Approvals and Signatures	1 day	Tue 4/20/21	Tue 4/20/21
44	Post implementation review complete	0 days	Tue 4/20/21	Tue 4/20/21

Appendix C: Risk Management Plan

Introduction

A risk is an event or condition that, if it occurs, could have a positive or negative effect on a project's objectives. The purpose of the Risk Management Plan for iPRIME is to establish the framework in which the project team will identify risks and develop strategies to mitigate or avoid those risks. This plan also defines how risks associated with the project will be recorded and monitored throughout the lifecycle of the project.

This Risk Management Plan includes the following sections:
- Risk Management Approach – Deciding how to approach and conduct the risk management activities for the project.
- Roles & Responsibilities – Defining how each team role contributes to managing the risk process.
- Risk Identification – An initial and continuous effort to identify, quantify and document risks as they are identified.
- Risk Prioritization & Categorization – Evaluate identified risks to determine probability of occurrence, impact, and timeframe.
- Risk Response Planning - Establish an action plan for risk and assign responsibility.
- Risk Monitoring, Controlling, & Reporting – Capture, compile, and report risk using the Risk Register.

Risk Management Approach

The basic Risk Management approach for iPRIME is to identify critical risks and take necessary action before issues occur that impact project objectives. Many different tools will be used as part of this strategy.

The approach taken to manage risks for this project will include a methodical process by which the project team will identify, score, and rank various risks. Risk information identified by the project team will be entered into the Risk Register. The Project Manager will maintain the Risk Register, and Risk information will be a principal topic in all iPRIME status meetings. New risks will be reviewed to determine if mitigation action is required. The most likely and highest impact risks will be added to the project plan to ensure that the assigned risk managers take the necessary steps to implement the mitigation response at the appropriate time during the project. Risk managers will provide status updates on their assigned risks in bi-weekly project team meetings, but only when the meetings include their risk's planned timeframe. Upon completion of the project, during the closing process, the Project Manager will analyze each risk and review the risk management process. Based on this

analysis, the Project Manager will identify any improvements that can be made to the risk management process for future projects. These improvements will be captured as part of the lessons learned knowledge base.

Roles and Responsibilities

The table below provides an overview of the Roles & Responsibilities for the iPRIME Risk Management activities.

Role	Responsibilities
Analysts	Assists in identifying and determining the context, consequence, impact, timing, and priority of the risk
Project Manager	• Chairs the risk assessment meetings • Coordinates with Risk Managers to determine if the risk is unique • Identifies risk interdependencies across projects and verifies if risk is internal or external to project • Assigns risk classification and tracking number • Continually monitors the projects for potential risks throughout the project lifecycle • Analyzes any new risks that are identified and add these items to the Risk Register
Risk Manager	• Coordinates with the Project Manager to identify the risks, the dependencies of the risk within the project, and the context and consequence of the risk • Determines the impact, timing, and priority of the risk • Formulates the risk statements • Monitors and controls risks that have been identified • Reviews and updates the top ten risk list [timeframe, as needed, every two weeks, etc.] • Escalates issues & problems to management

Role	Responsibilities
Risk Owners	• Determines which risks require mitigation and contingency plans • Generates the risk mitigation and contingency strategies and performs a cost benefit analysis of the proposed strategies • Monitors, controls, and updates the status of the risk throughout the project lifecycle • Aids in the development of the risk response and risk trigger • Carries out the execution of the risk response, if a risk event occurs • Participates in the review, re-evaluation, and modification of the probability and impact for each risk item on a weekly basis • Identifies and participates in the analysis of any new risks that occur • Escalates issues/problems to PM that significantly impact the projects triple constraint or trigger another risk event to occur • Highlights risks that require action prior to the next weekly review • Identifies and escalates risks where strategy is not effective or productive (causing the need to execute the contingency plan)
Other Key Stakeholders	Assists in identifying and determining the context, consequence, impact, timing, and priority of the risk

Risk Identification

Risk identification will involve the project team, and appropriate stakeholders, and will include an evaluation of environmental factors, organizational culture and the project management plan including the project scope, schedule, cost, or quality. Careful attention will be given to the project deliverables, assumptions, constraints, Work Breakdown Schedule, cost/effort estimates, resource plan, and other key project documents.

The following methods will be used to assist in the identification of risks associated with iPRIME:

- Expert Interviews
- Risk Assessment Meetings
- Historical Reviews of Similar Projects
- Brainstorming
- Interviewing
- SWOT (Strengths, Weaknesses, Opportunities and Threats)
- Diagramming

The Risk Register will be updated as needed and will be stored electronically in the local project library located at **\\Opserver\e\PRIMEproject** and on the project collaboration website.

Risk Prioritization & Categorization

In order to determine the severity of the risks identified by the team, a probability and impact factor will be assigned to each risk. This process will allow the Project Manager to prioritize risks based upon the potential impact to the project.

As risks are assigned a probability and impact, the Project Manager will move forward with risk mitigation/avoidance planning. The probability and impact of occurrence for each identified risk will be assessed by the Project Manager, with input from the project team using the following approach:

Probability

High – Between *80%* and 100% probability of occurrence

Medium – Between *20%* and 79% probability of occurrence

Low – Below *20%* probability of occurrence

Impact

High – Risk that has the potential to greatly impact project cost, project schedule or performance

Medium – Risk that has the potential to slightly impact project cost, project schedule or performance

Low – Risk that has relatively little impact on cost, schedule or performance

Risks that fall within the RED and YELLOW zones will have a risk response plan which may include both a risk response strategy and a risk contingency plan.

RISK RESPONSE PLANNING

Each major risk (those falling in the Red & Yellow zones) will be assigned to a risk owner for monitoring and controlling purposes to ensure that the risk will be addressed and managed appropriately.

For each major risk, one of the following approaches will be selected:

- Avoid – Eliminate the threat or condition, or avoid impact to the project objectives by eliminating the cause. The project plan may need to be altered to account for the risk avoidance. Avoidance may be achieved by changing scope, adding time, or adding resources.
- Mitigate – Identify ways to reduce the probability or the impact of the risk. These steps may be costly and time-consuming, but could be preferable to allowing the risk to go forward in an unmitigated state.
- Accept –The project team accepts that the risk exists and makes no change to the project plan to address the risk. No response strategy is identified.

- Contingency –Define actions to be taken in response to risks.
- Transfer – Shift the consequence and ownership of a risk by making another party responsible (buy insurance, outsourcing, etc.).

The Project Manager will lead the project team in developing responses to each identified risk. As more risks are identified, they will be qualified and the team will develop the response. These risks will also be added to the Risk Register to ensure they are monitored at the appropriate times and are responded to accordingly.

For each risk that will be mitigated, the project team will identify ways to prevent the risk from occurring or reduce its impact or probability of occurring. This may include prototyping, adding tasks to the project schedule, adding resources, etc. Any secondary risks that result from risk mitigation response will be documented and will follow the same risk management protocol as primary risks.

Risk Monitoring, Controlling, And Reporting

The Risk Register for iPRIME is an ongoing log of all identified risks, their probability and impact to the project, the category they belong to, mitigation strategy, and when the risk is estimated to occur. This register was created in the early planning phase of the project. Based on the identified risks and timeframes in the risk register, applicable risks will be added to the project plan. At the appropriate time in the plan—prior to when the risk is most likely to occur—the project manager will assign a risk manager to ensure adherence to the agreed upon mitigation strategy.

The level of risk on iPRIME will be tracked, monitored, controlled and reported throughout the project lifecycle. The most likely and greatest impact risks will be added to the project schedule to ensure that proper monitoring occurs during the time of risk exposure. As risks are added to the project schedule, a Risk Manager will be assigned. During the bi-weekly project team meeting, the Risk Manager will discuss the status of their assigned risks. Only risks which fall in the current time period will be discussed. Risk monitoring will be a continuous process throughout the life of this project.

Critical risks will also be assigned a risk owner(s) who will track, monitor, and control their assigned risks. The risk owner will also provide a weekly status report to the Project Manager and Risk Management Team. This report should contain an assessment of the effectiveness of each risk response action.

As Risk Events occur, the list will be re-prioritized during weekly reviews and the risk management plan will reflect any and all changes to the risk lists including secondary and residual risks. The Project Manager will notify the Project Sponsor of important changes to risk status as in the weekly Project Status Report.

Appendix D Risk Register

Vulnerability Statement

Vulnerability	Description
Cross-site scripting	The web application can be used as a mechanism to transport an attack to an end user's browser. A successful attack can disclose the end user's session token, attack the local machine, or spoof content to fool the user.
SQL Injection	Information from web requests is not validated before being used by a web application. Attackers can use these flaws to attack backend components through a web application.
Password Strength	Passwords used by the web application are inappropriately formulated. Attackers could guess the password of a user to gain access to the system.
Unnecessary Services	The web server and application server have unnecessary services running such as telnet, snmp and anonymous ftp
Disaster Recovery	There are no procedures to ensure the ongoing operation of the system in event of a significant business interruption or disaster
Lack of Documentation	System specifications, design and operating processes are not documented.
Integrity Checks	The system does not perform sufficient integrity checks on data input into the system.

Threat Statement

Threat-Source	Threat Actions
Hacker	• Web defacement • Social engineering • System intrusion, break-ins • Unauthorized system access
Computer Criminal	• Identity theft • Spoofing • System intrusion
Insiders	• Browsing of personally identifiable information • Malicious code (e.g., virus) • System bugs • Unauthorized system access
Environment	• Natural disaster

Risk ID: Identification number given to the risk register item

Risk Category: Categorization of risks by area of project affected, source of risk or other useful category.

Risk Identification: The risk stated in a complete sentence which states the cause of the risk, the risk, and the effect that the risk causes to the project.

Date Raised: Date when the risk was identified and added to the register

Probability: The likelihood that a risk or opportunity will occur (on a scale of Low (1), Medium(5), and High(10) with 10 being the highest).

Impact: The impact of the risk on the project if the risk occurs (on a scale of Low (1), Medium(5), and High(10) with 10 being the highest).

Risk Score: Determined by multiplying probability and impact (scale from 0 to 100).

Risk Ranking: A priority list which is determined by the relative ranking of the risks. Risk Scale: High (>50 to 100); Medium (>10 to 50); Low (1 to 10)

Risk Management Approach/Mitigation Actions: The action which is to be taken if this risk occurs.

Risk Owner: The person who the project manager assigns to watch for triggers, and manage the risk response if the risk occurs.

Example Risk Register:

RISK REGISTER								
Risk Identification				**Qualitative Rating**				**Risk Response**	
Risk ID	**Risk Category**	**Risk Identification**	**Date Raised**	**Probability (1, 5, 10)**	**Impact (1, 5, 10)**	**Risk Score (P * I)**	**Risk Ranking (Low, Medium, High)**	**Risk Management Approach/ Mitigation Actions**	**Risk Owner**
1.0	Software	Malicious Application Code	6/17/2019	1	10	10	LOW	Virus protection; Code reviews	Wendell
2.0	Schedule	Missing deadlines for critical updates	6/18/2019	1	5	5	LOW	Monitor for updates and ensure they are applied within 30 days of release	Wendell
3.0	Scope	Missing assets within scope	6/19/2019	1	10	10	LOW	Risk assessment team will review	Wendell
4.1	Hackers	Somone accessing the system and stealing/compromising data	6/20/2019	5	10	50	MEDIUM		Scott Bigliardi
4.2	Employees, Human Error	Somone accessing the system and stealing/compromising data	6/21/2019	5	10	50	MEDIUM		Scott Bigliardi
4.3	Thief/Intruder	Someone intending to cause physical damage or steal assets	6/24/2019	1	10	10	LOW		Wendell
5.1	Hardware (Infrastrucure)	Hardware Failure; Server, Router, Switch	6/25/2019	1	10	10	LOW		Scott Bigliardi
5.2	Hardware	MSR/POS Terminal Failure	6/26/2019	1	10	10	LOW		Wendell
6.0	Regulatory	Failing to meet PCI requirements	6/27/2019	1	10	10	LOW		Wendell
7.0	SQL Injection	Data inappropriately extracted/modified from database by entering SQL commands into input fields	6/28/2019	10	10	100	HIGH	Ensure that all parameters are validated before they are used. Sanitize user input and strip characters. Each parameter should be checked against a strict format that specifies exactly what input will be allowed.	Scott Bigliardi

Acceptance

Approved by:

_____   Date:_____

iPRIME Executive Sponsor

_____   Date:_____

iPRIME Business Sponsor

_____   Date:_____

iPRIME Project Manager

_____   Date:_____

iPRIME Steering Committee Member

_____   Date:_____

iPRIME Account Manager

_____   Date:_____

iPRIME Steering Committee Member

_____   Date:_____

iPRIME Steering Committee Member

_____   Date:_____

iPRIME Technical Lead