CITY OF SAN ANTONIO
INFORMATION TECHNOLOGY SERVICES DEPARTMENT

SAFD Predictive Software

SOW

Version 1.5.4 • May 20, 2019

SAFD Predictive Software
SOW Signoff

DATE: May 20, 2019

Approval of the SOW indicates an understanding of the purpose and content described in this deliverable. By signing this deliverable, each individual agrees work should be initiated on this project and necessary resources will be committed as described herein.

Approver Name	Title	Signature	Date
Douglas Baily	President		2/20/2019
Douglas Baily	President		5/20/2019

Version	Change Description	Date	Who
1.0	Initial draft	1/8/19	Robert Gamez
1.1	Updated document with Hope Brooks comments: Project Scope; minor edits and corrected misspellings in Project Management section; updated Deliverable Roles table; removed 3.2 Integration Testing section; added note to Hope Brooks regarding Production Support responsibilities; updated Project Contact List	1/11/19	Robert Gamez
1.2	Added Deliverables from RFCSP vendor response	1/17/19	Robert Gamez
1.3	Updated #9 Project Costs from Levrum proposal; updated #4 Training	1/28/19	Robert Gamez
1.4	Updated Communications Matrix, #6 Software and Hardware, #7 Assumptions and Constraints, #8 Risks and Issues and #10 Payments	1/30/19	Robert Gamez
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1.5.1	Updated Section 3.1 to include certification of System Testing	2/7/19	Robert Gamez
1.5.2	Accept changes from Levrum review	2/18/19	Hope Brooks (ITSD)
1.5.3	Revised payment schedule to include 2 renewal year options	5/1/19	Kristen McAvoy (ITSD)

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1 Project Summary

San Antonio Fire Department (SAFD) is seeking a replacement for the current decision software support solution. The intent for the current application was to provide proactive suggestions and to assist with strategic and operational planning for resource and facility placement. The software was also used to produce future plans of routes, redirection of SAFD resources, route scenarios, first responder routes, high call areas and informative reports based on near real time data. However, the current application has not met the expectations of the SAFD Staff and as a result has reduced the use of the application to an 'as needed basis'.

1.1 Project Scope

Levrum Software was recently selected as the new provider for the predictive software. Levrum shall install, test and configure the Code 3 Suite software as a replacement to the current DECCAN software. They will:

- Provide a solution to generate objective, factual data to explain departmental performance levels on an ad hoc basis.
- Provide a solution that can provide the ability to calculate and estimate performance evaluation and generate reports based on individual zones.
- Provide a solution that can rate individual stations based on response times and performances.
- Provide a planning tool that allows SAFD management to conduct scenarios of future possible manpower annexations and manpower needs and station relocation/consolidation
- Provide a solution that can provide accurate "near" real time data with reasonable vendor support.
- Support User Acceptance Training (UAT) activities prior to Go-Live.
- Conduct Training and user configuration for Go-Live.
- Support Production Go-Live activities.

1.1.1 IN SCOPE

The scope of this engagement includes all activities required to support the deliverables and activities including: project management, software installation and base configuration, end user training, skills transfer workshops, integration with third party systems, and technical support.

1.1.2 OUT OF SCOPE

Anything not included in the Request for Competitive Sealed Proposal (RFCSP), Requirements Traceability Matrix (RTM) and Proposal document is considered out of scope. This may change based on meetings when additional functionality is identified. Any future changes or additional functionality not represented in the RFP, response, and this SOW will result in a Change Request (CR) with potential additional costs.

2 Project Management

2.1 Levrum Responsibilities

The Levrum Project Manager is the COSA's primary point of contact for this engagement. The Levrum Project Manager is accountable for ensuring resource availability, managing communications across project teams, monitoring project progress against the project timeline and ensuring that the work deliverables are

appropriately developed based on the scope and requirements of the project.

The Levrum Project Manager shall support overall project objectives and work effectively with the COSA's Project Manager, Project Team and Stakeholders (as required) and shall function as the liaison between the COSA's Project Manager and Levrum on all matters relating to the project.

If Levrum employees are located on-site, Levrum shall provide its own hardware, computer equipment and software to fully satisfy all operational requirements of the Contract. Levrum's equipment and software must be compatible with the system and software used by the COSA, including the appropriate Microsoft Office and Microsoft Project systems.

COSA, at its sole discretion, shall have the right to remove any of the Levrum employees or subcontractors. Upon written notifications, Levrum shall remove and replace any employee or subcontractor without affecting stated timelines, deliverables, or service levels.

Levrum shall have sole responsibility to coordinate Levrum's work to meet project requirements and to notify COSA of all conflicts that cannot be accommodated through proper coordination of the project. Levrum shall submit copies of each major deliverable for review and evaluation by the COSA Project Manager.

Submitted deliverables found unsuitable, rejected or returned for revision by COSA, shall be reworked by Levrum and resubmitted. Payment will not be made until submitted items are found suitable and accepted by COSA.

Contract deliverable submittals shall be submitted for a minimum of one round of review and comment by COSA. Levrum shall be responsible for incorporating all comments and resubmitting as directed by COSA. Unless noted otherwise, one (1) electronic copy of all deliverables shall be provided.

2.2 COSA Responsibilities

COSA will designate a COSA Project Manager, responsible for all Levrum coordination activities. Levrum will work with the COSA Project Manager to provide all necessary information required for satisfactory performance of their tasks. Levrum will direct all communication to and take direction from the COSA Project Manager.

Project meetings will be scheduled on a regular basis and will serve as a means of identifying emerging issues and reporting on progress. The COSA Project Manager and Project Team will be responsible for contributing to and reviewing Weekly Progress Reports, reporting project issues and contributing to updates of the project plan and schedule.

COSA will provide the following in support of Levrum's system implementation:

1. Access to IT staff to support configuration
2. Access to business staff for configuration testing
3. Timely approval of technical design
4. COSA network access for deployment team
5. Access to non-production systems (CAD, GIS, network dataset, etc) for integration testing of data

import and API access functions.

6. Timely feedback on beta test and custom functionality developed during the engagement.
7. Review and approval of system tests
8. Assistance in scheduling staff for testing and training

2.3 Project Kickoff Meeting

This project will begin with a kickoff meeting designed to introduce the teams from Levrum to COSA, review project responsibilities, review the project schedule and provide a foundation for communications and collaboration. Status meeting agendas and call schedules are also discussed and agreed upon during the project kickoff meeting. Levrum shall coordinate with COSA for the scheduling of the kickoff meeting after issuance of contract award.

2.4 Project Status Meetings

Project status meetings will be held on a regular basis, as scheduled, and agreed upon. This will ensure that all project staff is up to date on the current project status, possible issues, risks, accomplishments, challenges and planned activities in the coming weeks. The Project Team attends this meeting along with various staff from both teams who are involved in that week's activities. This meeting generally lasts no longer than thirty minutes and will be setup by the COSA Project Manager via WebEx. The COSA Project Manager will distribute meeting minutes for review and approval after each status meeting.

Project status meetings shall be used to:

1. Discuss and review status of Action Items from previous meetings.
2. Review items of significance that could affect project progress.
3. Include topics for discussion as appropriate to the status of the project.
4. Review the project schedule for progress since the last meeting.
5. Determine where each activity is in relation to the project schedule, whether on time, ahead or behind schedule.
6. Determine how activities behind schedule will be expedited and to secure commitments from parties involved.
7. Discuss whether schedule revisions are required to ensure that current and subsequent activities will be completed within the project schedule.

2.5 Project Status Reports

Levrum will prepare and deliver a Project Status Report that will include but is not limited to updates to risks, issues, status of current activities and any project-related items. The Project Status Report will also include a current status of the project schedule including the percentage of work completed, a description of the progress achieved during the period, plans for the forthcoming period, problem areas and proposed solutions, delaying factors and their impacts, an explanation of corrective actions taken or proposed, and other analyses necessary to compare actual performance with planned performance.

2.6 Communications Management

2.6.1 Approach

This Communications Management Plan sets the communications framework for this project. It will serve as a guide for communications throughout the life of the project. The Levrum and COSA Project Managers will ensure effective communications on this project. The communications requirements are documented in the Communications Matrix (Table 1). The Communications Matrix will be used as the guide for what information to communicate, who is to do the communicating, when to communicate it and to whom to communicate.

2.6.2 Constraints

All project communication activities will occur within the project's approved budget, schedule, and resource allocations. The Levrum and COSA Project Managers are responsible for ensuring that communication activities are performed by the Project Team and without external resources which will result in exceeding the authorized budget. Communication activities should occur as detailed in the Communication Matrix.

2.6.3 Methods and Technologies

ITSD maintains a SharePoint platform within the PMO which all projects use to provide updates, archive various reports, and conduct project communications. This platform enables senior management, as well as stakeholders with compatible technology, to access project data and communications at any point in time. SharePoint also provides the ability for stakeholders and project team members to collaborate on project work and communication. For stakeholders who do not have the ability to access SharePoint, documentation will be sent via email.

What?	When?	How?	Who?
Kick Off Meeting	At project initiation	Face-to-face with Conference Bridge	Public Safety IT, Project Team, Vendor
Team Meeting	Weekly	WebEx	Project Team
Bi-Weekly Status Report	Bi-Weekly	WebEx and/or face-to face	SAFD/PM
Project Meetings	As required	WebEx and/or face-to face	Public Safety IT, Project Team, Vendor

Table 1 –Communications Matrix

2.6.4 Escalation Process

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 Project Team will use this standard escalation model 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
1	**Major** impact to project or business operations. If not resolved quickly there will be a significant adverse impact to budget and/or schedule.	Project Sponsor	Within 4 hours
2	**Medium** impact to project or business operations which may result in some adverse impact to budget and/or schedule.	Project Sponsor	Within one business day
3	**Minor** impact which may cause some minor scheduling difficulties with the project but no impact to scope, schedule, or budget.	Project Manager	Within two business days
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

Table 2 – Project Escalations

2.7 Risk Management

2.7.1 Approach

The purpose of the Risk Management Plan is to establish the framework in which the Project Team will identify risks and develop strategies to mitigate or avoid those risks. The approach taken to identify risks includes a methodical process by which the Project Team identifies, scores and ranks the various risks. The most likely and highest impact risks can be added to the project schedule to ensure that assigned risk owners take the necessary steps to implement the mitigation response at the appropriate time during the schedule.

2.7.2 Qualification and Prioritization

In order to determine the severity of the risks identified, a Probability and Impact factor is assigned to each risk. This process allows the COSA Project Manager to prioritize risks based upon the effect or Risk Exposure they may have on the project.

		Impact of Risk				
		1	2	3	4	5
Probability of Risk Occurring	1	1	2	3	4	5
	2	2	4	6	8	10
	3	3	6	9	12	15
	4	4	8	12	16	20
	5	5	10	15	20	25
	G	LOW Risk	The **Risk Exposure** in the matrix is determined by multiplying			
	Y	MED Risk	the **Impact of the Risk** x **Probability** that the risk will occur			
	R	HIGH Risk				

Table 3 –Risk Exposure Matrix

2.7.3 Risk Monitoring

The most likely and greatest impact risks can be added to the project plan to ensure that they are monitored

during the time the project is exposed to each risk. At the appropriate time in the project schedule a Risk Owner is assigned to each risk. Each Risk Owner is responsible for tracking, identifying statuses and managing the risk to resolution.

Risk monitoring is a continuous process throughout the life of this project. As risks approach on the project schedule the COSA Project Manager will ensure that the appropriate Risk Owner provides the necessary status updates which include the risk status, identification of trigger conditions, and the documentation of the results of the risk response.

2.7.4 Risk Mitigation and Avoidance

As more risks are identified, they will be qualified and the Project Team will develop avoidance and/or mitigation strategies. These risks will also be added to the Risk Log and the project plan to ensure they are monitored at the appropriate times and are responded to accordingly.

The risks for this project will be managed and controlled within the constraints of time, scope, and cost. All identified risks will be evaluated in order to determine how they affect this triple constraint. The COSA Project Manager will determine the best way to respond to each risk to ensure compliance with these constraints.

2.7.5 Risk Log

The Risk Log for this project is a log of all identified risks, their Probability and Impact to the project, the category they belong to, mitigation strategy, and when the risk will occur. The Risk Log also contains the mitigation strategy for each risk as well as when the risk is likely to occur.

Based on the identified risks and timeframes in the risk register, each risk can be added to the project plan. At the appropriate time in the plan—prior to when the risk is most likely to occur—the COSA Project Manager will assign a Risk Owner to ensure adherence to the agreed upon mitigation strategy. The COSA Project Manager will track status and manage the risk to resolution.

No	Project	Risk Statement	Negative Impact	Status (Open / Closed)	Probability (1-5)	Impact (1-5)	Risk Exposure	Risk Mitigation Action	Date Identified	Assigned To
1	FASTER Web	Current hardware/software configuration may not meet vendor minimum requirements for the software upgrade	If hardware/software upgrades are required, will affect schedule and budget	Open	3	5	15	Need to conduct hardware/software review to determine if upgrades are required	09/04/18	IT, BESD, SAFD
2	FASTER Web	Handheld hardware requirements not identified (scanners, tablets, phones)	If handheld hardware is required, may affect schedule and budget	Open	3	4	12	Need to identify handheld needs, cost and timeline	09/04/18	IT, BESD, SAFD
3	FASTER Web	Vendor SOW costs exceed current budget	If activities and budget cannot be reconciled, will not be able to complete required vendor activities without additional budget	Open	5	3	15	Need to review vendor SOW to determine if all activities identified are required and at the best possible price	09/04/18	PM, BESD
4	FASTER Web	Full-time System Administrator(s) not identified and assigned	If not identified, will not have key SME(s) to support the system	Open	5	5	25	Need to identify full-time System Administrator(s) ASAP	09/04/018	BESD, SAFD
5	FASTER Web	Training needs are extensive and exceed SOW costs	If minimum training requirements not met, will not be able to conduct successful Production deployment	Open	5	5	25	Will use 'train the trainer' method to complete additional training needs	09/04/18	BA, BESD, SAFD, Training Dept (?)
6	FASTER Web	Production data migration mappings not confirmed	If not confirmed, data may not be migrated as expected	Open	2	5	10	Review data mappings to confirm all required Production data will be migrated	09/04/18	BA, BESD, SAFD

Table 4 – Sample Risk Log

2.8 Scope and Change Control

2.8.1 Scope Verification

Scope Verification is the responsibility of the Project Team. The original scope for this project is defined by the Statement of Work. Scope Verification within this document refers to the management of deliverables identified as the scope of the project. The COSA Project Manager will oversee the Project Team and the progression of the project to ensure that this scope control process is followed.

As this project progresses the COSA Project Manager and Project Team will verify project deliverables against the latest, approved scope and the Acceptance Criteria for that deliverable. Once verified that a deliverable meets the scope and Acceptance Criteria, the Project Manager and Sponsor (or designated representative) will meet for review and formal acceptance of the deliverable. The COSA Project Manager will present the deliverable Acceptance Criteria and the Sponsor will accept the deliverable via email or document signature.

2.8.2 Roles and Responsibilities

The COSA Project Manager, Sponsor and Project Team will all play key roles in managing the scope of this project. The table below defines the roles and responsibilities for the scope management of this project.

Role	Responsibilities
Project Manager	• Approve or deny scope change requests that have minimal project impacts to schedule, budget and/or scope • Facilitate scope change requests • Evaluate impact of scope change requests • Organize and facilitate change control meetings • Communicate outcomes of scope change requests
Sponsor	• Approve or deny scope change requests • Evaluate need for scope change requests • Review and accept/deny project deliverables
Project Team, Subject Matter Expert(s)	• Participate in defining change resolutions • Evaluate the need for scope changes and communicate them to the Project Manager, as necessary • Update project documents upon approval of all scope changes

Table 5 – Scope Management Roles and Responsibilities

2.8.3 Scope Change Control

Proposed scope changes are initiated with a scope change request by the COSA Project Manager, Sponsor, Project Team or Key Stakeholders. The Scope Change Control process will ensure that all proposed changes are defined, reviewed and agreed upon so they can be properly implemented and communicated to all stakeholders. All changes will be analyzed and evaluated for impact on:

- Timeline, including impact to other work, deliverables, and/or milestones
- Budgets
- Resource assignments and availability

- Technical architecture, application design and/or technical requirements
- Meeting client requirements and expectations
- Risks including any additional risks added or mitigated by the proposed change

2.8.4 Definitions of Change

There are several types of changes:

- **Schedule Changes** – changes which will impact the approved project schedule. These changes usually require re-baselining the schedule depending on the significance of the impact.
- **Budget Changes** – changes which will impact the approved project budget. These changes may require additional funding and/or releasing funding no longer required.
- **Scope Changes** – changes which will impact the project's scope and are typically the result of adding or removing requirements which were not initially planned for. These changes may also impact budget and schedule.

Once received, the COSA Project Manager will request a sizing and impact analysis of the change. If the change is minimal with no major impacts to schedule, budget or scope of the project, the COSA Project Manager may approve the scope change request and notify the Project Team and Sponsor of the change.

If the scope change request is more complex, the COSA Project Manager will submit it to the Sponsor and Project Team for review. If the scope change request receives initial support of the Project Sponsor, the Project Team will conduct a more detailed analysis for impact to the project and review by the Change Control Board (CCB). The COSA Project Manager will then convene the CCB for review and formal acceptance.

If the scope change request is approved, the Project Sponsor will then formally accept the change by signing the project change control document. The Project Manager will communicate the scope change to all project team members and stakeholders and initiate update of the relevant project documents.

If the scope change request is NOT approved, no further action is required.

2.8.5 Change Control Board

The CCB is the approval authority for all proposed scope change requests that are outside of the Project Manager's decision authority. The purpose of the CCB is to review scope change requests, impacts on the project risk, scope, cost, and schedule, and to approve or deny each change request. The CCB is comprised of the Sponsor, Project Team and Key Stakeholders.

2.8.6 CCB Roles and Responsibilities

The following are the roles and responsibilities for all change management efforts related to the project:

Role	Responsibilities
Change Control Board Members	• Review and approve/deny scope change requests to budgets, schedules and/or project deliverables
Project Manager	• Receive and log all scope change requests received • Work directly with vendors, appropriate ITSD technical resources and client SMEs to collect information needed to estimate and complete the request • Maintain Change Request Log • Approve/deny changes that have minimal impact to scope, cost and/or schedule • Update the Change Control Board as needed
Project Team, Subject Matter Expert(s)	• Originate change requests based on project needs • Provide all applicable information and detail on change request forms • Be prepared to address questions regarding any submitted change requests • Provide feedback as necessary on impact of proposed changes • Requests from team members should be discussed with the Project Manager and/or Team Lead prior to submitting an official change request • Review change requests pending approval and provide input as needed / requested

Table 6 – Change Management Roles and Responsibilities

2.9 Work Breakdown Structure and Schedule

2.9.1 Schedule Management Approach

The Levrum Project Manager is responsible for the scheduling of the contract Scope of Work. Levrum's management personnel shall actively participate in the development of the project schedule so that the intended sequences and procedures are clearly understood by Levrum's organization. The COSA Project Manager will review and approve the final tasks that appear in the Levrum project schedule.

Project schedules are created using MS Project (or equivalent software) starting with the deliverables identified in the project's Work Breakdown Structure (WBS). Activity definition identifies the specific work packages which must be performed to complete each deliverable. Activity sequencing is used to determine the order of work packages and assign relationships between project activities. Activity duration estimating is used to calculate the number of work periods required to complete work packages. Resource estimating is used to assign resources to work packages in order to complete schedule development.

The project schedule shall identify detailed activities, scheduling, and show relationships between activities and similar milestone activities. Once a preliminary schedule has been developed, it is reviewed by the Project Team. The Project Team and resources must agree to the proposed work package assignments, durations, and schedule. Once this is achieved the COSA Project Manager will baseline the schedule.

2.9.2 Schedule Control

The project schedule is reviewed and updated as necessary on a weekly basis with actual start, actual finish, and completion percentages. The COSA Project Manager is responsible for holding weekly schedule updates/reviews, determining impacts of schedule variances, processing schedule changes and reporting schedule status in accordance with the project's communications plan.

The Project Team is responsible for participating in weekly schedule updates/reviews, communicating any changes to actual start/finish dates to the project manager and participating in schedule variance resolution activities as needed.

2.9.3 Schedule Changes and Thresholds

If a schedule change is necessary, the COSA Project Manager and Project Team will review and evaluate the change. They must determine which tasks are impacted, variance as a result of the potential change and any alternatives or variance resolution activities they may employ to see how it would affect the scope, schedule, and resources. If, after this evaluation is complete, the COSA Project Manager determines that any change will exceed the established boundary conditions, then a schedule change request must be submitted.

Submittal of a schedule change request to the project sponsor for approval is required if either of the two following conditions is true:

- The proposed change is estimated to increase the duration of an individual work package by 10% or more.
- The change is estimated to increase the duration of the overall baseline schedule or deliverable.

When agreement has been reached on the number of days to be included in an overall time extension or an extension to an intermediate milestone, the COSA Project Manager will take the Change Request to the CCB. Upon the CCB approval, the revised project schedule with the extensions will become the basis for any future approved changes.

The Levrum Project Manager shall incorporate activities representing the total value of approved change orders as each is approved. Change order activities shall be assigned unique activity codes such that they can be segregated in the project schedule.

2.9.4 Scope Change

Any changes in the project scope, which have been approved by the Sponsor, will require the Project Team to evaluate the effect of the scope change on the current schedule. If the COSA Project Manager determines that the scope change will significantly affect the current project schedule, they will re-baseline the schedule in consideration of any changes which need to be made as part of the new project scope. The CCB must review and approve this request before the schedule can be re-baselined.

2.10 Project Organization

Project Organization documents required shall include:

1. An organization chart showing interrelationships among Levrum Team Members, the COSA, and the Project Stakeholders.
2. Project Contact List (Appendix A).

2.11 Deliverable Roles

The following table identifies the responsibilities associated with delivery of required deliverables services. The table attempts to define the lead role, but it is expected that both Levrum and the COSA will work collaboratively to develop the documentation:

- L – Lead: create/update the deliverable,
- R – Review: review the deliverable,
- S – Support: support creation and delivery of the deliverable,

- A – Approve: approve the deliverable

Deliverable Responsibilities		LEVRUM	COSA
1	Project Kick-Off	S	L
2	Project Organization Chart	L	S
3	Project Contact List	S	L
4	Requirements Traceability Matrix	S	L
5	Data conversion Mapping Files	S	L
6	Training Plan	S	L
7	Status Meeting Minutes	S	L
8	Weekly Progress Report – Risk and Issues Logs	S	L
9	Application hardware and system software requirements documentation	S	L
10	Gap Analysis	S	L
11	AS IS documentation	S	L
12	TO BE documentation	S	L
13	Project Management Plan – Work Breakdown Structure	L	S
14	Project Acceptance and Closure	S	L
15	User Acceptance Testing Plans and Schedule	S	L
16	User Acceptance Testing documentation	S	L

Table 6 – Project Deliverable Responsibilities

3 Testing

3.1 System Testing

System Testing will be completed to ensure the system functions as specified. Testing will consist minimally of system controls and integration to the CAD data to demonstrate the methods and processes for performing daily activities. The test plan is built based on the requirements and functionality for this project:

- Types of testing to be performed
- Organization of the test team and associated responsibilities
- Testing scripts
- Test schedule
- Documentation and certification of test results

During System Testing, the COSA Business Analyst and vendor will provide leadership and oversight via collaborative webinar sessions. It is expected that during testing, the team will identify anything that does not function as specified and in-scope requirements. The vendor will also provide all testing scripts to be used as the basis for User Acceptance Test planning.

3.2 User Acceptance Testing

User Acceptance Testing (UAT) will be completed to ensure compliance with the system design requirements. Testing will consist minimally of functional requirements, system controls, and integration to

the CAD data to demonstrate the methods and processes for performing daily activities. The test plan is built based on the requirements for this project. The UAT plan and scripts will include:

- Types of testing to be performed
- Organization of the test team and associated responsibilities
- Testing scripts
- Test schedule
- Documentation of test results

During UAT, the COSA Business Analyst will provide leadership and oversight via collaborative UAT webinar sessions. It is expected that during the UAT sessions the team will identify anything that does not function as per in-scope requirements.

4 Training

Levrum will provide Code3 Strategist training that will consist of 24 hours of face-to-face instruction and hands-on laboratory sessions. The training emphasizes interactive teaching, teamwork and challenging, realistic lab and homework exercises.

5 Project Deliverables

Task	Deliverable
Develop project timeline	Detailed Project Schedule of activities
Acquire and validate historical data and current deployment information	Data quality assessment report
Build initial Base model	INITIAL Base model
Deliver current software and install	Software installed and validated
Provide training	Trained staff with Training certificates
Create custom data source IMPORT interface	IMPORT capability
Complete Code3 Visionary module data customization	Customized Code3 Visionary module
Review and approve final Base model	Approved FINAL Base model

6 Software and Hardware

6.1 Hardware Component Diagram

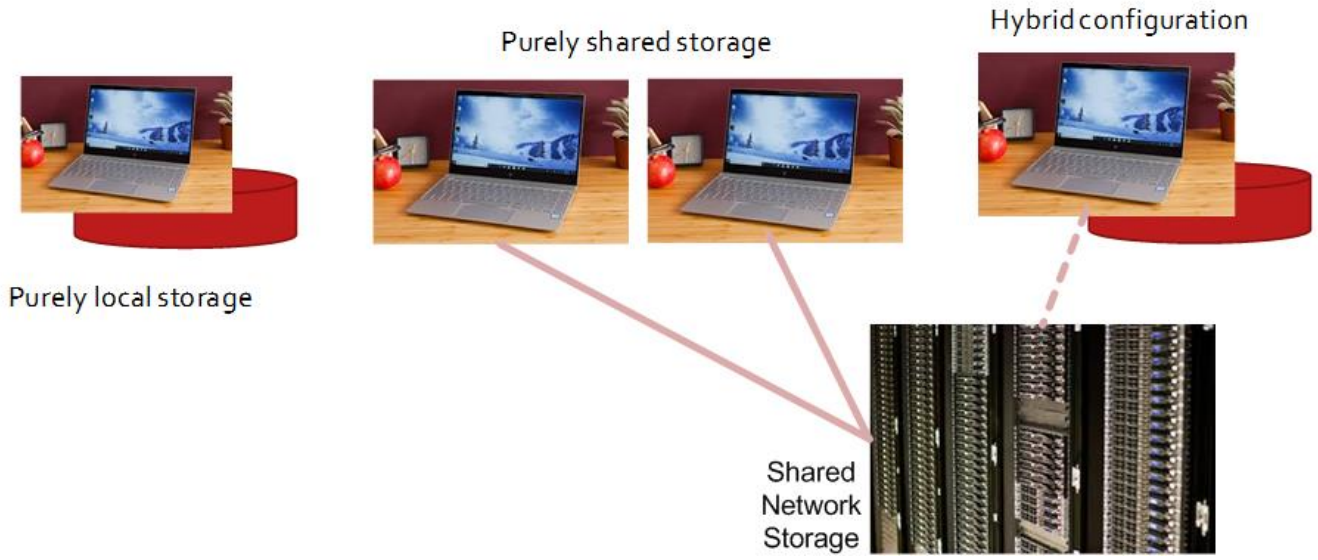

Figure 1: Hardware Component Diagram

The diagram above shows potential hardware configurations for Code3 Strategist. The application is capable of being run completely disconnected from any network, if necessary. It is capable of storing and maintaining all necessary data on the user's local computer.

It is also capable of using a shared network storage environment, using Windows™ file sharing. In this configuration, all users who have configured their systems to use the shared storage environment will be able to view and create data that all similar users can access.

These two storage modes can be changed dynamically with configuration settings, so that an individual user may store some work locally (in which case that work will be completely private) and access other work in one or more shared environments.

6.2 Software Component Diagram

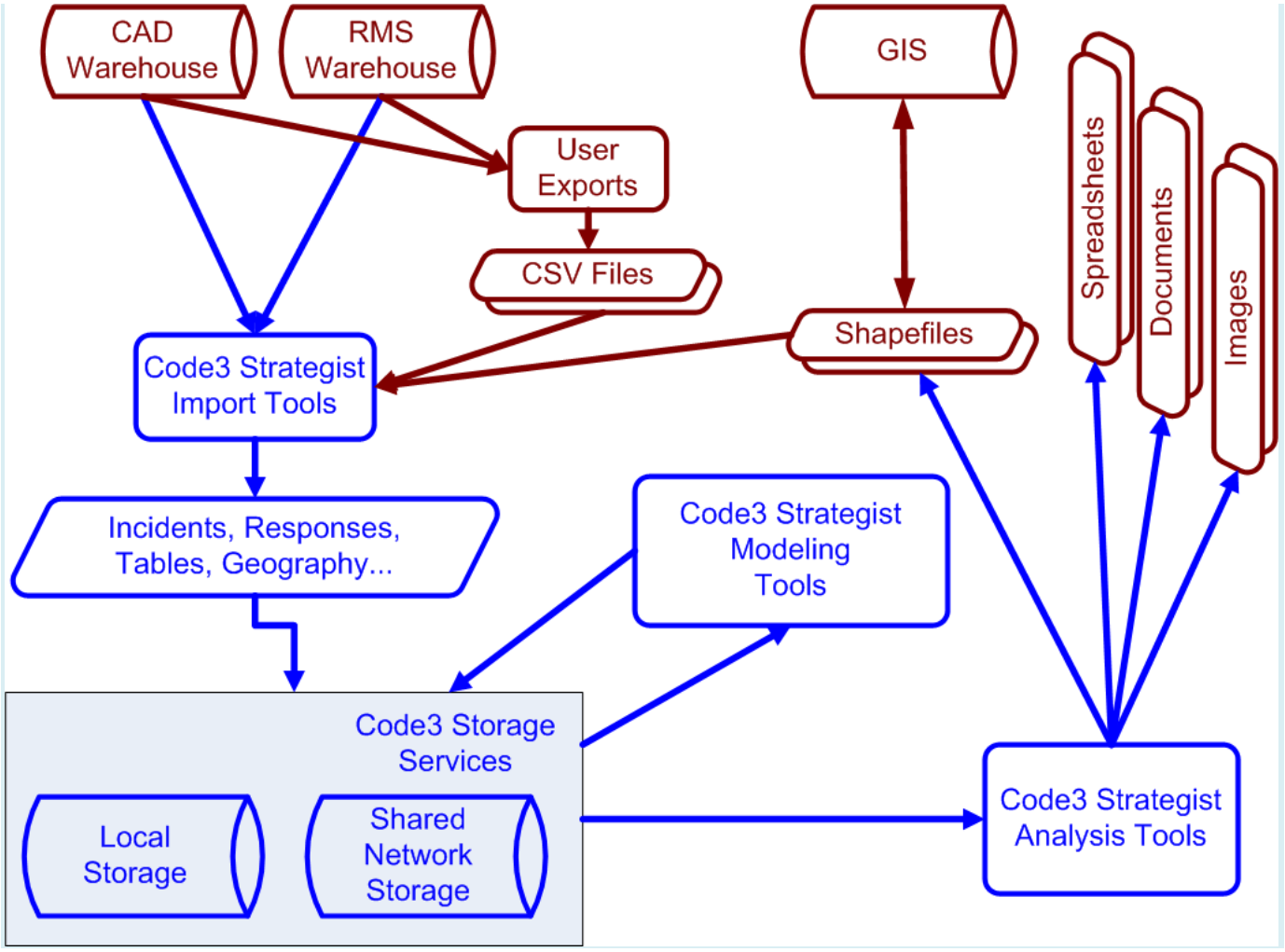

Figure 2: Software Component Diagram

Figure 2 provides a graphical illustration of the major software components involved in the Code3 Strategist system. In the diagram, blue elements denote Code3 Strategist components or artifacts; red components indicate customer-controlled or -generated components and artifacts. The following notes provide additional detail:

1. A set of import tools allow Code3 Strategist to make use of customer data, from CAD, RMS, GIS and potentially other data sources. Relational data can be provided in CSV format, whereby customers perform manual extract-translate-load (ETL) logic, or can be acquired directly from any SQL Server data source. The latter method may require some initial customization, and assumes that all ETL operations are performed within the remote database via views or similar mechanisms. It also requires the customer to provide read-only access to the appropriate components of the remote database.
    a. The import tools responsible for the import of incident and response data have facilities for "scrubbing" Protected Health Information (PHI), if desired.
    b. GIS import tools have some support for polygon simplification, optimization and aggregation; however, these operations are typically best performed in the GIS prior to import.
2. Imported data can be stored:
    a. locally on each individual user's computer,

b. In a shared network system wherein all authorized users have access to shared data
c. Or, in a hybrid configuration, where a user can switch between local data storage and shared network storage.

3. The Code3 Strategist modeling environment enables users to build "base" models of their current operations, alternate models of potential future re-deployments and other factors such as targeted growth. These models are used to generate detailed predictive performance data that is stored along with the imported data, locally, in shared network storage or in a hybrid configuration as discussed above.
4. Code3 Strategist's analysis tools enable quantitative and visual analysis of actual historical data OR predictive future data in map, chart and tabular form. Output of Code3 Strategist analyses can be exported for use in GIS, spreadsheet, document or web form.

7 Assumptions and Constraints

To identify and estimate the required tasks and timing for the project, certain assumptions and constraints were made and are listed below. If an assumption is invalidated at a later date, the activities and estimates will be adjusted accordingly:

7.1 Assumptions

1. Assume vendor is providing translation scripts in the RFCSP.
2. COSA can provide data as specified in the Configuration Document provided by the vendor.
3. COSA hardware is capable of supporting the application software.

7.2 Constraints

1. Time required for Public Safety IT to extract data for use
2. Time required for GIS to extract data for use

8 Risks and Issues

Project risks are characteristics, circumstances, or features of the project environment that may have an adverse effect on the project or the quality of its deliverables. Known risks identified with this project have been included below. Each risk is identified in the Risk Log and a plan is place to mitigate the impact of each risk to the project:

8.1 Risks

1. CAD data is not sufficient to meet the software's needs (Extremely low risk, as minimal required dataset consists of approximately 8 data elements, and Levrum has already worked with several TriTech customers).
2. CAD DISP/INC TYPE CODES need to be mapped (Low risk, due to C3S's ability to merge multiple

code sets into a single classification system).

3. Code3 Strategist (C3S) does not support all TriTech dispatch actions used by COSA. (Believed to be a small risk: there are several other C3S customers using TriTech; it is also relatively easy to add dispatch action functionality to C3S).
4. Expanded functionality of C3S necessitates more than 24 hours of training.
5. Time required to customize Code3Visionary to COSA's requirements
6. Unanticipated obstacles (e.g., security policies) to integrating COSA CAD data repositories

8.2 Issues

1. CAD Respond Plans need to be mapped in Code3

8.3 Open Questions

1. What's the meaning of "scripts import"? To clarify the import process and if it is/can be automated. This will be clarified upon requirements definition after project kickoff.
2. Difference between "production" and "non-production" environments? Will the C3S require a non-production environment where new updates, imported data or such is tested before it is put into the system the Planning division will be utilizing for scenarios.
3. C3V: need to nail down exact requirem
4. ents to discuss customization. These will be defined in the post contract project planning. If requirements are outside the defined scope, hourly rate might apply.
5. Can we get access to a test version of the CAD data warehouse for testing? Hope Brooks will send you forms required for COSA credentials.
6. Should we do UAT after training? UAT will make more sense to trained users. UAT will be conducted in after training and during the window of assurance testing.

9 Costs

No	Deliverable Description	Amount
1	Implementation and installation services (one-time); Year 1 annual maintenance and support fee	$130,000
2	Year 2 annual maintenance and support fee	$41,000
3	Year 3 annual maintenance and support fee	$41,000
4	Year 4 annual maintenance and support fee	$43,460
5	Year 5 annual maintenance and support fee	$43,460
	TOTAL	**$298,920**

10 Payments

10.1 Deliverable Payments

COSA will be billed for initial installation and Year 1 maintenance and support according to the Milestone schedule below:

Pmt #	Deliverable Description	%	Pmt Amount
1	Awarded ordnance	10%	$13,000
2	GIS dataset	15%	$19,500
3	CAD dataset	15%	$19,500
4	CAD Response Plans	15%	$19,500
5	User Acceptance Testing (UAT)	15%	$19,500
6	Scripts import completed	15%	$19,500
7	Go Live & Training	15%	$19,500
	TOTAL Payments	**100%**	**$130,000**

10.2 Deliverable Acceptance Criteria

No	Deliverable Acceptance Criteria Description
1	Contract signed and project kickoff has occurred
2	Vendor delivers GIS dataset and imports without error into software
3	Vendor delivers CAD dataset and imports without error into software
4	Vendor delivers CAD Response Plans built per the requirements
5	UAT completes successfully with NO open HIGH or CRITCAL defects
6	Scripts import successfully into software
7	Go-Live Deployment to PROD and Training has occurred
8	30-day warranty period

All project deliverables will be reviewed and signed-off on within ten business days of notification that the deliverable is complete.

11 Timeline and Milestones

The Levrum Project Manager will provide a timeline with milestones once a start date has been identified.

Appendix A – Project Contact List

Name	Role	Email	Phone
ITSD			
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