GENERAL MEETING OF THE BOARD OF DIRECTORS
OF THE
CENTRAL TEXAS REGIONAL MOBILITY AUTHORITY

RESOLUTION NO. 20-011

APPROVING AN AGREEMENT WITH LUNA DATA SOLUTIONS INC. FOR THE IMPLEMENTATION AND LICENSING OF A VIDEO SHARING SYSTEM FOR REGIONAL INCIDENT RESPONSE COORDINATION

WHEREAS, the Mobility Authority is developing a Traffic Incident Management and Intelligent Transportation System Master Plan to help standardize and coordinate the regional traffic incident management operations between regional partner agencies; and

WHEREAS, Mobility Authority staff have identified video interoperability and sharing technology as a key component to support regional coordination for traffic incident response; and

WHEREAS, the Executive Director has negotiated a scope of work for the implementation and support for a cloud-based video interoperability and sharing solution (VISS) for the Mobility Authority based on the proposal received from Luna Data Solutions Inc. which is attached hereto as Exhibit A; and

WHEREAS, Luna Data Solutions Inc. currently provides services to the State of Texas through Texas Department of Information Resources (DIR) Contract No. DIR-TSO-3819; and

WHEREAS, pursuant to Texas Government Code Section 2054.0565, the Mobility Authority may use the DIR contract with Luna Data Solutions Inc. for the implementation and support of a VISS without the need to seek competitive bids; and

WHEREAS, the Executive Director recommends entering into an agreement with Luna Data Solutions Inc. for the implementation and support of a VISS in an amount not to exceed $253,400 through their DIR contract.

NOW THEREFORE BE IT RESOLVED that the Board of Directors hereby approves the proposal from Luna Data Solutions Inc. for the implementation of a cloud-based video interoperability and sharing solution attached hereto as Exhibit A; and

BE IT FURTHER RESOLVED, that the Executive Director is authorized to enter into an agreement with Luna Data Solutions Inc. in an amount not to exceed $253,400 through their contract with the Department of Information Resources for the implementation of a cloud-based video interoperability and sharing solution in support of the Mobility Authority's traffic incident response coordination.

Adopted by the Board of Directors of the Central Texas Regional Mobility Authority on the 26th day of February 2020.

Submitted and reviewed by:

Geoffrey Petrov, General Counsel

Approved:

Robert W. Jenkins, Jr.
Chairman, Board of Directors

Exhibit A

CENTRAL TEXAS
Regional Mobility Authority

CTRMA Solicitation
Video Interoperability and Sharing System
Amended Proposal

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February 12, 2020

Contents

1 EXECUTIVE SUMMARY

Luna Data Solutions Inc. partnering with Skyline Technology Solutions is pleased to present this proposal to meet the Central Texas Regional Mobility Authority's (CTRMA) needs for a Video Interoperability and Sharing Solution (VISS). Skyline's Claris Video Interoperability as-a-Service (VIaaS) offering meets all the goals and requirements of the VISS as stated in the CTRMS Solicitation.

The Luna/Skyline team will demonstrate in our proposal that we fully understand the technical and management requirements for successful performance and have the capability to meet or exceed those requirements. The Luna/Skyline team will support and manage the CTRMA IT environment from a 24/7 standpoint; this will provide CTRMA an always available and fully dedicated support partner.

The core of our managed Video Interoperability services offering is our centralized IT services. Our managed services workflow design automates and delivers consistent and predictable end results to our client's.

Our managed video streaming services has over 20,000 cameras securely shared to over 500 partner agencies in 13 states including school systems, police departments, park services, stadium authorities, hospitals, and other state, federal, and local municipalities. Skyline has developed the expertise to become the Department of Transportation (DOT) industry leader in providing live streaming video sharing systems.

The Luna/Skyline's differentiator is we are service provider network engineering experts and consulting company, managing fiber assets for states and DOTs. Having built and managed thousands of miles of fiber, lit up thousands of circuits to hundreds of agencies, along with the cyber security infrastructure for state wide enterprise networks, has put us in position to understand the challenges states have with streaming and sharing live low latency video securely in a manner acceptable to all agencies sourcing and viewing video.

As a result, Luna/Skyline has a unique VIaaS architecture approach to solve the sharing security concerns, in a scalable cloud-based manner that addresses the goals and requirements of CTRMA's VISS program.

The Luna/Skyline team understands the CTRMA goals throughout the Region are to:
- • Reduce the impacts of incidents to travelers, reduced roadway clearance time, and incident clearance time.
- • Reduce secondary crashes.
- • Provide accurate and timely traveler information to travelers.

We believe, as we have seen with our other customers, that by CTRMA taking a collaborative approach with regional partner entities towards mobility management will help ensure cohesion in the region by coordinating traffic incident management operations with its regional partners.

Below in Section 2 we will explain the products and services that make up our Video Interoperability as a Service offering which will provide a regional platform for CTRMA to reach those goals. Following in Section 3, we address how all the requirements of the RFP will be met.

2 SOLUTION

2.1 Skyline Video Sharing Solutions Overview

For the CTRMA Video Interoperability and Sharing System, Luna will be leveraging the Skyline Video Sharing Solution currently available as a Commercial-Off-The -Shelf product, the Claris Portal.

The Claris Portal has been implemented for interoperable video sharing solutions of similar type and of significantly larger size for nearly ten (10) years to state and local government agencies. Skyline's Claris Portal is currently supporting thirteen (13) State DOT's with their video sharing systems, utilizing both on-premise (or locally hosted) solutions and solutions hosted completely or partially in the cloud.

The Skyline Claris Portal is configurable to support the following requirements:
- Integration with complex IP networks including LAN and WAN to provide stable and secure transport of video stream.
- Video collection from diverse cameras, networks, and locations.
- Normalization of video to a common format that is easy to transport and share.
- Secure and efficient video distribution to the public, media, partners and first responders.
- Integrating with multiple source and destination networks.
- Web based portals providing secure access to partners and operational support.
- Innovative features to enhance the video sharing system capabilities.
- Support for smart phones and tablets.
- 24/7 monitoring and support in our Network Operations Center (NOC) and Service Desk.
- Proven enterprise level product.

The most common barriers are network security, limited bandwidth, and diverse consuming agencies. The Luna/Skyline proposes a video sharing architecture to deal directly with these challenges and has enabled many agencies to provide live streaming video to the Traffic Management Centers and first responders. The architecture/approach is broken into areas: Normalize, Stream, Manage, and Monitor.

2.2 Step 1: Normalize

The key to any video sharing system is to have a way to normalize the video to a common format, size, and compression that is easy to move around an IP network. The Transcoding Appliance was designed specifically for the purpose of normalizing live IP video streams regardless of compression (MPEG2, MPEG4, H.264), frame rate (1-30), resolution (QCIF to D1), bandwidth (96kbps to 4 mbps), and format/codec (Impath, Optelecom, Cohu, Coretec, etc.). The Transcoder converts the diverse video sources to industry standards for compression, H.264, and format, RTP (Real Time Protocol), essentially normalizing the video. The Transcoder pulls only one video stream from a source but can produce multiple video sizes of the same stream (i.e. one low bandwidth for large volume distribution efforts and one high bandwidth for internal operations and sharing with media partners).

CTRMA currently has 50 total cameras in scope, all of which are H.264 and can put overlays of text or logos if desired. Given this, the transcoding service and infrastructure is not needed for this Phase 1 deployment of these 50 cameras. Should other partner agencies have non H.264 cameras or need special overlays not supported natively on the cameras, then the Transcoders and the Normalization step will be needed for those camera feeds.

2.3 Step 2: Stream

Once the video is normalized, CTRMA will need the video to be securely distributed to the Claris video portal for the TxDOT, City of Austin, and other trusted partners such as Police and to view on any device. These groups have specific needs regarding format, quality of video, security and volume. In order to support the diverse applications, streaming appliances are strategically placed on specific network firewall DMZs providing the ability to distribute video via the Claris portal from the CTRMA, TxDOT, COA and other school or government networks. The Streaming Appliances now become the edge distribution device for each consumer group and enable the ability to create unique sets of cameras for each and to offline those cameras when required.

This architecture also allows thousands of end users to view a single camera, while at no time will there be more than one connection to the camera, nor will the county network be consumed and burdened with providing connections to 3rd party viewers. VIaaS streaming service can scale to ingest additional source cameras with the ability to support thousands of concurrent viewers.

The streaming appliance distributes video streams via Skyline's Claris Live Streaming Protocol (CLSP), RTMP, RTSP/RTP/RTCP, or HLS/HTTP live protocol based on the request received from the user's device. This allows streaming video to be viewed on virtually any device, putting real-time streaming video into the hands of decision makers and responders wherever they may be located wherever they may be located.

The Death of Flash:

🧩 Flash Player will no longer be supported after December 2020. [Turn off]
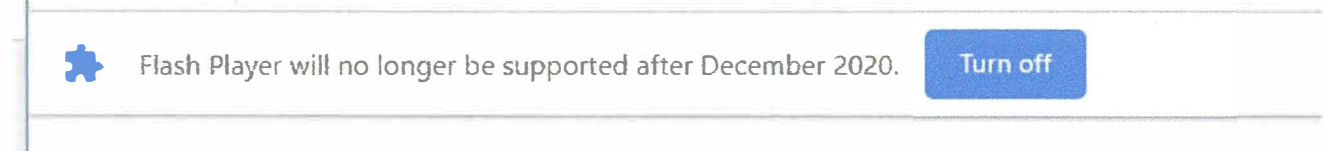
You may have seen this above banner in Chrome browser. Claris Live Streaming Protocol (CLSP) video protocol was developed to provide a low latency and high-volume replacement for the RTMP/Flash video format. Currently RTMP/Flash video format is in the final stages of end of life and currently requires manual intervention on the Google Chrome browser. In time RTMP /Flash will not be available on any browsers. CLSP uses industry standard HTML5 media extensions because there is no other option to provide the low latency and high volume required for emergency response and for <u>real time</u> coordination. We provide this format to any portal at the request of our clients. It comes standard with the Claris Portal and is available for any 3rd party website as open source on Git Hub.

2.4   Step 3: Manage

Now that the video is ready for distribution, CTRMA will need the ability to manage the operations and distribution of the video. Luna will use two web-based portals created by Skyline, to handle this requirement, the **Stream Manager** and the **Claris Portal**.

2.4.1   Stream Manager

The *Stream Manager Portal* enables efficient and effective operation of the SFS1000 and TS1000 appliances that make up the live video sharing system. Admins can view current status reports on the Stream Manager. Stream manager consolidates real-time stream status reports into an easy to use dashboard where a single user can connect to and manage every SFS/TS device in the video sharing architecture. The Stream Manager also provides a single location for camera meta data database which is used to support API (applications polling interface) polling capabilities supplying presentation applications with real time info on every camera. Often identified as the most important function the Stream Manager performs, the ability to offline or red button camera feeds from a single point is critical. The interface allows a user to turn off specific cameras on one or multiple streaming appliances which corresponds to specific security groups. Most commonly this capability is used to offline cameras to the public and media, while maintaining streaming to internal and external partners. The Stream Manager is a key component to our video sharing architecture.

2.4.2   Claris Portal

Claris Portal provides web-based access to video content virtually anywhere. Whether out in the field, government office, or in the Traffic Management or police command center, Claris portal provides a flexible interface to view and manage video streams. Claris provides CTRMA with the ability manage access rights to their cameras and potentially partner agency cameras. All participating agencies/partners can view cameras based upon their access rights through a common portal, <u>with no client software requirements or additional licensing fees.</u> The Video Wall, Incident, and Map pages are three ways users can view video content in the Claris web-based portal.

The *Video Wall page* allows you to create your own dashboard with up to eighteen cameras and save your favorite configurations for quick reference. Choose from cameras organized by region or participating agency, city or partner. Each partner can view different videos independent of any other videos that may be requested by other partners and only has access to those video streams which CTRMA provides permission to view.

The Incident page provides agencies the ability to quickly select traffic/congestion incidents as provided by ATMS or CAD applications and see the video streams coming from the nearest four cameras. Coming soon is the ability to view cameras from mobile response units based upon their real-time geo-location, giving agencies a quick bird's eye view along with an on-the-ground view of the situation.

The Map-*based page* provides the ability to quickly geo-locate cameras and other data points like traffic speeds, lane closures, incidents and other pertinent information from your ATMS or third-party provider.
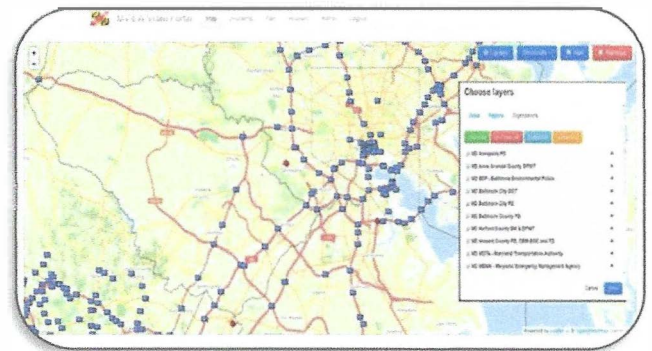
Claris also provides *administrative management tools* that allow agencies to easily incorporate new cameras from the network and quickly share with partner agencies based upon secure access rights. CTRMA will be able to grant access within minutes and partner agencies can share and restrict access to subgroups of cameras based upon agency need.

Claris can also incorporate LDAP databases so that access credentials can be managed from a single database for agencies. Within Claris, users will only see the cameras that they were granted access to view. Cameras not within the approved device group for that partner will not be displayed. There are two levels of administration: Global and Local.

A global administrator can manage the application's configuration, organizations, global device groups, and regions. A local administrator can manage users, markers, and device groups within one's own organization, produce reports, and manage the sharing of cameras and markers with users from other organizations.

2.5   Step 4: Monitor

Skyline has perfected the monitoring, maintenance and operations of the video sharing solution over the last 10 years. The Luna/Skyline team maintains a fully functional Service Desk which meets the Information Technology Infrastructure Library (ITIL) standards. ITIL helps an IT Services company develop a baseline of processes, procedures, tasks and checklists from which it can plan, implement, and measure success. The Service desk is available by phone at any time through the use of a local or a toll-free number and provides the capabilities needed to fully support any client. These capabilities include the following:

- Proactive and first response to network and appliance monitoring and alerts.
- A documentation repository for each network and appliance infrastructure.
- A documentation repository for all standard operating procedures and policies.
- A flexible incident management system for incident and problem management and tracking.

In order to ensure reliable consistent responses for phone support, emails, and network monitoring alerts our service desk has been fortified with redundancy, including provisions for power, telephone, Internet services, and connectivity back to the data centers housing all of Skyline Technology Solutions systems and video infrastructure. Skyline also maintains a fully redundant disaster recovery office within 15 minutes of its primary offices which includes redundant telephone, network, systems, and Internet services.

The Luna/Skyline team will be providing the following services for CTRMA:
- 24x7 Service Desk phone support.
- Ticketing system support w/ tracking of Incidents, Requests, and Maintenance.
- Hardware maintenance to include Firmware and Software updates.
- Onsite hot swappable spares appliance equipment.
- 48-hour hardware replacements supported with hot swappable spares.
- Emergency incident response.

2.6 Virtual Video Wall, Vero

The Vero video wall product replaces the legacy and expensive video matrix switch approach that hard wires video inputs to a set HDMI outputs to a wall of monitors. This approach limits where the wall can be seen to the local room. It also limits the number of simultaneous inputs and outputs.

Our approach is different, a web based, IP Stream based, virtual switch where any video can me matrixed on a wall of monitors. There are no limitations to counts of sources and destinations. Being virtualized and web based, allows for anyone with an account on the Vero system to bring up the Traffic Management Center wall on their browser, such as a VIP conference room, or another emergency management room, or any PC. The user can also define and select their own wall, and cycle through video tours they individually define.

The Video Wall capability is not in scope of this Proposal however, may be of use to CTRMA as the VISS system grows.

3 SKYLINE MAP TO CTRMA VISS REQUIREMENTS

3.1 Understanding Scope

The tables below map the Skyline Video Interoperability as a Service component or feature that provides the required capability from the CTRMA VISS RFP.

Understanding Scope Requirements	Skyline Understands and Meets
the VISS shall provide a fully operational turnkey solution, including all services to design, implement, configure, and test the most effective and efficient solutions to deliver the best value for CTRMA.	Our packaging of all the architecture components described above in a single Video Interoperability as a Service offering was designed exactly for that purpose, to provide a turnkey managed solution.
CTRMA is looking at a web-based, cloud hosted solution based on existing COTS Software Solution with streaming capabilities originating in the cloud.	Skyline's Claris VIaaS is just that. A web-based cloud hosted solution for streaming is the basis for multi-agency collaboration, a primary CTRMA goal, which otherwise would not be achievable.

Understanding Scope Requirements	Skyline Understands and Meets
CTRMA is looking for minimal equipment required to be installed locally at its facilities to facilitate the delivery of streams to the cloud. Only one feed can be pulled from each camera regardless of how many end-users will be viewing the stream.	The architecture optionally would place a single SFS1000 appliance at the DMZ segment where all the video aggregates, which is understood to be at the Cedar Park TIMC. This provides a secure demarcation point to the cloud streaming service to send a single stream per camera to the cloud.
Any cloud services shall be hosted in a Tier 1 telecommunications facility with multiple power and internet backup connections	All our cloud datacenters / telecommunication centers surpass Tier 1 requirements and achieve Tier 2 and 3 with multiple power and internet redundant and alternate path connections.
The VISS will be designed to have no impact on CTRMA network security or capacity.	None of the collaborative 3rd party agencies will have any access to any component on the CTRMA network and not impact its security or bandwidth consumption. The architecture is the CTRMA local streamer device pushes a single stream per camera to the Cloud based service. It's from this cloud-based service is where the other agencies pull the stream for viewing, therefore not exposing CTRMA to any 3rd party connections.
The Contractor of the VISS shall provide any initial engineering service required to support the connection of the dedicated circuit, supplied by CTRMA, between the CTRMA's network and the VISS provided hosted services, and provide recommendations on the circuit capacity.	As a Network Engineering company architecting, managing and monitoring thousands of circuits for our customers, we have the skills and processes to provide the optimal engineering services for supporting the direct connection from CTRMA network to the cloud hosting facility. We understand the circuit(s) will be provisioned directly with the carriers and not in-scope of the VIaaS service. We will provide the specifications and engineering details to work with CTRMA IT and the carriers to see it is engineered and provisioned correctly.

3.2   Video Sources and Output Requirements Map

Video Sources and Output Requirements	Skyline Meets
The contractor shall provide equipment and services to securely share live video streams from 50 CTRMA cameras to internal users, external partner agencies, and the public.	Our Streaming service scales well beyond 50 cameras and has ability to set role-based access controls on who can view the video based on agency and user account or to a public portal.
The VISS needs to incorporate video feeds from CTRMA and share video feeds with other partner agencies such as TXDOT or the City of Austin (COA) in a straightforward manner.	Our cloud based streaming service will provide access to TXDOT or COA by simply creating the organization profiles for each and user accounts in our Claris portal platform. Then share groups are defined to set who can see what streams if and when such filtering is needed.
VISS must be capable but not limited to handling and sharing simultaneous MPEG2, MPEG4, H.264 video inputs, and distributing on an industry standardized H.264 format.	The Transcoders were designed to pull in MPEG2, MPEG4, and H.264 feeds from cameras or other VMS sources and produce H.264 outputs at any standard frame rate and resolution, in real time.
VISS shall not be limited in the number of cameras to be shared or the number of simultaneous viewers of cameras. The solution shall quickly scale, allowing to add new cameras within the system.	Our SF Streamers support, depending on resolution, up to 400 simultaneous inputs and thousands of simultaneous viewers. This scales in minutes in our cloud by auto-provisioning additional streamer appliances. Adding new cameras is a simple and quick task of entering or importing the meta data describing the camera, frame rate and resolution settings, GPS locations, and device group associations.
The streaming video shall be made available to end-users based upon the format required by the viewing device. Outbound video streams shall be automatically configured to Real-Time Messaging Protocol (RTMP), Real-Time Streaming Protocol (RTSP) protocols, or HTTP Live Streaming (HLS) protocol for mobile devices.	The Streamers provide different viewing formats depending whether the viewer is on an Apple device with HLS, a viewer of a web site still using RTMP Flash, a thick client viewer on RTSP so that any device and standard browsers can view the live streams.

3.3 System Administration Requirements Map.

System Administration Requirements	Skyline Meets
The VISS must be capable of quickly and simultaneously shutting down the video feeds in whole or per camera to the public while still providing access to videos for CTRMA and specified partner agencies.	The Stream Manager portal provides a systems administrator the interface to shut down in whole or per camera to the public feed while still allowing video feeds to other viewer communities such as CTRMA and other partners. This is called the "Red Button" feature with a simple click to off-line specified cameras.
The VISS shall provide administrative tools that provide CTRMA the ability to easily incorporate new cameras from the network and quickly share with its partner agencies.	The Stream Manager tool purpose is to quickly add new cameras, configure any setting, and verify the connection. These are immediately available for sharing by adding them in the appropriate device groups.
The VISS shall provide administrative tools that allow CTRMA's authorized users to grant access to whole groups of cameras, or subsets of cameras, to internal CTRMA's users and external partners, as necessary.	The Claris portal administration page defines cameras in device groups to map to partner agencies user groups for authorizing viewing permission. This is used in the Greater Washington DC area to provide secure access from over 60 video source agencies at the Federal, State, and local agencies to 160+ viewing agencies.
The VISS shall provide CTRMA the ability to group cameras into sub-groups for a specific user or all users based upon region, event, road, or other categories as defined by CTRMA.	Claris Portal provides for the definition of device groups and sub-groups for cameras that can be associated with individual or groups of users. These groups can be based on regional tags, roads, or other categories as defined by CRMTA.
The VISS shall provide multiple levels of administration. VISS shall allow higher management control over configurations, groupings, and organization and local administration to manage users, assign credentials, produce reports. Individual users cannot have access to administrative functions.	Claris Portal has 3 primary user types; Global Administrators with complete control over the system including configurations, groupings, and organizations; Local Administrators with control limited to their agencies cameras, users, assign credentials, produce reports. ; and Individual users have no administrative right, just view rights granted to them by an administrator.

3.4 Web-Based Portal and integration with Third-Party Websites Map

Web-Based Portal and integration with Third-Party Websites Requirements	Skyline Meets
Video streams shall be available to internal users and partner agencies via a web-based portal with user permissions assigned by CTRMA without the use of thick client proprietary, license-based software. Each user will only be able to view the specific cameras included in their user credential profile.	Claris VIaaS intent is for sharing video from any device, any agency, and any network to any device. A web-based platform is the only way to obtain that goal in a operationally effective means, where you don't need to have a thick client installed on all devices that partake in the system. That would be extremely cumbersome if not impossible in a multi- agency use case. However, every agency and every device has a browser. With Claris VIaaS, there is no need for proprietary clients, just a browser supporting HTML5. Cameras will only be viewable if the user has been granted direct permission or are a member of a user group that has been granted permission as defined in their user credentials profile.
End-users shall be able to view up to a minimum of nine (9) simultaneous videos on a single screen. The portal will provide the ability for each user to store custom views based upon the cameras that the user may need to view regularly.	Users can view more than nine (9) and typically view 12, 16 or more on their screen. They have multiple layout and size options and can map video sources to places on the screen layouts. These screen configurations can be saved and named, providing multiple pre-arranged layout presets which can be later selected for viewing.
The VISS portal shall provide multiple viewing options for video streams and ways of selecting video streams to view, including map and list based.	Claris Portal has a Map view with icons for each camera to select for viewing. Claris also has a list view for searching, sorting and filtering by multiple criteria and selecting for viewing.
The streaming video shall be available and viewable on mobile devices.	Android devices and Apple iPhone and iPads are supported for viewing video streams.
The VISS shall be able to publish an API that allows incorporating video streams into third party websites and applications for the traveling public and other potential partners.	Skyline Claris APIs have been used by many public facing 511 web site, and internal facing 3rd party 911 CAD systems such as RapidDeploy, and 3rd party Advance Traffic Management Systems to ingest Claris Video into their web portals. This provide a simple aggregation service to the third parties for live video support.

3.5   System Reporting Requirements Map

System Reporting Requirements	Skyline Meets
The VISS shall provide reporting capabilities that include data about 1) system usage by a user; 2) inventory of cameras and metadata; 3) inventory of user and their user levels; 4) contact information and agency name; 5) cameras viewed by a user, and 6) most utilized cameras.	Claris Portal includes a robust reporting and analytics module that has the ability to view all system data and logs in numerous outputs and visualizations that an administrator can define with a simple interface. There are pre-established reports that provide the 6 use cases listed here: 1) system usage by a user; 2) inventory of cameras and metadata; 3) inventory of user and their user levels; 4) contact information and agency name; 5) cameras viewed by a user, and 6) most utilized cameras.

3.6   Operations Support & Monitoring Requirements Map.

Operations Support & Monitoring Requirements	Skyline Meets
The Contractor shall provide 24x7x365 monitoring of the VISS, alerting CTRMA staff of dropped video feeds and loss of network connectivity to the cloud and monitor availability and quality of video streaming service.	We will leverage a Network Operation Center (NOC) / Service Desk which has been in continual operations without and interruption 24x7x365 for the past 12 years. This NOC currently supports TxDOT enterprise business network and the TxDOT Intelligent Transportation Network and provides proactive monitoring of all devices on those networks. The NOC monitors dropped video feeds, network health, and connectivity of our customers circuits and networking devices, as well as the video quality. Our matured ITIL based standard operating procedure ensures we respond to all alerts and notify our customers following a escalation schedule till resolution.
The contractor shall provide a 24x7x365 service desk staffed by U.S. based engineers to respond quickly to any system issues. Access to support shall be provided through both email and phone.	Our NOC / Service desk is in the US at Glen Burnie Maryland is staffed 24x7x365 by US engineers to respond quickly to all system issues. Skyline has a toll-free number 888-767-9040 and email Support@skylinenet.net and portal https://www.skylinenet.net/help to request assistance.

Operations Support & Monitoring Requirements	Skyline Meets
The contractor is required to provide an automated ticketing system to document, track, and follow-up with the customer service requests and established SLAs. The contractor shall have in place standard operating and escalation procedures to process system issues, measure performance, and abide by the agreed SLAs and KPIs.	Our Service desk has an automated ticketing system and follows ITIL defined processes to document, track, escalate incidents with disciplined follow-up processes to ensure established SLAs and KPIs are met. Our standard operating procedures have been in use and continually maturing over several years. After go live of the project, Skyline will provide a monthly report stating performance, uptime, and incident statistics.
The contractor shall include in its response the Standard Terms and Conditions of its Support and Monitoring Service, its proposed Cloud Management Service with any established SLAs and KPIs.	The Terms and conditions of our support monitoring service are listed below in Section 3.7.2, Operational Support after Go-Live.

3.7   Contractor Responsibilities

The Luna/Skyline team is prepared to perform all Project Management services required to design, implement, configure, test, and support the VISS after go-live and throughout the Contract. We have successfully managed deployments from design through testing and operations for over 17 DOTs at the state and county levels.

The Luna/Skyline team will develop a work plan that will include configuration and implementation efforts for the VISS system. Below is the requested Project management and deployment services we will perform.

3.7.1   Formal project Kickoff Meeting

The Luna/Skyline team will review in detail with CTRMA and all interested stakeholders during the project kickoff meeting the project work plan to deliver the items described above. The Luna/Skyline team will bring the project management, networking, delivery and account management resources to this meeting to create a comprehensive view of our team and how we conduct these projects. To ensure we understand the CTRMA's goals and objectives correctly, our teams frequently ask why, so that we get to the root of the challenges trying to be solved. This helps us better align what we build to your true needs.

Our meeting goals include:

- Reinforce relationships with all CTRMA stakeholders and define a shared understanding of the project goals.
- Define expectations, roles and responsibilities for both Luna/Skyline and CTRMA staff.
- Confirmation of System requirements.
- Detailed discussion of project work plan.
- Discussion of preliminary network design.
- Creation of project communications plan and tools, which include status reports and cadence of project meetings with CTRMA.

3.7.2 Project Management Plans

The project plan will clarify the tasks, timelines, critical path or potential blocker issues to complete the project. The first draft will be reviewed in the kickoff meeting and then updated based on the decisions made with the CTRMA.

Training Plan: The Luna/Skyline team will develop a Training plan to ensure that the Administrative and User community have a clear understanding of the appliances, the architecture and how to operate the portals. The goal is to enable the CTRMA to operate independently in the video solution. The Luna/Skyline team will incorporate onsite training sessions or remote training session, troubleshooting sessions and provide training manuals for each application and user level.

Communications Plan: The Luna/Skyline team will document a Communications plan defining:

- regular checkpoint meetings are scheduled, and with whom.
- how and when status reporting will be delivered and accessed.
- an escalation process to resolve issues and blockers.
- document the roles and responsibilities of CTRMA and Luca/Skyline team members.
- who are the point people and path for communications.
- any Configuration Control Board (CCB) or Change Advisory Board (CAB) communication requirements from CTRMA so CTRMA's Information Technology department is aware and scheduled time for all deployment or configuration activities.

Documentation Plan: The Luna/Skyline team will provide all the documents identified in this section such as the Project management plan, The Communications plan, Preliminary design, Network Diagrams as-builts, Testing plans, and the Technical Special Provisions (TSP). This is the final deliverable which Luna/Skyline presents to a client at Project Closeout. TSP document which is used to clarify the entire solution and how support will be delivered in one document.

The document details out the inventory, support agreements, diagrams, severity definitions, contact procedures, and more. The TSP document is provided to the CTRMA at the Go-Live Meeting.

Throughout the project status reports will be provided biweekly to document progress and issues that need resolution. A formal signoff document for final acceptance will be issued to CTRMA to close out the initial deployment and professional services lump sum phase of the effort.

Testing and Acceptance Testing: The Luna/Skyline **team** has a proven **Pre-Production Testing** process to validate the entire video architecture prior to deploying in production to ensure we get the results that we expect based on the requirements of the RFP and the performance specifications of the equipment. After usefully ensuring all components and cameras are working properly we will schedule and provide a comprehensive User Acceptance Test plan based upon the functional and performance requirements as stated in the RFP. At the end of the UAT period, established by CTRMA, the Claris product will be put into production for internal CTRMA users initially, and then later onboard external partners, and the public when CTRMA is ready.

Information Gathering and Site Surveys: The Luna/Skyline team has a process of gathering all the camera inventory data, GPS locations, and meta data, protocols supported such as Onvif. This gathering process requires the assistance of CTRMA staff to provide the detailed inventory and associated data elements. We also perform a site survey visit to gather the installation information to prep for the deployment. We plan to visit the demarcation and video aggregation location to ensure proper rack space, cable distance requirements, HVAC environmental, power, and networking connectivity is in place to support any direct connect and or MPLS circuit circuits and local streaming servers will be interfaced. While there we will test the network flows and camera video feeds.

Distribution and Network Analysis – The Luna/Skyline will determine bandwidth and network requirements with MPLS carrier. We will review the distribution requirements with CTRMA and determine any changes required with this new hosted distribution point. Then we will define the network circuit specifications for CTRMA to order with the carrier. The Luna/Skyline team will formalize and document the network design that includes integration of MPLS circuit and cloud-based streaming appliances.

System and Portals Deployment: The Luna/Skyline team has a cloud hosting capabilities and provisioning procedures for creating the VIaaS servers and network components. We will host the streaming and management services in our cloud environment.

A direct connect circuit to this environment engineered by the Luna/Skyline team will be procured by CTRMA. We will work with CTRMA IT department to establish the networking and firewall rules for this connectivity. Once this has been provisioned, we will assist CRTMA in the configuration of the Claris portal with creating the Global and Local administration accounts, define initial device groups and region, and create organization groups. We will setup the Stream Manager Server and import the previously collected camera meta data to configure the VISS. Then we will work with CTRMA to assist in the mapping cameras to device groups for its operational use cases.

Operational Support Analysis: The Luna/Skyline team will review our existing standard operating procedures for our managed service center and determine if any changes need to be made to most effectively serve CTRMA going forward. We will prepare the Service center to onboard the VISS components for monitoring and the operational communication and escalation procedures with CTRMA when incidents occur.

System Documentation: The Luna/Skyline team will provide as-built documentation for the network connectivity, and a user's guide for the Claris VIaaS services supporting the CTRMA VISS. Reports are available in Stream Manager and Claris Portal for the current state of the system. The internal systems hosting management and patching procedure will be managed and performed by the Luna/Skyline team as part of the managed services.

System Burn in: The Luna/Skyline team performs a 2-week burn-in period to exercise the system and uncover and troubleshoot any networking issues and will work with CTRMA to remediate cameras and configuration issues.

System Training: The Luna/Skyline team will provide the training agreed upon in the Training Plan.

Conduct UAT Period: CTRMA will establish a UAT group and conduct usage of the system over a one-week period. Any issues will be documented and any critical issue will be corrected prior to go-live.

System Go-Live: The Luna/Skyline team will Conduct a Go-Live Meeting to review the documents, ensure there are no blockers, review team's readiness, and finalize the go-live date and time.

System Final Acceptance: CTRMA will review the VISS system for final acceptance. Critical issues that prevent or significantly impair operational use will be documented and addressed. If any enhancements or non-critical issues are identified, those items will be put in the operations and support issue list or feature list to be worked on and delivered post acceptance and go live. The Luna/Skyline team will provide the CTRMA VISS program manager a signoff sheet for formal acceptance of delivery of the VISS system.

Operational Support after Go-Live: The Luna/Skyline team has a 24x7 Network Operations Center / Support Center to monitor the health of the VIaaS service. This team will be alerted and create support tickets as needed. There is a support email and phone number to call them directly to report any issue with the system. Luna/Skyline team has a dedicated team of Product Technicians to support and manage the VIaaS offering. This includes promptly responding to all trouble tickets, with defined escalation procedures following ITIL practices. This team also performs the following activities as part of the Operational Support services.

- Updates for all user manuals.
- A minimum of yearly firmware and software updates for appliance and portals including all minor software releases that provide bug patches and new functionality that falls within the product roadmap.
  - Any upgrades follow a rigorous testing approach.
    - Automated and manual testing of proposed release.
    - Regression testing of release in Skyline's lab.
      - UAT for any new software release in the client's environment if required.
      - Change Control process for rolling out new release into a client's production environment.
  - Security patching - Skyline patches vulnerabilities which are identified throughout the development process. For vulnerabilities that are critical in nature, Luna/Skyline may coordinate with CTRMA to patch the system at an agreed upon time outside of the normal release cycle.
- 48-hour parts replacement for mission critical components
- *Ticketing and Escalation* - When a service call or email comes into the Service Desk, our employees follow a carefully scripted sequence of activities to thoroughly troubleshoot, resolve and track all communications and activities associated with the ticket. The Service Desk can support your agency's service-level requirements for video sharing program through a series of detailed steps in a Run Book created specifically for each client.
  - The process starts with the Service Desk as Tier-1 and Tier-2 support and escalates through Tier-3 and Tier-4 engineering and management support. The Service Desk has tiered teams to provide escalation responses as detailed in our Service Level Agreement.

- The Service Desk provides an initial response to the client within five minutes of detection.
  - A ticket is created in the incident management system in order to keep a comprehensive work log detailing the history and current status of the incident.
  - Service Desk begins diagnosis of the event with the mission of determining the severity level.
  - Once the severity level is determined, the Service Desk will begin a notification process.
  - The ticket is tracked and all work on the related issue is documented within the ticket including all details through to the final resolution.
  - The operations service manager provides each client with a report indicating the actions taken, root cause and the current status of the issue.
- *Enhancements* - The Luna/Skyline team uses the Agile software development approach (utilizing scheduled sprints) that allows us to compartmentalize and schedule enhancements to our products. It also prevents us from doing "one-off" development exercises that are hard to update and support and can make the overall product line unreliable and hard to maintain.
  - We establish a roadmap that outlines the next 3-12 months of new features. Development sprints are scheduled on a quarterly basis and new enhancements are automatically considered to be at least one quarter out depending upon the current backlog of the team.
  - Enhancements are treated as additional small projects and will be estimated and presented to CTRMA for approval. All Enhancements to the system that are a result of requests from other DOT clients are included in the yearly O&M for CTRMA at no extra charge.
  - Functional enhancements that are considered to be highly critical to CTRMA operations are considered separately and can be scheduled into sprints on short notice upon approval of the development team and management.

4 PROJECT SCHEDULE

The proposed project schedule is as follows:

Date	Task
1 weeks from NTP (0-7 days)	Conduct Kick-Off Meeting with CTRMA and Associate Stakeholders • Submit Project Plan and Updated Timeline • Submit Drafts Other Required Documents • Draft Regular Meeting Schedule and Communication Expectations CTRMA initiates private circuit discussions/purchase with Vendor & Provider
2nd to 3rd week from NTP (8-21 days)	CTRMA assists the Luna/Skyline team in Initial Information Gathering • Points of Contacts • Camera Lists (~50 cameras with Meta Data) • Site Survey Template • Network Information • Power Requirements • Pre-Site Survey Planning • Equipment Specification and Ordering • Network Equipment Feedback on Project Plan and Other Documents Weekly Meetings and Communications
4th week from NTP (22-28 days)	Site Survey one week on site, with One (1) Technician • Stream Testing • Network Survey • Create Site Documentation Update Training Plan Weekly Meetings and Communications
5th week from NTP (29-35 days)	Post Site Survey • Establish VPN credentials • Communicate any issues identified with camera streams or network pathways Create network connection specifications for CTRMA to order necessary circuits to cloud. Provide preliminary design documentation. Schedule Training Weekly Meetings and Communications

6th and 7th week from NTP (36-49 days)	Appliance, Equipment and Portal Staging
	• Build Appliances and Configure Streams
	   o Transcoding Appliances (dependent on Option selected)
	   o Streaming Appliances
	• Build Portals and Configure Stream information
	   o Stream Manager Portal
	   o Claris Portal
	Client private circuit installed and tested
	Weekly Meetings and Communications

Date	Task
8th week from NTP (50-56 days)	Deploy Appliances and Portals • Hardware Installation • Test Streams • Test Applications • Troubleshooting if necessary Documentation • Internal ITGlue • TSP Documentation • Network Documentation Weekly Meetings and Communications
9th thru 10th weeks from NTP (57-70 days)	Burn-in Equipment • Troubleshoot issues • Working with CTRMA to remediate issues with cameras • Assist CTRMA with any configurations User Acceptance Testing Training • Conduct any necessary system training Post Training Support • Provide remote training support following initial training sessions Weekly Meetings and Communications
11th week from NTP (71-77 days)	Conduct Go-live pre-meeting • Review TSP, Network and ITGlue information Schedule Go-live Rollout Begin Support Period Weekly Meetings and Communications
Begin Support and HW/SW Maintenance	The Operational phase of the project begins once Go Live meeting is scheduled and held with primary stakeholders (CTRMA & Vendor). The Technical Special Provisions (TSP) document will be presented and reviewed at the Go-Live meeting, and any edits must be agreed to by both parties. The Support process and agreements will be fully detailed in the TSP.
As required	Assist providing an after-action report and resolutions for severe outages in partnership with CTRMA staff. The report should include a summary and timeline of the issue, impacted stakeholders, resolution, next steps and follow-up.
Monthly	Once the streaming service is established and operational provide monthly reports on general operations of the system (i.e. uptime), recent helpdesk tickets, and cameras with the highest number of views within each of the associated video products/viewing platform.

5 PRICING AND SCHEDULE OF PAYMENTS

The following table covers all in-scope deliverables and activities described above. The pricing is based on a three-year contract with one optional 1-year extension.

Price Item	Quantity	Price
Professional Services (CAPEX) *Include design, implementation, testing, training, documentation, and project management services to implement the VISS fully.*	Lump-Sum	$50,000
50 Cameras, All-inclusive Claris VIaaS Hosted Services SW and Maintenance (OPEX)	Year-1	$64,000
50 Cameras, All-inclusive Claris VIaaS Hosted Services SW and Maintenance (OPEX)	Year-2	$64,000
50 Cameras, All-inclusive Claris VIaaS Hosted Services SW and Maintenance (OPEX)	Year-3	$64,000
50 Cameras, All-inclusive Claris VIaaS Hosted Services SW and Maintenance (OPEX)	Year-4 *(Optional)*	$64,000
Total 4 Year Contract Value *(Total includes year 4 optional extension)*		**$306,000**

Schedule Milestone	Deliverable Name	Payment Milestone
Delivery of PM plans, design, testing, training, documentation, and system deployed ready for testing.	Testing	50% Professional Services ($25,000)
User Acceptance Testing complete, Go Live, Acceptance	Acceptance	Remaining 50% Professional Services ($25,000) + 100% of Year-1 Annual Hosted Services ($64,000)
Annual Software license fees, hosting fees, and maintenance support fees	VISS Hosted Services	100% of Annual Hosted Services on each anniversary of Acceptance ($64,000)

6   SUPPORT SERVICE & OPERATIONAL OBJECTIVES

Support Service Business Hours: 8:00 AM to 5:00PM ET Monday – Friday
After Hours: All hours outside this window, and holidays.
Holidays: New Year's Day, Memorial Day, Independence Day, Labor Day, Thanksgiving Day, Day after Thanksgiving, Christmas Eve, Christmas Day.

General
Specific terms/points of these objectives may be adjusted on a case by case basis as required based on mutual agreement by Luna and the Agency.

Exceptions
Luna/Skyline shall not provide any credits under this agreement in connection with any failure or deficiency of our provider's network caused by or associated with the following:

- Circumstances beyond reasonable control, including without limitation,
  - acts of any governmental body
  - war, insurrection, sabotage, embargo
  - "Acts of God" (i.e., fire, flood, earthquake, tornado, etc.)
  - strike or other labor disturbance
  - interruption of or delay in transportation
  - unavailability of or interruption or delay in telecommunications or third-party services,
  - failure of third-party software or inability to obtain raw materials, supplies
  - power used in or equipment needed for provision of the Service Agreement.
- Telco Failure (i.e., cutting a fiber line somewhere)
- Backbone peering point issues (PAIX)
- Scheduled maintenance for hardware/software upgrades
- DNS issues not within our direct control
- Agency acts or omissions, including without limitation,
  - any negligence, willful misconduct, or use of our services in breach of our Policy, by agency or others authorized by agency.
- DDoS attacks or any IRC related attacks

In the event of an unfortunate third-party outage (e.g., telecom provider, power service, etc.) the Luna/Skyline team owns the process as well as responsibility to continue service to their best ability should a third-party provider be unable to deliver service.

Measurement
On an average of every 5 minutes the support service polls the agency video systems components using monitors specifically for network and host server availability. The monitoring is completed using software and hardware components capable of measuring application traffic and responses.

We uses a method of PING and SNMP responses, and agency acknowledges that such measurements may not measure the exact path traversed by a client's internet connection, and that such measurements constitute measurements across our network, but not other networks to which a client may connect. We reserve the right to periodically change the measurement points and methodologies it uses without notice to clients. Full network and server reporting will be posted to a location designated by the Luna/Skyline team and made available to agency. The measurement of service is computed by averaging the availability across all active servers and services (minus any equipment in maintenance).

Trusted Brands
The Luna/Skyline team commits to using name brand, trusted equipment partners to provide best in tier service. Specific brand examples include Dell, Juniper, Ciena, Aruba, Cisco, Microsoft, Apple, Axis, WTI, etc.

Hardware Failure
The Luna/Skyline team makes a commitment that all hosted equipment if found to be in a failed state will be corrected as soon as possible, and in accordance with the *Expected Response Times for Incidents and Service Requests*. Faulty hardware is rare but cannot be predicted nor avoided. We utilize only name brand hardware of the highest quality and performance. We will replace all faulty hardware affecting performance levels of equipment as soon as possible, which includes hardware issues that cause server crashes or speed issues. Hardware failure resulting in complete network/server outage/downtime will also be corrected as soon as possible. Router failure is an exception to this guarantee and may require on-site engineers or backbone provider emergency personnel to correct the problem. We will replace all faulty hardware on equipment, at no charge to agency, with an unlimited free replacement policy during the term of service. This includes parts ordered as upgrades.

Accountability
The Luna/Skyline team will discuss availability during the Monthly Status Meeting. Any actions for remediation will be proposed and discussed during the scheduled meeting. Such actions will be agreed to by both agency and vendor, as well as any plans or associated tasking.

Incident Severities
Incident Definition: An unplanned interruption to a video service or reduction in the quality of the service. The incident management process ensures that normal service operation is restored as quickly as possible and the business impact is minimized.

Severity-1 – A critical, or major incident where a severe outage spans one or many TOCs/sites, or one or many Streamers (SFS1000's) that are in a non-functional state, or all users are impacted, or an outage of a hosted application or its subsystems (i.e., Claris, Stream Manager, Map Server, etc.) or any incident during a special event.

Severity-2 – Incident resulting in an outage of one or many Transcoders (TS1000), or one Streamer (SFS1000), or an outage which impacts functionality, but the system remains usable. A degradation in functionality of the application or service, or Streamer (SFS1000).

Severity-3 – Incident affecting one stream, or a small subset of camera feeds, or an incident which results in service degradation thereof.

Service Request – Not an incident. Request in which nothing is degraded or non-functional. This is an appeal for a new account, service, information, functionality, modification of existing service, etc.

Maintenance –Not an incident, or a service request. Modification of a Production or Non-Production system that is required to keep the system functioning in an optimal and secure manner. The process utilizes the standard Change Management process (CCB) and may at times require additional documentation.

1. Expected Response Times for Incidents and Service Requests.

Incident Severity	Initial Response	Initial Communication	Frequency of Communication	Resolution Objective	Root Cause Analysis
Severity 1	Phone call to the submitter of the ticket within fifteen (15) minutes from receipt of system ticket, system monitor, technician discovery, or client phone call to the Service Desk. Internal Conference	Formal email communication to client within thirty (30) minutes from confirmation/verification that the issue is a Sev-1. To be distributed no later than one (1) hour since report of issue.	Formal email communication to client within sixty (60) minutes from the previous communication.	Two (2) hours. With formal notification.	Formal email communication to client within two (2) business days from the distribution of the Resolution communication. Upon client request for a post mortem. Analysis may be performed.

Incident Severity	Initial Response	Initial Communication	Frequency of Communication	Resolution Objective	Root Cause Analysis
	bridge to be opened. Basis of response is 24x7x365.				
Severity 2	Phone call to the submitter of the ticket within thirty (30) minutes from receipt of system ticket, system monitor, technician discovery, or client phone call to the Service Desk. In some cases, email correspondenc e (or via ticketing system). Basis of response is 24x7x365.	Formal email communicatio n to client within one (1) hour from confirmation/v erification that the issue is a Sev-2. To be distributed no later than one (1) hour since report of issue.	Email correspondence using the ticketing system every two (2) hours. In some cases the frequency of communication may be reduced.	One (1) business day. With email (i.e., ticket system) notification.	Formal email communicatio n to client within two (2) business days based on a specific client request.
Severity 3	Phone call within thirty (30) minutes from receipt of system ticket, system monitor, technician discovery, or client phone call to the Service Desk. Basis of response is 24x7x365.	Email correspondenc e using the ticketing system within one (1) business day of confirmation/v erification that the issue is a Sev-3.	Email correspondence using the ticketing system once (1) per business day.	Three (3) business days. With email (i.e., ticket system) notification.	Formal email communicatio n to client within two (2) business days based on a specific client request.

Incident Severity	Initial Response	Initial Communication	Frequency of Communication	Resolution Objective	Root Cause Analysis
Service Request	Phone call within thirty (30) minutes from receipt of system ticket, or client phone call to the Service Desk. Basis of response is 24x7x365.	Within one (1) business day of Initial Response.	Dependent on nature of request.	Dependent on nature of request.	None.

7 PROPOSAL CLARIFICATIONS

This section provides further details to the previous sections based on CTRMA request for clarifications issued on December 6th, 2019 and Luna/Skyline clarifications provided on December 13th, 2019.

System Architecture

1. CTRMA Question: CTRMA understands that your proposal and price does not include any Transcoding Appliances since all CTRMA's cameras already support H.264. Please confirm.

   Luna/Skyline Response: Correct, no Transcoding appliances were included in the quote.

2. CTRMA Question: Should a Transcoding Appliance be required in the future to connect different cameras, what would be the price associated with the supply, installation, and configuration of the relative hardware and software?

   Luna/Skyline Response: The following is pricing for (1) TS1000 Transcoding Appliance which can process up to (20) streams simultaneously:
   i.   Transcoder Appliance - $6,000 one-time fee. Typical lifespan of these appliances 5-6 years before refresh needed.
   ii.   Configuration, Installation, Travel, and Simple Training - $5,480 one-time fee.
   Annual Software Assurance / Hardware Maintenance - $2,680/year for up to 5 years or refresh, whichever comes first.

3. CTRMA Question: CTRMA understands that this proposal and price include two (2) Streaming Appliances SFS1000: one to manage interagency streaming and one to manage public streaming. Please confirm.

   Luna/Skyline Response: This proposal includes (3) total Streaming Appliances. (1) Streaming Appliance that will be installed at CTRMA, and then (2) Streaming Appliances which will be installed at Skyline's Data Center (one for interagency streaming, and one for public streaming)

4. CTRMA Question: Please confirm the maximum capacity of the proposed streaming appliances expressed as the maximum number of cameras that can be connected to the appliance. Assume all cameras are streaming at the highest allowed resolution. Or, provide the spare capacity for the proposed Streaming Appliance, available to CTRMA, beyond the proposed initial count of 50 Cameras.

   Luna/Skyline Response: The maximum number of input streams based on resolution are as follows:
       i.   *LQ (320x240, 15 fps, 192 kbps) – 400 Input Streams*
       ii. *SD (720x480, 15fps, 768 kbps) – 200 Input Streams*
       iii. *720p (1280x720, 30fps, 2000 kbps) – 75 Input Streams*

5. CTRMA Question: Should an additional Streaming Appliance be required in the future to connect other cameras, what would be the price associated with the supply, installation, and configuration of the relative hardware and software?

   Luna/Skyline Response: The following is pricing for (1) SFS1000 Streaming Appliance which can process up to (400) streams simultaneously:
       i.   *Streaming Appliance - $7,000 one-time fee. Typical lifespan of these appliances 5-6 years before refresh needed.*
       ii. *Configuration, Installation, Travel, and Simple Training - $5,480 one-time fee*
       iii. *Annual Software Assurance / Hardware Maintenance - $3,288/year for up to 5 years or refresh, whichever comes first.*

6.   CTRMA Question: CTRMA will be responsible for providing rack space (1U), power supply, and communication circuits for the Streaming Appliances provided by Luna/Skyline. Please confirm.

Luna/Skyline Response: Correct

7.   CTRMA Question: Based on your experience, please provide an estimate of the type of circuits needed by CTRMA and their estimated cost.

Luna/Skyline Response: We leverage MPLS circuits for this type of hosted service. Cost will vary based on the quality of the video stream. We can provide rough pricing once we know your quality of the video. Circuit costs are the responsibility of CTRMA and pricing is not included in this Proposal

System Integrations

1.   CTRMA Question: CTRMA is interested in leveraging the Incident View in the Claris Portal. We understand that it will require an API to integrate with Kapsch and Lonestar TIMC software to retrieve incident alarms and automatically associate the closest cameras into the Claris Portal. Please confirm if such APIs already exist and could be leveraged in CTRMA's implementation at no extra cost. If not, what additional cost will require its development, and what is the expected impact on the proposed project schedule?

Luna/Skyline Response: Claris has an existing integration with Lonestar that supports pulling in incident data, DMS sign data, and speed sensor data. There is no additional cost for implementation of these layers.   If additional layers would be needed, there would be an additional cost for integration. Specific costs and schedule would be determined upon discovery of those layers. Claris does not currently have an integration with Kapsch, but we could integrate with Kapsch for an additional cost. Specific costs and schedule would be determined upon discovery of the integration details.

2.   CTRMA Question: Please confirm if you anticipate that such APIs require the TIMC supplier (Kapsch or Lonestar) to provide any additional development or support to Luna/Skyline during project implementation.

Luna/Skyline Response: There may be some support hours needed to setup a test environment (if one does not already exist), or to engage in collaboration required to ensure successful API integration.

Solution Pricing

1. CTRMA Question: In your proposal, Section 5 – Pricing and Schedule of Payments, you require an Annual Payment of $64,000. In the Price Column, you state, "Total 4 Year Contract ($192,000.00)". CTRMA understands that the $192,000 amount accounts for three (3) 1-year renewals following the first one and that the Lump Sum amount of $114,000 already includes $64,000 for the first year of support. Please confirm.

    Luna/Skyline Response: Correct. This proposal has been amended accordingly.

2. CTRMA Question: If, after the first year, CTRMA decides not to renew its contract, please confirm what CTRMA obligations are. Is CTRMA committed to pay for the 4-year term as a minimum or mandatory term?

    Luna/Skyline Response: We suggest that first 3 years are mandatory. This proposal has been amended accordingly.

Contractual Terms

- CTRMA Question: CTRMA will procure the VISS solution through Texas DIR. Please provide all details regarding the DIR Contract that Luna / Skyline intends to use, as it applies and including:

    a.   The draft Contract covering the professional service for implementation.

    b.   The draft Contract covering the annual supports services with the proposed KPIs and SLAs;

    c.   The DIR Price Items and quantity to be billed to CTRMA and matching the submitted Pricing Proposal;

    d.   Any other contractual document required by TxDIR.

    Luna/Skyline Response: CTRMA will contract with Luna through the TxDIR Contract # DIR-TSO-3819. Skyline is teaming with Luna as its subcontractor. The Contractual Terms and Conditions that will apply between CTRMA and Luna are the DIR Terms and Conditions. This Proposal, as amended, represents the statement of work to be provided by the Luna/Skyline team for the CTRMA VISS project. The annual support services will be provided in adherence to the KPIs and SLAs described in "Section 6-Support Service & Operational Objectives" of this amended proposal.

"This is to signify that the Central Texas Regional Mobility Authority and Lunda Data Solutions, Inc. have entered into an Agreement in an amount not to exceed $306,000 pursuant to Texas Government Code Section 2054.0565 utilizing Texas Department of Information Resources Contract No. DIR-TSO-3819 for the purchase and installation of equipment and services described in this proposal.   All terms and conditions of Texas Department of Information Resources Contract No. DIR-TSO-3819 are applicable to and made part of this Agreement."

LUNA DATA SOLUTIONS, INC.

CENTRAL TEXAS REGIONAL MOBILITY AUTHORITY

_____
Dana R. Jones
CEO

_____
Mike Heiligenstein
Executive Director

_____
2-19-2020
Date

_____
Date