



CENTRAL TEXAS REGIONAL
MOBILITY AUTHORITY

February 28, 2024 AGENDA ITEM #8

Discuss and consider approving an agreement with Luna Data Solutions Inc. for a video interoperability sharing solution to support regional coordination for traffic management and incident response

Strategic Plan Relevance:	Collaboration, Innovation, Safety, Service
Department:	Operations
Contact:	Tracie Brown, Director of Operations
Associated Costs:	Not to exceed lic for two years
Funding Source:	Operating
Action Requested:	Consider and act on draft resolution

Summary: The Mobility Authority's mission is to implement innovative, multi-modal transportation solutions that reduce congestion and create transportation choices that enhance the quality of life and economic vitality. In furtherance of that mission, in July 2014, CTRMA completed the construction of a traffic & incident management center (TIM Center) in Cedar Park, Texas. The Authority's TIM Center oversees traffic capacity, mobility, incident management, tolling operations, managed lanes, and maintenance operations on CTRMA-owned and operated roadways, projects, buildings, and adjacent roadways. The TIM Center has a critical role in traffic incident management and safety on Mobility Authority facilities.

The Mobility Authority developed a Traffic Incident Management and Intelligent Transportation System (TIM/ITS) Master Plan to standardize and coordinate the traffic incident management operations between regional partner agencies. The goals of this plan are to:

- reduce the impacts of incidents to travelers in the region, including reduced roadway clearance time, incident clearance time and time to return to normal;
- reduce secondary crashes in the region; and
- provide accurate and timely traveler information to travelers throughout the region.

The Mobility Authority employs a collaborative approach towards mobility management to help ensure cohesion in the region by coordinating traffic incident management operations with its regional partners. The Luna video incident sharing system (VISS) allows the Authority to facilitate this vision.

Current Action: The Luna Video Interoperability Sharing Solution (VISS) consists of installing and configuring a new commercial-off-the-shelf (COTS) software to enable video sharing functionality. This software is available from Skyline Technology Solution and provided in a managed cloud-based environment which will mitigate the installation of additional hardware and software.

The cloud-based VISS software will be connected via a safe internet circuit to the existing Mobility Authority’s CCTV cameras (56 units). The CCTV cameras are connected to the Authority’s TIM Center via a fiber optic network, into the current operational video system. The solution enables the Mobility Authority to share video streams with regional partners such as TxDOT, the City of Austin, or the Austin Police Department, thus improving regional coordination for traffic incident detection and response. The VISS also allows the Mobility Authority to publish and share video streams from both the PTZ and fixed CCTV cameras with both their selected regional partners and the public without the need for partners or the public to own any specific software or licenses. Similarly, the Mobility Authority can access their shared video streams when regional partners implement the same platform.

The term of the agreement is one year with a one-year renewal option. CTRMA may terminate the agreement at any time with or without cause by providing sixty (60) days written notice. The total contract value is not to exceed **\$468,709.96** and is broken down as follows:

PROJECT ITEM	YEAR 1	YEAR 2 (if exercised)
All-inclusive Claris VIaaS Hosted Services SW and Maintenance (OPEX) - 100% of Annual Hosted Services - 183A Phases I & II, 290, 45SW, MoPac, 183 (56 camera feeds)	\$ 88,704.00	\$ 88,704.00
120 additional camera feeds @ \$1,584 annually per feed		
<ul style="list-style-type: none"> 183A Phase III (35 camera feeds) 	55,440.00	55,440.00
<ul style="list-style-type: none"> 183 North (85 camera feeds) 	-----	134,640.00
DIR contract administration fee (0.0075%)	1,081.08	2,090.88
Project Contingency (10%)	14,522.08	28,087.49
ANNUAL COST	\$159,747.5	\$308,962.37

TOTAL NOT TO EXCEED CONTRACT VALUE	\$468,709.96
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This table outlines the maximum cost possible for this Agreement; however, the exact amount is dependent upon when the 183A Phase III and 183N construction projects are completed and the related camera feeds are ready for integration. The Operations staff will ensure that the Authority does not pay more than required for these services.

About Luna Data Solutions, Inc.: Luna Data Solutions Inc. is a women-owned, HUB certified and WBENC certified company based in Austin, Texas. Luna is an approved Texas Department of Information Resources (DIR) vendor for deliverables-based information technology services (DBITS). Luna Data Solutions’ contract with DIR, contract # DIR-CP-4957, expires on December 13, 2025. Luna Data Solutions, Inc. will partner with Skyline Technology Solution to deliver the VISS to the Mobility Authority.

Previous Actions: In February 2020 the Mobility Authority Board approved an agreement with Luna Data Solutions Inc. In an amount not to exceed \$253,400 through their contract with the Texas 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. The term of the agreement was three years with one 1-year optional extension. The original term expired on February 28, 2023, and the 1-year extension was granted resulting in a February 28, 2024, contract expiration.

Action Requested/Staff Recommendation: Staff recommends contracting with Luna Data Solution for the implementation and annual support of the Video Interoperability and Sharing Solution (VISS) through their contract with the Department of Information Resources (DIR). Pursuant to Government Code Section 2054.0565, use of the DIR contract with Luna Data Solution Inc. satisfies all competitive purchasing requirements.

Financing: Not applicable

Backup provided: Draft Resolution
Luna Data Solutions, Inc. Proposal and Clarifications
Skyline Software License Agreement

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

RESOLUTION NO. 24-0XX

**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-CP-4957; 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 \$468,709.96 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 \$468,709.96 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 28th day of February 2024

Submitted and reviewed by:

Approved:

James M. Bass
Executive Director

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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January 30, 2024

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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 CTRMA 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 56,000 cameras securely shared to over 500 partner agencies in 17 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 fourteen (14) years to state and local government agencies. Skyline's Claris Portal is currently supporting seventeen (17) 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. VaaS 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.

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,

with no client software requirements or additional licensing fees. 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



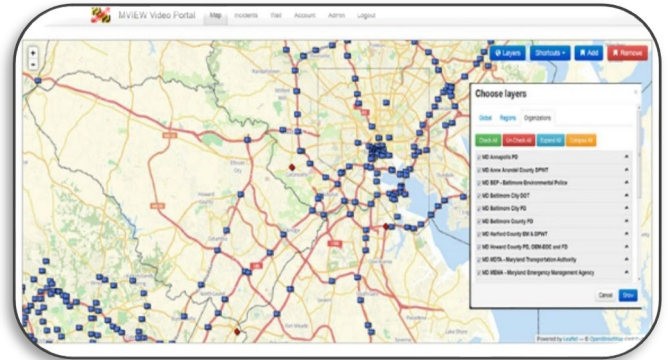
participating agency, city or partner. Each partner can view different videos independent of any other videos that may be requested by other partners and only has access to those video streams which CTRMA provides permission to view.

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.



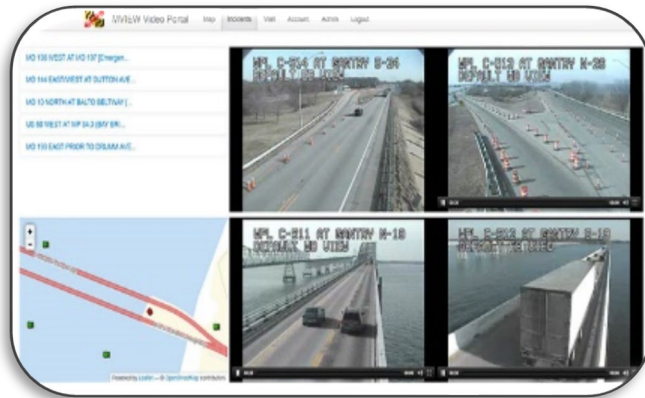
2.5 Step 4: Monitor

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 be 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 Meets
<p>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.</p>	<p>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.</p>
<p>CTRMA is looking at a web-based, cloud hosted solution based on existing COTS Software Solution with streaming capabilities originating in the cloud.</p>	<p>Skyline’s Claris VlaaS 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.</p>
<p>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.</p>	<p>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.</p>
<p>Any cloud services shall be hosted in a Tier 1 telecommunications facility with multiple power and internet backup connections</p>	<p>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.</p>
<p>The VISS will be designed to have no impact on CTRMA network security or capacity.</p>	<p>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.</p>
<p>The Contractor of the VISS shall provide any initial engineering service required to support the</p>	<p>As a Network Engineering company architecting, managing and monitoring</p>

Understanding Scope Requirements	Skyline Meets
<p>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.</p>	<p>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 VaaS 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.</p>

3.2 Video Sources and Output Requirements Map.

Video Sources and Output Requirements	Skyline Meets
<p>The contractor shall provide equipment and services to securely share live video streams from 58 CTRMA cameras to internal users, external partner agencies, and the public.</p>	<p>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.</p>
<p>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.</p>	<p>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.</p>
<p>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.</p>	<p>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.</p>
<p>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.</p>	<p>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</p>

Video Sources and Output Requirements	Skyline Meets
<p>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.</p>	<p>resolution settings, GPS locations, and device group associations.</p> <p>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.</p>

3.3 System Administration Requirements Map.

System Administration Requirements	Skyline Meets
<p>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.</p>	<p>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.</p>
<p>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.</p>	<p>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.</p>
<p>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.</p>	<p>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.</p>
<p>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.</p>	<p>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.</p>

System Administration Requirements	Skyline Meets
<p>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.</p>	<p>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.</p>

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

Web-Based Portal and integration with Third-Party Websites Requirements	Skyline Meets
<p>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.</p>	<p>Claris VlaaS 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 VlaaS, 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.</p>
<p>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.</p>	<p>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.</p>
<p>The VISS portal shall provide multiple viewing options for video streams and ways of selecting video streams to view, including map and list based.</p>	<p>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.</p>

Web-Based Portal and integration with Third-Party Websites Requirements	Skyline Meets
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 3 rd party 911 CAD systems such as RapidDeploy, and 3 rd 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

Operations Support & Monitoring Requirements	Skyline Meets
	<p>quality. Our matured ITIL based standard operating procedure ensures we respond to all alerts and notify our customers following a escalation schedule till resolution.</p>
<p>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.</p>	<p>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.</p>
<p>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.</p>	<p>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. Skyline will provide a monthly report stating performance, uptime, and incident statistics.</p>
<p>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.</p>	<p>The Terms and conditions of our support monitoring service are listed below.</p>

Operational Support: The Luna/Skyline team has a 24x7 Network Operations Center / Support Center to monitor the health of the VlaaS 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 VlaaS 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 Pricing and Schedule of Payments

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

Price Item	Quantity	Price
56 Cameras, All-inclusive Claris VaaS Hosted Services SW and Maintenance (OPEX) -100% of Annual Hosted Services on each anniversary of Acceptance	Year-1	\$88,704.00
56 Cameras, All-inclusive Claris VaaS Hosted Services SW and Maintenance (OPEX) - 100% of Annual Hosted Services on each anniversary of Acceptance	Year-2 (Optional)	\$88,704.00
		Total 2 Year Contract (\$177,408.00) +DIR fee of .0075%

****Each additional camera will be billed at \$1,584 per year or amortized at \$132.00 per stream per month plus the DIR fee of .0075**

Schedule Milestone	Deliverable Name	Payment Milestone
Annual Software license fees, hosting fees, and maintenance support fees	VaaS Hosted Services	100% of Annual Hosted Services on each anniversary of Acceptance (\$88,704.00) +DIR fee of .0075

The CTRMA has the right to terminate this Agreement at its reasonable option, at any time with or without cause, by providing sixty (60) days written notice of such intention to terminate by stating in said notice the optional termination date. Upon such optional termination, the CTRMA shall enter into a settlement with the Contractor upon an equitable basis as determined by the CTRMA, which shall fix the value of the work performed by the Contractor prior to the optional termination date. In determining the value of the work performed, the CTRMA in all events shall compensate the Contractor for any reasonable costs or expenses actually incurred and which are attributable to the exercise of the CTRMA’s optional termination, on an equitable basis as determined by the CTRMA as noted above, provided, however, that no consideration will be given to anticipated profit which the Contractor might possibly have made on the uncompleted portion of the Services.

5 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 use 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 bridge to be opened. Basis of response is 24x7x365.	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.
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 correspondence (or via ticketing system). Basis of response is 24x7x365.	Formal email communication to client within one (1) hour from confirmation/verification 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 communication 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
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 correspondence using the ticketing system within one (1) business day of confirmation/verification 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 communication to client within two (2) business days based on a specific client request.
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.

LUNA DATA SOLUTIONS INC.

CENTRAL TEXAS REGIONAL
MOBILITY AUTHORITY



Dana R. Jones
Luna Data Solutions Inc.

James Bass
Executive Director

2/16/2024

Date

Date

DIR Vendor Agreement

This is to signify that the Central Texas Regional Mobility Authority and Luna Data Solutions Inc. have entered into an Agreement **in an amount not to exceed \$468,709.96** pursuant to Texas Government Code Section 2054.0565 utilizing Texas Department of Information Resources Contract No. #DIR-CPO-4957 for the deliverable-based information technology services described in this proposal. All terms and conditions of Texas Department of Information Resources Contract No. #DIR-CPO-4957 are applicable to and made part of this agreement.

LUNA DATA SOLUTIONS



Dana R. Jones
Luna Data Solutions Inc.

2/16/2024
Date

CENTRAL TEXAS REGIONAL
MOBILITY AUTHORITY

James Bass
Executive Director

Date

Public Records Act Agreement

The Contractor acknowledges and agrees that all records, documents, drawings, plans, specifications, and other materials in the Authority's possession, including materials submitted by Contractor, are subject to the provisions of the Texas Public Information Act (see Texas Government Code § 552.001). The Contractor shall be solely responsible for all determinations made by it under such law, and for clearly and prominently marking each page or sheet of materials with "Trade Secret" or "Confidential", as it determines to be appropriate. Contractor is advised to contact legal counsel concerning such law and its application to Contractor.

If any of the materials submitted by the Contractor to the Authority are clearly and prominently labeled "Trade Secret" or "Confidential" by Contractor, the Authority will endeavor to advise Contractor of any request for the disclosure of such materials prior to making any such disclosure. Under no circumstances, however, will the Authority be responsible or liable to Contractor or any other person for the disclosure of any such labeled materials, whether the disclosure is required by law, or court order, or occurs through inadvertence, mistake, or negligence on the part of the Authority or its officers, employees, contractors, or consultants.

In the event of litigation concerning the disclosure of any material marked by Contractor as "Trade Secret" or "Confidential," the Authority's sole obligation will be as a stakeholder retaining the material until otherwise ordered by a court, and Contractor shall be fully responsible for otherwise prosecuting or defending any action concerning the materials at its sole cost and risk; provided, however, that the Authority reserves the right, in its sole discretion, to intervene or participate in the litigation in such manner as it deems necessary or desirable. All costs and fees, including reasonable attorneys' fees and costs, incurred by the Authority in connection with any litigation, proceeding or request for disclosure shall be reimbursed and paid by the Contractor.

LUNA DATA SOLUTIONS INC.

**CENTRAL TEXAS REGIONAL
MOBILITY AUTHORITY**



Dana R. Jones
Luna Data Solutions Inc.

James Bass
Executive Director

2/16/2024

Date

Date