PART 1 GENERAL

1.1 SYSTEM DESCRIPTION

A. General requirements

    1. The specified product shall be of the software provider's official product line, designed for commercial and/or industrial 24/7/365 use.

    2. Related requirements

        a. 28 05 07.21 PoE Power Sources for Electronic Safety and Security

        b. 28 05 11 Cyber Security Requirements for Electronic Safety and Security

        c. 28 05 19 Storage Appliances for Electronic Safety and Security

        d. 28 05 21 Network Attached Storage for Electronic Safety and Security

        e. 28 05 23 Storage Area Network for Electronic Safety and Security

        f. 28 23 11 Video Management System Analytics

        g. 28 23 13 Video Management System Interfaces

1.2 CERTIFICATIONS AND STANDARDS

A. General abbreviations and acronyms

1. API: Application Programming Interface
2. DHCP: Dynamic Host Configuration Protocol
3. DNS: Domain Name System
4. FPS: Frames per Second
5. H.264 (Video Compression Format)
6. IP: Internet Protocol
7. NTP: Network Time Protocol
8. PTZ: Pan/Tilt/Zoom
9. SaaS: Software as a Service
10. SMTP: Simple Mail Transfer Protocol
11. SMPTE: Society of Motion Picture and Television Engineers
12. SOC: Security Operations Center
13. SSL: Secure Sockets Layer
14. TCP: Transmission Control Protocol
15. TLS: Transport Layer Security
16. VMS: Video Management System

1.3 QUALITY ASSURANCE

A. The contractor or security sub-contractor shall be a licensed security Contractor with a minimum of five (5) years' experience installing and servicing SaaS platforms of similar scope and complexity and evidence that is completed at least three (3) projects of similar design and is currently engaged in the installation and maintenance of systems herein described.

B. The Software provider will provide a Platform Service available with a Monthly Uptime Percentage of at least ninety-nine point five per cent (99.5%), during any calendar month (the "Service Level Commitment").

1.4 QUALIFICATIONS

A. All installation, configuration, setup, program and related work shall be performed by electronic technicians thoroughly trained by the manufacturer in the installation and service of the equipment provided.

B. The contractor or designated sub-contractor shall submit credentials of completed manufacturer certification, verified by a third-party organization, as proof of the knowledge.

1.5 SOFTWARE UPGRADES

A. The software provider shall provide free upgrades to new software releases for the duration of an active platform license.
   1. Cloud service updates will result in zero downtime of the platform.

B. The software shall be backed by free support during normal business hours for the duration of an active platform license.

PART 2 PRODUCT

2.1 GENERAL

A. The video management software shall comply with established network and video standards.

2.2 UNIFIED SECURITY PLATFORM SCHEDULE

A. The video management software listed below shall be supplied by a single software provider.

B. The video management software provider and model numbers shall be as follows:
   1. The video management software shall be YourSixOS.

2.3 UNIFIED SECURITY PLATFORM

A. Video Management Software
   1. Hardware requirements
      a. System will not require any onsite appliance.
      b. Axis cameras running one of the following firmware versions:
         1. LTS 2016: 6.50.5.10 or newer
         2. LTS 2018: 8.40 or newer
         3. LTS 2020: 9.80 or newer
         4. LTS 2022: 10.12 or newer
      c. Switching hardware that supports PoE.
      d. Minimum of 0.5Mbps upload bandwidth dedicated per stream for cloud storage and viewing
   2. Software requirements

    a. The video management software shall provide full functionality when operated in the following environment:

      1. Windows® 10.

      2. Latest version of MacOS® .

    b. The video management software shall not require 3rd-party software or databases to operate.

    c. The video management software will not require a thick client or any software to be downloaded locally.

    d. The video management application shall provide mobile application functionality when operated in the following environment:

      1. One of the following versions:

        a. Apple® iOS 15.0 or later.

        b. Apple® iPadOS 15.0 or later.

        c. Google® Android 8.0 or later.

3. Security and uptime requirements

    a. The video management software shall provide a minimum SLA (Service Level Agreement) of 99.99% uptime.

    b. The video management software must hold hold SOC 2® – SOC for Service Organizations attestation.

4. Supported products

    a. Axis Communications devices

      1. Fixed, Multi-sensor, PTZ, modular, Panoramic, and thermal network cameras with 6.50.5.10 firmware or greater.

        a. Panoramic 360⁰ camera dewarped views, including 180⁰ and quad-views on capable devices.

        b. Panoramic stitching on capable devices.

      2. Intercoms.

      3. System devices

        a. I/O and relay modules.

        b. Radar system products.

        c. Video encoders.

      4. Audio system products.

5. Product connectivity

    a. System will provide connectivity to devices via:

      1. Axis One-Click Cloud Connection (O3C).

      2. Outbound TCP Port 443.

      3. Basic proxy supported.

6. Video specifications

    a. Provide full functionality from any video and audio stream from network cameras, and video encoders and audio devices which the minimum requirements for supported devices.

7. Client functionality

    a. The video management software shall be equipped with a graphical user interface, providing the following functionality:

      1. Display up to 20 different video streams.

        1. Geographically dispersed; not located within the same site.

      2. Create favorite views and pin views for quick access.

      3. Support optimized rendering for smooth display of video in resolutions up to 4K.

4. Provide drag and drop of single sources within the user interface.

5. Support multiple screens when operating on a computer with supporting hardware.

6. Live view functionality:

   a. Single live camera view up to 4K at 15fps with supported monitor.

7. Support split view, single view in full screen, Multiview streaming, Axis' Corridor Format, Digital zoom.

8. Flexible live view configuration including dynamic resizing of players.

9. Web page

   a. Supported browsers: Google Chrome™ (latest), Firefox® (latest), Microsoft Edge (latest).

10. PTZ

   a. Digital.

   b. Mechanical.

11. PTZ Presets.

12. On-screen controls.

13. Support for dewarped 360° views in live, playback and export.

14. Provide instant replay for the user to jump from live view back in time a few seconds to immediately investigate something seen in the live view.

b. The video management software shall support the following security protocols:

1. Multiple user access levels with password protection supporting SSO via SAML and OIDC.

2. HTTPS certificates between the YourSix cloud and devices.

3. Camera encryption via Axis One-Click Cloud Connection (O3C) with Encryption and Authentication; TLS 1.3.

c. The video management software shall have the ability to periodically check for new device firmware upgrades and updated firmware when applicable.

d. The video management software shall provide system health monitoring for real-time status, including:

1. Storage disruption.

2. Device unreachable.

3. Device reachable.

e. The video management software shall provide device tampering alerts for real-time status, including:

1. Casing opened.

2. Shock detection.

3. Tilt detection.

4. Video tampering.

f. Multi-tenant functionality for browser and mobile app.

g. Device management, including configuration and operational actions.

8. Recording functionality

a. Retention can be limited per camera to conform to local legal requirements.

b. Record various individually configured full frame rate video streams.

1. Standard cloud recordings in HD (720p at 8fps).

   a. Available in 3, 7, 14, 30, 45, 60, 90,120, 180, 365 day retention lengths.

   b. Backed up to 6 regionally dispersed data centers.

        c. Cloud footage uploaded in real time automatically (no local buffering or manual intervention required).

     2. Edge recording up to the max resolution and frame rate of the device.

        a. Support flexible edge recording lengths based on size of SD card and storage configuration.

        b. Supported edge storage on SD card (removable; not fixed)

           1. AXIS.

           2. Micron.

     3. Local storage to NAS dependent on device capabilities and configuration

        a. Supported NAS storage.

           1. AXIS S3008.

           2. Synology.

  c. Support the following formats for each video channel:

     1. MPEG-4 Part 2 10/AVC.

     2. H.264.

     3. AXIS Zipstream.

     4. Configurable quality settings unique to each storage location (cloud, NAS, SD).

  d. Continuous recording.

  e. Motion detection recording.

  f. Edge AI event driven recording.

  g. Scheduled recording – unique customization for each day of the week.

  h. Individual and configurable recording resolution and frame rate for each video source.

9. Playback functionality

  a. Playback of single camera up to 8x speed.

  b. Playback of multiple cameras up to 8x speed.

  c. Synchronized playback up to 20 cameras depending on resolution and client hardware.

  d. Select which storage location to playback footage from (cloud, edge).

10. Search functionality

  a. The video management system shall provide the ability to search for video based upon the following criteria:

     1. Time and date.

     2. By device.

     3. By event type (analytic).

11. Export functionality

  a. The video management software shall:

     1. Export multiple video clips from selected cameras.

     2. Export duration length up to 24 hours.

     3. Video in MP4 format packaged in ZIP container including M3U playlist.

     4. Saved exported cases for 90 days in the cloud.

12. PTZ functionality

  a. The video management software shall:

     1. Provide the ability to control Pan, Tilt and Zoom functionality directly from the user interface, including mobile app.

     2. Provide unlimited preset positions, camera dependent.

3. Support Pan and Tilt control by clicking in the image to move the camera using the mouse for click to center.

4. Support zoom control by selecting an area in the image using the mouse.

5. Support the use keyboard, mouse, trackpad, touch screen.

13. Audio functionality

   a. The video management software shall support the following audio specifications:

     1. Two-way, half and full duplex audio encoded with the video stream with supported network cameras.

     2. One-way audio encoded with the video stream with AXIS network cameras.

     3. Assign or link a microphone or speaker to a defined video device.

     4. Support active echo cancellation and noise reduction, device dependent.

     5. Audio Compression using AAC.

     6. Live and recorded audio can be disabled to conform to local legal requirements.

   b. Live-view functionality

     1. Volume control of incoming audio.

     2. Talk down speaker-function, enabling transmission of live announcements.

14. Input / Output functionality

   a. The video management software shall support the following Input/Output functionality:

     1. Accept notifications and alarms from an unlimited number of supported auxiliary devices connected to the network.

     2. Received notifications and alarms shall be able to generate events within the video management software.

15. Event functionality

   a. The video management software shall be equipped with an event functionality, supporting events trigged in a camera, encoder or other network connected device, and include support for the following triggers:

     1. Detectors functionality

       a. Video motion detection.

       b. Radar motion detection.

       c. Audio detection.

       d. Passive infrared.

     2. Hardware functionality

       a. SD card functionality.

       b. Device connected.

       c. Device disconnected.

     3. Storage functionality

       a. Storage full.

     4. Tampering functionality

       a. Casing opened.

       b. Shock detection.

       c. Tilt detection.

       d. Video tampering.

     5. Device group (Alarm zones) functionality

       a. State change: armed, disarmed, schedule (neutral).

     6. System functionality

       a. Embedded third-party applications when supported.

b. Lost connection to network camera, encoder or network disk.

c. External I/O.

d. Device event triggers.

7. Response to triggers shall include:

a. Recording of video at defined image quality and frame rate to edge, cloud, or local NAS.

b. Storing of pre-alarm video at the captured frame rate.

7. Pre and post buffer configurable within the platform allowing up to 20 seconds of captured footage pre and post trigger.

c. Activating external outputs on a camera, encoder or other network connected device.

d. Notification of event, via email, to user, organization, or central monitoring station (webhooks supported).

e. Play recorded audio clip when device is paired to a supported audio device.

8. Solution will support professional alarm monitoring without alarm panel onsite.

16. Analytics

a. The video management software shall provide a platform allowing the upload of supported 3rd party applications into a device.

b. Supported applications from 3rd parties include:

1. Object detection, intrusion/crossline detection, live and static privacy masking, loitering detection, and motion detection.

17. Mobile application functionality

a. The video management application shall provide the following functionality when accessing the video management software:

1. Live view functionality.

2. Playback of recorded material.

3. The ability to create/take snapshots.

4. Create and download exports.

5. PTZ Controls.

6. Health monitoring of sites and devices.

7. I/O and audio controls including talk down.

18. System functionality

a. The video management software shall support the following functionality:

1. IP addresses

a. Static or dynamic IP addresses.

b. Dynamic Name Server (DNS) addresses.

c. Secure internet routing of devices via owner authentication key.

2. Time synchronization

a. Network Time Protocol (NTP) as provided by the VMS NTP server.

3. Security

a. The video management software shall provide the following:

3. Restrict access to the systems by usernames and passwords at a minimum of six different levels.

3. Support multi-factor authentication and single sign on.

3. No Port-forwarding or NAT required.

3. Data encrypted in transit and at rest.

3. Device identity verification.

3. Auto upkeep to make sure devices are up to date on patches and firmware.

3. Breached password detection and password strength requirements.

3. Suspicious IP throttling detection.

3. Brute-force detection.

3. 3rd party security audits and penetration tests.

4. API support

a. The video management software shall be fully supported by a RESTful API and published API, which shall provide necessary information for integration with third party applications.

5. Maintenance and configuration functionality

a. The video management software shall:

5. Provide the ability to create multiple users of the system, from a browser, each with individual definable user rights.

5. Provide the ability to upgrade firmware in individual cameras and encoders.

5. When connected to Internet, automatically locate suitable firmware updates and download them.

5. Utilize a license model supporting unlimited and flexible system growth where scalability is only limited by local networking infrastructure onsite.

19. System Scalability

a. The platform shall provide the following system limitations with device subscriptions.

1. Unlimited customer accounts.

2. Unlimited users per account with unique individual permissions (Fair use policy).

3. Unlimited sites per account.

b. The platform shall provide account management functions including:

1. Add, remove, update, and suspend accounts.

2. Assign and manage multiple permissions for organizations, sites, and devices.

PART 3 EXECUTION

3.1 INSTALLATION

A. The contractor's or subcontractor's main resources within the project shall carry proper professional certification issued by the manufacturer and verified by a third-party organization to confirm sufficient product and technology knowledge.

B. The contractor shall carefully follow instructions in documentation provided by the manufacturer to ensure all steps have been taken to provide a reliable, easy-to-operate system.

C. All equipment shall be tested and configured in accordance with instructions provided by the manufacturer prior to installation.

D. All firmware found in products shall be the latest and most up-to-date version as specified by the manufacturer, or by the product component provider.

E. All equipment requiring users to log on using a password shall be configured with user/site-specific password/passwords. No system/product default passwords shall be allowed.

F. A proper installation shall meet NEC (National Electrical Code – US only) per the guidelines of that year's revision. When properly installed equipment meets Low Voltage, Class 2 classification of the NEC.

3.2 TRAINING

A. The software provider shall provide system operations, administration, and maintenance training by trained personnel.

B. The software provider shall provide a training schedule for approval by the consultant prior to substantial completion.

END OF SECTION